CSRN-XHE2

49.4-110.4

MANUAL

FOR INSTALLATION, USE AND MAINTENANCE

M07V40B13-07 11/20

R-410A

Dear Customer,

We congratulate you on choosing these product

Clivet has been working for years to offer systems able to assure the maximum comfort for a long time with highly-reliable, efficient, high-quality and safe solutions.
The target of the company is to offer advanced systems, that assure the best comfort and reduce energy consumption as well as the installation and maintenance costs for the entire life-cycle of the system.

With this manual, we want to give you information that are useful for all phases: from reception, installation and use to disposal - so that such an advanced system can provide the best performances during installation and use.

Best regards and have a good read.

CLIVET Spa

INDEX

Safety considerations	5
Configurations	7
Reception	10
Selecting the installation site	12
Water connections	17
Aeraulic connections	20
Electrical connections	21
Start-up	28
Control	36
Maintenance	60
Decommissioning	67
Residual risks	68
Technical information	70

SAFETY CONSIDERATIONS

Manual

The manual provides correct unit installation, use and maintenance.

It is advisable to read it carefully so you will save time during operations.

Follow the written indications so you will not cause damages to things and injuries people.

Preliminaries

Only qualified personnel can operate on the unit, as required by the regulation in force.

Risk situations

The unit has been designed and created to prevent injures to people.

During designing it is not possible to plane and operate on all risk situation.

Read carefully “Residual risk” section where all situation which may cause damages to things and injuries to people are reported.

Installation, starting, maintenance and repair required specific knowledge; if they are carried out by inexperienced personnel, they may cause damages to things and injuries people.

Intended use

Use the unit only:

- civil air-conditioning
- keep to the limits foreseen in the technical schedule and in this manual

The manufacturer accepts no responsibility if the equipment is used for any purpose other than the intended use.

Installation

Outdoor installation

The positioning, hydraulic system, refrigerating, electrics and the ducting of the air must be determined by the system designer in accordance with local regulations in force.

Follow local safety regulations.

Verify that the electrical line characteristics are in compliance with data quotes on the unit serial number label.

Maintenance

Plan periodic inspection and maintenance in order to avoid or reduce repairing costs.

Turn the unit off before any operation.

Pay particular attention to:

⇒ warnings / prohibitions / danger indicating particularly important operations or information, operations that cannot be done, which compromise the functionality of the unit or which may cause damage to things or persons.

Modification

All unit modifications will end the warranty coverage and the manufacturer responsibility.

Breakdown/Malfunction

Disable the unit immediately in case of breakdown or malfunction.

Contact a certified service agent.

Use original spares parts only.

Using the unit in case of breakdown or malfunction:

- voids the warranty
- it may compromise the safety of the unit
- it may increase time and repair costs

User training

The installer has to train the user on:

- start-up/shutdown
- set points change
- standby mode
- maintenance
- what to do / what not to do in case of breakdown.

Data update

Continual product improvements may imply manual data changes.

Visit manufacturer web site for updated data.

Indications for the User

Keep this manual with the wiring diagram in an accessible place for the operator.

Note the unit data label so you can provide them to the assistance centre in case of intervention (see “Unit identification” section).

Provide a unit notebook that allows any interventions carried out on the unit to be noted and tracked making it easier to suitably note the various interventions and aids the search for any breakdowns.

In case of breakdown or malfunction

- Immediately deactivate the unit
- Contact a service centre authorized by the manufacturer

The installer must train the user, particularly on:

- Start-up/shutdown
- Set points change
- Standby mode
- Maintenance
- What to do / what not to do in case of breakdown

Unit identification

The serial number label is positioned on the unit and allows to indentify all the unit features.

The matriculation plate shows the indications foreseen by the standards, in particular:

- unit type
- serial number (12 characters)
- year of manufacture
- wiring diagram number
- electrical data
- type of refrigerant
- refrigerant charge
- manufacturer logo and address

The matriculation plate must never be removed.

It contains fluorinated greenhouse gases.

Serial number

It identifies uniquely each unit.

Must be quoted when ordering spare parts.

Refrigerant

It contains fluorinated greenhouse gases

Type of refrigerant: R410A

Assistance request

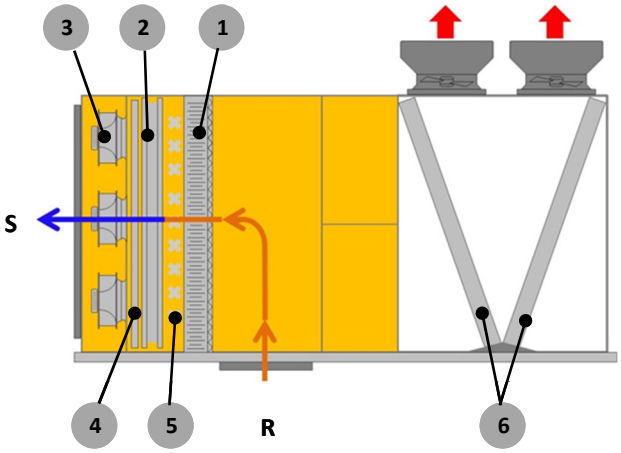
Note data from the serial number label and write them in the chart on side, so you will find them easily when needed.

Series
Size
Serial number
Year of manufacture
Number of electrical wiring diagram

CONFIGURATIONS

CAK configuration

Single fan section for full recirculation

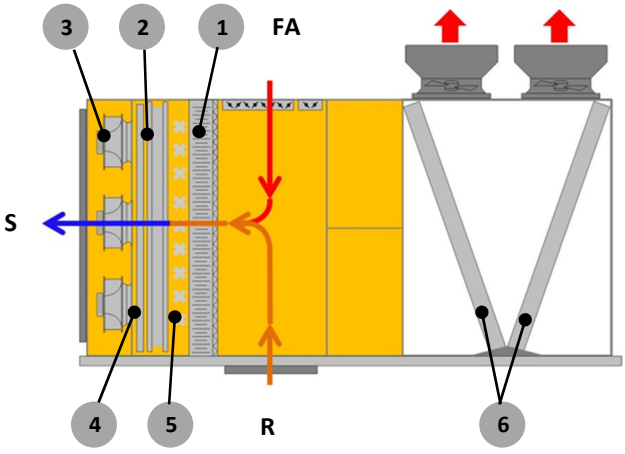


R. Return air
S. Supply air

1. G4 efficiency filters + electronic filters (option) or F7 filter (option)
2. Handling exchanger
3. Supply fan section
4. Hot gas reheating exchanger
5. Electric heaters.
6. Thermodynamic recovery on exhaust air

CBK configuration

Single fan section for recirculation and fresh air

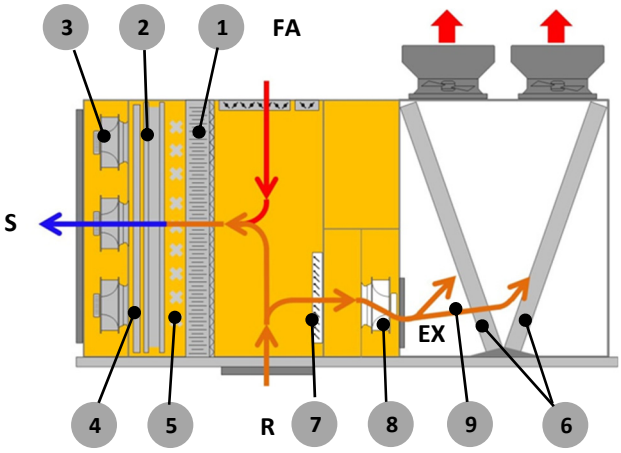


R. Return air
S. Supply air
FA. Fresh air

1. G4 efficiency filters + electronic filters (option) or F7 filter (option)
2. Handling exchanger
3. Supply fan section
4. Hot gas reheating exchanger
5. Electric heaters.
6. Thermodynamic recovery on exhaust air

CCK configuration

Double fan section for recirculation, fresh air, exhaust, thermodynamic recovery

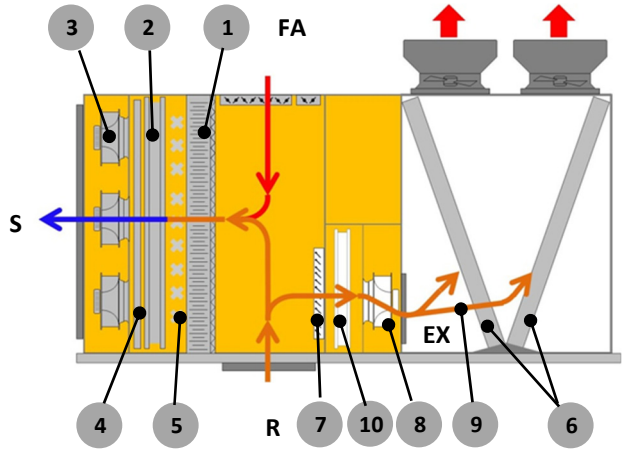


R. Return air
S. Supply air
FA. Fresh air
EX. Exhaust air

1. G4 efficiency filters + electronic filters (option) or F7 filter (option)
2. Handling exchanger
3. Supply fan section
4. Hot gas reheating exchanger
5. Electric heaters.
6. Thermodynamic recovery on exhaust air
7. Exhaust damper
8. Exhaust fan section
9. Thermodynamic recovery on exhaust air

CCKP configuration

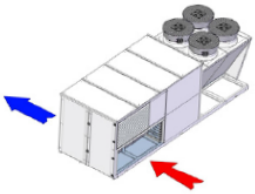
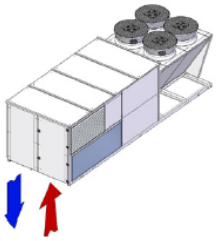
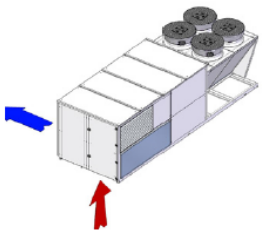
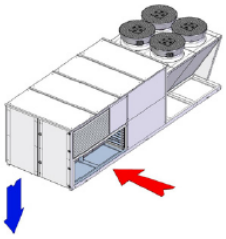
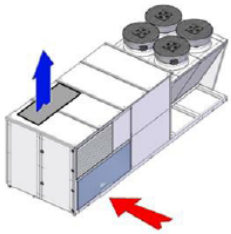
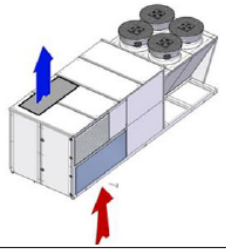
Double fan section with fresh air and THOR thermodynamic recovery



R. Return air
S. Supply air
FA. Fresh air
EX. Exhaust air

1. G4 efficiency filters + electronic filters (option) or F7 filter (option)
2. Handling exchanger
3. Supply fan section
4. Hot gas reheating exchanger
5. Electric heaters.
6. Thermodynamic recovery on exhaust air
7. Exhaust damper
8. Exhaust fan section
9. Thermodynamic recovery on exhaust air
10. Thermodynamic recovery exchanger, THOR

Supply and return configuration

M0 - R0 Standard unit	M3 - R3 Option	M0 - R3 Option
		
M3 - R0 Option	**M5 - R0** Option	**M5 - R3** Option
		

Filters nomenclature according to EN ISO 16890		
1° filtering stage - standard	G4	ISO 16890 Coarse 60%
2° filtering stage - option	F7	ISO 16890 ePM1 55%
2° filtering stage - option	FES (electronic filters)	ISO 16890 ePM1 90%

RECEPTION

Saftey

Operate in compliance with safety regulations in force.

For detailed information (dimensions, weight, technical characteristics etc.) please refer to the TECHNICAL INFORMATION section.

Use single protection devices: gloves, glasses etc.

Reception

You have to check before accepting the delivery:

- That the unit hasn't been damaged during transport
- That the materials delivered correspond with that indicated on the transport document comparing the data with the identification label positioned on the packaging.

In case of damage or anomaly:

- write down on the transport document the damage you found and quote this sentence: "Conditional acceptance clear evidence of deficiencies/damages during transport"
- wontact by fax and registered mail with advice of receipt to supplier and the carrier.

NOTE

⇒ *Any disputes must be made within 8 days from the date of the delivery. Complaints after this period are invalid .*

Storage

Respect the indications on the outside of the pack.

In particolar:

⇒ *minimum ambient temperature -15°C*
(possible components damages)

⇒ *maximum ambient temperature +49°C*
(possible safety valve opening)

⇒ *maximum relative humidity 95%*
(possible damages to electrical components

NOTE

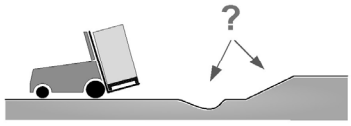
⇒ *The unit may not be tilted more than 15° during transport.*

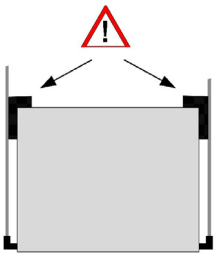
NOTE

Removal of packaging

Be careful not to damage the unit.

Recycle and dispose of the packaging material in compliance with local regulations.





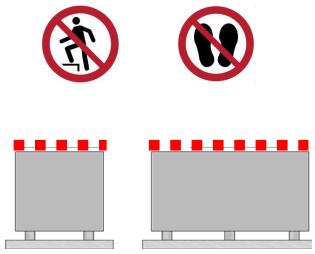
Handling

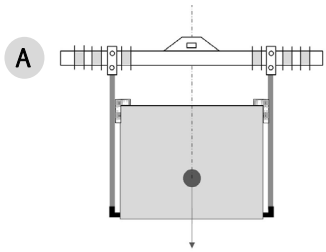
Caution

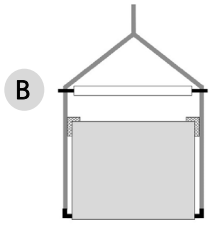
⇒ *Check that all handling equipment complies with local safety regulations (cran, forklifts, ropes, hooks, etc.).*

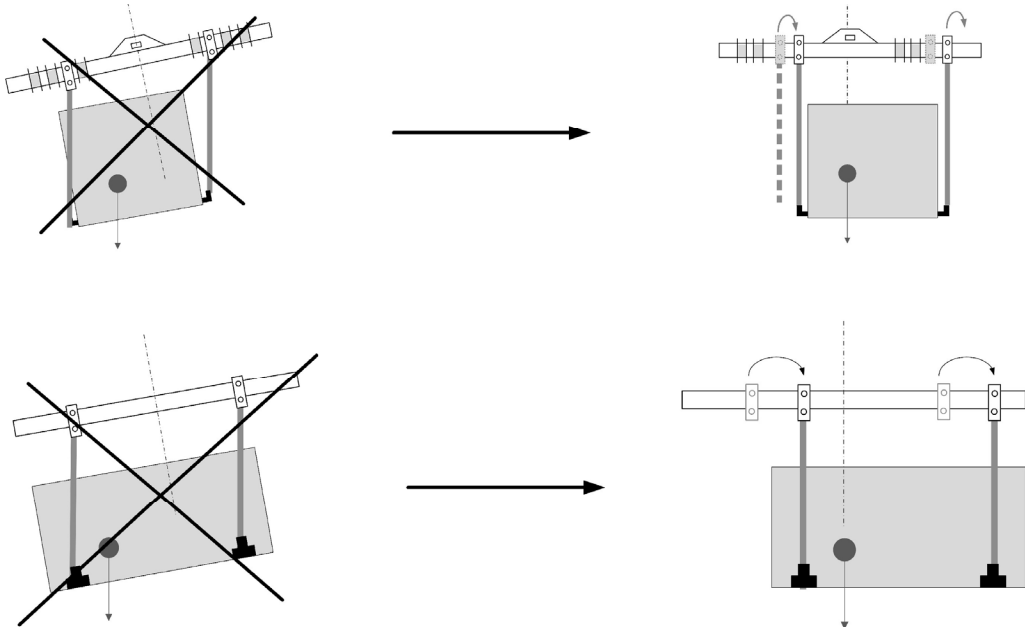
⇒ *Provide personnel with personal protective equipment suitable for the situation, such as helmet, gloves, accident-prevention shoes, etc.*

- Observe all safety procedures in order to guarantee the safety of the personnel present and the of material.
- Verify unit weight and handling equipment lifting capacity.
- Identify critical points during handling (disconnected routes, flights, steps, doors).
- Suitably protect the unit to prevent damage.
- Lifting with balance (A)
- Lifting with spacer bar (B)
- Align the barycenter to the lifting point
- Gradually bring the lifting belts under tension, making sure they are positioned correctly.
- Before starting the handling, make sure that the unit is stable.









SELECTING THE INSTALLATION SITE

Positioning

⇒ *Installation must be in accordance with local regulations. If they do not exist, follow EN378 .*

During positioning consider these elements:

- customer approval
- unit weight and bearing point capacity
- safe accessible position
- functional spaces
- spaces for the air intake/exhaust
- electrical connections
- max. distance allowed by the electrical connections
- water connections

Functional spaces

Functional spaces are designed to:

- guarantee good unit operation
- carry out maintenance operations
- protect authorized operators and exposed people

⇒ *Respect all functional spaces indicated in the TECHNICAL INFORMATION section.*

Positioning

Units are designed to be installed:

- EXTERNAL
- in fixed positions

⇒ *Put the unit in a position where any leaking gas cannot enter buildings or stagnate in closed areas. In the latter case, observe the rules for machinery rooms (ventilation, leak detection, etc.).*

Installation standards:

- install the unit raised from the ground
- bearing points aligned and leveled
- discharged condensation water must not cause harm/danger to people and property
- the accumulation of snow must not cause clogging of the coils
- avoid installations in places subject to flooding

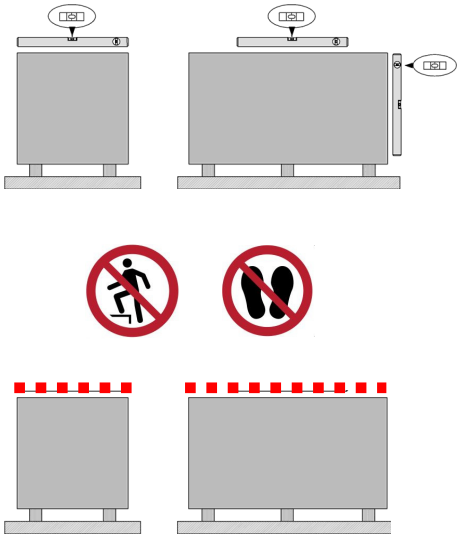
Limit vibration transmission:

- use anti-vibration devices or neoprene strips on the unit support points
- install flexible joints on the hydraulic and aeraulic connections

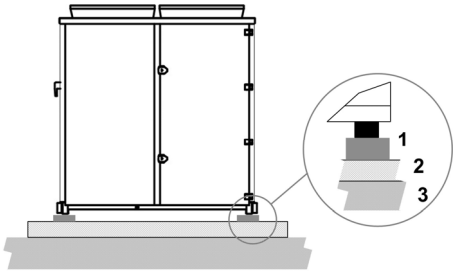
Protect the unit with suitable fence in order to avoid access to unauthorised personnel (children, vandals, etc.)

A correct circulation of the air is mandatory to guarantee the good unit operating..

The unit must be level.

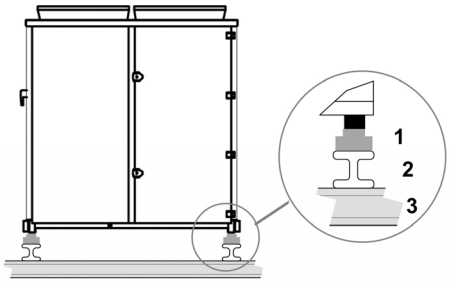


Concrete floor



1 2 cm thick neoprene strips
2 concrete floor
3 floor

Steel structure



1 anti-vibration devices
2 steel structure
3 steel structure

Avoid therefore:

- obstacles to the airflow
- exchange difficulties
- leaves or other foreign bodies that can obstruct the exchange batteries
- winds that hinder or favour the airflow
- heat or pollution sources close to the unit (chimneys, extractors etc)
- stratification (cold air that stagnates at the bottom)
- recirculation (expelled air that is sucked in again)
- positioning below the level of the threshold, close to very high walls, attics or in angles that could give rise to stratification or recirculation phenomenons.

Ignoring the previous indications could:

- energy efficiency decrease
- alarm lockout due to HIGH PRESSURE (in summer) or LOW PRESSURE (in winter)

CBK, CCK, CCKP configurations only

Avoid the accumulations of snow and ice in front of the exhaust air outlet.

Pressure relief valve gas side

The installer is responsible for evaluating the opportunity of installing drain pipes in compliance with the local regulations in force (EN 378).

If ducted, the valves must be sized according to EN13136 .

Only if electronic filter is present

The most common contaminants for which the filter is designed, are:

- air pollution by PM10, PM 2,5 and PM1

Contaminants that can be filtered:

- dry smokes
- powder (up to 0,3 microns)
- smoke electrostatically charged

Contaminants that can NOT be filtered:

⇒ *water vapors also in low concentration*

⇒ *oil vapors*

⇒ *large amounts of dust*

⇒ *metal shavings,iron filing dusts and waste generally*

⇒ *Gas*

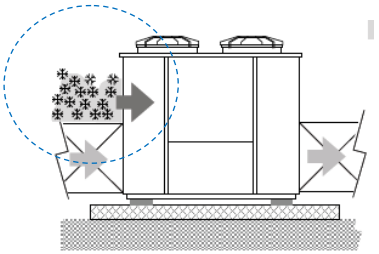
Absolutely to avoid:

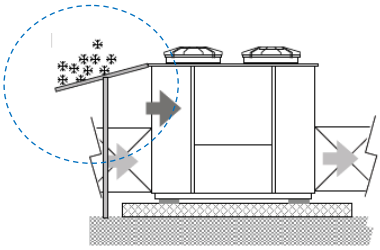
⇒ *metal dusts also fine*

⇒ *fumes produced by combustion of organic and not materials (wood, coal, gasoline, etc.)*

only CBK, CCK, CCKP

Avoid snow accumulating





Gas heating module

Option

Burner with low pollutant emissions (NOx below 80 mg/kWh), in line with Class 5 of the EN 676 European standard is supplied with a gas increase control for methane or LPG.

The heating module with burner includes:

- hot air generator powered with methane
- kit for transformation of power with liquefied petroleum gas (LPG)
- kit of steel chimney for exhaust fumes
- all the control and safety devices

⇒ *The component requires gas supply (gas connections to be made by the Customer).*

⇒ *The location of the unit and the fume drain mode must comply with laws and standards in force in the Country of use.*

⇒ *The Costumer may choose the flue chimney.*

⇒ *The Costumer is responsible for mounting the chimney kit during installation.*

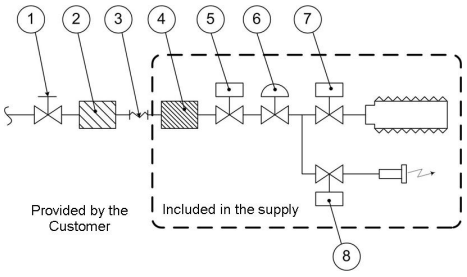
⇒ *Based on the specific installation requirements, the length of the chimney can be increased with suitable joints and fittings (not supplied by Clivet).*

Gas connection

- Read the gas heating module manual.
- Connection must be carried out by qualified personnel.
- use certified components and comply with the local standards in force
- install on the gas connection: tap, large section filter and anti-vibration joint
- check the supply pressure is correct and stable, in particular where more uses are inserted on the same line.

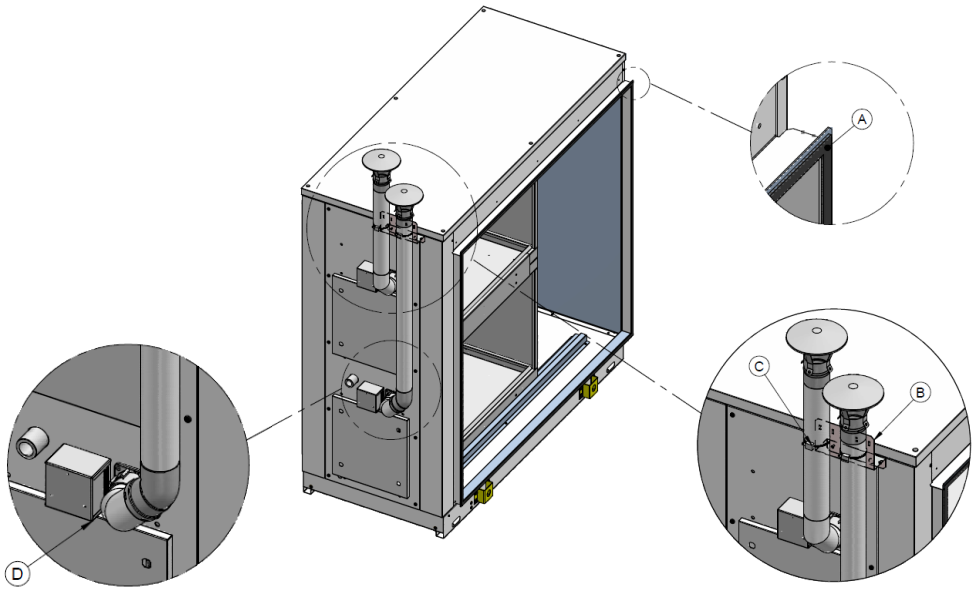
System maintenance booklet

- t must be kept in the place of installation of the unit
- It must be filled-in upon commissioning
- It must be updated with the results of the periodical checks, of the routine and extraordinary maintenance interventions.

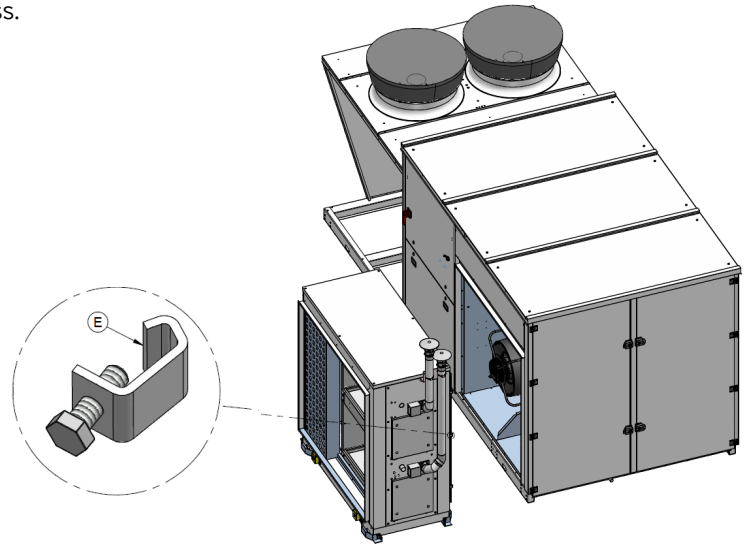


1. Gas cock
2. Gas filter (large section)
3. Anti-vibration joint
4. Gas filter (small section)
5. Safet gas solenoid vlave
6. Pressure stabiliser
7. Main gas burner solenoid valve
8. Pilot burner gas solenoid valve

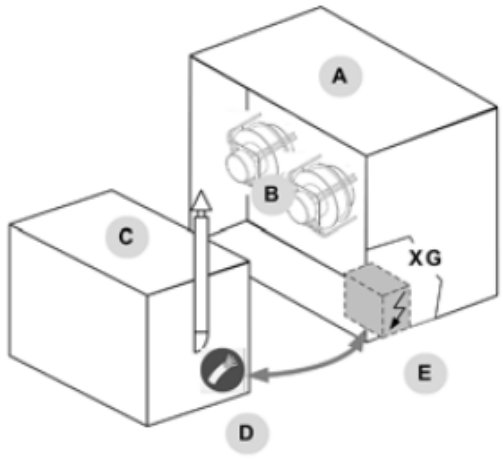
A. Apply the flat adhesive gasket15x5 on the Gas Module flange perimeter to guarantee the absence of air bypass.
B. Fix with screws the flue supporting bracket to the GM frontal panel
C. Fix the extensions with clamps to the flue supporting bracket
D. Fix the suction terminals in ambient and the fuel components (curves, extensions, terminals) by the corresponding gaskets



1 remove the unit supply flange closing.
2 approach the unit to the Gas Module.
3 match the supply flanges by means of the supplied terminals.
4 tighten screws
5 guarantee the absence of air bypass.



Connections performed by costumer



A. rooftop
B. supply fan
C. gas module
D. connecting cables
E. electrical panel - terminal XG

Gas use features

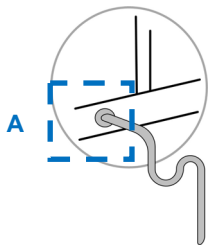
		65KW		82KW		100KW		130KW		164KW		200KW		300KW	
Description		min	max	min	max	min	max	min	max	min	max	min	max	min	max
Rated thermal input	kW	12,4	65,0	16,4	82,0	21,0	100,0	12,4	130,0	16,4	164,0	21,0	200,0	21,0	300,0
Efficiency Hi (P.C.I.)	%	108,1	96,8	108,4	97,6	108,6	97,2	108,1	96,8	108,4	97,6	108,6	97,2	108,6	97,2
Efficiency Hu (P.C.S.)	%	97,4	87,2	97,6	87,9	97,8	87,5	97,4	87,2	97,6	87,9	97,8	87,5	97,8	87,5
Max condensation produced	l/h	2,1		3,3		2,7		4,2		6,6		5,4		8,1	
Carbon monoxide CO (0% di O_2)	ppm	<5		<5		<5		<5		<5		<5		<5	
Nitrogen oxides - NOx (0% di O_2)		39 mg / kWh 22 ppm		41 mg / kWh 23 ppm		39 mg / kWh 22 ppm		39 mg / kWh 23 ppm		41 mg / kWh 23 ppm		39 mg / kWh 22 ppm		39 mg / kWh 22 ppm	
Available flue pressure	Pa	120		120		120		120		120		120		120	
Gas connection diameter	GAS	UNI ISO 228/1 - G 3/4"		UNI ISO 228/1 - G 3/4"		UNI ISO 228/1 - G 3/4"		UNI ISO 228/1 - G 1 1/2"		UNI ISO 228/1 - G 1 1/2"		UNI ISO 228/1 - G 1 1/2"		UNI ISO 228/1 - 1xG 1 1/2" and 1xG 3/4"	
Exhaust pipe diameter	mm	80		80		80		2 x 80		2 x 80		2 x 80		3 x 80	
Seasonal space heating energy efficiency [EU Reg./2281/2016] [ηs, h]	%	93,2		93,2		93,1		93,9		94		94		94,2	
Emission efficiency [EU Reg./2281/2016] [ηsflow]	%	97,4		97,1		97,0		98,1		97,9		97,9		98,1	
Power supply pressure (for gas G20)	mbar	20 [min 17-max 25]													
Gas consumption @15°C - 1013 mbar (for G20 gas)	m3/h	1,31	6,88	1,74	8,68	2,22	10,58	2,62	13,76	3,48	17,36	4,44	21,16	6,66	31,74

WATER CONNECTIONS

Condensate drain

The condensate must be disposed in order to avoid damages to people and things.

- Unit discharge fitting: the connection must not transmit mechanical stresses and must be performed taking care not to damage the unit discharge fitting.
- Provide a siphon that, eliminating the negative pressure caused by the fan, prevents the air intake from the discharge duct.
- The connection between the attachment and the siphon must be hermetically sealed (A)
- The piping must have adequate slope to allow out flow.
- Anchor the ducting with an adequate number of supports.. Otherwise are generated duct failures and air locks that prevent the runoff.
- Insulate the duct and the siphon to avoid the condensate drippings.
- Connect the condensate discharge to a sewerage drainage network.
- DO NOT use white water or drainage networks to avoid the aspiration of odours in the case of evaporation of water contained in the siphon.
- Check at the end of the work, the regular condensate runoff pouring some water in the tray.



Siphon height calculation

T = 2P

S = T/2

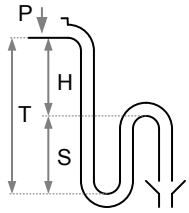
P is the pressure determined by the fan in correspondence of the condense collection bowl (approx. 1 mm = 9.81 Pa)

Example :

P = 300 Pa = 30 mm

T = 2P = 60 mm

S = T/2 = 30 mm



Condensation in winter operation

When a heat pump is running it produces a considerable amount of water due to the defrosting cycles of the external coil.

The condensate must be disposed in order to avoid damages to people and things.

Risk of freezing

Prevent the risk of freeze if the unit, drain or plumbing connections can be subject to temperatures close to 0°C.

- isolate the piping
- protect the piping with heating cables laid underneath the insulation

Immersed electrode humidifier

Option

Connexion humidificateur: 1" F

Supply water

The humidifier must be supplied with mains water having the following features:

- pressure between 0.1 and 0.8 Mpa (1 – 8 bar)
- temperature between 1 and 40°C

Do not use:

- water treated with softeners: it can corrode the electrodes and form foam with possible faults/ malfunctionings
- pit, industrial or potentially polluted (chemically or bacteriologically) water
- disinfectants or anti-corrosive substances mixed with water, as potentially irritating

Supplying the humidifier with water treated with reverse osmosis filtering system gives the following advantages:

- reduces limescale deposits
- reduces energy consumptions
- reduces maintenance costs
- increases humidifier duration

Check that the filter guarantees a water flow rate higher than the flow rate of the installed humidifier.

Limit values for the supply water

Respect the limits indicated in the table

No relation can be demonstrated between water hardness and conductivity.

Limit values for the supply water	conductivity		medium-low		medium-high	
			min	**max**	**min**	**max**
Hydrogen ions	pH		7	8,5	7	8,5
Specific conductivity at 20°C		µS/cm	125	500	300	1250
Total dissolved solids	TDS	mg/l	(1)	(1)	(1)	(1)
Dry residue at 180°C	R_{180}	mg/l	(1)	(1)	(1)	(1)
Total hardness	TH	mg/l $CaCO_3$	50 (2)	250	100 (2)	400
Temporary hardness		mg/l $CaCO_3$	30 (3)	150	60 (3)	300
Iron + Manganese		mg/l Fe+Mn	0	0,2	0	0,2
Chlorides		ppm Cl	0	20	0	30
Silica		mg/l SIO_2	0	20	0	20
Residual chlorine		mg/l Cl^-	0	0,2	0	0,2
Calcium sulphate		mg/l $CaSO_4$	0	60	0	100
Metallic impurities		mg/l	0	0	0	0
Solvents, diluents, soaps, lubricants		mg/l	0	0	0	0

(1) Values depending on specific conductivity; in general:

$$TDS \cong 0{,}93 * \sigma_{20;}\ R_{180} \cong 0{,}65 * \sigma_{20}$$

(2) not lower than 200% of the chloride content in mg/l of Cl-

(3) not lower than 300% of the chloride content in mg/l of Cl-

Drainage water

It can reach a temperature of 100°C.

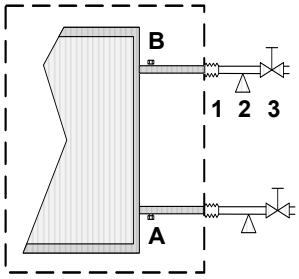
It contains the same substances of the supply water but in higher concentration.

As it is not toxic, it can be disposed of with white waters.

Heating coil

Option

Max. operating pressure = 10 bar



A drain cock
B vent valve

Provided by the costumer:
1 anti-vibration devices
2 piping supports
3 Shut-off valves

AERAULIC CONNECTIONS

The dimensioning and correct execution of the aeraulic connections are fundamental to guarantee good unit operation and adequate level of silence in the room.

When designing and manufacturing the ducting, consider LOAD LOSSES, AIR FLOW AND SPEED that must be consistent with the unit features.

Particularly consider that load losses higher than the unit useful prevalence, lead to reduction in flow rate, with consequent unit blocks.

- the weight of the channels must not burden on the connection flanges
- place anti-vibration joints between channels and unit
- connection to the flanges and between the various sections of the channels must guarantee air seal, avoiding dispersions penalising the overall efficiency of the system
- limit the load losses by optimising the path, the type and number of bends and junctions
- use wide bends evaluating the opportunity of equipping them with deflectors (in particular with high air speed or bends with reduced radius)

Treated air channelling

The internal surface of the channel must be smooth, enable its washing and must not contaminate the air.

Thermally isolate the channels and the flanges to avoid energy losses and forming of condensation.

DIFFUSERS INLETS GRILLES

A correct diffusion of the air in the room is determining for the level of comfort.

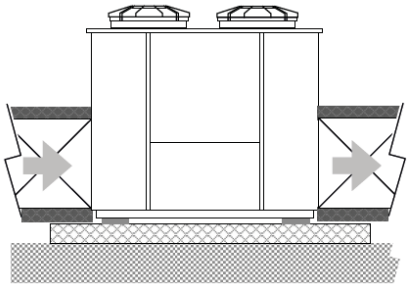
When choosing and positioning the grilles, inlets and diffusers, avoid:

- excessive air speed
- forming of stagnant and stratification areas
- cold air delivery in room
- forming of localised currents (also due to uneven distribution of air)
- excessive room temperature variations, vertically and horizontally
- short circuits of the supply air towards the return air

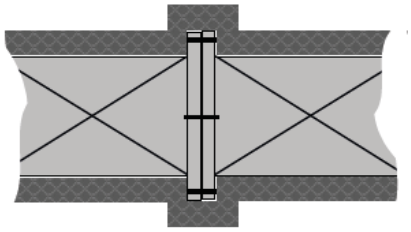
For sound comfort, consider that:

- the air diffusers must be chosen verifying the sound power generated at nominal flow rate conditions
- the cut-off to diffusers must be carried out with flexible elements
- the return grilles must be widely dimensioned

Isolate the channels



Isolate the flanges



ELECTRICAL CONNECTIONS

The characteristics of the electrical lines must be determined by specialized personnel able to design electrical installations; moreover, the lines must be in conformity with regulations in force.

The protection devices of the unit power line must be able to stop the presumed short circuit current, whose value must be determined in function of system features.

The power cables and the protection cable section must be defined in accordance with the characteristics of the protections adopted.

All electrical operations should be performed by trained personnel having the necessary requirements by the regulations in force and being informed about the risks relevant to these activities.

Operate in compliance with safety regulations in force.

Electrical data

The serial number label reports the unit specific electrical data, included any electrical accessories.

The electrical data indicated in the technical bulletin and in the manual refer to the standard unit, accessories excluded.

Refer to the electrical data report on the serial number label:

- Tensione
- F.L.A.: full load ampere, absorbed current at maximum admitted conditions
- F.L.I.: full load input, full load power input at max. admissible condition
- Electrical wiring diagram Nr

Connections

refer to the unit electrical diagram (the number of the diagram is shown on the serial number label).

verify that the network has characteristics conforming to the data shown on the serial number label.

Before starting work, verify that the sectioning device at the start of the unit power line is open, blocked and equipped with cartel warning.

Primarily you have to realize the earthing connection.

Shelter the cables using adequate measure fairleads.

Before power the unit, make sure that all the protections that were removed during the electrical connection work have been restored.

Power supply network requirements

1 The short circuit capacity of the line must be less than 15 kA
2 The units can only be connected to TN, TT distribution systems
3 Voltage 400-3-50 +/-10%
4 Phase unbalance < 2%
5 Harmonic distortion less than 12% (THDv<12%)
6 Voltage interruptions lasting no longer than 3ms and with at least 1 s between each one
7 Voltage dips not exceeding 20% of the RMS value, lasting no longer than a single period (50Hz) and with at least 1 s between each dip.
8 Earth cable as specified in the table:

Cross-section of the line conductors (mm^2)	Minimum cross-section of the protective conductor (PE) (mm^2)
$S \leq 16$	S
$16 < S \leq 35$	16
$S > 35$	S/2

Signals / data lines

Do not overpass the maximum power allowed, which varies, according to the type of signal.

Lay the cables far from power cables or cables having a different tension and that are able to emit electromagnetic disturbances.

Do not lay the cable near devices which can generate electromagnetic interferences.

Do not lay the cables parallel to other cables; cable crossings are possible, only if laid at 90°.

Connect the screen to the ground, only if there aren't disturbances.

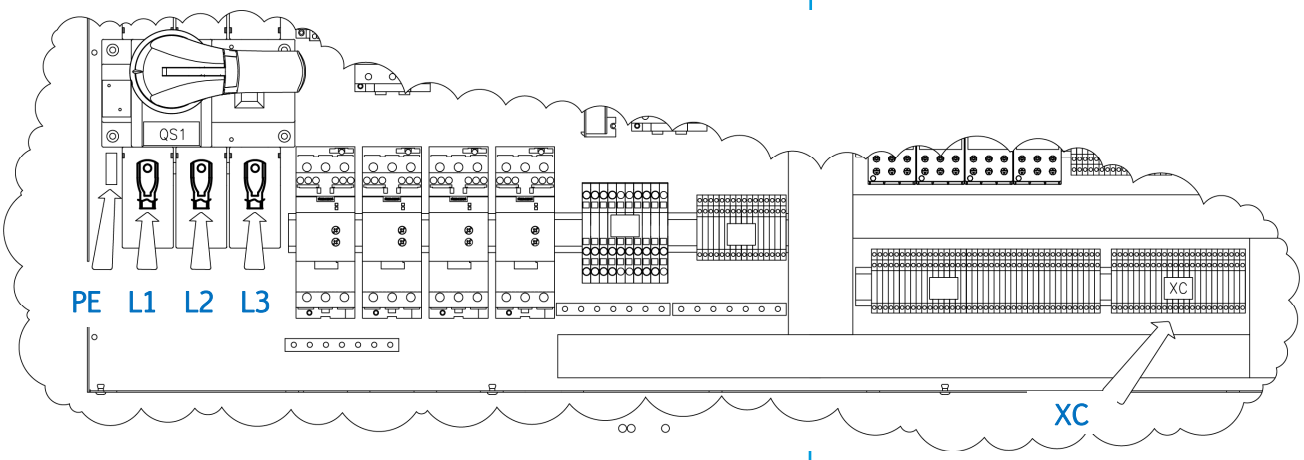
Guarantee the continuity of the screen during the entire extension of the cable.

Respect impendency, capacity and attenuation indications.

Power input

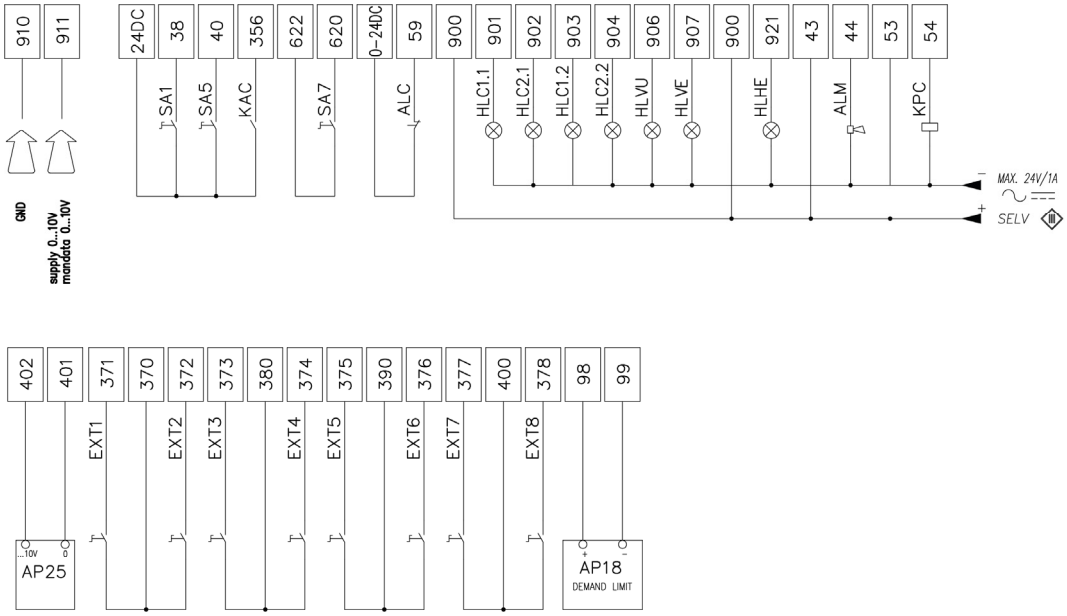
Fix the cables: if vacated may be subject to tearing.

The cable must not touch the compressor and the refrigerant piping (they reach high temparatures).



XC
Terminal block connections by the customer

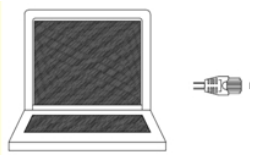
Connections performed by costumer - XC



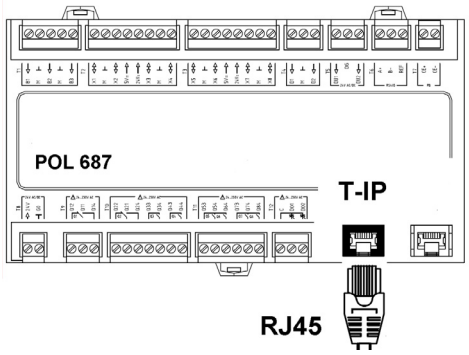
ALC	Free contact from signalling system of fire alarm
ALM	Cumulative fault signal
AP18	4...20 mA autofeed generetor (Demand Limit) (2) (3)
AP25	Modulating extraction module with 0-10V signal (2) (3)
EXT1..8	Ambient extractor potential-free contact (2)
KAC	Remote control module of the fresh air damper
KPC	Pump control - available only if the unit is equipped with a hot water integration coil
HLC....	Compressor status signal lamp
HLHE	Warning light of the heat pump operating status
HLVE	Indicating light of the return and/or supply fan status
HLVU	Indicating light of the supply fan status
SA1	Remote ON/OFF selector
SA5	Settable input (mode change / Fan only)
SA7	Enabling selector to the umidifier manual discharge
910-911	Modulation of supply air flow and extraction (1) (2)

(1) Option
(2) It must be enabled and set up by personnel trained and authorised by Clivet
(3) Not provided by CLIVET

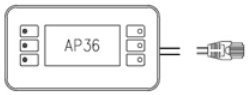
P.C. - not supplied



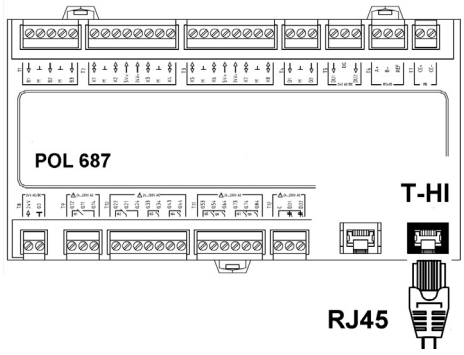
RJ45 : standard connection



Optional keypad



Shift RJ45 from T-IP to T-HI



P.C. configuration

1 connect P.C. and main module with LAN cable

2 check in the taskbar that the connection is active

3 Open *Control panel* and select *Network and sharing center*

4 Select *Modify board setting*

5 Select *Local area connection (LAN)*

6 Select *Internet protocol version 4 (TPC) IPV4* and enter *Property*

7 Set the IP address *192.168.1.100*

8 Set Subnet mask as *255.255.255.0*

9 confirm (**OK**)

10 Enter *Start* (Windows button).

11 Write the command *cmd* and enter/do it

12 Write and run the command *Ping 192.168.1.42*

13 if will appear dawn an answer string, the connection is ok

14 enter the browser (Crhome, Firefox ecc)

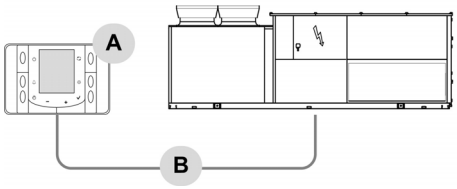
15 Write and run the command **http:/192.168.1.42**

16 Userid = **WEB**

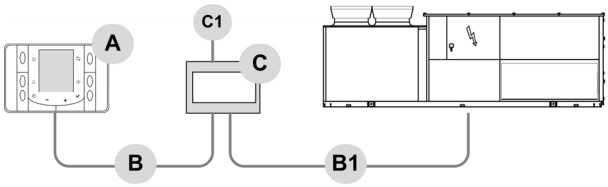
17 Password = **SBTAdmin!**

Remote control with user interface

Distance up to 350 mt



Distance up to 700 mt



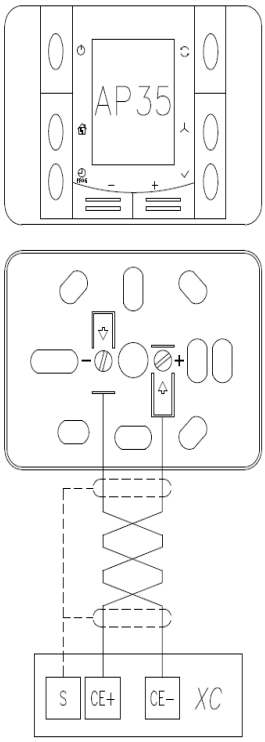
A user interface

B = B1 KNX bus, max 350 mt
twisted pair with shield, Ø 0,8 mm
EIB/KNX cable marking recommended

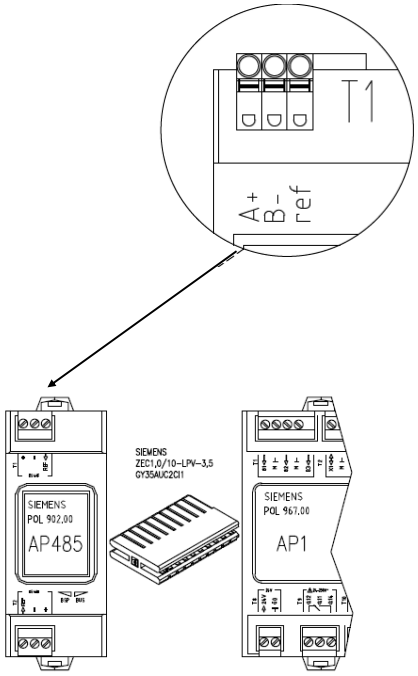
C power supply unit N125/11 5WG1 125-1AB11

C1 AC 120...230 V, 50...60 Hz

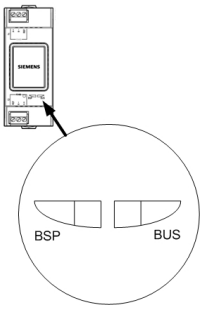
Connections



MODBUS - RS485



LED BSP	**communication with AP1 module**
green	communication ok
yellow down	software ok but communication with AP1
red	flashing : software error
	fixed : hardware error
LED BUS	**communication with MODBUS**
green	communication ok
yellow	startup / channel not communicating
red	communication down



Cable MODBUS, requirements

Couple of conductors twisted and shielded

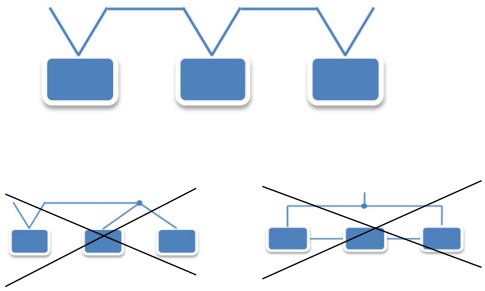
Section of conductor 0.22mm^2…0,35mm^2

Nominal capacity between conductors < 50 pF/m

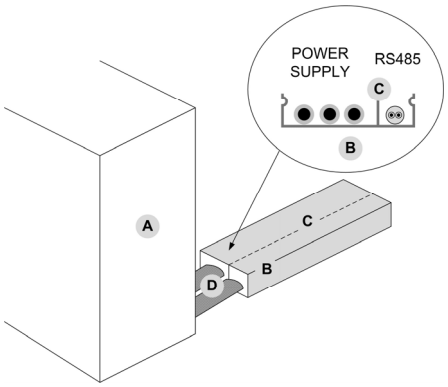
nominal impedance 120 Ω

Recommended cable BELDEN 3106A

- Ogni linea seriale RS485 deve essere realizzata con sistema bus di tipo 'Entra/Esci'. Non sono ammesse tipologie diverse.



- Every RS485 serial line must be set up using the 'In/Out' bus system. Other types of networks are not allowed, such as Star or Ring networks
- The difference in potential between the earth of the two RS485 devices that the cable shielding needs to be connected to must be lower than 7 V
- Suitable arresters must be set up to protect the serial lines from the effects of the atmospheric discharges
- A 120 ohm resistance must be located on the end of the serial line. Alternatively, when the last serial board is equipped with an internal terminator, it must be enabled using the specific jumper, dip switch or link
- The cable must have insulation features and non-flame propagation in accordance with applicable regulations
- The RS485 serial line must be kept as far away as possible from sources of electromagnetic interference



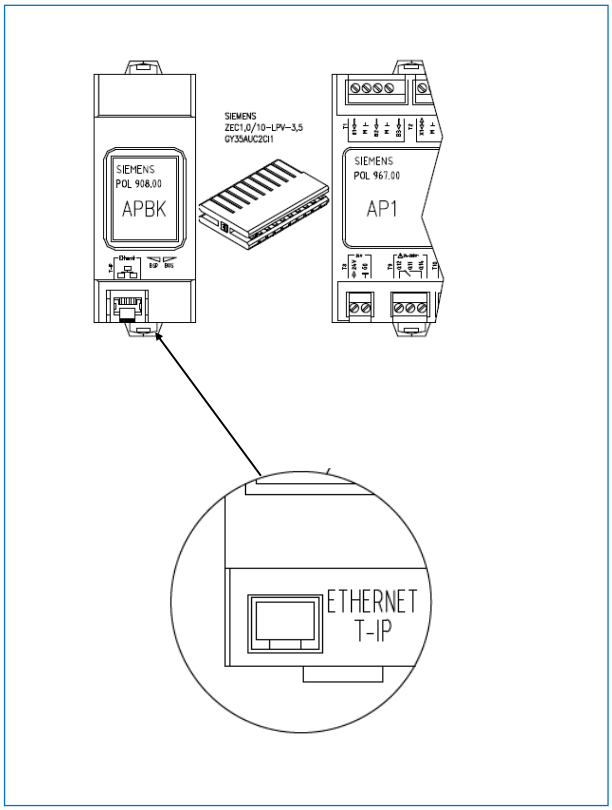
A unit

B metal conduit

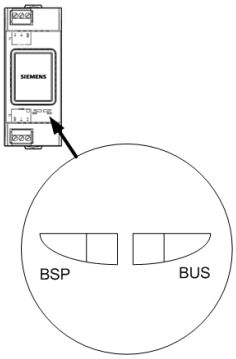
C metal septums

D metal-lined sheath (sleeve)

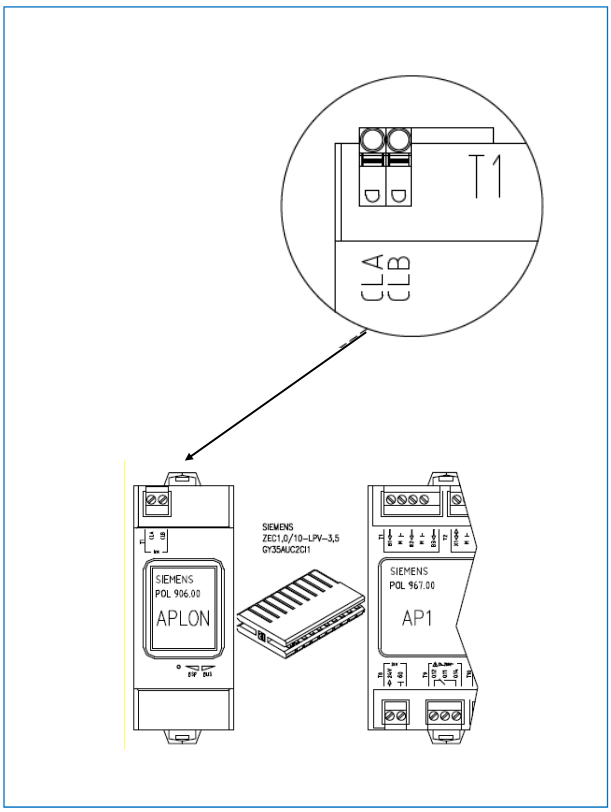
BACNET



LED BSP	communication with AP1 module
green	communication ok
yellow down	software ok but communication with AP1
red	flashing : software error
	fixed : hardware error
LED BUS	**communication with BACNET**
green	ready for communication
yellow	startup
red	BACnet server down
	restart after 3 sec.



LONWORK



LED BSP	communication with AP1 module
green	communication ok
yellow down	software ok but communication with AP1
red	flashing : software error
	fixed : hardware error
LED BUS	**communication with LONWORK**
green	communication ok
yellow	startup
	flashing: communicating not possible
red	communication down

LONWORK CABLE TYPES

Echelon allows three cable types for channel type TP/FT-10, including the

Category 5 network cable used commonly in building automation and control (TIA

568A Cat-5).

CAT-5 SPECIFICATIONS

Unshielded cable, twisted pair with at least 18 beats per meter:

Cross-sectional area Min. □ 0.5mm, AWG24, 0.22mm²

Impedance 100 Ω +/- 15 % @ f > 1 MHz

Operating capacity between two wires of a pair < 46 nF/km

Capacity pair to ground, asymmetric. < 3.3 nF/km

DC loop resistance < 168 Ω

START-UP

The indicated operations must be carried out by qualified technicians and specifically trained on the product.

Upon request, the after-sales assistance centres execute start-up.

The electric, hydraulic connections and the other work of the system are the responsibility of the installer.

Agree the start-up date with the after-sales assistance centre with sufficient advance

Before starting any check, verify that :

- the unit is perfectly installed and in compliance with that reported in this manual
- the electric power supply line of the unit is isolated at start-up
- the isolation device of the line is open, blocked and equipped with relative signal.
- make sure no tension is present

⇒ *After turning off the power, wait at least 5 minutes before accessing to the electrical panel or any other electrical component.*

⇒ *Before accessing check with a multimeter that there are no residual stresses.*

UV-C lamps

Option

Caution

⇒ *Direct radiation device: causes eye irritation and skin rashes.*

⇒ *Any maintenance operation must be carried out with the lamps off.*

Preliminary checks

For details refer to the various chapters in the manual.

Unit OFF power supply

1 safe access
2 functional spaces
3 air flow: correct return and supply (no bypass, no stratification)
4 integrity of structure
5 fans turn freely
6 unit on anti-vibration devices
7 condensate drain
8 air filters present and clean
9 completed aeraulic system
10 cooling circuit visual control
11 earth connection
12 power supply features
13 electric connections by customer

Preliminary checks

For details refer to the various chapters in the manual.

unit ON power supply

1 compressor carter heaters ON from at least 8 hours
2 vacuum voltage measurement
3 phases sequence control
4 shut-off valve refrigerant circuit open (if present)
5 unit ON
6 load voltage measurement and absorptions
7 liquid sight glass check (no bubbles)
8 fans operation check
9 check air flow on outer coil (no by-pass, no stratification)
10 treated air flow rate measurement
11 static pressure relief in return
12 supply, return and outdoor air temperature measurement
13 subcooling and overheating measurement
14 no anomalous vibrations check
15 set-point personalization
16 climatic curve personalization
17 scheduling personalization
18 fire alarm configuration *
19 complete and available unit documentation

* only if present

Cooling circuit

1 Visually check the cooling circuit: any oil stains can be symptom of leaks (caused by, for example, transport, handling or other).
2 Check the cooling circuit is pressurised: use the machine pressure gauges, if present, or service pressure gauges.
3 Check all service sockets are closed with relative plugs; their absence may determine coolant leaks
4 Shut-off valve refrigerant circuit open (if present)

Water circuit

Only with humidifier options - Hot water coil

1 Before realizing the unit connection make sure that the hydraulic system has been cleaned up and the cleaning water has been drained.
2 Check that the water circuit has been filled and pressurized.
3 Check that the shut-off valves in the circuit are in the “OPEN” position.
4 Check that there isn’t air in the circuit, if required, evacuate it using the air bleed valve placed in the system high points.
5 When using antifreeze solutions, make sure the glycol percentage is suitable for the type of use envisaged.

NOTE

⇒ *Neglecting the washing will lead to several filter cleaning interventions and at worst cases can cause damages to the exchangers and the other parts.*

Electric Circuit

Verify that the unit is connected to the ground plant.

Check the conductors are tightened as: the vibrations caused by handling and transport might cause these to come loose.

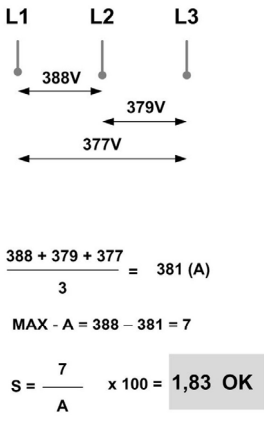
Connect the unit by closing the sectioning device, but leave it on OFF.

Check the voltage and line frequency values which must be within the limits: 400/3/50 +/- 10%

Check and adjust the phase balance as necessary: it must be lower than 2%

NOTE

⇒ *Working outside of these limits can cause irreversible damages and voids the warranty.*



Compressor crankcase heaters

Power the compressor oil heating resistors for at least 8 hours before starting the compressor itself:

- upon unit commissioning
- after every prolonged stop period with unit not powered

1 Power the resistors by closing the unit isolator.
2 Check electric absorption of the resistors to be sure they are working.
3 Execute start only if the temperature of the compressor casing on the lower side is at least 10°C higher than the outdoor temperature.
4 Do not start the compressor with carter oil not in temperatureTensioni

Voltages

Check that the air and water temperatures are within in the operating limits.

Start-up the unit.

With unit operating in stable conditions, check:

- Voltage
- Total absorption of the unit
- Absorption of the single electric loads

Scroll compressor

The Scroll compressors have only one rotation direction.

In the event it is reversed, the compressor is not immediately damaged, but increases its noise and jeopardises pumping.

After a few minutes, the compressor blocks due to intervention of the thermal protection.

In this case, disconnect power supply and invert 2 phases on the machine power supply.

Avoid the compressor working for a long time with contrary rotation: more than 2-3 of these anomalous start-ups can damage it.

To ensure the rotation direction is correct, measure the condensation and suction pressure.

The pressures must significantly differ: upon start-up, the suction pressure decreases whereas the condensation one, increases.

The phase monitor optional, controlling the phases sequence, can also eventually be installed subsequently.

Remote controls

Check that the remote controls (ON-OFF etc) are connected and, if necessary, enabled with the respective parameters as indicated in the “electrical connections” section.

Check that probes and optional components are connected and enabled with the respective parameters (“electrical connections” section and following pages).

Delivery air flow management

Standard mode

The **fan rotation speed** remains constant in all heat load conditions and operation modes.

Eco mode

The fan rotation speed (or the delivery air flow if the constant flow option is present) stays constant as the thermal load varies and is shutdown when setpoint is fulfilled.

Constant air flow

Option

The **delivery air flow** stays constant as the thermal load varies and the pressure drops of unit and the system.

The ventilation remains active even when the setpoint is fulfilled.

Variable airflow

Option

The **air flow supply** varies depending on the heat load, up to a minimum value compatible with the distribution system and the chosen air diffusion.

The ventilation remains active even when the setpoint is fulfilled.

Calibration:

1 check the doors and windows of the serviced room are closed

2 calibration must be carried out with unit all in recirculation: during the first 20 minutes from start-up, the unit is in full recirculation

3 set the nominal air flow range
menu *SUPPLY VENTILATION*
par 261 SfQSet (m3/h)

4 set the reduced air flow
menu *VENTILATION*
par 294 RfFctRimod
reduction at xx% of the nominal flow rate

Air flow setting

Standard mode

The fan speed setting must be checked by a service centre authorised by Clivet

The real unit flow is according to the aeraulic system features.

Before checking, make sure that the system has been completed in all its parts (shunts, dampers, grilles, diffusers etc.).

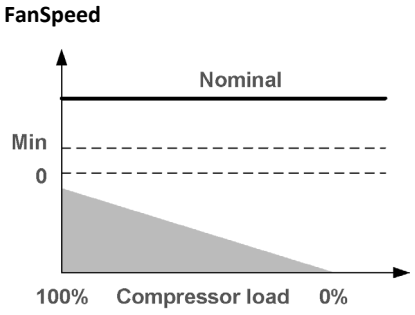
Calibration must be carried out with unit all in recirculation.

During the first 20 minutes from start-up, the unit is in full recirculation

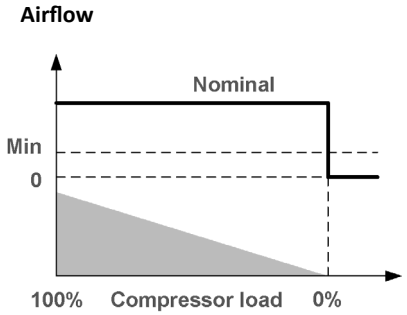
Set the flow rate :
menu supply ventilation
par 265 SfFanSpeedOut (%)

Standard mode

nominal = par 265 SfFanSpeedOut

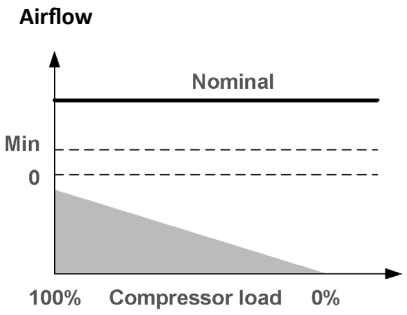


ECO Mode



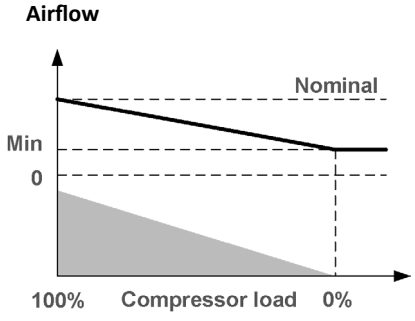
Constant airflow

nominal = par 261 SfQSet



Variable airflow

min = par 294 RfFctRimod



ECO mode

The fan rotation speed (or the delivery air flow if the constant flow option is present) stays constant as the thermal load varies and is shutdown when setpoint is fulfilled.

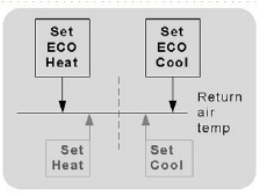
To further increase the energy savings in this condition, it is also possible to set less demanding operation setpoints for the unit in respect to the standard mode.

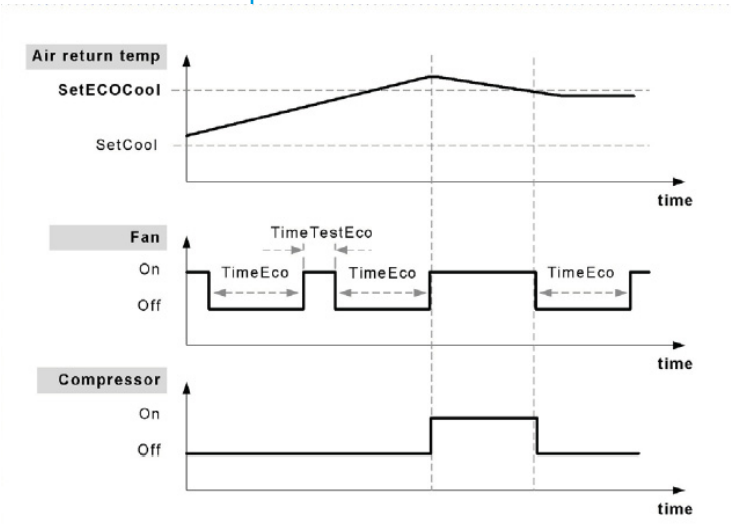
This function is indicated for the thermal maintenance of the served area in case it is temporarily not used, which can for example occur at night.

The ECO mode can be activated:

- manually: from keyboard with MODE menu
- automatically by means the time slots
- automatically by means supervision system

Example in cooling mode:





Constant air flow rate in supply

Option

The operation allows setting the wanted flow rate

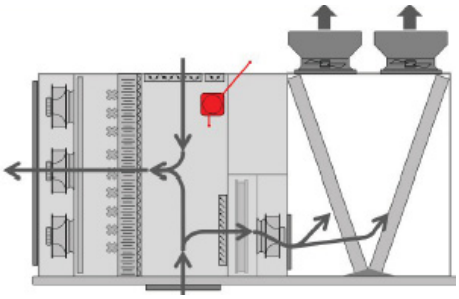
1 check the doors and windows of the serviced room are closed
2 calibration must be carried out with unit all in recirculation: during the first 20 minutes from start-up, the unit is in full recirculation
3 set the flow rate
menu *SUPPLY VENTILATION*
par 261 SfQSet (l/sec)

Ambient pressure control

CCK or CCKP configurations only.

The ambient pressure control device compares the return pressure with the external pressure and compensates any variations by acting on the outdoor air damper.

This way, the unit maintains the relevant ambient pressure desired by the user, who can choose between the overpressure, depression or equal-pressure.



Room pressure calibration

1 Check the serviced room has doors and windows closed 2
2 Calibration must be carried out with the unit in full recirculation: during the first 20 minutes from start-up, the unit is in full recirculation
3 On display view the state:: PDiffRipresa_X4:AI-955 value of the return load losses
4 Wait for the pressure value to stabilise and take note of the value
5 To maintain the room in neutral pressure, memorise in menu *RECOVERY RENEWAL*, par. 334 SetPAmb the pressure value detected in point 4
6 to maintain the room in overpressure, memorise a lower value respect to that detected in point 4
7 to maintain the room in depression, memorise a higher value respect to that detected in point 4

Textile channels

Opztion

The operation allows to set the start-up ramp of the supply fan

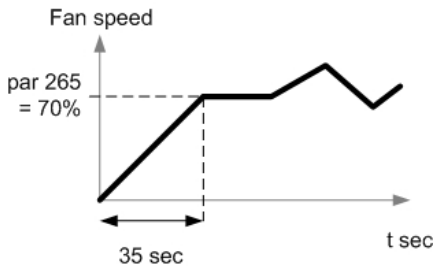
menu SUPPLY VENTILATION

par 266 SfRateoStartup

example :

par 266 = 2% / sec

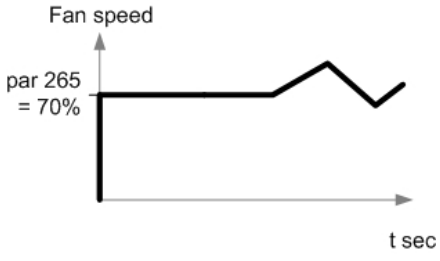
fan speed = 70% in 35 sec



example :

par 266 = 0% / sec

fan speed = 70% in 0 sec



Fire alarm: configuration

⇒ *The unit cannot be used as smoke extractor.*

⇒ *Any fire detection devices built-in the unit must be considered as an auxiliary safety system, and, accordingly, must not be a replacement for any fire detection devices in the room.*

It is possible to configure the unit behaviour in presence of alarm signal.

Menu thermoregulator,P94 TypeFireMode:

0 = unit complete stop,

1 = room in depression,

2 = room pressurised

In presence of alarm:

- the compressors are switched off
- On-Off remote is disabled
- On-Off from keyboard is disabled

complete stop	supply fan	off
	ejection fan *	off
	outdoor air shutter	closed
	overpressure shutter *	closed
room kept in depression (*)	supply fan	off
	ejection fan *	on
	outdoor air shutter	closed
	overpressure shutter *	open
room kept pressurised	supply fan	on
	ejection fan *	off
	outdoor air shutter	open
	overpressure shutter *	closed

* only for configuration CCK or CCKP

Hot water coil - Gas module

Option

The operation allows to set the start-up ramp of the supply fan

menu CNF UNIT

par 31 TypeInt

0 = no

1 / 2 / 3 = electric heaters

4 = Hot water coil

5 = GAS module

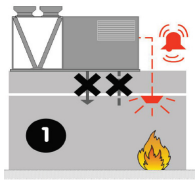
Set the outside temperature below which the compressors are disabled and only the hot water coil remains in operation:

menu THERMOREGULATOR

par 88 LimCompText

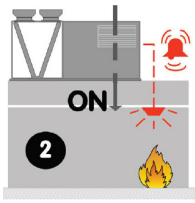
Complete unit shutdown

unit CAK, CBK, CCK, CCKP



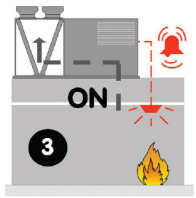
Space in overpressure

unit CBK, CCK, CCKP



Space in negative pressure

unit CCK, CCKP



Demand limit

It allows to temporarily limit the electrical capacity absorbed by the unit according to an ext. signal 0 - 10V.

Higher is the signal and lower the number of available compressors, that is the electrical capacity absorbed.

Enable the function :

par 50 EnDemandLimit =

Set the set Demand Limit:

par 7 SetDL (%)

It allows to limit the electric power absorbed by the unit (compressors or auxiliary elements).

The limitation can be:

fixed, value defined by parameter

variable, according to the external signal 0-10v

variable, according to the external signal 4-20mA

To enable the function:

par 50 EnDemandLimit =

0-10v see wiring diagram

4-20mA see wiring diagram

from parameter

If enabled by parameter set par 7 SetDL (%); the greater is the value, the lower is electric power absorbed

If enabled by signal, the greater is the signal, the lower is the absorbed electrical power.

For the connections see the wiring diagram

Low set-up outdoor temperature

Option indicated for very cold climates, where the outdoor temperature can be between –10°C and –30°C.

⇒ *The accessory is also active with unit OFF; the unit must remain powered.*

Start-up report

dentifying the operating objective conditions is useful to control the unit over time.

With unit at steady state, i.e. in stable and close-to-work conditions, identify the following data:

- total voltages and absorptions with unit at full load
- absorptions of the different electric loads (compressors, fans, pumps etc)
- temperatures and flows of the different fluids (water, air) both in input and in output from the unit
- temperature and pressures on the characteristic points of the refrigerating circuit (compressor discharge, liquid, intake)

The measurements must be kept and made available during maintenance interventions.

2014/68/UE PED directive

DIRECTIVE 2014/68/UE PED gives instructions for installers, users and maintenance technicians as well.

Refer to local regulations; briefly and as an example, see the following:

Compulsory verification of the first installation:

- only for units assembled on the installer's building site (for ex. Condensing circuit + direct expansion unit)

Certification of setting in service:

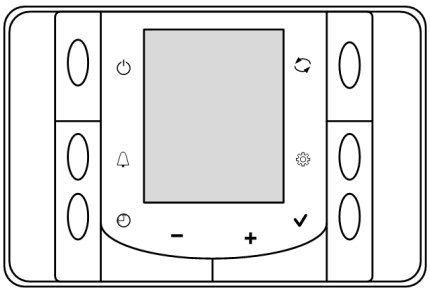
- for all the units

Periodical verifications:

- to be executed with the frequency indicated by the Manufacturer (see the "maintenance inspections" paragraph)

CONTROL

Keypad



Keys and function

	change of status: OFF, ON, ECO, FAN
	ALARMS menu access (if available)
	set TIME and DATE set SCHEDULER (prolonged pressure)
	to browse through the menus to set values
	to browse through the menus to set values
	access to the STATUS menu to confirm your selection
	to access the PARAMETERS menu (password) KEYPAD LOCK menu (password)
	HEAT - COOL mode change CLEAN function (prolonged pressure)

Symbols

	ON / OFF OFF status. On the top field of the thermostat, the temperature and OFF indication are alternated every 2 seconds. When the status is OFF, changes to the SETPOINT and schedule are blocked.
AUTO	Automatic Mode: The temperature setpoint is in automatic mode. The user cannot change the setpoint value.
	ECO mode: The machine is in economy mode.
	HEAT mode * : The machine is in heat mode.
	COOL mode: The machine is in cool mode.
	Defrosting Mode: The machine is defrosting.
	Humidifier / Dehumidifier mode The Humidifier mode is active If flashing, it means the Dehumidifier mode is active
	Recirculation mode: The machine is in recirculation mode
	Compressor ON: At least one compressor is active
	Alarm: There is at least one alarm Press the "alarm" key to view it
P	Scheduling Mode: The scheduling is active.

OPERATIONAL MODES

MANUAL

The choice between HEATING or COOLING mode is manually carried out from keyboard, room thermostat or remote selector (see ELECTRIC CONNECTIONS chapter).

AUTOMATIC

The choice between HEATING or COOLING mode automatically happens from electronic module depending on the room temperature, detected by the probe in unit return . With temperatures above the cold set, the unit cools the room, with temperatures below the hot set, it heats.

ECO

In this operational mode the minor consumption compared to comfort is privileged:

- the ECO-COOL set is higher than the COOLING set
- the ECO-HEAT set is lower than the HEATING set

In this mode, the fan periodically activates to verify the room temperature and decide whether to activate or not the available resources to satisfy the set.

It can be activated from keyboard with MODE menu, using the time slots or from supervisor.

FAN

Ventilation only; all the resources devoted to thermoregulation are disabled (compressors, electric heaters, humidifier, etc).

Setpoint

MANUAL TEMPERATURE SETPOINT

The room setpoint can be MANUALLY modified from keyboard at parameter n. 01 ManSet = xx °C . Starting from this value, the module determines 2 setpoint:

COOLING = manset + dead area/2 = xx +1°C
HEATING = manset - dead area/2 = xx -1°C

AUTOMATIC TEMPERATURE SETPOINT

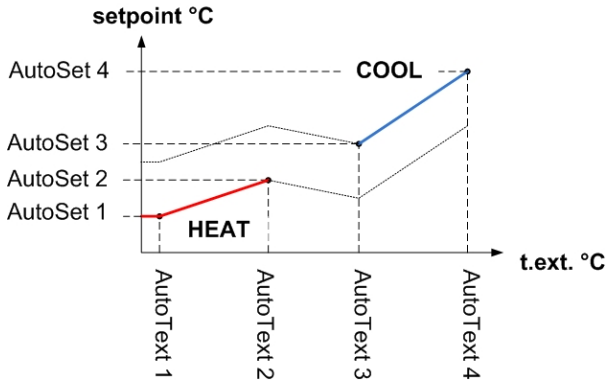
The setpoint can also AUTOMATICALLY adjust to the outdoor temperature and some parameters variations (modifiable from after-sales assistance centres)

The choice between MANUAL or AUTOMATIC setpoint happens by modifying the parameter

53 En Climatica =

0 manual operation

0 automatic operation



HUMIDITY SETPOINT

Only for unit with enthalpy control option.

In heating, the thermoregulator will activate the humidifier by modulating the power in order to humidify the room until reaching the set at parameter 5 SptUrHeat set.

In cooling, the thermoregulator will force compressors operation in order to dehumidify the room until reaching of the set at parameter 4 SptUrCool set.

In parallel, the thermoregulator will activate the post -heating.

SET POINT CO2

Only for units with CO2 / CO2+VOC probe option.

It is possible to manage the air renewal in room based on the CO2 concentration.

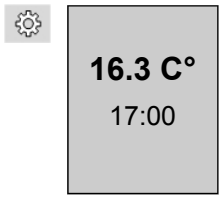
The outdoor air in room relation happens by privileging the thermoregulation requirements, therefore, only if: :

- in HEATING
  the temperature is higher than the set hot - 2°C
- in COOLING
  the temperature is below the setcold – 2°C
- the outdoor temperature is above 16 °C

PARAMETERS MENU

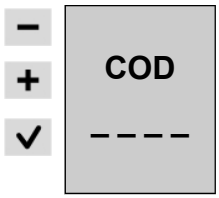
Press

the access by password is reserved to qualified personnel, the parameters changes can cause malfunctions.



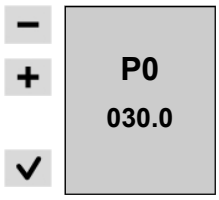
enter password (0047)

confirm



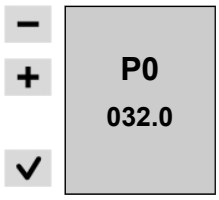
scroll the parameters

enable the parameter change
PO starts flashing



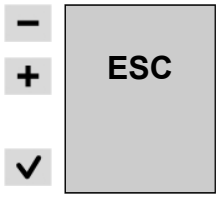
change the value of the parameter

confirm the new value



select
to enable the new value and exit

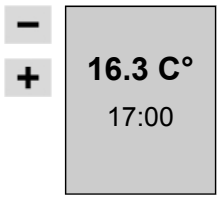
when the time is displayed
it is possible to carry out other operations



MANUAL SET POINT

To change the ***manset*** manual temperature Setpoint:
press

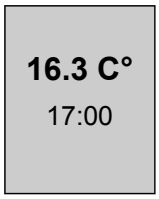
The unit:
must be On
En Climate must be = 0



keyboard code	Mnemonico	Description
0	**SetUrCool**	Relative humidity setpoint in Cool mode
1	**SetURHeat**	Relative Humidity setpoint in Heat mode
2	**SetEcoCool**	Temperature setpoint in cool economy mode
3	**SetEcoHeat**	Temperature setpoint in heat economy mode
4	**SetCO2**	Air quality setpoint
5	**EnClimatic**	Enables setpoint from climate area
6	**Control priority**	Start-up/mode change controls priority ([0] keyboard [1] BMS)
7	**EnModeAuto**	Enables automatic mode change in relation to the return temperature
8	**EnScheduler**	Enables / disabling scheduler: 0 = disabled, 1 = enabled (P0061 service keypad)

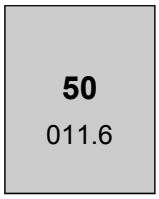
STATA MENU

Press ✓

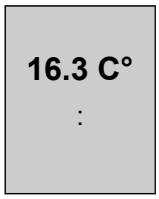


scroll the statuses − +

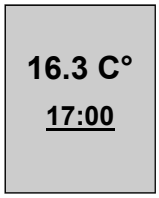
exit ✓



wait for 3 sec



when the time is displayed
it is possible to carry out other operations



Keyboard index	STATUS
0	SupplyTemp._B2:AI-687
1	OutdoorTemp._B3:AI-687
2	RH% Return_X1:AI-955
3	RH% External_X2:AI-955
4	QualityAir_X2:AI-687
5	Nr. active compressors
6	ActVcInt
7	%Cmd ExternalDamper_X7:AO-687
8	PowerHum

Example of status codification:

Supply temperature

Supply temp_B2:AI-687

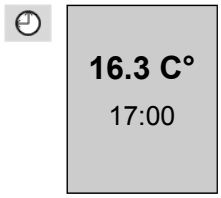
B2 = electronic module connector code

AI = type of input/output: AI=Analogic input, DI= digital input, AO=analogic output, DO=digital output

687 = electronic module: 687=control unit, 985=compressor, 994=EEV driver,

DATE AND HOUR

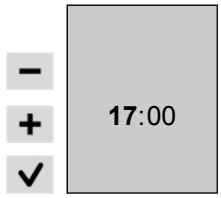
Press



HOUR digits start flashing

edit

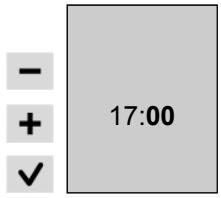
confirm



MINUTE digits start flashing

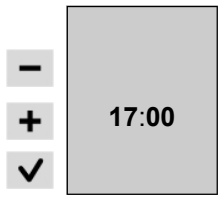
edit

confirm



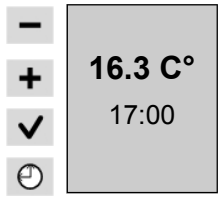
HOUR - MINUTE digits start flashing

choose format
24h / am - pm



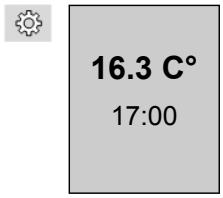
set
year, month, day

main menu

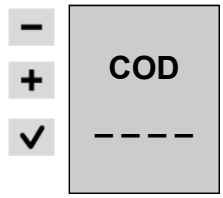


BUTTON LOCK

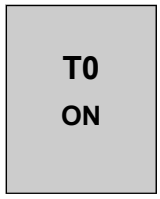
Press for 4 sec.



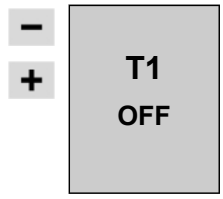
enter password
confirm



example:
T0 = "-" key
ON = active key
see codes-key table

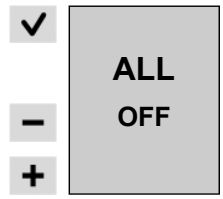


scroll the keys



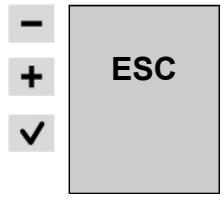
select the key
(ALL starts flashing)

set active-ON / disabled-OFF
example:
ALL = OFF
all keys disabled

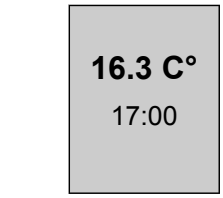


select to confirm

exit



Key-code table			
n. key	key	n. key	key
T0	–	T5	
T1	+	T6	
T2		T7	✓
T3		ALL	All keys
T4			



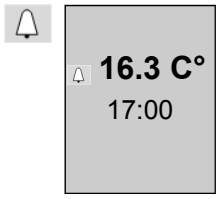
To visualize alarm in progress

Caution

⇒ *Before resetting an alarm identify and remove its cause.*

⇒ *Repeated resets can cause irreversible damage.*

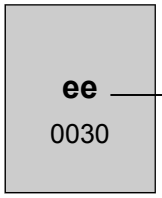
press
only if the ALARM symbol is flashing



ee type of alarm (see table)

0 generic alarm (1 circuit1 alarm, etc.)

030 progressive alarm number



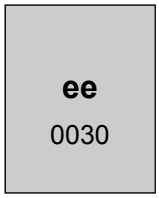
press

7 days since the alarm was triggered

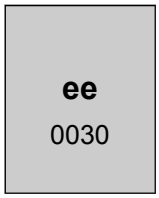
17:00 alarm time

previous menu

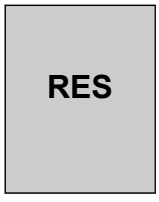
scroll the alarms



exit without alarms RESET



exit with alarms RESET:
scroll and select RES



Type of alarm

Code	Type	Restore
ee	Electric	Automatic
eE	Electric	From Auto to manual*
EE	Electric	Manual
ii	Idraulic	Automatic
iI	Idraulic	From Auto to manual*
II	Idraulic	Manual
ff	Refrigerator	Automatic
fF	Refrigerator	From Auto to manual*
FF	Refrigerator	Manual
aa	Aeraulic	Automatic
aA	Aeraulica	From Auto to manual*
AA	Aeraulica	Manual

* After "n" times the alarm has been triggered, it is necessary to conduct a manual reset.

The code of the circuit 2 alarms is **2nn**:

example:

fF**113**:DI High pressure = circuit **1**

fF**213**:DI High pressure = circuit **2**

SCHEDULER

Caution

⇒ *Enable scheduler (see: menu parametres)*

It is possible to set up to 7 schedules (1 for every day of the week)
It is possible to set up to 6 status changes for each day (On, Off, Fan).
In the days not included in the schedule, the unit maintains the most recent status defined in the schedule.
Example:

- Sunday scheduled, 23h unit in OFF mode
- Monday not scheduled (-), the unit remains in - (OFF)

Scheduling example:

Time	Event	1 Monday	2 Tuesday	3 Wedne-sday	4 Thursday	5 Friday	6 Saturday	7 Sunday
05:30	1	- (OFF)	FAN	- (OFF)	FAN	FAN	FAN	- (OFF)
08:00	2	FAN	ON	FAN	ON	ON	ON	FAN
13:00	3	FAN	ON	FAN	ON	ON	ON	FAN
15:00	4	FAN	ON	FAN	ON	ON	ON	FAN
18:00	5	FAN	ON	FAN	ON	ON	ON	FAN
21:00	6	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Scheduling customer:

Time	Event	1 Monday	2 Tuesday	3 Wedne-sday	4 Thursday	5 Friday	6 Saturday	7 Sunday
05:30	1							
08:00	2							
13:00	3							
15:00	4							
18:00	5							
21:00	6							

Sequence of operations:

1. Set weekly scheduling (see table example)
2. define days with the same scheduling (ex. days 2 = 4 = 5 = 6)
3. select days 2,4,5,6
4. set event 1 (event time, state Off - On - Fan)
5. set event 2,3, ecc..
6. select days 1,3,7
7. set event 1,2,3, ecc..

The most recent schedule saved overrides the existing one. For instance, if a day is included in two different schedules, the most recent one saved prevails.

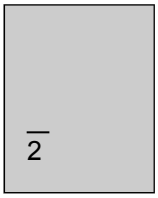
Scheduling days 2,4,5,6

Scheduling the 1st day, also the other days of the week are automatically scheduled.

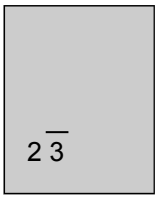
Press 2 sec
(only if the unit is not OFF)

day 1 starts flashing
to go to day 2 press +

to schedule day 2 press ✓
(2 stays steady = day 2 scheduled)

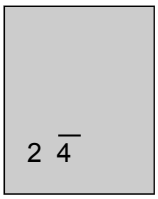


to exclude day 3 press +



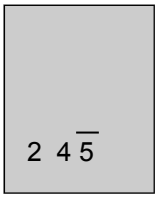
to schedule day 4 press ✓
(4 starts flashing)

press +



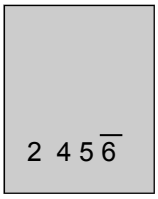
to schedule day 5 press ✓
(5 starts flashing)

press +

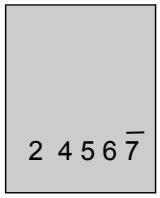


to schedule day 6 press ✓
(6 starts flashing)

press +

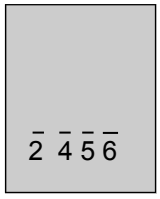


to exclude day 7 press +

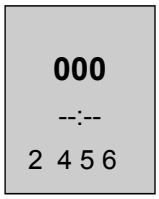


to confirm selected days press +

– – – –
2 4 5 6 starts flashing



press

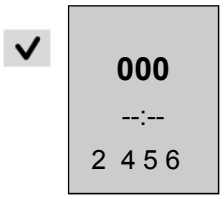


Set event 1

example: Tuesday 05:30 FAN

press

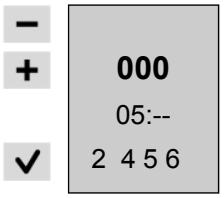
-- starts flashing



set

- event time

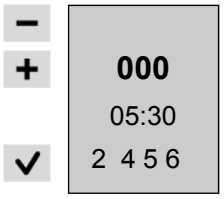
press



set

- eventt minutes

press

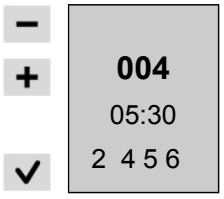


iset

- desired mode

0 = null, 1 = OFF, 2 = ECO,
3 = ON, 4 = Fan

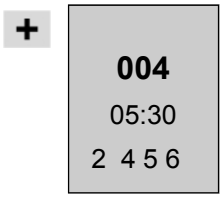
press



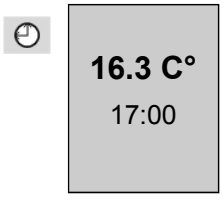
Press

to set other the events 2,3,4,5,6

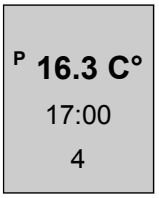
Ripeat from **(Set event 1)**



press 2 times to exit



P flashing, active scheduling



Scheduling days 1,3,7

Scheduling the 1st day, also the other days of the week are automatically scheduled.

Press 2 sec

(only if the unit is not OFF)

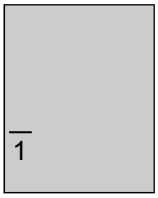
day 1 starts flashing

to schedule day 1 press

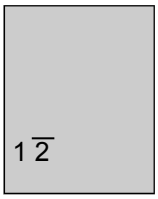
(1 stays steady = day 1 scheduled)

to go to day 2 press

(2 starts flashing)



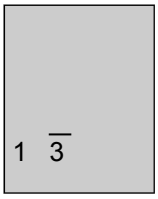
to exclude day 2 press



to schedule day 3 press

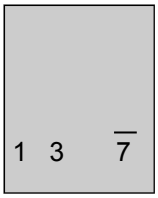
(3 starts flashing)

press



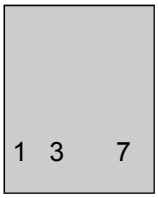
to exclude days 4,5,6

press



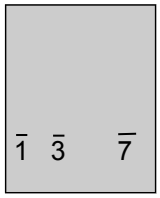
to schedule day 7 press

(7 starts flashing)

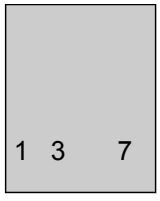


to confirm selected days press

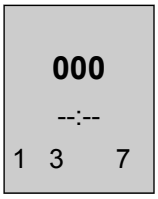
1 3 7 starts flashing



press



press

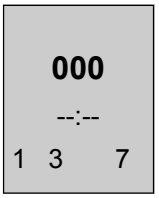


Set event 1

example: Monday 05:30 FAN

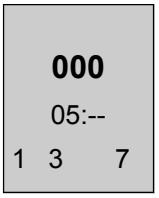
press

-- starts flashing



set

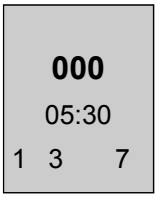
- event time



press

set

- eventt minutes

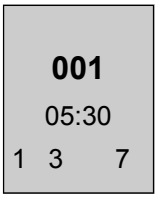


press

iset

- desired mode

  0 = null, 1 = OFF, 2 = ECO,
  3 = ON, 4 = Fan

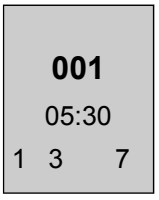


press

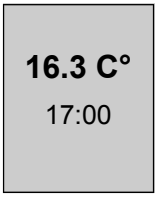
Press

to set other the events 2,3,4,5,6

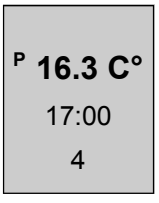
Ripeat from **(Set event 1)**



press 2 times to exit



P flashing, active scheduling



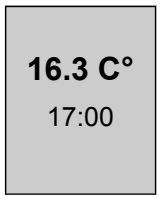
Modify scheduling

Example:

- day 5
- change events 3 and 4
- from ON to OFF

Time	Event	1 Monday	2 Tuesday	3 Wedne-sday	4 Thursday	5 Friday	6 Saturday	7 Sunday
05:30	1	(OFF)	FAN	(OFF)	FAN	FAN	FAN	(OFF)
08:00	2	FAN	ON	FAN	ON	ON	ON	FAN
13:00	3	FAN	ON	FAN	ON	OFF	ON	FAN
15:00	4	FAN	ON	FAN	ON	OFF	ON	FAN
18:00	5	FAN	ON	FAN	ON	ON	ON	FAN
21:00	6	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Press 2 sec

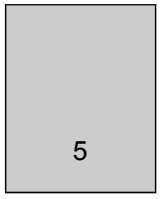


press

to schedule day 5 press

press

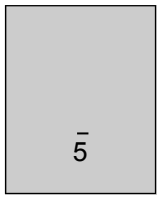
(5 stays steady)



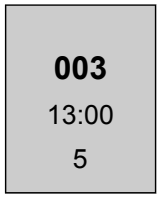
press to exclude the other days

5 starts flashing

press



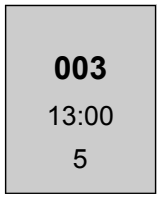
press 3 times (= event 3)



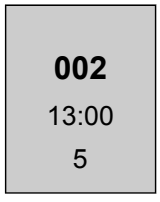
press 3 times

starts flashing 003 (= ON)

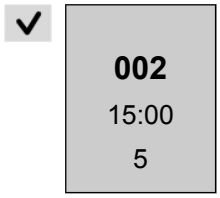
select mode 002 (=OFF)



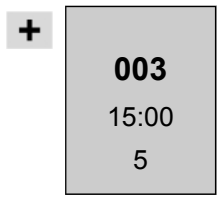
confirm



press

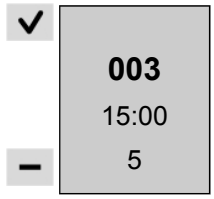


press 4 times (= event 4)

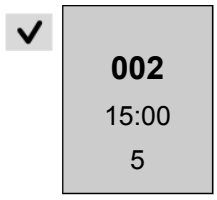


press 3 times
starts flashing 003 (= ON)

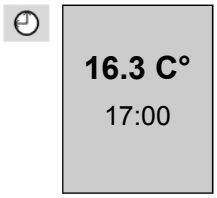
select mode 002 (=OFF)



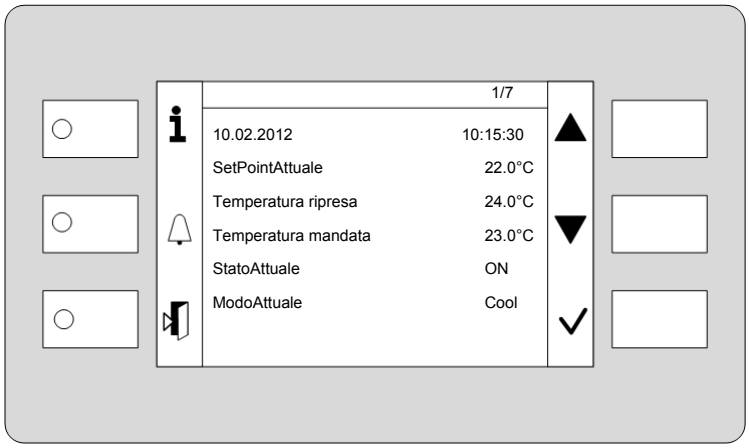
confirm



press 2 times to exit



SERVICE KEYPAD



Function keys

Main menu

Alarm display

Exit
Previous level
Keyboard settings

Up
Increases value

Down
Decreases value

Confirm
Password

DISPLAY MEANING

ActualSetPoint	temperature setting
T.In air	Return temperature
T.Out air	Supply temperature
ActualState	On / off / eco / pmp On
ActualMode	Cool : cooling
	Heat : heating

2 installed compressors

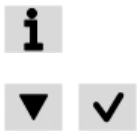
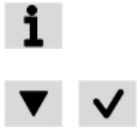
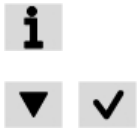
3 **1 - 0** Compressors ON

example : circuit 1 = **1** compr. On

circuit 2 = **0** compr. On

50% required power

COMMON OPERATIONS

ON, OFF, ECO		main menu → cmd local status → scegliere OFF - ON - ECO - PUMP ON
change MODE		main menu → cmd local mode → select COOL - HEAT
change SETPOINT		main menu → unit parameters → setpoint

MAIN MENU

Select 

Main index	
Cmd Local state	On
Cmd Local mode	Cool
Unit stata	
Unit parameters	

Select the menu 

Confirm 

Main index	
Cmd Local state	**On**
Cmd Local mode	Cool
Unit stata	
Unit parameters	

Cmd Local state	OFF	
	ECO	
	ON	
	Fan	
Cmd Local mode	Cool	
	Heat	
Unit Stata	General	→
	Central	
	Expansion	
	Thermoregulator	
	Stata C1	Circuit 1 *
	Thermostatic	
	Bac	
	Lon	
Parameters Unit	SetPoint	→
Scheduler	Scheduler	

Unit Stata → **page 55**

Input, output functioning variables.

See next pages tables

* Circuits number dipend on unit's series .

The menu is repeated for each refrigerant circuit (circuit: circuit1, circuit2,.....;thermostatic: circuit1, circuit2,....)

Setpoint Menu

P0001:	**ManSet**	Manual temperature Setpoint
P0002:	**SetEcoCool**	Temperature setpoint in cool economy mode
P0003:	**SetEcoHeat**	Temperature setpoint in heat economy mode
P0004:	**SetUrCool**	Relative humidity setpoint in Cool mode
P0005:	**SetURHeat**	Relative Humidity setpoint in Heat mode
P0006:	**SetCO2**	Air quality setpoint
P0053:	**EnClimate**	Enables setpoint from climate area
P0054:	**Control priority**	Start-up/mode change controls priority ([0] keyboard [1] BMS)
P0058:	**EnModeAuto**	Enables automatic mode change in relation to the return temperature

SCHEDULER

It is possible to set 6 events (Off, Eco, On, Recirculating) for each week day.

Scheduler must be enabled:

display : actual value = On

pag xy : unit parameters service-maintenance, P0500=1

Select

Confirm

Main index	
Cmd Local state	On
Cmd Local mode	Cool
Unit stata	
Unit parameters	

Select

Confirm

Main index	
Actual value	On
01 : Monday	**Off**
01 : Tuesday	Off
01 : Wednesday	Off

Select

Confirm

Setting

d01 : Monday	
Scheduled day	Active
Time 1	**00:00**
Value 1	ECO
Time 2	5:00
Value 2	ON
Time 3	17:00

Select

Confirm

Setting

d01 : Monday	
Scheduled day	Active
Time 1	xx:yy
Value 1	**Eco**
Time 2	
Value 2	

KEYBOARD SETTINGS

Press 3 sec

Select

Confirm

HMI settings
local connection

exit :

HMI settings	
V9.08 B0024	
Backlight color	Blue
Backlight turn off time	0
Contrast	60
Brightness	100
Firmware Update	No

To exit :

Select

Confirm

HMI settings
local connection

To Visualize alarm in progress

Caution

⇒ *Before resetting an alarm identify and remove its cause.*

⇒ *Repeated resets can cause irreversible damage.*

Press 

alarm log detail
+ eE001 : Monitore fase : Fault

1 Critico (A)

14.02.2012 11.30.10

Press 

alarm list

Reset Passive 1

+ eE001 : Monitore fase : Fault

Press 

Press 

alarm log

Reset Passivo 10

+ eE001 : Monitore fase : Fault

- EE003 : Guasto P1 Util : Ok
+ EE003 : Guasto P1 Util : Fault

- eE001 : Monitore fase : Fault = active alarm

Reset alarm

Press 

alarm log detail

+ eE001 : Monitore fase : Fault

1 Critico (A)

14.02.2012 11.30.10

Press 

alarm list

Reset Passive 1

+ eE001 : Monitore fase : Fault

Press 

Slide 

alarm log

Reset Passivo 10

+ eE001 : Monitore fase : Fault

- EE003 : Guasto P1 Util : Ok
+ EE003 : Guasto P1 Util : Fault

.....

Press 3 sec. 

Enter password:

Maintenance

Password

Password

0 - - -

Confirm 

Press 

Select 

Confirm 

alarm list

Reset Passive 1

+ eE001 : Monitore fase : Fault

Select 

Confirm 

Passivo

Attivo

Select 

alarm list

Reset Passivo 0

Exit:
Press 3 sec. 

Select 

Confirm 

password management

Log off

Cambia PSS user

Cambia PSS service

Cambia PSS manufacturer

Alarm log reset

Press 

alarm log	
Reset	**Passivo 10**
+ eE001 : Monitore fase : Fault	
- EE003 : Guasto P1 Util : Ok	
+ EE003 : Guasto P1 Util : Fault	
……..	

Press 3 sec. 

Insert password:

Maintenance

Confirm 

Password
Password
0 - - -

Press 

alarm log	
Reset	**Passivo 10**
+ eE001 : Monitore fase : Fault	
- EE003 : Guasto P1 Util : Ok	
+ EE003 : Guasto P1 Util : Fault	
……..	

Select 

Confirm 

Alarm cnf	
AlarmSnapshot	0
Lista allarmi :	
Ordinamento 1	Ora
Ordinamento 2	Ora
Ordine descrescente	Passive

Select 

Confirm 

Execute

Select 

Allarmi cnf	
AlarmSnapshot	0
Lista allarmi :	
Ordinamento 1	Ora
Ordinamento 2	Ora
Ordine descrescente	Passive

Press 3 sec. 

10.02.2012	10:15:30
SetPointAttuale	8.5°C
T.InH2OUtilizzo	10.5°C
T.OutH2OUtilizzo	12.5°C
StatoAttuale	ON

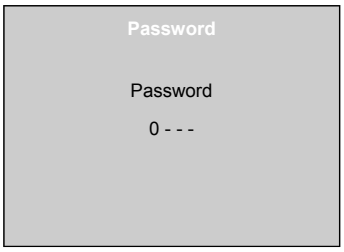
Select 

Confirm 

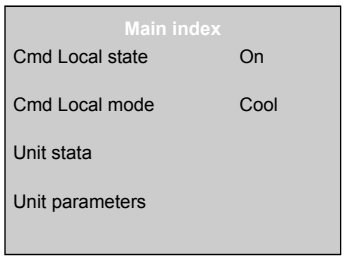
password management
Log off
Cambia PSS utente
Cambia PSS service
Cambia PSS costruttore

Main menù - installer use

Press 3 sec.

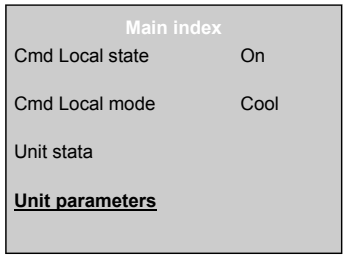


insert maintenance password



Select

Confirm



Cmd local state	
Cmd local Mode	
Unit Stata	Circuit stata
	Circuit 1 stata
	Circuit 1 I/O stata
	Thermostatic stata
	General stata
	Central POL687-IO
	Expansion POL955 - I/O
	Thermoregulator
Unit parameters	SetPoint
	Unit setting
	circuit setting
	Circuit C1
	Thermostatic C1
	Unit option
	Thermoregulator
	Integrations
	Compressor
	Correction SH
	Sourse
	Ventilation
	Supply fan
	Return fan
	Circuit alarms
	Defrost
	Humidity control
	Recovery renewal
	Reset usure
	Sensor settings
	Serial communication
System objects	date / hour setting
	language select
	Communication
	Save / load
	AlarmSanpshot
	Diagnostica
	password management
	time lightening
	HMI
	Version
	sw. info
	Target
	DiagobjHandler
Scheduler	Scheduler *

ALARMS - tab 1

ID	Description	Reset
AA003	Fire	M
aa004	Dirty filters	A
aa008	Supply air flow	A
eE001	Phase monitor	A/M
EE002	Compartment opening	M
EE005	Electrostatic Filters	A
ee006	POL955 Board Offline	A
eE007	Supply fan protections	A/M
eE009	Return, exhaust fan protections	A/M
EE010	Additions high temp.	M
EE011	Addition heater	M
ee020	POL822 keyboard offline	A
ee027	Return temperature probe	A
ee028	Delivery temperature probe	A
ee029	Outside temperature local probe	A
ee030	Deman Limit input	A
ee031	Relative return humidity probe	A
ee032	Outside relative Humidity probe	A
ee033	Air Quality probe	A
ee035	Supply fan Pdiff. Probe	A
ee036	External fan Pdiff. probe	A
ee037	Return fan Pdiff. probe	A
ee038	Coil antifreeze probe	A
ee039	Supply pressure probe	A
ee040	Signal from humidifier board	A
ee041	Alarm from humidifier board	A
ee042	Alarm from humidifier board	A
ee043	Humidifier board offline	A
ee044	POL925 (1) board offline	A
ee045	POL925 (1) board offline	A
ee046	Ambient pressure probe failure	A

ID	Description	Reset
ee101	Circuit 1 module disconnection on Proces-	A
ee102	Thermostatic valve driver timeout	A
ee104	Thermostatic valve block	A
EE106	Comp 1 Protec.	M
EE107	Comp 2 Protec.	M
EE108	Comp 3 Protec.	M
EE118	Source Protec.	M
ee122	Discharge temperature C1 probe	A
ee123	Discharge temperature C2 probe	A
ee124	Discharge temperature C3 probe	A
ee125	Source 1 Temp. probe	A
ee126	Source 2 Temp. probe	A
ee127	Suction Temp. probe	A
ee128	Discharge Pression probe	A
ee129	Suction Pression probe	A
ee201	circuit 1 module disconnection on Proces-sBus	A
ee202	driver 1 module disconnection on Proces-sBus	A
ee204	thermostatic valve block	A
EE206	Comp 1 Protec.	M
EE207	Comp 2 Protec.	M
EE208	Comp 3 Protec.	M
EE218	Source Protec.	M
ee222	Discharge temperature C1 probe	A
ee223	Discharge temperature C2 probe	A
ee224	Discharge temperature C3 probe	A
ee225	Source 1 Temp. probe	A
ee226	Source 2 Temp. probe	A
ee227	Suction Temp. probe	A
ee228	Discharge Pression probe	A
ee229	Suction Pression probe	A

Type of alarm

A automatic reset

M manual reset

A/M rautomatic reset , after N alarm → manual reset

ALARMIS- tab 2

ID	**Description**	**Reset**
ff105	Overheating below minimum limit	A
fF109	DI Low Pressure	A/M
ff110	Cool Low pressure Pre-alarm	A
ff111	Low Heat Pressure pre-alarm	A
fF112	AI Low Pressure	A/M
fF113	DI High Pressure	A/M
ff114	High pressure pre-alarm	A
fF115	AI High Pressure	A/M
ff116	Max. Press. rat. pre-alarm	A
fF117	Min Press. Rat. pre-alarm	A/M
FF119	Max Press. Rat. alarm	M
FF134	Empty circuit alarm	M
FF136	Defrost not manageable due to activated Demand	M
ff205	minimum overheating	A
fF209	DI Low Pressure	A/M
ff210	Cool Low pressure Pre-alarm	A
ff211	Low Heat Pressure pre-alarm	A
fF212	AI Low Pressure	A/M
fF213	DI High Pressure	A/M
ff214	High pressure pre-alarm	A
fF215	AI High Pressure	A/M
ff216	Max. Press. rat. pre-alarm	A
fF217	Min Press. Rat. pre-alarm	A/M
FF219	Max Press. Rat. alarm	M
FF234	Empty circuit alarm	M
FF236	Defrost not manageable due to activated Demand	M
iI012	Addition antifreeze	A
iI120	Source flow	A
II121	Source frost	M
iI220	Source flow	M
II221	Source frost	M

Statia- tab 1

MENU	ID	Short description	Description
1 Main Page	-	Machine status	Current unit status [0]:Off, [1]:ECO, [2]:ON, [3]:FAN
1 Main Page	-	Machine mode	Current unit mode [0]:COOL, [1]:HEAT
1 Main Page	-	Current setpoint	Current unit setpoint
1 Main Page	-	No. of steps used	Number of compressors currently activated
10 Main Index	-	Clean	Clean control from HMI
3001 Central POL687 - IO	-	IntakeTemp._B1:AI-687	Return temperature detected by the main board's analogue input
3001 Central POL687 - IO	-	OutdoorTemp._B3:AI-687	Outside temperature
3001 Central POL687 - IO	-	SupplyTemp._B2:AI-687	Supply temperature
3001 Central POL687 - IO	-	%Cmd RicicDamper_X1:AO-687	Recirculation damper opening control percentage
3001 Central POL687 - IO	-	QualityAir_X2:AI-687	Air quality value from analogical input
3001 Central POL687 - IO	-	SupplyPDiff_X3:AI-687	Supply fan differential pressure to calculate air flow rate
3001 Central POL687 - IO	-	ExternalPDiff_X4:AI-687	Return external differential pressure to examine pressure drops on the return channel and, if necessary, adjust the external damper
3001 Central POL687 - IO	-	ON-OFFRem_DU1:DI-687	On/off digital input status (open OFF, closed ON)
3001 Central POL687 - IO	-	Heat/CoolRem_DU2:DI-687	Digital input status for mode change (open COOL, closed HEAT)
3001 Central POL687 - IO	-	PhaseControl_D1:DI-687	Phase monitor alarm input status (open ALARM)
3001 Central POL687 - IO	-	Ovl SupplyFan_DL1:DI-687	Supply fan thermal digital input status (open ALARM)
3001 Central POL687 - IO	-	Ovl RipEspFan_DL2:DI-687	Return/exhaust fan thermal digital input status (open ALARM)
3001 Central POL687 - IO	-	Diff. Filters_D2:DI-687	Supply air filters differential input status (open INSUFFICIENT FLOW)
3001 Central POL687 - IO	-	Fire Alarm_X8:DI-687	Fire alarm input status (open ALARM)
3001 Central POL687 - IO	-	%Cmd Supply Fan_X5:AO-687	Modulating supply fan control percentage
3001 Central POL687 - IO	-	%Cmd ExternalDamper_X7:AO-687	External damper opening control percentage
3001 Central POL687 - IO	-	%Cmd EjectionDamper_X6:AO-687	Exhaust damper opening control percentage
3001 Central POL687 - IO	-	Cmd CumAlarm_Q2:DO-687	Alarm cumulative control status
3001 Central POL687 - IO	-	Cmd EjectionDamper_Q5:DO-687	Exhaust damper/fan control status
3001 Central POL687 - IO	-	Cmd Humidifier_Q6:DO-687	Humidifier control status
3001 Central POL687 - IO	-	Cmd SupplyFan_Q3:DO-687	Supply fan control status
3001 Central POL687 - IO	-	Cmd ReturnFan_Q4:DO-687	Return fan control status
3001 Central POL687 - IO	-	Cmd ModeUnit_Q1:DO-687	Unit mode control status (open COOL, closed HEAT)
3001 Central POL687 - IO	-	AntifreezeHeater_Q8	Control status of the antifreeze heaters for source side water exchangers
3002 Expansion POL955 - IO	-	ReturnPDiff_X4:AI-955	Return fan differential pressure to calculate air flow rate
3002 Expansion POL955 - IO	-	Freeze Addition_X3:AI-955	Water coil output temperature for additions' antifreeze function
3002 Expansion POL955 - IO	-	RH% outdoor_X2:AI-955	Outside relative humidity value
3002 Expansion POL955 - IO	-	Supply Pressure_X5:AI-955	Absolute pressure status on supply channel
3002 Expansion POL955 - IO	-	RH% Return_X1:AI-955	Relative return humidity value
3002 Expansion POL955 - IO	-	HT Addition_X6:DI-955	Additions' high temperature alarm input status
3002 Expansion POL955 - IO	-	Ovl Addition_X7:DI-955	Addition protections alarm input status
3002 Expansion POL955 - IO	-	Supply Flux_X8:DI-955	Supply air flow switch status
3002 Expansion POL955 - IO	-	%Cmd Addition_Y2:AO-955	Integration element control percentage
3002 Expansion POL955 - IO	-	%Cmd Return Fan_Y1:AO-955	Return fan control percentage
3002 Expansion POL955 - IO	-	Cmd Addition Pump_Q1:DO-955	Additions' pump control for water coil
3002 Expansion POL955 - IO	-	Cmd Addition 1_Q2:DO-955	Addition 1 control

Stata - tab 2

MENU	ID	Short description	Description
3002 Expansion POL955 - IO	-	Cmd Addition 2_Q2:DO-955	Addition 2 control
3002 Expansion POL955 - IO	-	Cmd Addition 3_Q2:DO-955	Addition 3 control
3003 Thermoregulator	1	Startup phase	Start-up phase
3003 Thermoregulator	2	Time to end startup	Start-up end timer
3003 Thermoregulator	3	Info to compressor	Information on the compressors
3003 Thermoregulator	4	Info to freecooling/heatingFCHMsg	Freecooling/heating information
3003 Thermoregulator	5	Maximum power available for freecooling/ heating	Maximum power available for freecooling
3003 Thermoregulator	6	Info to addition	Information on the additions
3003 Thermoregulator	7	Thermoreg. total request	Thermoreg. total request
3003 Thermoregulator	8	Thermoreg. compressor request	Thermoreg. compressor request
3003 Thermoregulator	9	Thermoreg. freecooling/heating request	Thermoreg. freecooling/heating request
3003 Thermoregulator	10	Thermoreg. addition request	Thermoreg. addition request
3003 Thermoregulator	11	Actual compressor limit for supply T	Power limit of the compressors for supply temp.:
3003 Thermoregulator	12	Actual fch limit for supply T	Freecooling/heating power limit for supply temp.:
3003 Thermoregulator	13	Actual addition limit for supply T	Power limit of the additions for supply temp.:
3003 Thermoregulator	14	Thermo req. compressor	Reg. requested for the compressors
3003 Thermoregulator	15	Thermo req. Fch	Reg. requested for freecooling/heating
3003 Thermoregulator	16	Fch state	Freecooling/heating status
3003 Thermoregulator	17	Actual request for addition	Reg. requested for the additions
3003 Thermoregulator	18	Addition state	Additions' status
3003 Thermoregulator	19	CntDwn start regulation	Countdown to start regulation
3003 Thermoregulator	20	CntDwn stop fan	Countdown to stop fans
3003 Thermoregulator	21	Wait insert step	Minimum waiting time to enable power
3003 Thermoregulator	22	Wait release step	Minimum waiting time to release power
3003 Thermoregulator	23	Enth. outdoor	External air enthalpy
3003 Thermoregulator	24	Enth. Return	Return air enthalpy
3003 Thermoregulator	25	US outdoor	External air specific humidity
3003 Thermoregulator	26	US return	Return air specific humidity
3003 Thermoregulator	27	Renoval available	Renewal availability
3003 Thermoregulator	28	CO2BMS	CO2 value passed BY BMS
3003 Thermoregulator	29	Modulation external damper for CO2	External damper modulation for CO2
3003 Thermoregulator	30	Correction external damper for Pdiff	External damper adjustment for diff. pressure
3003 Thermoregulator	31	Power Humidifier	Humidifier power
3003 Thermoregulator	32	Humidifier command	Humidifier control
3003 Thermoregulator	33	H2O valve command	Adiabatic humidifier control
3003 Thermoregulator	34	Power dehumidification	Post-heating power
3003 Thermoregulator	35	Valve postheat state	Post-heating valve status
3003 Thermoregulator	36	CPYCylHr	Cylinder hours CPY humidifier
3003 Thermoregulator	37	CPYHr	Operating hours CPY humidifier
3003 Thermoregulator	38	CPYStage	CPY humidifier operating stage
3003 Thermoregulator	39	CPYStatus	CPY humidifier operating status

Stata - tab 3

MENU	ID	Short description	Description
3003 Thermoregulator	40	CPYCurrent	CPY humidifier absorbed current
3003 Thermoregulator	41	CPYIstSteam	CPY humidifier output
3003 Thermoregulator	42	Supply Q Air	Supply air flow rate
3003 Thermoregulator	43	Return Q Air	Return air flow rate
3003 Thermoregulator	44	Supply temp. ctrl low power	Supply temperature control activation status for low capacities
3003 Thermoregulator	45	Max mod. damper low power	Maximum renewal for supply limit
3003 Thermoregulator	46	SetActPAmbExt	Current external/return pressure setpoint
3003 Thermoregulator	47	PressRoomExFlow	Status of the ambient pressure detector – ExFlow opt.
3003 Thermoregulator	48	Nr Extractor Run ExFlow	Number of active extractors – ExFlow option
3003 Thermoregulator	49	ExFlow Modulation	External damper modulation associated with ExFlow opt.
3101 Circuit C1 Stata	1100	CMP1 starts	Compressor 1 start-ups
3101 Circuit C1 Stata	1101	CMP2 starts	Compressor 2 start-ups
3101 Circuit C1 Stata	1102	CMP3 starts	Compressor 3 start-ups
3101 Circuit C1 Stata	1104	Source starts	Source motor start-ups
3101 Circuit C1 Stata	1105	Hours Comp.1	Compressor 1 hours
3101 Circuit C1 Stata	1106	Hours Comp.2	Compressor 2 hours
3101 Circuit C1 Stata	1107	Hours Comp.3	Compressor 3 hours
3101 Circuit C1 Stata	1108	HoursScrew	Screw compressor hours
3101 Circuit C1 Stata	1109	HoursSource	Source motor hours
3101 Circuit C1 Stata	1110	Total steps	Total amount of active steps on the circuit
3101 Circuit C1 Stata	1111	Comp.1 status	0=Free 1=Active 2=Timed 3=Not enabled
3101 Circuit C1 Stata	1112	Comp.2 status	0=Free 1=Active 2=Timed 3=Not enabled
3101 Circuit C1 Stata	1113	Comp.3 status	0=Free 1=Active 2=Timed 3=Not enabled
3101 Circuit C1 Stata	1114	Current cap.	Capacity currently employed on the circuit
3101 Circuit C1 Stata	1115	Requested cap.	Capacity requested on the circuit
3101 Circuit C1 Stata	1116	Pressure ratio	Compression ratio status (1+Hp/1+LP)
3101 Circuit C1 Stata	1117	FANPreAlarm	Status of the maximum ventilation pre-alarm in progress 0=Off 1=On
3101 Circuit C1 Stata	1118	Defrost delay	Current value of the countdown towards the cycle inversion due to defrosting. (defrosting starts when the value reaches zero)
3101 Circuit C1 Stata	1119	Defrost status	Indicates the defrosting status 0=DfrOff (Cycle inversion phase for defrosting phase NOT active) 1=DfrON (Cycle inversion phase for defrosting phase ACTIVE)
3101 Circuit C1 Stata	1120	HWErr	0=Off 1=On_Hardware error of the POL94U module that does not preclude the possibility of moving the valve or closing it. Possible causes: anomalous voltage values in the valve motor
3101 Circuit C1 Stata	1121	BlckingHWErr	0=Off 1=On_Hardware error of the POL94U module that prevents the electronic valve from moving. Possible causes: UPS not available, wrong POL94U Bios, HW POL94U Error, Disconnected EEV Motor, calibration error associated with configuration parameters.
3101 Circuit C1 Stata	1122	FailSafeSta	0=Off 1=On_Active block status
3101 Circuit C1 Stata	1123	UPSNotAval	0=Off 1=On_UPS failure
3101 Circuit C1 Stata	1124	CircWarning	Status associated with minor alarm on the circuit
3101 Circuit C1 Stata	1125	CircBlock	Status associated with circuit block alarm
3101 Circuit C1 Stata	1126	ThTempDischarge	Theoretical discharge temperature
3102 Circuit C1 -IO Stata	-	T.DischargeC1_B1:AI-985	Compressor 1 discharge temperature

Stata- tab 4

MENU	ID	Short description	Description
3102 Circuit C1 -IO Stata	-	T.DischargeC2_B2:AI-985	Compressor 2 discharge temperature
3102 Circuit C1 -IO Stata	-	T.DischargeC3_X2:AI-985	Compressor 3 discharge temperature
3102 Circuit C1 -IO Stata	-	T.Source1_B3:AI-985	Source 1 temperature (for machines with reversible air source on gas = Probe 1 on the source coil. For machines with water source = Source input probe)
3102 Circuit C1 -IO Stata	-	T.Source2_X1:AI-985	Source 2 temperature (for machines with reversible air source on gas = Probe 2 on the source coil. For machines with water source = Source output probe)
3102 Circuit C1 -IO Stata	-	T.Suction_X2:AI-94U	Intake temperature
3102 Circuit C1 -IO Stata	-	DemandLimit_X2:AI-985	Analogue input for demand limit function
3102 Circuit C1 -IO Stata	-	P.Discharge_X3:AI-985	High pressure transducer
3102 Circuit C1 -IO Stata	-	P.Suction_X1:AI-94U	Low pressure transducer
3102 Circuit C1 -IO Stata	-	Ovl Cmp1_D1:DI-985	0=Fault 1=OK Status of the thermal protection contact of compressor 1
3102 Circuit C1 -IO Stata	-	Ovl Cmp2_D2:DI-985	0=Fault 1=OK Status of the thermal protection contact of compressor 2
3102 Circuit C1 -IO Stata	-	Ovl Cmp3_D3:DI-985	0=Fault 1=OK Status of the thermal protection contact of compressor 3
3102 Circuit C1 -IO Stata	-	SourceFlow_X4:DI-985	0=Fault 1=OK Status of the source flow contact (Active only on machines with water source)
3102 Circuit C1 -IO Stata	-	LP_X7:DI-985	0=Fault 1=OK Status of the low-pressure pressure switch contact
3102 Circuit C1 -IO Stata	-	Cmprtmnt opening_DL1:DI-985	0=Fault 1=OK Status of the machine compartments opening contact
3102 Circuit C1 -IO Stata	-	HP_X8:DI-985	0=Fault 1=OK Status of the high-pressure pressure switch contact
3102 Circuit C1 -IO Stata	-	Ovl Source_DL2:DI-985	0=Fault 1=OK Status of the thermal protection contact of the source motors
3102 Circuit C1 -IO Stata	-	ElectFilter_X5:DI-985	0=Fault 1=OK Status of the electrostatic filters' protection contact
3102 Circuit C1 -IO Stata	-	%Cmd Source_X6:AO-985	Percentage value of the status of the control signal of the modulating source motor_X6:AO-985
3102 Circuit C1 -IO Stata	-	Cmd Cmp1_Q2:DO-985	0=Off 1=On_Status of compressor 1 control_Q2:DO-985
3102 Circuit C1 -IO Stata	-	Cmd Cmp2_Q3:DO-985	0=Off 1=On_Status of compressor 2 control_Q3:DO-985
3102 Circuit C1 -IO Stata	-	Cmd Cmp3_Q4:DO-985	0=Off 1=On_Status of compressor 3 control_Q4:DO-985
3102 Circuit C1 -IO Stata	-	Cmd Sorg_Q1:DO-985	0=Off 1=On_Status of source motor control_Q1:DO-985
3102 Circuit C1 -IO Stata	-	Cmd Inj.Cmp1_Q5:DO-985	0=Off 1=On_Status of the compressor 1 liquid injection valve_Q5:DO-985
3102 Circuit C1 -IO Stata	-	Cmd Inj.Cmp2_Q7:DO-985	0=Off 1=On_Status of compressor 2 liquid injection valve_Q7:DO-985
3102 Circuit C1 -IO Stata	-	Cmd Inj.Cmp3_Q8:DO-985	0=Off 1=On_Status of compressor 3 liquid injection valve_Q8:DO-985
3102 Circuit C1 -IO Stata	-	Cmd YV4 vie_Q6:DO-985	0=Off 1=On_Status of control of the cycle inversion valve_Q6:DO-985
3102 Circuit C1 -IO Stata	-	Cmd Digital_DO2:DO-985	0=Off 1=On_Status of button valve control for PWM compressors_DO2:DO-985
3200 Thermostatic C1 Stata	1200	SHSpOp	Operating overheating setpoint net with SH and MET adjustments
3200 Thermostatic C1 Stata	1201	AICalSuctSprHtP	Current overheating value calculated
3200 Thermostatic C1 Stata	1202	ECVState	0 = Idle 1 = ECVAlarm 2 = FailSafe 3 = Referencing 4 = Positioning 5 = Positioned 6 = ECVWaiting 7 = FastClosing
3200 Thermostatic C1 Stata	1203	EEVSH_Limiter	Maximum valve opening determined by the minimum SH control function
3200 Thermostatic C1 Stata	1204	EEVLET_Limiter	Status of the minimum LET intake temperature control

Stata - tab 5

MENU	ID	Short description	Description
3200 Thermostatic C1 Stata	1205	EEVMode	0=Idle (motor off) 1=Init (valve initialised when completely closed) 2=Manual (valve controlled in manual mode) 3=Control (the valve conducts adjustments to control SH)
3200 Thermostatic C1 Stata	1206	Prepos	Positioning % required for thermostatics
3200 Thermostatic C1 Stata	1207	ECVSetPos	Opening percentage of the valve when EEVMod = Manual
3200 Thermostatic C1 Stata	1208	ECVMode	0 = Idle 1 = Init 2 = Position 3 = FastClose
3200 Thermostatic C1 Stata	1209	SHPIDOut	% value of the PID output to adjust the valve
3200 Thermostatic C1 Stata	1210	EEVStatus	0 - Closed (Ready) 1 - StartUpPositioning 2 - StartUpPositioned 3 - SuperHeat 4 - Prepositioning 5 - MET 6 - LET 7 - Closing 8 - PumpDown 9 - DangAlarm 10 - PumpDownStartUp 11 - ECVAlarm 12 - MinSHLmtr 13 - WaitValveClose 255 - Warning
3200 Thermostatic C1 Stata	1211	SetPosSteps	Control of the number of steps the valve must reach to adjust overheating
3200 Thermostatic C1 Stata	1212	SetPos%	Opening % control of the valve to adjust overheating
3200 Thermostatic C1 Stata	1213	Pol94xCommOK	0=NotOK 1=OK_Connection status of the POL94U module on processbus
3200 Thermostatic C1 Stata	1214	ActPos%	% value of the current status of the EEV valve
3200 Thermostatic C1 Stata	1215	ActPosSteps	Current number of steps of the EEV valve
3200 Thermostatic C1 Stata	1216	ECVMode	0 = Idle 1 = Init 2 = Position 3 = FastClose.
3200 Thermostatic C1 Stata	1217	ECVState	0 = Idle 1 = ECVAlarm 2 = FailSafe 3 = Referencing 4 = Positioning 5 = Positioned 6 = ECVWaiting 7 = FastClosing
3201 Thermostatic C2 Stata	2200	SHSpOp	Operating overheating setpoint net of SH and MET corrections
3201 Thermostatic C2 Stata	2201	AICalSuctSprHtP	Current overheating value calculated
3201 Thermostatic C2 Stata	2202	ECVState	0 = Idle 1 = ECVAlarm 2 = FailSafe 3 = Referencing 4 = Positioning 5 = Positioned 6 = ECVWaiting 7 = FastClosing
3201 Thermostatic C2 Stata	2203	EEVSH_Limiter	Maximum valve opening determined by the minimum SH control function
3201 Thermostatic C2 Stata	2204	EEVLET_Limiter	Status of the LET minimum intake temperature control
3201 Thermostatic C2 Stata	2205	EEVMode	0=Idle (motor off) 1=Init (valve initialised when fully closed) 2=Manual (valve controlled manually) 3=Control (the valve performs adjustments for the SH control)
3201 Thermostatic C2 Stata	2206	Prepos	Positioning in % requested to the thermostatic valve
3201 Thermostatic C2 Stata	2207	ECVSetPos	Opening percentage of the valve when EEVMod = Manual
3201 Thermostatic C2 Stata	2208	ECVMode	0 = Idle 1 = Init 2 = Position 3 = FastClose
3201 Thermostatic C2 Stata	2209	SHPIDOut	% value of the PID output to adjust the valve
3201 Thermostatic C2 Stata	2210	EEVStatus	0 - Closed (Ready) 1 - StartUpPositioning 2 - StartUpPositioned 3 - SuperHeat 4 - Prepositioning 5 - MET 6 - LET 7 - Closing 8 - PumpDown 9 - DangAlarm 10 - PumpDownStartUp 11 - ECVAlarm 12 - MinSHLmtr 13 - WaitValveClose 255 - Warning
3201 Thermostatic C2 Stata	2211	SetPosSteps	Control associated with the number of steps that the valve needs to reach to adjust overheating
3201 Thermostatic C2 Stata	2212	SetPos%	Opening % control of the valve to adjust overheating
3201 Thermostatic C2 Stata	2213	Pol94xCommOK	0=NotOK 1=OK_Connection status of the POL94U module on processbus
3201 Thermostatic C2 Stata	2214	ActPos%	% value of the current status of the EEV valve
3201 Thermostatic C2 Stata	2215	ActPosSteps	Current number of steps of the EEV valve
3201 Thermostatic C2 Stata	2216	ECVMode	0 = Idle 1 = Init 2 = Position 3 = FastClose.

Statia- tab 6

MENU	ID	Short description	Description
3201 Thermostatic C2 Stata	2217	ECVState	0 = Idle 1 = ECVAlarm 2 = FailSafe 3 = Referencing 4 = Positioning 5 = Positioned 6 = ECVWaiting 7 = FastClosing
4300 ModBus	750	ModBusBios	Bios version of the ModBus RTU expansion module
4301 BacNet	700	BacnetIPModul	Relative status with the Bacnet module 0=Absent 1 = Present
4301 BacNet	701	BacnetIPState	0=Null 1=Init 2=OK
4301 BacNet	702	BacnetCnf	0=NotOK 1=OK (se Current IP = Set IP, Current MASK = Set MASK, Current DHCP= Set DHCP allora OK)
4301 BacNet	703	BacNetBios	Versione bios del modulo espansione BacNet
4302 LonWorks	800	LonID	Universal identification status of the Lon device
4302 LonWorks	801	LonState	Status of the Lon node
4302 LonWorks	802	LonBios	Versione bios del modulo espansione LonWorks
3004 Expansion POL925 - IO	-	Input 1 X4 - DIPOL687	ExFlow option input 1 status
3004 Expansion POL925 - IO	-	Input 2 DI1 - DIPOL926 (1)	ExFlow option input 2 status
3004 Expansion POL925 - IO	-	Input 3 DI2 - DIPOL926 (1)	ExFlow option input 3 status
3004 Expansion POL925 - IO	-	Input 4 DI3 - DIPOL926 (1)	ExFlow option input 4 status
3004 Expansion POL925 - IO	-	Input 5 DI4 - DIPOL926 (1)	ExFlow option input 5 status
3004 Expansion POL925 - IO	-	Input 6 DI1 - DIPOL926 (2)	ExFlow option input 6 status
3004 Expansion POL925 - IO	-	Input 7 DI2 - DIPOL926 (2)	ExFlow option input 7 status
3004 Expansion POL925 - IO	-	Input 8 DI3 - DIPOL925 (2)	ExFlow option input 8 status
3004 Expansion POL925 - IO	-	Input 9 DI4 - DIPOL925 (2)	ExFlow option input 9 status

MAINTENANCE

Saftey

Operate in compliance with safety regulations in force.

Use single protection devices: gloves, glasses etc.

Generality

Maintenance must be carried out authorised after-sales assistance centres or by specialised personnel.

Maintenance allows:

- maintaining the unit efficient
- reduce deterioration speed to which each equipment is subject in time
- collect information and data to understand the efficiency state of the unit and prevent possible faults

WARNING

⇒ *Before checking, please verify the following:*

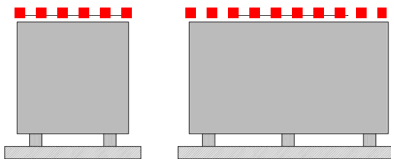
⇒ *the electrical power supply line should be isolated at the beginning*

⇒ *the line isolator device is open, locked and equipped with the suitable warning sign*

⇒ *make sure no tension is present*

⇒ *After switching the power off, wait at least 5 minutes before accessing to the electrical panel or any other electrical component.*

⇒ *Before accessing check with a multimeter that there are no residual stresses.*



Frequency of interventions

Perform an inspection every 6 months.

However, frequency depends on the type of use.

Pan inspections at close intervals in the event of:

- frequent use (continuous or very intermittent use, near the operating limits, etc)
- critical use (service necessary)

Unit booklet

It's advisable to create a unit booklet to take notes of the unit interventions.

In this way it will be easier to adequately note the various interventions and aid any troubleshooting.

Report on the booklet:

- date
- intervention description
- carried out measures etc.

Recommended periodical checks sheet

	intervention frequency (months)	1	6	12
1	presence corrosion			X
2	panel fixing			X
3	fans fixing		X	
4	coil cleaning		X	
5	bowl cleaning + sanitisation		X	
6	outflow test		X	
7	air filters cleaning/inspection	X		
8	air flow rate measurement			X
9	channelling: anti-vibration devices and fastenings check			X
10	power supply cable isolation and fastening check			X
11	earth cable check			X
12	electric control board cleaning			X
13	power remote controls state			X
14	clamps closure, cables isolation integrity			X
15	phases unbalancing and power supply voltage (vacuum and loaded)		X	
16	absorption of the individual electric loads		X	
17	compressors carter heaters test		X	
18	leaks control *			*
19	cooling circuit work parameters detection		X	
20	Saftey valve *			*
21	protective equipment test: safety valves, pressure switches, thermostats, flow meters, etc.		X	
22	protective equipment test: setpoint, climatic compensations, power slicing, air flow rate variations		X	
23	control devices test: alarms signal, thermometers, probes, pressure gauges, etc.		X	
24	electrical heaters check - option			X
25	water coil check - option			X

NOTE

⇒ **Refer to the local regulations. Companies and technicians performing installation, maintenance/repair, leak control and recovery operations must be CERTIFIED as set out by the local regulations.*

Structure

Check the state of the parts constituting the structure.

Treat those parts of the unit subject to oxidation, with paints act at eliminating or reducing the oxidation phenomena.

Check fastening of the unit external panelling.

Bad fastening give rise to anomalous noises and vibrations.

Outdoor air coil

Accidental contact with the exchanger flaps can cause injuries from cut: use protective gloves.

The coil must allow maximum thermal exchange, therefore, the surface must be clear from dirt and scaling.

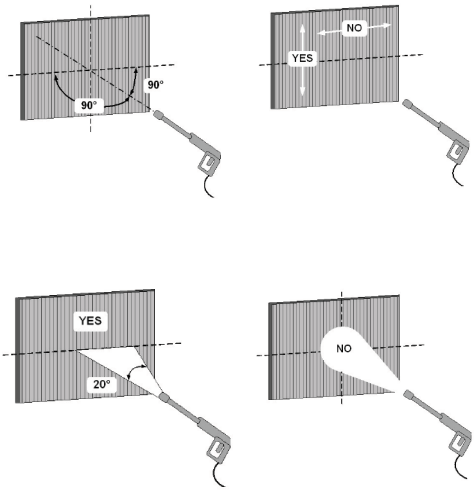
Clean the air inlet side.

Use a soft brush or aspirator or pressurised air jet or high-pressure water jet machine.

Keep the direction parallel to the flow of the flaps to avoid damages.

Check the aluminium flaps have not been damaged or folded, on the contrary contact an authorised after-sales assistance centre to "comb" the coil for excellent air flow.

Keep the direction parallel to the flow of the flaps to avoid damages.



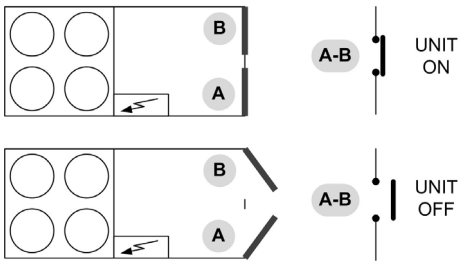
Indoor air coil

Accidental contact with the exchanger flaps can cause injuries from cut: use protective gloves.

The finned surfaces of the cooling coils and, in particular, the condense collection bowls constitute places where microorganisms and moulds greatly flourish. It is very important to foresee periodical cleaning with suitable detergents and, eventually, disinfect with sanitising products.

Closed panels switch

The unit is equipped with stop microswitches in case of opening panels.



Condensation collection basin

Dirt or scale can give rise to clogging.

Also, microorganisms and mould can flourish in the bowl. It is very important to foresee periodical cleaning with suitable detergents and, eventually, disinfect with sanitising products.

Once cleaning is completed, pour water inside the bowl to check the regular outflow.

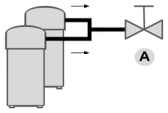
Compressor supply line shut-off valve (A)

Only if present

Do not remove the seal

Remove only if authorized by the manufacturer.

Please contact the maker for informations.



Compressor crankcase heaters

Check :

- closing
- operation

G4 Folded air filters

It is very important for the air treatment coil to offer maximum thermal exchange: the unit must always work with clean and installed filters. Cleaning and replacement of filters are very important from an hygienic-sanitary point of view.

Operation with clogged filters leads to a reduction in the air flow rate with malfunctionings and block, up to possible breaks in the unit.

The frequency with which the filters must be checked depends on the quality of the outdoor air, the unit operation hours, the dustiness and crowding of rooms.

Frequency can indicatively vary from WEEKLY to MONTHLY. It is advised to start with frequent checks, subsequently adjusting frequency to degree of detected dirt.

1 Remove the closing panels
2 Delicately remove the filter avoiding dirtying the area below
3 Wash the filtering jacket in warm water with common detergent
4 Accurately rinse in running water avoiding spilling in the room
5 Dry the filter
6 Insert it back in its seat
7 Remount the closing panels

Old filters, washing wastewater and residues must be disposed of according to the current standards.

F7 filters (ISO 16890 ePM1 55%)

Option

The pocket filters are not renewable, once dirty they must be replaced

1 aprire il open the access panel
2 delicately remove the filter avoiding dirtying the area below
3 insert the new filters, with the pockets vertically
4 close the panel
5 dispose of the old filters sending them to specialised recycling or collection centres (keep to the standards in force)

Electronic filters (ISO 16890 ePM1 90%)

Option

The electronic adjustment is integrated in the filter; maintenance can be carried out without removing it.

Materials necessary for maintenance

1 Acid detergent B01212 (code CLIVET C6460316);
2 Plastic or steel tank (750x750x310 mm) with settling bottom
3 Protective gloves and goggles;
4 Graduated jug;
5 Pump for manual or pneumatic spraying.

Do not use aluminum tanks or galvanized.

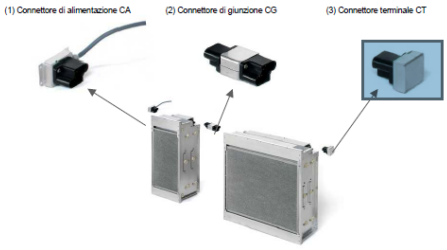
Foresee a stainless steel frame that keeps the filters lifted from the tank base to have a settling bottom for the muds.

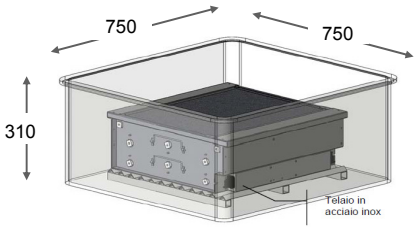
Remove the pre-filter by lifting it of about 1 cm and remove it as shown in figure.

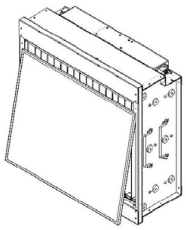
1 Position the filter to be washed on a support to facilitate work.
2 Prepare a tank with a solution of B01212 detergent and water at 1÷20.
3 Immerse the filter in this solution
4 Ensure the solution covers the entire filter
5 Immerse it for about 5-7 minutes. A slight chemical reaction is noticed within 2÷3 minutes with the development of foam indicating the occurred elimination of residues.
6 Rinse the filter with a jet of water or using a low-pressure water jet machine.
7 Leave the electrostatic cells to dry in a hot room or directly in the sun for a few hours.
Keep the cells lifted from the ground using two metal or wooden laths.
8 Check the ionisation wires before remounting the filter.

The cleaner can be used to clean about 20 filters.

Can be recovered and placed in plastic containers closed; the air oxidizes the cleaner and reduces its effectiveness







Ionisation wires

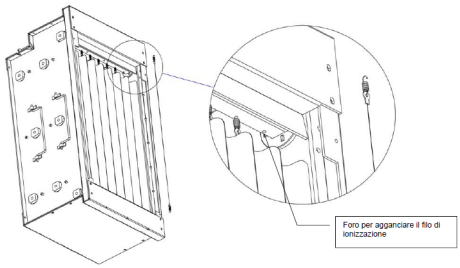
The impurities can determine oxidation or scaling on the wires, which can be removed using a cloth soaked in alcohol or an abrasive scourer with very fine grain.

Due to the high voltage powering them, the ionisation wires are subject to wear.

To foresee a yearly replacement OF ALL WIRES avoids unexpected breaks.

In case of break:

1 remove all wire pieces present in the cell and remove the springs stretching the wire;
2 hook the spring to the wire eyelet;
3 grip the ionisation wire with curved beaks pliers;
4 hook the top of the spring with the open eyelet to the wire stretcher rod of the electrostatic cell;
5 keeping the ionisation wire stretched, with the other hand hook it to the other wire stretching rod, always by means of the curved beaks pliers.



Immerged electrodes humidifier

Option

Do not use solvents or detergents to clean the plastic components.

For descaling use a vinegar or acetic acid solution at 20%, subsequently rinsing with water

Periodical checks	
15 days	Cylinder: not over 300 hours of work checking operation, general state, no leaks
90 days	Cylinder: not over 1000 hours of work checking operation, general state, no leaks, any replacement
1 year	Cylinder: not over 2500 hours of work (disposable cylinders) Load solenoid valve replacement: disconnect electric power supply, dismantle valve, clean the drain solenoid valve filter: disconnect electric power supply, remove reel and dismantle valve body and any impurity and rinse the power supply bowl, piping: check they are free and without impurities
5 years	Cylinder: not over 10000 hours of work (inspectional cylinders) replacement

Humidifier cylinder drainage

Cylinder must be drained in these situations:

- cleaning of the cylinder
- emptying of the cylinder to avoid ice forming
- replacement of the cylinder

The manual drainage is carried out by means of selector SA7: see ELECTRIC CONNECTIONS chapter.

Replacement of the cylinder

To remove the cylinder:

- completely drain the water
- interrupt power supply voltage of humidifier by means of the unit isolator
- remove the vapour pipe from the cylinder
- disconnect the electric connections of the electrodes and remove the pins from the high level electrodes
- loosen the ring nut to remove the pipe unions and the filter (when filter is outside the cylinder)
- lift the cylinder to remove it

Before mounting it:

- the filter body does not require replacing, wash it with water and remount it on the new cylinder, using the new gasket provided with the latter
- check the seal gasket between the cylinder and the drain unit
- remount the cylinder repeating the operations in reverse order

Electric heaters

Option

Check:

- cleaning state
- fastening
- presence of corrosion

UV-C lamps

Option

Caution

⇒ *Direct radiation device: causes eye irritation and skin rashes.*

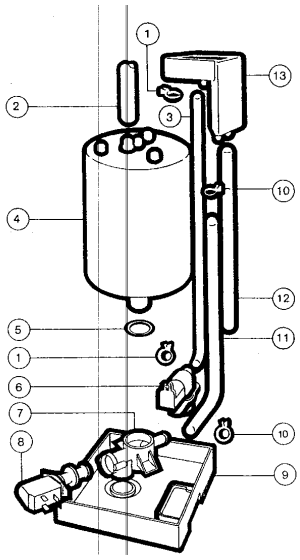
⇒ *Any maintenance operation must be carried out with the lamps off...*

⇒ *Do not touch the glass part with hands.*

The UV-C lamps are on when the supply fans are running..

Clean with cloth and alcohol to remove dust.

Replace the lamp after 9,000 hours of operation.



1 pipe fixing spring
2 vapour pipe
3 load pipe
4 vapour cylinder
5 seal O-rings
6 load valve
7 valves support
8 drain valve
9 bottom tank
10 pipe fixing spring
11 load pipe
12 too full pipe
13 fill tank

DECOMMISSIONING

Disconnection

WARNING

⇒ *Before performing any operation, read the warnings found in the Maintenance chapter.*

Avoid leak or spills into the environment.

Before disconnecting the unit, the following must be recovered, if present:

- refrigerant gas
- Anti-freeze solutions in the hydraulic circuit

Awaiting decommissioning and disposal, the unit can also be stored outdoors, as bad weather and rapid changes in temperature do not harm the environment provided that the electric, cooling and hydraulic circuits of the unit are intact and closed.

WEEE INFORMATION

The manufacturer is registered on the EEE National Register, in compliance with implementation of Directive 2012/19/EU and relevant national regulations on waste electrical and electronic equipment.

This Directive requires electrical and electronic equipment to be disposed of properly.

Equipment bearing the crossed-out wheelie bin mark must be disposed of separately at the end of its life cycle to prevent damage to human health and to the environment.

Electrical and electronic equipment must be disposed of together with all of its parts.

To dispose of “household” electrical and electronic equipment, the manufacturer recommends you contact an authorised dealer or an authorised ecological area.

“Professional” electrical and electronic equipment must be disposed of by authorised personnel through established waste disposal authorities around the country.

In this regard, here is the definition of household WEEE and professional WEEE:

WEEE from private households: WEEE originating from private households and WEEE which comes from commercial, industrial, institutional and other sources which, because of its nature and quantity, is similar to that from private households. Subject to the nature and quantity, where the waste from EEE was likely to have been by both a private household and users of other than private households, it will be classed as private household WEEE;

Professional WEEE: all WEEE which comes from users other than private households.

This equipment may contain:

refrigerant gas, the entire contents of which must be recovered in suitable containers by specialised personnel with the necessary qualifications;

- lubrication oil contained in compressors and in the cooling circuit to be collected;
- mixtures with antifreeze in the water circuit, the contents of which are to be collected;
- mechanical and electrical parts to be separated and disposed of as authorised.

When machine components to be replaced for maintenance purposes are removed or when the entire unit reaches the end of its life and needs to be removed from the installation, waste should be separated by its nature and disposed of by authorised personnel at existing collection centres.

RESIDUAL RISKS

General

In this section the most common situations are indicated,as these cannot be controlled by the manufacturer and could be a source of risk situations for people or things.

Danger zone

This is an area in which only an authorised operator may work.

The danger zone is the area inside the unit which is accessible only with the deliberate removal of protections or parts thereof.

Handling

The handling operations, if implemented without all of the protection necesssary and without due caution, may cause the drop or the tipping of the unit with the consequent damage, even serious, to persons, things or the unit itself.

Handle the unit following the instructions provided in the present manual re-garding the packaging and in compliance with the local regulations in force.

Should the refrigerant leak please refer to the refrigerant “Safety sheet”.

Installation

The incorrect installation of the unit could cause water leaks, condensate accumulation, leaking of the refrigerant, electric shock, poor operation or damage to the unit itself.

Check that the installation has been implemented by qualified technical personnel only and that the instructions contained in the present manual and the local regulations in force have been adhered to.

The installation of the unit in a place where even infrequent leaks of inflam-mable gas and the accumulation of this gas in the area surrounding the area occur could cause explosions or fires.

Carefully check the positioning of the unit.

The installation of the unit in a place unsuited to support its weight and/ or guarantee adequate anchorage may result in consequent damage to things, people or the unit itself.

Carefully check the positioning and the anchoring of the unit.

Easy access to the unit by children, unauthorised persons or animals may be the source of accidents, some serious.

Install the unit in areas which are only accessible to authorised person and/or provide protection against intrusion into the danger zone.

General risks

Smell of burning, smoke or other signals of serious anomalies may indicate a situation which could cause damage to people, things or the unit itself.

Electrically isolate the unit (yellow-red isolator).
Contact the authorised service centre to identify and resolve the problem at the source of the anomaly.

Accidental contact with exchange batteries, compressors, air delivery tubes or other components may cause injuries and/or burns.

Always wear suitable clothing including protective gloves to work inside the danger zone.

Maintenance and repair operations carried out by non-qualified personnel may cause damage to persons, things or the unit itself.

Always contact the qualified assistance centre.

Failing to close the unit panels or failure to check the correct tightening of all of the panelling fixing screws may cause damage to persons, things or the unit itself.

Periodically check that all of the panels are correctly closed and fixed. If there is a fire the temperature of the refrigerant could reach values that in-crease the pressure to beyond the safety valve with the

consequent possible projection of the refrigerant itself or explosion of the circuit parts that remain isolated by the closure of the tap.

Do not remain in the vicinity of the safety valve and never leave the refriger-ating system taps closed.

Electric parts

An incomplete attachment line to the electric network or with incorrectly sized cables and/or unsuitable protective devices can cause electric shocks, intoxication, damage to the unit or fires.

Carry out all of the work on the electric system referring to the electric layout and the present manual ensuring the use of a system thereto dedicated.

An incorrect fixing of the electric components cover may lead to the entry of dust, water etc inside and may consequently electric shocks, damage to the unit or fires.

Always fix the unit cover properly.

When the metallic mass of the unit is under voltage and is not correctly connected to the earthing system it may be as source of electric shock and electrocution.

Always pay particular attention to the implementation of the earthing system connections.

Contact with parts under voltage accessible inside the unit after the removal of the guards can cause electric shocks, burns and electrocution.

Open and padlock the general isolator prior to removing the guards and signal work in progress with the appropriate sign.

Contact with parts that could be under voltage due to the start up of the unit may cause electric shocks, burns and electrocution.

When voltage is necessary for the circuit open the isolator on the attachment line of the unit itself, padlock it and display the appropriate warning sign.

Moving parts

Contact with the transmissions or with the fan aspiration can cause injuries.

Prior to entering the inside of the unit open the isolater situated on the con-nection line of the unit itself, padlock and display the appropriate warning sign.

Contact with the fans can cause injury.

Prior to removing the protective grill or the fans, open the isolator on the attachment line of the unit itself, padlock it and display the appropriate warning sign.

Refrigerant

The intervention of the safety valve and the consequent expulsion of the gas refrigerant may cause injuries and intoxication.

Always wear suitable clothing including protective gloves and eyeglasses for operations inside the danger zone.

Should the refrigerant leak please refer to the refrigerant “Safety sheet”.

Contact between open flames or heat sources with the refrigerant or the heating of the gas circuit under pressure (e.g. during welding operations) may cause explosions or fires.

Do not place any heat source inside the danger zone.

The maintenance or repair interventions which include welding must be carried out with the system off.

Hydraulic parts

Defects in tubing, the attachments or the removal parts may cause a leak or water projection with the consequent damages to people, things or shortcircuit the unit.

Standard airflow

SIZE				49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
COOLING											
Cooling capacity		1	kW	154,6	164,6	195,0	213,0	245,2	297,3	311,9	333,6
Sensible capacity		1	kW	116,3	124,3	143,6	164,2	184,2	222,8	234,7	246,0
Compressor power input		1	kW	40,9	45,0	49,9	58,4	64,7	75,7	84,1	94,7
EER		1	-	3,78	3,66	3,91	3,64	3,79	3,93	3,71	3,62
Cooling capacity (EN14511:2018)	CAK	11	kW	152,5	160,8	192,5	209,6	240,2	291,9	305,9	326,3
EER (EN14511:2018)		11	-	3,29	3,09	3,24	3,05	3,15	3,22	3,05	2,91
SEER		12		4,56	3,98	4,41	4,29	4,28	4,63	4,12	3,91
ηsc		12	%	179,6	156,2	173,4	168,5	168,3	182,0	162,0	153,3
EER - EN14511-2018		1		3,29	3,09	3,24	3,05	3,15	3,22	3,05	2,91
Cooling capacity		2	kW	161,2	171,3	202,9	223,2	257,6	310,1	328,2	346,8
Sensible capacity	CBK	2	kW	119,4	128,6	148,7	167,3	187,8	229,3	238,0	253,8
Compressor power input		2	kW	41,5	45,5	50,6	59,5	65,5	76,8	85,7	96,2
EER		2	-	3,88	3,76	4,01	3,75	3,93	4,04	3,83	3,60
Cooling capacity		3	kW	164,2	175,1	206,0	227,1	262,5	314,7	333,2	353,0
Sensible capacity	CCK	3	kW	121,2	130,7	150,2	169,0	190,3	231,9	240,8	256,9
Compressor power input		3	kW	40,2	43,9	49,4	58,1	63,6	74,9	83,5	93,6
EER		3	-	4,08	3,99	4,17	3,91	4,13	4,20	3,99	3,77
Cooling capacity		3	kW	174,9	185,9	220,2	242,1	279,5	336,4	356,0	376,2
Sensible capacity	CCKP	3	kW	128,7	138,6	160,2	180,3	202,4	247,1	256,5	273,6
Compressor power input		3	kW	41,1	45,1	50,1	59,0	65,1	76,4	85,1	95,3
EER		3	-	4,26	4,12	4,40	4,10	4,29	4,40	4,18	3,95
RISCALDAMENTO											
Heating capacity		1	kW	161,1	171,9	198,9	220,6	255,1	302,1	323,1	350,0
Compressor power input		1	kW	34,4	36,9	42,5	48,6	55,4	64,8	69,9	79,2
COP		1	-	4,68	4,66	4,68	4,54	4,60	4,66	4,62	4,42
Heating capacity (EN14511:2018)	CAK	13	kW	149,8	158,7	185,4	208,9	235,1	285,3	302,8	326,8
COP (EN14511:2018)		13	-	3,53	3,43	3,43	3,37	3,36	3,41	3,33	3,24
SCOP		12		3,65	3,42	3,39	3,35	3,38	3,35	3,30	3,40
ηsh		12	%	143	134	133	131	132	131	129	133
COP- EN14511-2018		1		3,53	3,43	3,43	3,37	3,36	3,41	3,33	3,24
Heating capacity		2	kW	163,5	174,3	202,5	223,7	258,9	306,2	327,4	354,5
Compressor power input	CBK	2	kW	31,7	33,8	39,0	44,8	51,3	60,1	65,1	72,6
COP		2	-	5,16	5,16	5,19	4,99	5,05	5,09	5,03	4,88
Heating capacity		3	kW	167,8	179,3	206,4	228,7	265,4	311,7	333,4	361,9
Compressor power input	CCK	3	kW	32,1	34,2	39,4	45,4	51,9	61,1	65,8	73,6
COP		3		5,23	5,24	5,24	5,04	5,11	5,10	5,07	4,92
Heating capacity		3	kW	176,3	186,6	218,3	241,2	279,1	330,1	353,0	382,2
Compressor power input	CCKP	3	kW	32,8	36,5	40,3	46,3	53,0	62,1	67,3	75,0
COP		3		5,38	5,11	5,42	5,21	5,27	5,32	5,25	5,10
THOR recovery efficiency		4	%	91	88	94	93	87	84	84	85
COMPRESSOR											
Type of compressors		5		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
No. of compressors			Nr	4	4	4	4	4	4	4	4
Std Capacity control steps			Nr	6	6	4	6	6	6	6	6
Refrigerant charge (C1)		6	kg	31	38	38	34	50	64	67	67
Refrigerant charge (C2)		6	kg	38	38	38	34	50	64	67	67
Refrigeration circuits			Nr	2	2	2	2	2	2	2	2
AIR HANDLING SECTION FANS (SUPPLY)											
Type of supply fan		7		RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
No. of supply fans			Nr	3	3	4	4	4	6	6	6
Fan diameter			mm	560	560	560	560	560	560	560	560
Supply airflow			l/s	26000	29000	33000	37000	44000	51000	56000	60000
Supply airflow			m^3/h	7222	8056	9167	10278	12222	14167	15556	16667
Installed unit power			kW	2,90	2,90	2,90	2,90	2,90	2,90	2,90	2,90
Max. static pressure supply fan		8	Pa	630	540	660	570	360	620	540	460

SIZE				49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
HIGH STATIC PRESSURE AIR HANDLING SECTION FANS (OPTIONAL)											
Type of supply fan				RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
No. of supply fans			Nr	3	3	4	4	4	6	6	6
Fan diameter			mm	500	500	500	500	500	500	500	500
Supply airflow			l/s	26000	29000	33000	37000	44000	51000	56000	60000
Supply airflow			m^3/h	7222	8056	9167	10278	12222	14167	15556	16667
Installed unit power			kW	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
Max. static pressure supply fan			Pa	1140	1080	1140	1140	900	1140	1140	1020
FANS (EXHAUST) (ONLY CCK, CCKP-THOR CONFIGURATION)											
Type of fans		7		RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
No. of fans		9	Nr	2	2	2	2	2	2	2	2
Installed unit power		9	kW	2,60	2,60	2,70	2,70	2,70	2,70	2,70	2,70
EXTERNAL SECTION FANS											
Type of fans				AX	AX	AX	AX	AX	AX	AX	AX
No. of fans			Nr	2	2	4	4	4	6	6	6
Supply airflow			l/s	12500	12500	23333	23333	23333	35000	35000	35000
Max. static pressure supply fan			kW	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
CONNECTIONS											
Condensate drain			mm	30	30	30	30	30	30	30	30
POWER SUPPLY											
Standard power supply			V	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.
Contains fluorinated greenhouse gases (GWP 2087,5)
Performances in cooling: Indoor air temp. 27°C/19°C W.B. Entering external exchanger air temperature 35°C D.B./24°C W.B. EER referred only to compressors
Performance in Heating: Indoor air temp. 20°C D.B./12°C W.B. entering air to the external exchanger 7°C/6°C W.B. COP referred only to compressors

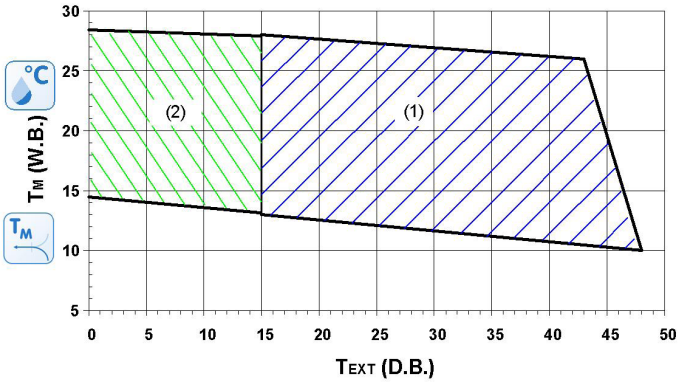
1. Performance refers to operation at full re-circulation
2. Performance with 30% of outdoor air
3. Performance with 30% of outdoor air including the energy recovery on the exhaust air
4. Energy recovery efficiency determinated on the exhaust air. Indoor temperature 20°C D.B./12°C W.B., outdoor temperature 7°C D.B./6°C W.B.
5. SCROLL = scroll compressor
6. Indicative values for standard units with possible +/-10% variation. The actual data are indicated on the label of the unit
7. RAD = radial fan electronically controlled
8. Net outside static pressure to win the outlet and intake onboard pressure drops
9. Configuration with double fan section for recirculation, fresh air, exhaust, thermodynamic recovery (CCK) and configuration with double fan section with fresh air and THOR thermodynamic recovery (CCKP)
10. AX = axial fan
11. Capacity in total recirculation according to EN 14511-2018, indoor air temperature 27°C D.B./19°CW.B.; outdoor temperature 35°C. EER according to EN 14511-2018
12. Data calculated in accordance with EN 14825: 2018
13. Capacity in total recirculation according to EN 14511-2018, indoor air temperature 20°C; outdoor temperature 7°CD.B./6°CW.B.. COP according to EN 14511-2018

Sound levels

SIZE	Sound power level (dB)								Sound power level	Sound pressure level
	Octave band (Hz)									
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
49.4	99	95	98	88	84	75	70	67	72	92
54.4	101	95	95	90	87	78	74	72	72	92
60.4	105	95	95	91	86	80	75	73	72	93
70.4	106	96	95	92	88	83	77	75	73	94
80.4	106	97	96	93	89	82	77	75	74	95
90.4	107	101	100	94	92	85	79	78	76	97
100.4	108	102	101	95	93	86	80	79	77	98
110.4	109	103	102	96	94	87	81	80	78	99

The sound levels are referred to unit operating at full load in nominal conditions. The sound pressure level is referred at a distance of 1 m. from the ducted unit surface operating in free field conditions. External static pressure 50 Pa. (standard UNI EN ISO 9614-2)
Please note that when the unit is installed in conditions different from nominal test conditions (e.g. near walls or obstacles in general), the sound levels may undergo substantial variations.

Operating range (Cooling)



The limits are meant as an indication and they have been calculated by considering:
- general and non specific sizes,
- standard airflow,
- non-critical positioning of the unit and correct operating and maintenance of the unit,
- operating at full load.

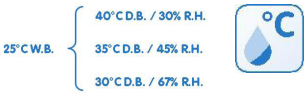
To verify the operation field of the operating units with percentages of outdoor air, always calculate the Tm mixing temperature at the internal heat exchanger input.

Tm = Internal exchanger entering air temperature
temperature measured with wet bulb (W.B.=WET BULB)

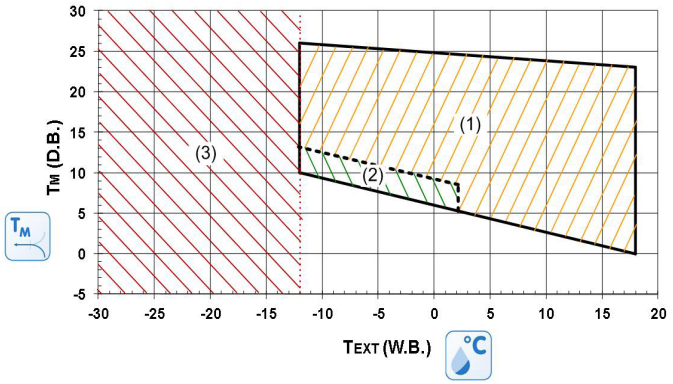
Text = Inlet air temperature in the external exchanger
dry bulb measured temperature (D.B.=DRY BULB)

1. Standard operating range
2. Operation range of the unit in FREE-COOLING mode or with automatic distribution of the outdoor ventilation

WET BULB TEMPERATURE - EXAMPLE



Operating range (Heating)



The limits are meant as an indication and they have been calculated by considering:
- general and non specific sizes,
- standard airflow,
- non-critical positioning of the unit and correct operating and maintenance of the unit,
- operating at full load

To verify the operation field of the operating units with percentages of outdoor air, always calculate the Tm mixing temperature at the internal heat exchanger input.

Tm = internal exchanger entering air temperature
dry bulb measured temperature (D.B.=DRY BULB)

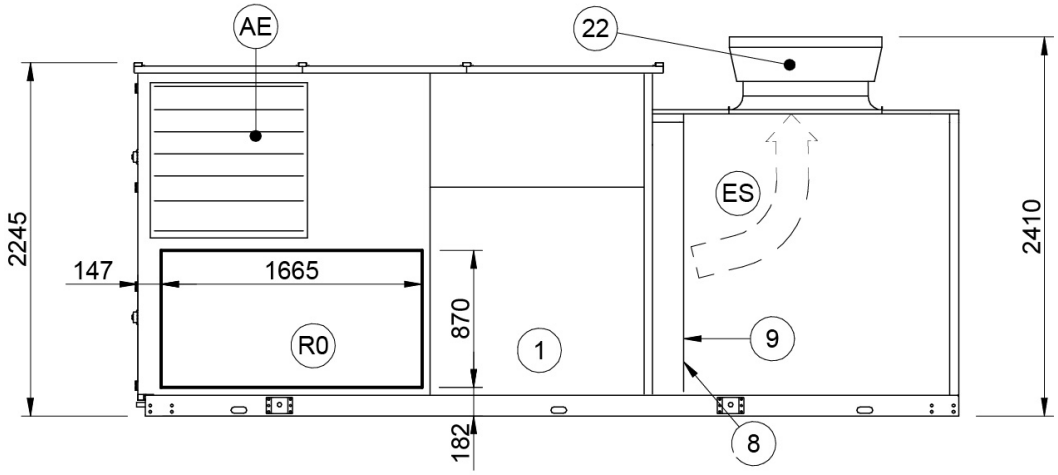
Text = inlet air temperature in the external exchanger
temperature measured with wet bulb (W.B.=WET BULB)

1. Operation range at full load
2. Range in which the unit operation is allowed only for a limited period (max 1 hour)
3. Operation range of the unit equipped with “application for low outdoor temperature” and “hot water coil” or “gas heating module” options. The heat pump circuit is not active.

In extended operating mode, in heat pump operation with an outdoor air temperature of less than 6°C, the unit performs defrosts by reversing the cycle, activating one circuit at a time and maintaining the ventilation active to eliminate the ice that forms on the surfaces of the outside exchanger. In the event of negative temperatures, the water resulting from the defrosts must be drained so as to avoid the accumulation of ice near the base of the unit. Make sure that this does not constitute a danger for people or things.
With an outdoor air temperature between –10°C and –30°C install the following options: hot water coil or gas heating module and outdoor air low temperature configuration.

Size 49.4 - 54.4

DAA7V49.4_54.4 REV04
DATA/DATE 09/01/2019



1. Compressor compartment
2. Electrical panel
3. Connector for keyboard or PC connection
4. Power input
5. Humidifier connections
6. Condensate drain
7. Functional spaces
8. Water heating coil inlet Ø 1" 1/2
9. Water heating coil outlet Ø 1" 1/2
10. Reheat coil (optional)
11. Treatment coil
12. water heating coil (optional)
13. F7 / Electronic filters (optional)
14. Standard G4 filters
15. Electric fan (supply - return)
16. Exhaust electric fan (CCK - CCKP version)
17. Lifting brackets (removable)
18. Outdoor air damper
19. Exhaust overpressure damper (CCK - CCKP version)
20. Access for coil - filter - heater inspection
21. Exhaust air recovery coil (only CCKP version)
22. Axitop (removable)
23. Outdoor air return cap, accessory disassembled supplied

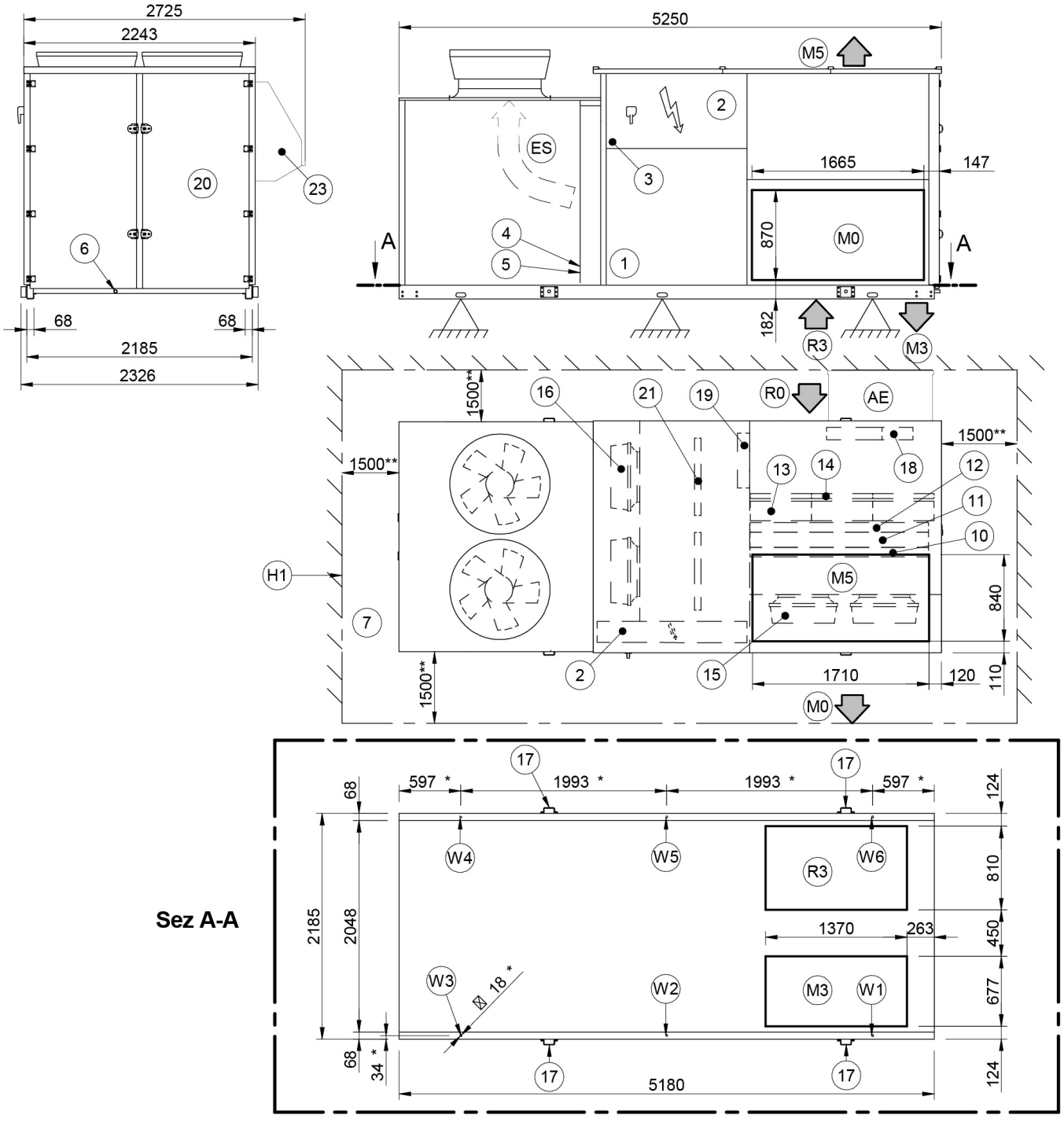
(R0) Horizontal air return
(R3) Downward air return (optional)
(M0) Horizontal air supply
(M3) Downward air supply (optional)
(M5) Upflow air supply
(AE) Outdoor air intake (CBK - CCK - CCKP version)
(ES) Exhaust air (CCK - CCKP version)
(H1) Wall with same height as unit on a maximum of three sides
(*) Anti-vibration mount position
(**) Suggested minimum clearance

WEIGHT DISTRIBUTION

SIZE		49.4			54.4		
Configuration		**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**
W1 Supporting point	kg	427	449	468	490	512	531
W2 Supporting point	kg	383	403	420	440	460	477
W3 Supporting point	kg	317	334	348	364	381	395
W4 Supporting point	kg	317	334	348	364	381	395
W5 Supporting point	kg	350	369	384	402	420	436
W6 Supporting point	kg	394	415	432	452	473	490
Operating weight	kg	2189	2304	2400	2512	2628	2724
Shipping weight	kg	2189	2304	2400	2512	2628	2724

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings

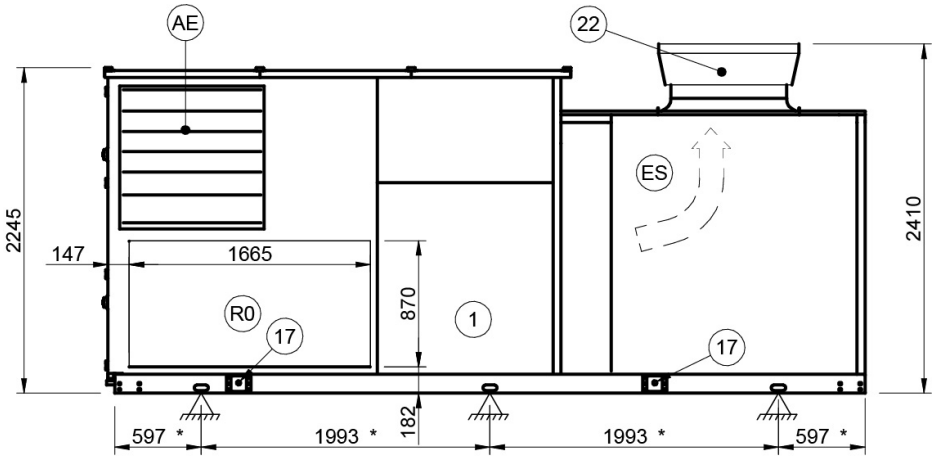


Sez A-A

Size 49.4 - 54.4 Combustion module

DAA7V49.4_54.4_GC09X-GC11X REV01
DATA/DATE 09/01/2019

Single chamber (GC09X 65 kW - GC10X 82 kW - GC11X 100 kW)



1. Compressor compartment
2. Electrical panel
3. Connector for keyboard or PC connection
4. Power input
5. Humidifier connections
6. Condensate drain
7. Functional spaces
8. Reheat coil (optional)
9. Treatment coil
10. F7 / Electronic filters (optional)
11. Standard G4 filters
12. Electric fan (supply - return)
13. Exhaust electric fan (CCK - CCKP version)
14. Lifting brackets (removable)
15. Outdoor air damper
16. Exhaust overpressure damper (CCK - CCKP version)
17. Access for coil - filter - heater inspection
18. Exhaust air recovery coil (only CCKP version)
19. Axitop (removable)
20. Gas module (to be connected to the unit during installation) (UNI ISO 228/1 - G 3/4")
21. Outdoor air return cap, accessory disassembled supplied

(R0) Horizontal air return
(R3) Downward air return (optional)
(M0) Horizontal air supply
(AE) Outdoor air intake (CBK - CCK - CCKP version)
(ES) Exhaust air (CCK - CCKP version)
(H1) Wall with same height as unit on a maximum of three sides
(*) Anti-vibration mount position
(**) Suggested minimum clearance

WEIGHT DISTRIBUTION

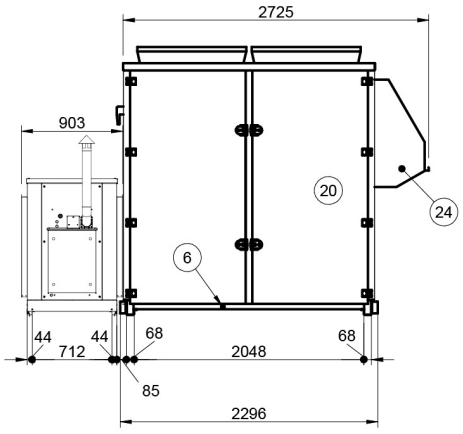
SIZE		49.4			54.4		
Configuration		**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**
W1 Supporting point	kg	427	449	468	490	512	531
W2 Supporting point	kg	383	403	420	440	460	477
W3 Supporting point	kg	317	334	348	364	381	395
W4 Supporting point	kg	317	334	348	364	381	395
W5 Supporting point	kg	350	369	384	402	420	436
W6 Supporting point	kg	394	415	432	452	473	490
Operating weight	kg	2189	2304	2400	2512	2628	2724
Shipping weight	kg	2189	2304	2400	2512	2628	2724

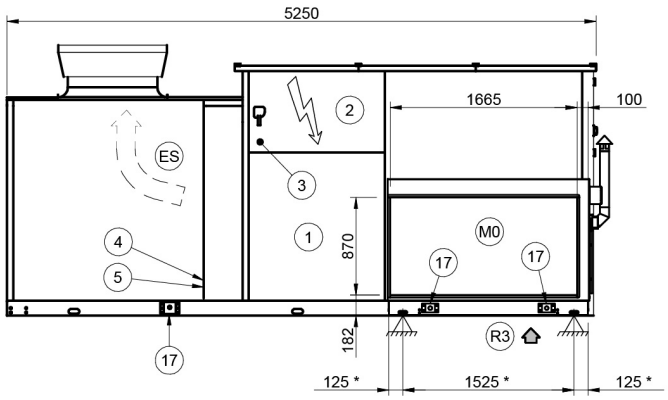
DISTRIBUZIONE PESI MODULO GAS

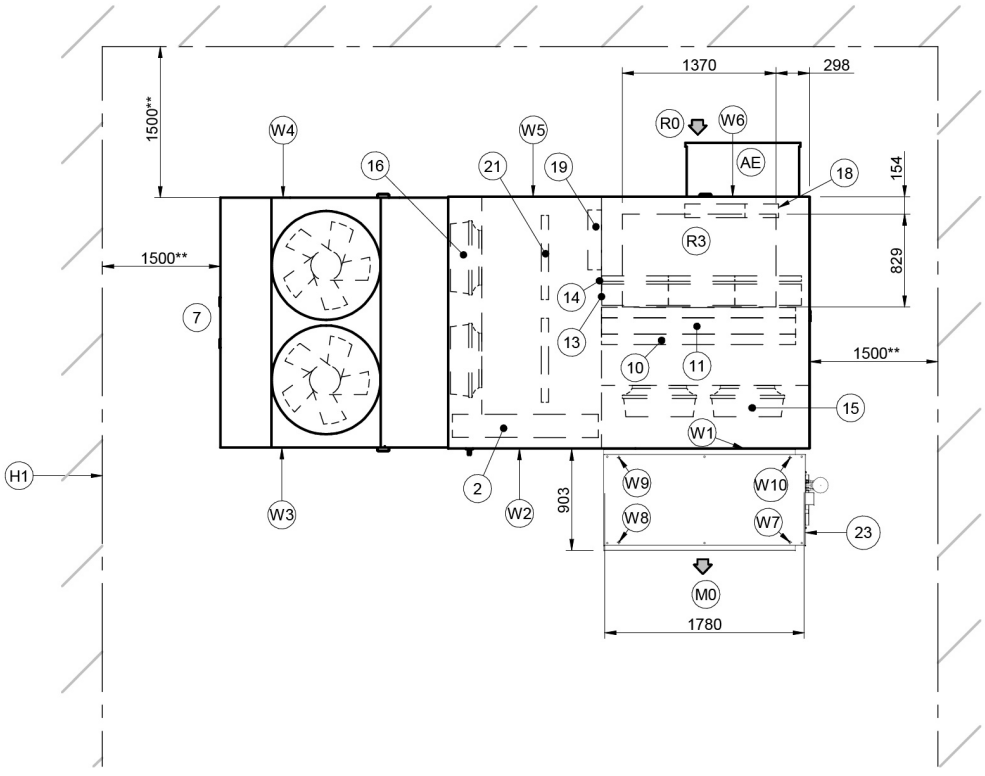
SIZE		49.4	54.4
W7 Supporting point	kg	75	75
W8 Supporting point	kg	65	65
W9 Supporting point	kg	65	65
W10 Supporting point	kg	75	75
Operating weight	kg	280	280
Shipping weight	kg	280	280

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings



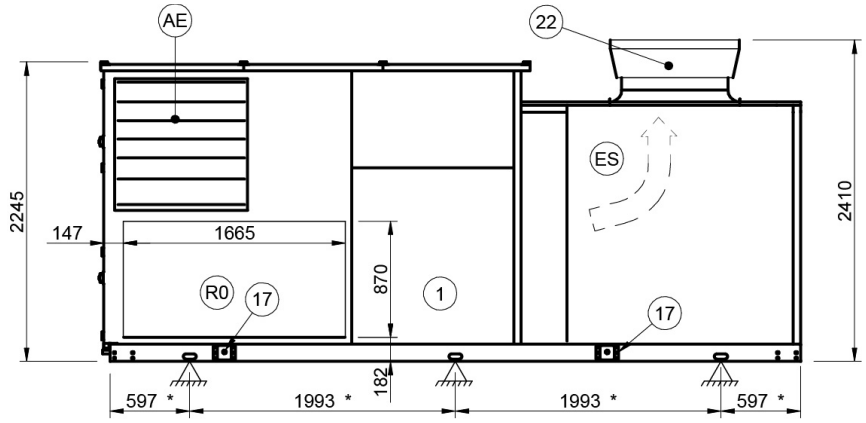




Size 49.4 - 54.4 Combustion module

Double chamber (GC12X 130 kW)

DAA7V49.4_54.4_GC12X REV01
DATA/DATE 09/01/2019



1. Compressor compartment
2. Electrical panel
3. Connector for keyboard or PC connection
4. Power input
5. Humidifier connections
6. Condensate drain
7. Functional spaces
8. Reheat coil (optional)
9. Treatment coil
10. F7 / Electronic filters (optional)
11. Standard G4 filters
12. Electric fan (supply - return)
13. Exhaust electric fan (CCK - CCKP version)
14. Lifting brackets (removable)
15. Outdoor air damper
16. Exhaust overpressure damper (CCK - CCKP version)
17. Access for coil - filter - heater inspection
18. Exhaust air recovery coil (only CCKP version)
19. Axitop (removable)
20. Gas module (to be connected to the unit during installation) (UNI ISO 228/1 - G 3/4")
21. Outdoor air return cap, accessory disassembled supplied

(R0) Horizontal air return
(R3) Downward air return (optional)
(M0) Horizontal air supply
(AE) Outdoor air intake (CBK - CCK - CCKP version)
(ES) Exhaust air (CCK - CCKP version)
(H1) Wall with same height as unit on a maximum of three sides
(*) Anti-vibration mount position
(**) Suggested minimum clearance

WEIGHT DISTRIBUTION

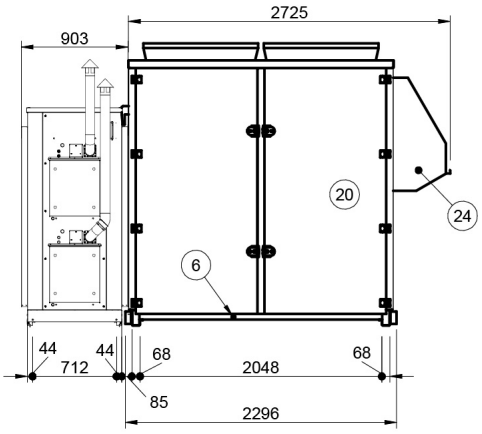
SIZE		49.4			54.4		
Configuration		**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**
W1 Supporting point	kg	427	449	468	490	512	531
W2 Supporting point	kg	383	403	420	440	460	477
W3 Supporting point	kg	317	334	348	364	381	395
W4 Supporting point	kg	317	334	348	364	381	395
W5 Supporting point	kg	350	369	384	402	420	436
W6 Supporting point	kg	394	415	432	452	473	490
Operating weight	kg	2189	2304	2400	2512	2628	2724
Shipping weight	kg	2189	2304	2400	2512	2628	2724

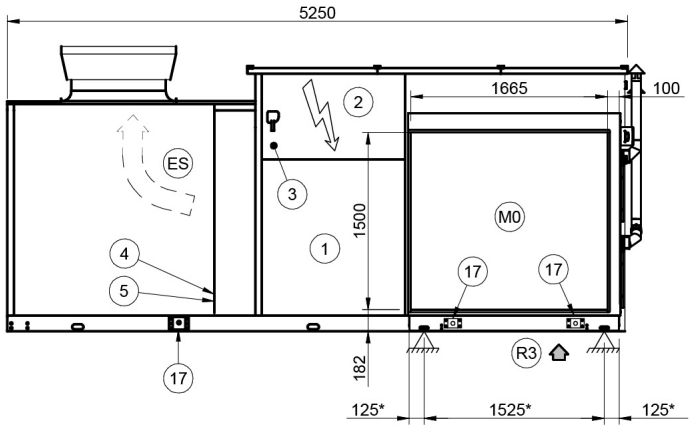
GAS MODULE WEIGHT DISTRIBUTION

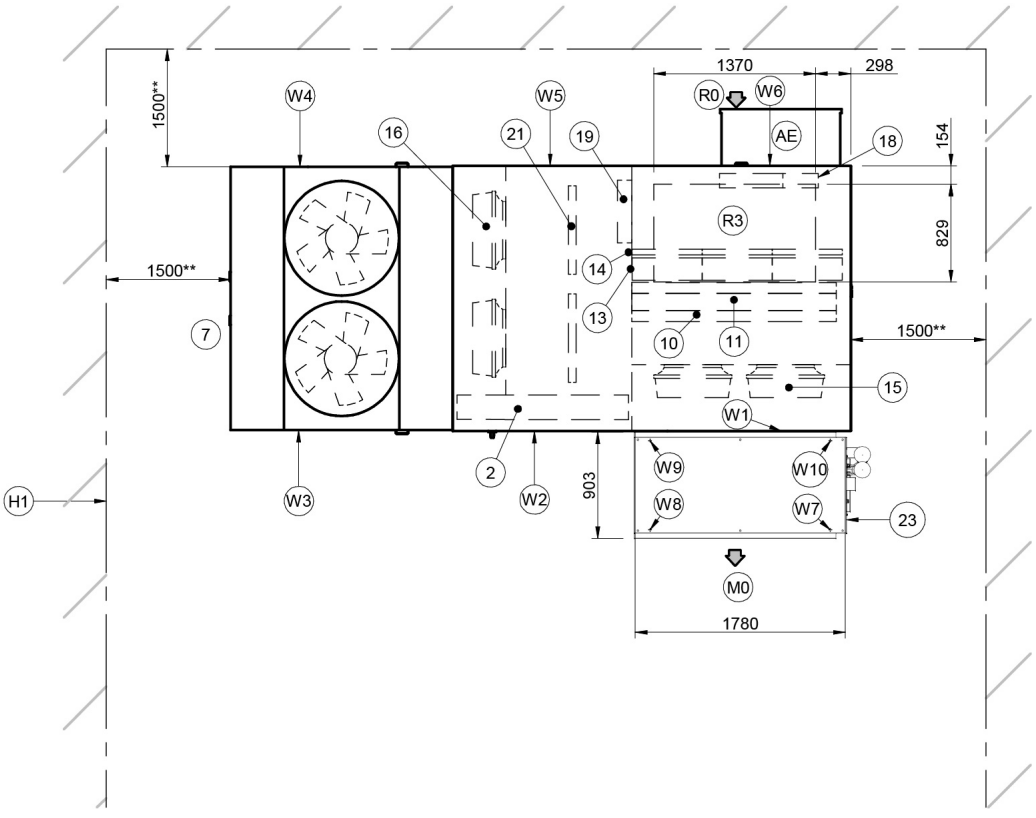
SIZE		49.4	54.4
W7 Supporting point	kg	100	100
W8 Supporting point	kg	75	75
W9 Supporting point	kg	75	75
W10 Supporting point	kg	100	100
Operating weight	kg	350	350
Shipping weight	kg	350	350

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings

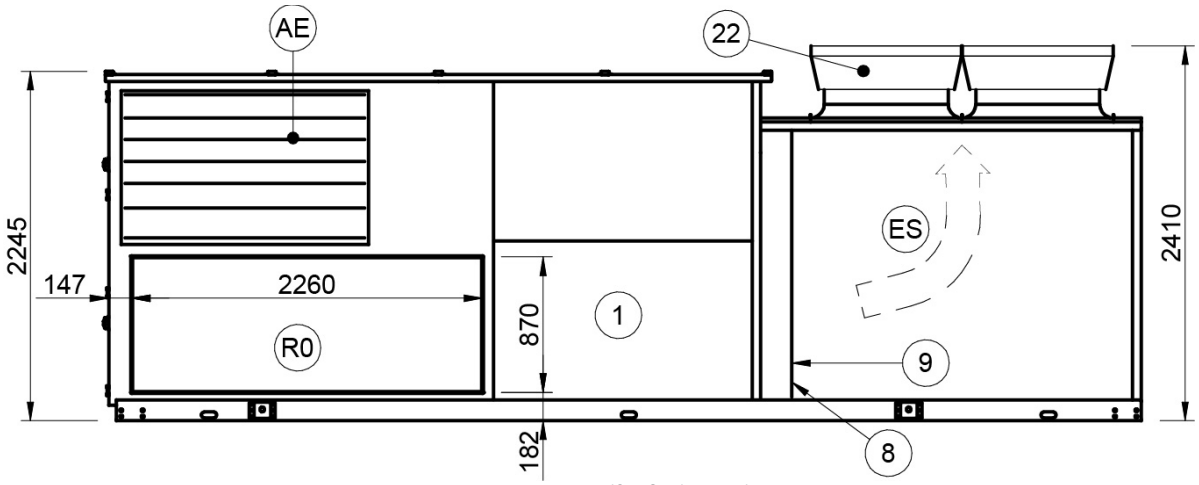






Size 60.4 - 70.4 - 80.4

DAA7V60.4_80.4 REV03
DATA/DATE 09/01/2019



1. Compressor compartment
2. Electrical panel
3. Connector for keyboard or PC connection
4. Power input
5. Humidifier connections
6. Condensate drain
7. Functional spaces
8. Water heating coil inlet Ø 2”
9. Water heating coil outlet Ø 2”
10. Reheat coil (optional)
11. Treatment coil
12. Water heating coil (optional)
13. F7 / Electronic filters (optional)
14. Standard G4 filters
15. Electric fan (supply - return)
16. Exhaust electric fan (CCK - CCKP version)
17. Lifting brackets (removable)
18. Outdoor air damper
19. Exhaust overpressure damper (CCK - CCKP version)
20. Access for coil - filter - heater inspection
21. Exhaust air recovery coil (only CCKP version)
22. Axitop (removable)
23. Outdoor air return cap, accessory disassembled supplied

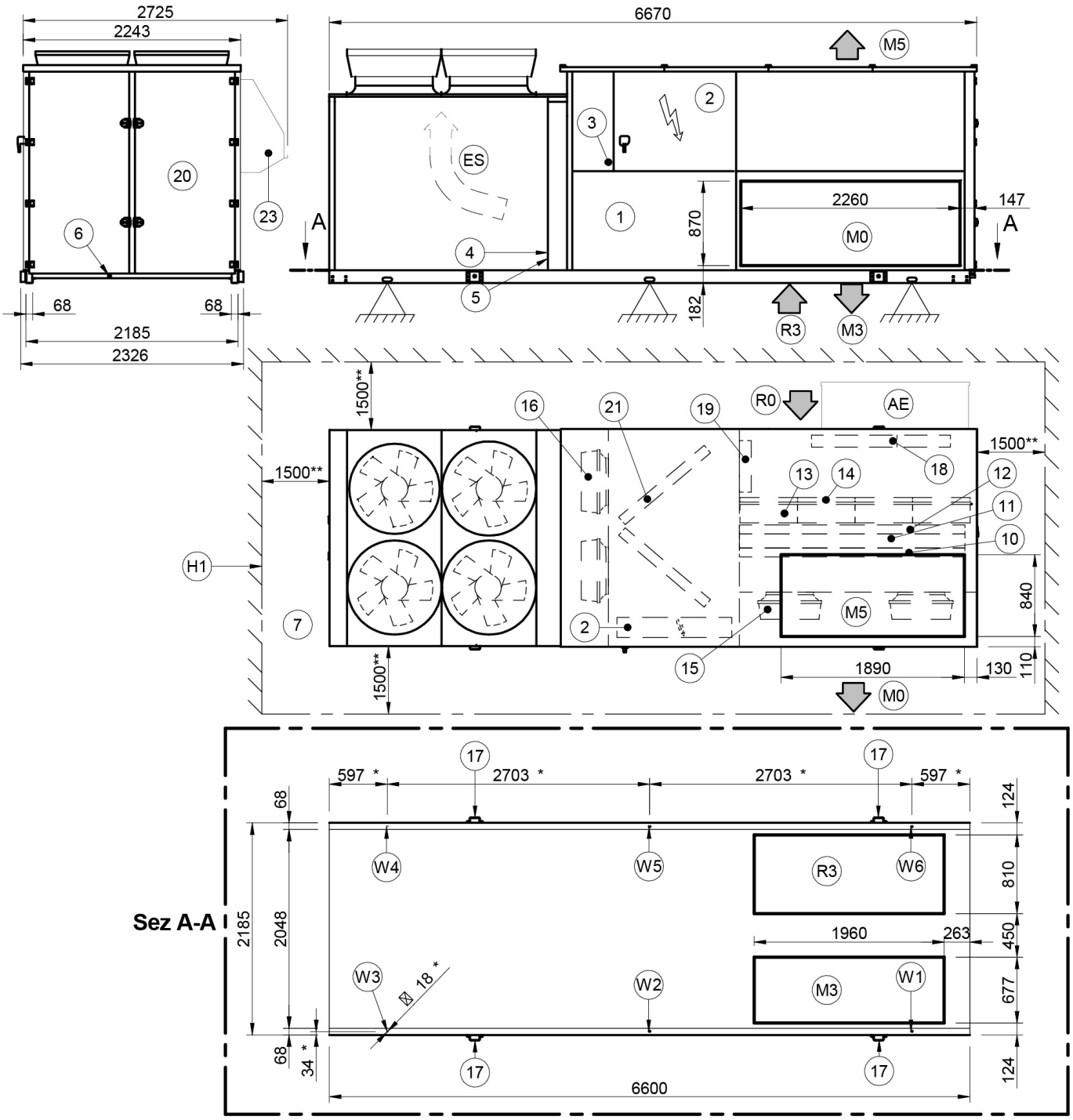
(R0) Horizontal air return
(R3) Downward air return (optional)
(M0) Horizontal air supply
(M3) Downward air supply (optional)
(M5) Upflow air supply
(AE) Outdoor air intake (CBK - CCK - CCKP version)
(ES) Exhaust air (CCK - CCKP version)
(H1) Wall with same height as unit on a maximum of three sides
(*) Anti-vibration mount position
(**) Suggested minimum clearance

WEIGHT DISTRIBUTION

SIZE		60.4			70.4			80.4		
Configuration		**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**
W1 Supporting point	kg	524	554	578	562	591	616	644	674	699
W2 Supporting point	kg	470	497	519	504	530	553	578	605	627
W3 Supporting point	kg	390	412	430	418	440	458	479	501	520
W4 Supporting point	kg	390	412	430	418	440	458	479	501	520
W5 Supporting point	kg	430	454	475	461	485	505	529	553	573
W6 Supporting point	kg	484	511	534	518	546	568	595	622	645
Operating weight	kg	2688	2839	2966	2880	3031	3158	3305	3457	3583
Shipping weight	kg	2688	2839	2966	2880	3031	3158	3305	3457	3583

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings

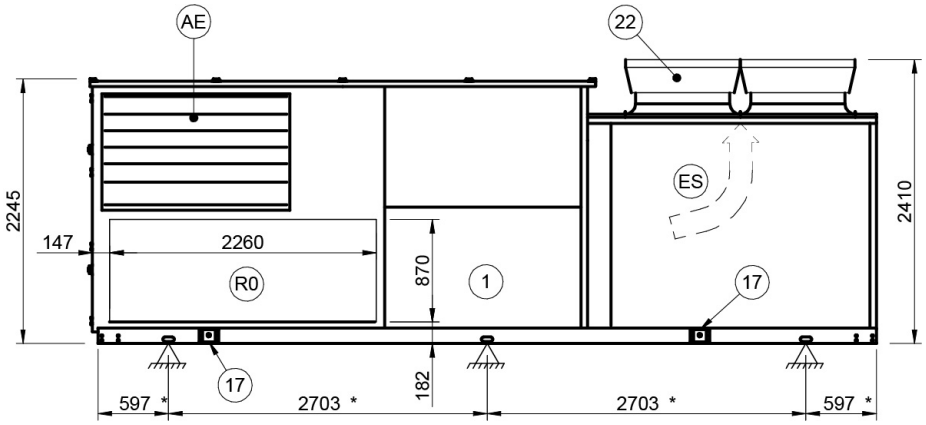


Sez A-A

Size 60.4 - 70.4 - 80.4 Combustion module

Single chamber (GC10X 82 kW - GC11X 100 kW)

DAA7V60.4_80.4_GC10X-GC11X REV01
DATA/DATE 09/01/2019



1. Compressor compartment
2. Electrical panel
3. Connector for keyboard or PC connection
4. Power input
5. Humidifier connections
6. Condensate drain
7. Functional spaces
8. Reheat coil (optional)
9. Treatment coil
10. F7 / Electronic filters (optional)
11. Standard G4 filters
12. Electric fan (supply - return)
13. Exhaust electric fan (CBK - CCK - CCKP version)
14. Lifting brackets (removable)
15. Outdoor air damper
16. Exhaust overpressure damper (CCK - CCKP version)
17. Access for coil - filter - heater inspection
18. Exhaust air recovery coil (only CCKP version)
19. Axitop (removable)
20. Gas module (to be connected to the unit during installation) (UNI ISO 228/1 - G 3/4")
21. Outdoor air return cap, accessory disassembled supplied

(R0) Horizontal air return
(R3) Downward air return (optional)
(M0) Horizontal air supply
(AE) Outdoor air intake (CBK - CCK - CCKP version)
(ES) Exhaust air (CCK - CCKP version)
(H1) Wall with same height as unit on a maximum of three sides
(*) Anti-vibration mount position
(**) Suggested minimum clearance

WEIGHT DISTRIBUTION

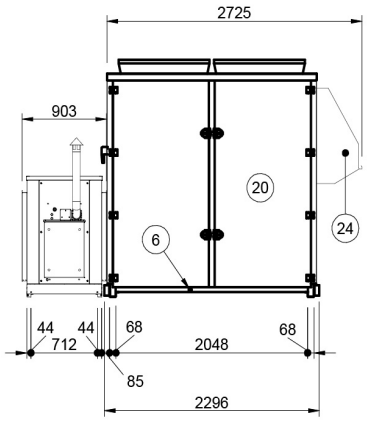
SIZE		60.4			70.4			80.4		
Configuration		**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**
W1 Supporting point	kg	524	554	578	562	591	616	644	674	699
W2 Supporting point	kg	470	497	519	504	530	553	578	605	627
W3 Supporting point	kg	390	412	430	418	440	458	479	501	520
W4 Supporting point	kg	390	412	430	418	440	458	479	501	520
W5 Supporting point	kg	430	454	475	461	485	505	529	553	573
W6 Supporting point	kg	484	511	534	518	546	568	595	622	645
Operating weight	kg	2688	2839	2966	2880	3031	3158	3305	3457	3583
Shipping weight	kg	2688	2839	2966	2880	3031	3158	3305	3457	3583

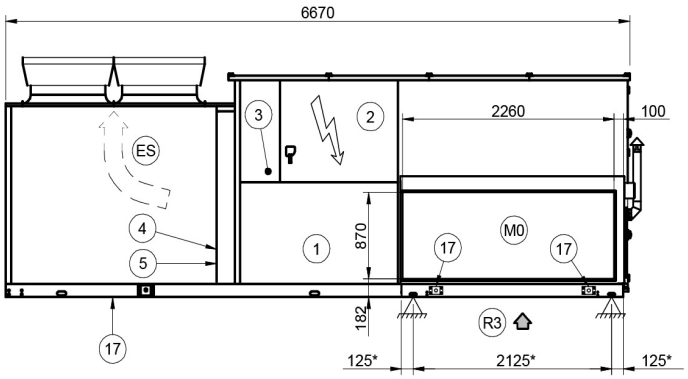
GAS MODULE WEIGHT DISTRIBUTION

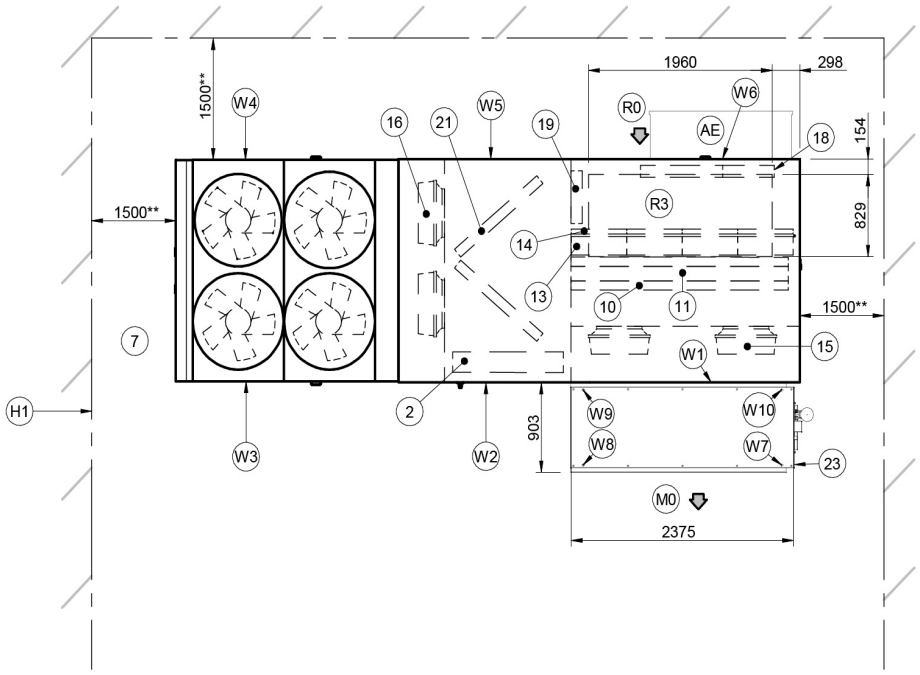
SIZE		60.4	70.4	80.4
W7 Supporting point	kg	85	85	85
W8 Supporting point	kg	75	75	75
W9 Supporting point	kg	75	75	75
W10 Supporting point	kg	85	85	85
Operating weight	kg	320	320	320
Shipping weight	kg	320	320	320

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings



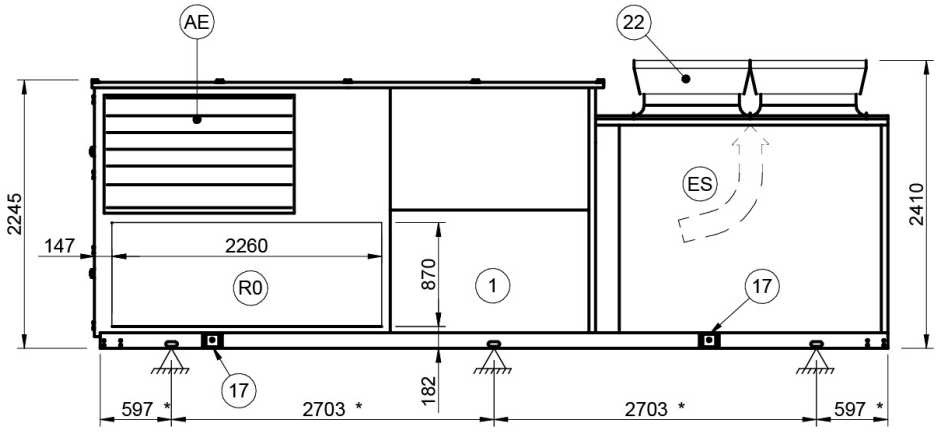




Size 60.4 - 70.4 - 80.4 Combustion module

Double chamber (GC13X 164 kW - GC06X 200 kW)

DAA7V60.4_80.4_GC13X-GC06X REV01
DATA/DATE 09/01/2019



1. Compressor compartment
2. Electrical panel
3. Connector for keyboard or PC connection
4. Power input
5. Humidifier connections
6. Condensate drain
7. Functional spaces
8. Reheat coil (optional)
9. Treatment coil
10. F7 / Electronic filters (optional)
11. Standard G4 filters
12. Electric fan (supply - return)
13. Exhaust electric fan (CBK - CCK - CCKP version)
14. Lifting brackets (removable)
15. Outdoor air damper
16. Exhaust overpressure damper (CCK - CCKP version)
17. Access for coil - filter - heater inspection
18. Exhaust air recovery coil (only CCKP version)
19. Axitop (removable)
20. Gas module (to be connected to the unit during installation) (UNI ISO 228/1 - G 1 1/2")
21. Outdoor air return cap, accessory disassembled supplied

(R0) Horizontal air return
(R3) Downward air return (optional)
(M0) Horizontal air supply
(AE) Outdoor air intake (CBK - CCK - CCKP version)
(ES) Exhaust air (CCK - CCKP version)
(H1) Wall with same height as unit on a maximum of three sides
(*) Anti-vibration mount position
(**) Suggested minimum clearance

WEIGHT DISTRIBUTION

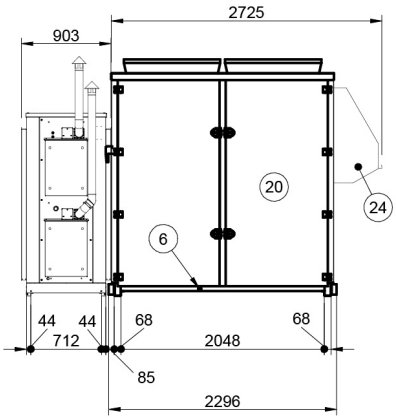
SIZE		60.4			70.4			80.4		
Configuration		**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**
W1 Supporting point	kg	524	554	578	562	591	616	644	674	699
W2 Supporting point	kg	470	497	519	504	530	553	578	605	627
W3 Supporting point	kg	390	412	430	418	440	458	479	501	520
W4 Supporting point	kg	390	412	430	418	440	458	479	501	520
W5 Supporting point	kg	430	454	475	461	485	505	529	553	573
W6 Supporting point	kg	484	511	534	518	546	568	595	622	645
Operating weight	kg	2688	2839	2966	2880	3031	3158	3305	3457	3583
Shipping weight	kg	2688	2839	2966	2880	3031	3158	3305	3457	3583

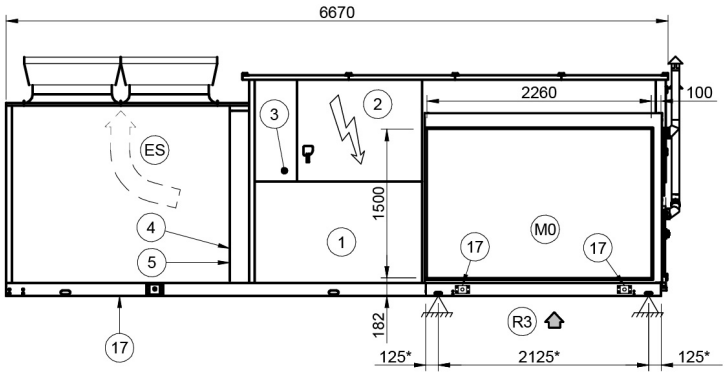
GAS MODULE WEIGHT DISTRIBUTION

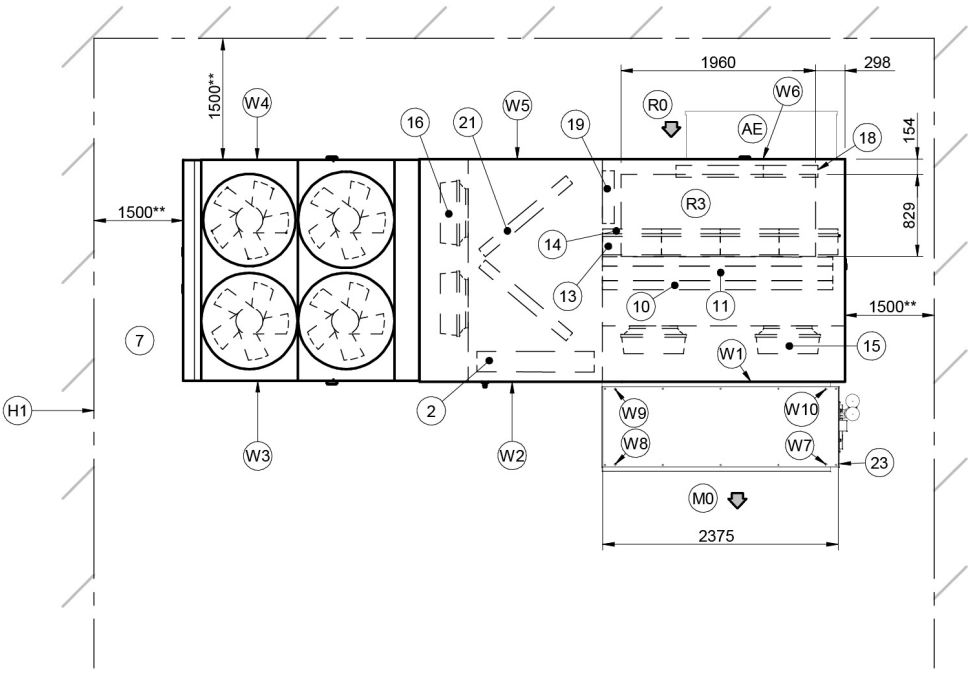
SIZE		60.4	70.4	80.4
W7 Supporting point	kg	145	145	145
W8 Supporting point	kg	100	100	100
W9 Supporting point	kg	145	145	145
W10 Supporting point	kg	100	100	100
Operating weight	kg	490	490	490
Shipping weight	kg	490	490	490

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings

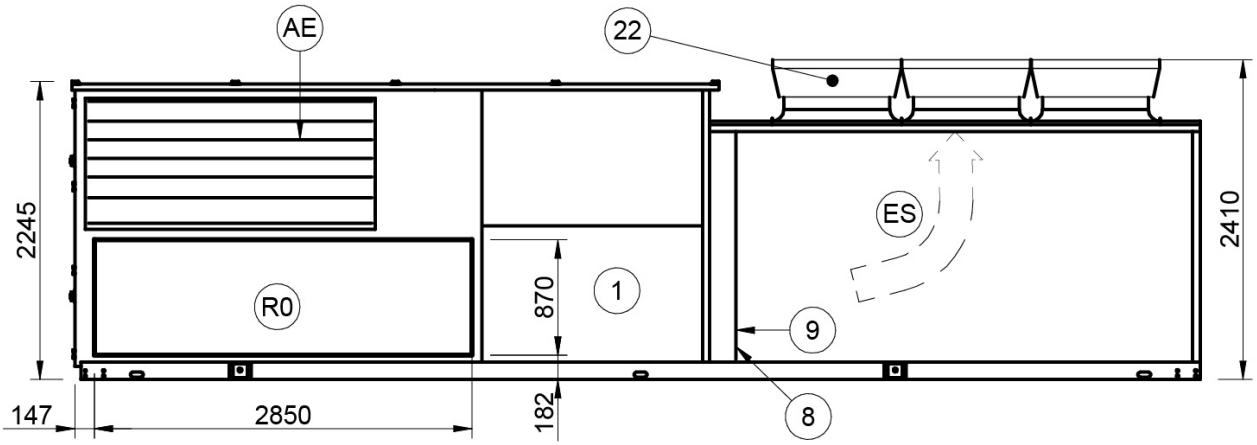






Size 90.4 - 100.4 - 110.4

DAA7V90.4_110.4 REV04
DATA/DATE 09/01/2019



1. Compressor compartment
2. Electrical panel
3. Connector for keyboard or PC connection
4. Power input
5. Humidifier connections
6. Condensate drain
7. Functional spaces
8. Water heating coil inlet Ø 2”
9. Water heating coil outlet Ø 2”
10. Reheat coil (optional)
11. Treatment coil
12. Water heating coil (optional)
13. F7 / Electronic filters (optional)
14. Standard G4 filters
15. Electric fan (supply - return)
16. Exhaust electric fan (CCK - CCKP version)
17. Lifting brackets (removable)
18. Outdoor air damper
19. Exhaust overpressure damper (CCK - CCKP version)
20. Access for coil - filter - heater inspection
21. Exhaust air recovery coil (only CCKP version)
22. Axitop (removable)
23. Outdoor air return cap, accessory disassembled supplied

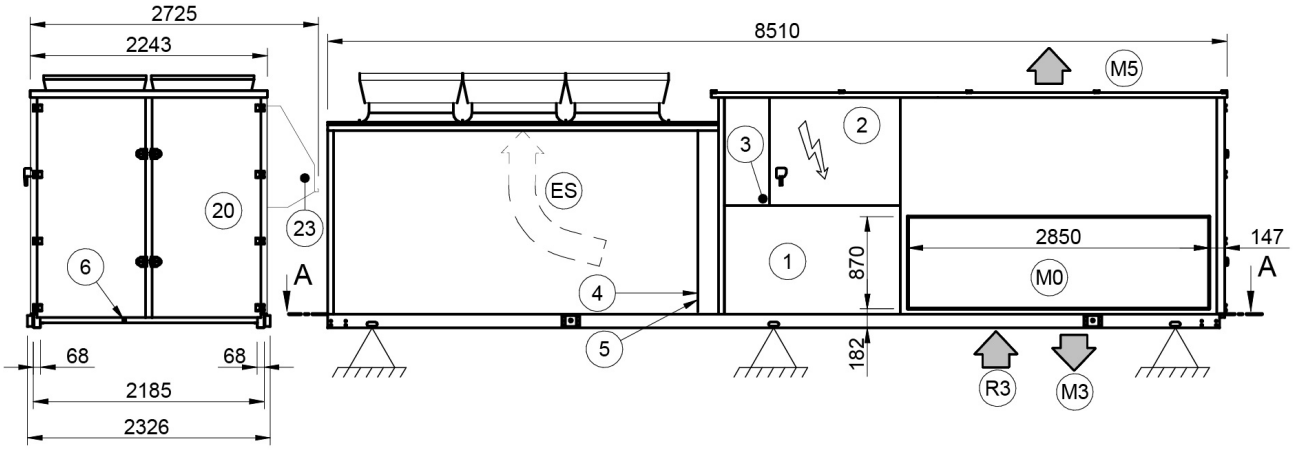
(R0) Horizontal air return
(R3) Downward air return
(M0) Horizontal air supply
(M3) Downward air supply (optional)
(M5) Upflow air supply (CBK - CCK - CCKP version)
(AE) Outdoor air intake
(ES) Exhaust air (CCK - CCKP version)
(H1) Wall with same height as unit on a maximum of three sides
(*) Anti-vibration mount position
(**) Suggested minimum clearance

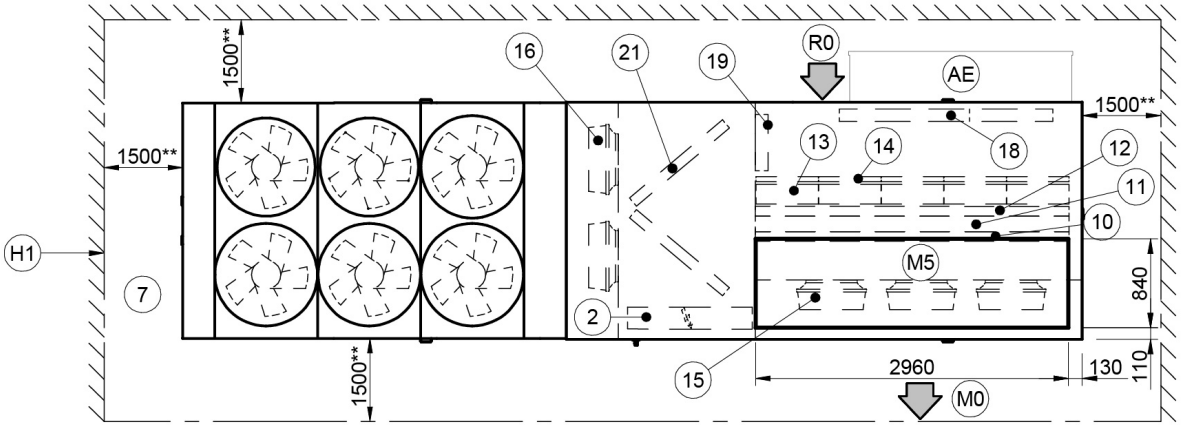
WEIGHT DISTRIBUTION

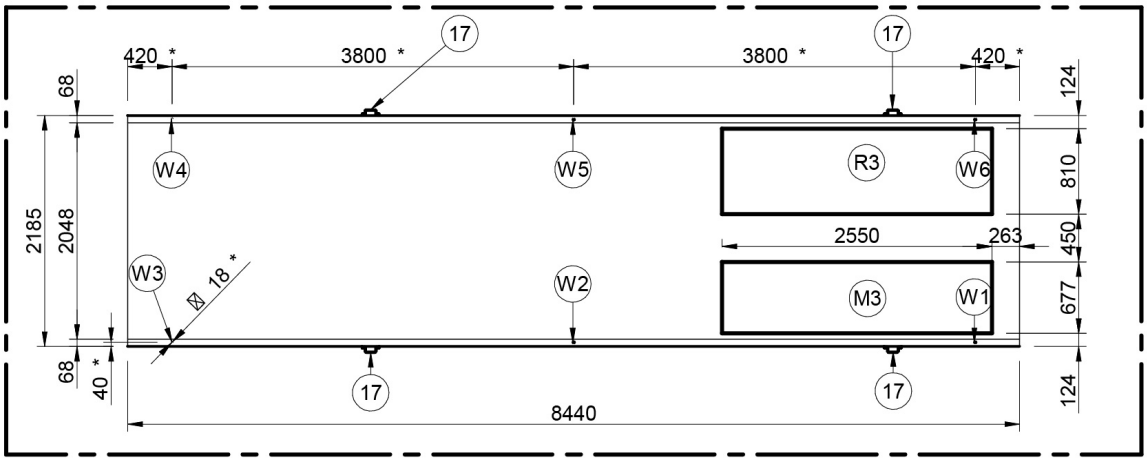
SIZE		90.4			100.4			110.4		
Configuration		**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**
W1 Supporting point	kg	669	706	738	717	754	786	822	860	891
W2 Supporting point	kg	600	634	662	643	677	705	738	772	800
W3 Supporting point	kg	497	525	549	533	561	584	611	640	663
W4 Supporting point	kg	497	525	549	533	561	584	611	640	663
W5 Supporting point	kg	549	580	605	588	619	645	675	706	731
W6 Supporting point	kg	617	652	681	661	696	725	759	794	823
Operating weight	kg	3430	3622	3784	3674	3867	4029	4217	4411	4571
Shipping weight	kg	3430	3622	3784	3674	3867	4029	4217	4411	4571

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings



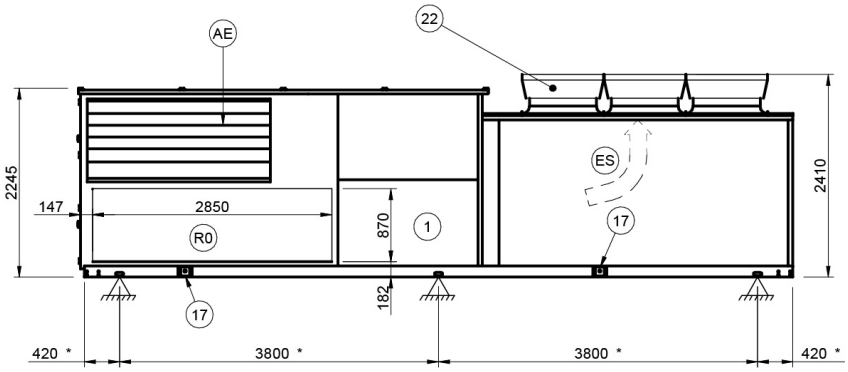




Size 90.4 - 100.4 - 110.4 Combustion module

Double chamber (GC12X 130 kW - GC13X 1640 kW - GC06X 200 kW)

DAA7V90.4_110.4_GC13X_GC06X REV02
DATA/DATE 09/01/2019



1. Compressor compartment
2. Electrical panel
3. Connector for keyboard or PC connection
4. Power input
5. Humidifier connections
6. Condensate drain
7. Functional spaces
8. Reheat coil (optional)
9. Treatment coil
10. F7 / Electronic filters (optional)
11. Standard G4 filters
12. Electric fan (supply - return)
13. Exhaust electric fan (CCK - CCKP version)
14. Lifting brackets (removable)
15. Outdoor air damper
16. Exhaust overpressure damper (CCK - CCKP version)
17. Access for coil - filter - heater inspection
18. Exhaust air recovery coil (only CCKP version)
19. Axitop (removable)
20. Gas module (to be connected to the unit during installation) (UNI ISO 228/1 - G 1 1/2")
21. Outdoor air return cap, accessory disassembled supplied

(R0) Horizontal air return
(R3) Downward air return (optional)
(M0) Horizontal air supply
(AE) Outdoor air intake (CBK - CCK - CCKP version)
(ES) Exhaust air (CCK - CCKP version)
(H1) Wall with same height as unit on a maximum of three sides
(*) Anti-vibration mount position
(**) Suggested minimum clearance

WEIGHT DISTRIBUTION

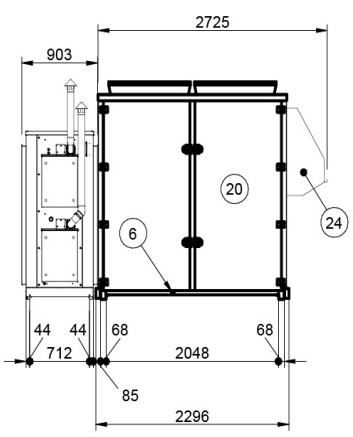
SIZE		90.4			100.4			110.4		
Configuration		**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**	**CAK/CBK**	**CCK**	**CCKP**
W1 Supporting point	kg	669	706	738	717	754	786	822	860	891
W2 Supporting point	kg	600	634	662	643	677	705	738	772	800
W3 Supporting point	kg	497	525	549	533	561	584	611	640	663
W4 Supporting point	kg	497	525	549	533	561	584	611	640	663
W5 Supporting point	kg	549	580	605	588	619	645	675	706	731
W6 Supporting point	kg	617	652	681	661	696	725	759	794	823
Operating weight	kg	3430	3622	3784	3674	3867	4029	4217	4411	4571
Shipping weight	kg	3430	3622	3784	3674	3867	4029	4217	4411	4571

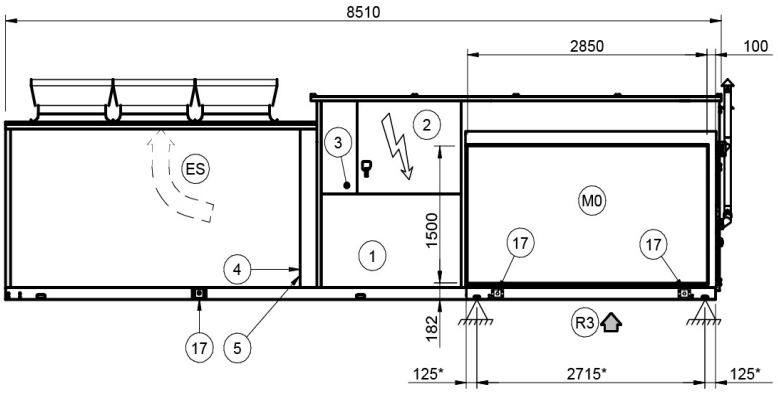
GAS MODULE WEIGHT DISTRIBUTION

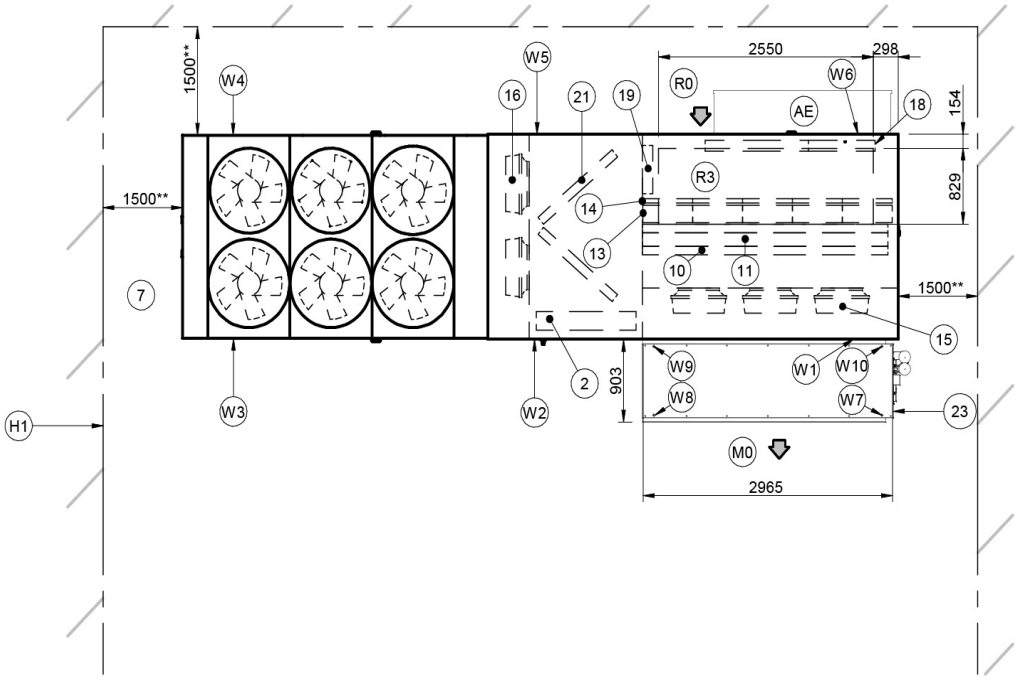
SIZE		90.4	100.4	110.4
W7 Supporting point	kg	155	155	155
W8 Supporting point	kg	110	110	110
W9 Supporting point	kg	110	110	110
W10 Supporting point	kg	155	155	155
Operating weight	kg	530	530	530
Shipping weight	kg	530	530	530

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings



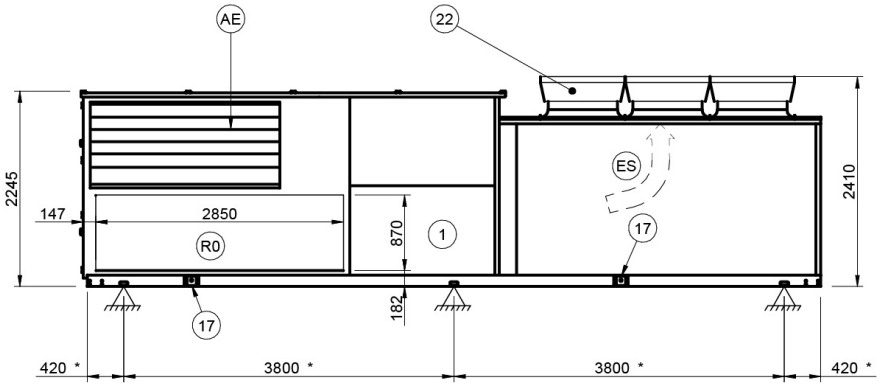




Size 90.4 - 100.4 - 110.4 Combustion module

Triple chamber (GC07X 300 kW)

DAA7V90.4_110.4_GC07X REV02
DATA/DATE 09/01/2019



1. Compressor compartment
2. Electrical panel
3. Connector for keyboard or PC connection
4. Power input
5. Humidifier connections
6. Condensate drain
7. Functional spaces
8. Reheat coil (optional)
9. Treatment coil
10. F7 / Electronic filters (optional)
11. Standard G4 filters
12. Electric fan (supply - return)
13. Exhaust electric fan (CCK - CCKP version)
14. Lifting brackets (removable)
15. Outdoor air damper
16. Exhaust overpressure damper (CCK - CCKP version)
17. Access for coil - filter - heater inspection
18. Exhaust air recovery coil (only CCKP version)
19. Axitop (removable)
20. Gas module (to be connected to the unit during installation) (UNI ISO 228/1 - 1xG 1 1/2" and 1xG 3/4")
21. Outdoor air return cap, accessory disassembled supplied

(R0) Horizontal air return
(R3) Downward air return (optional)
(M0) Horizontal air supply
(AE) Outdoor air intake (CBK - CCK - CCKP version)
(ES) Exhaust air (CCK - CCKP version)
(H1) Wall with same height as unit on a maximum of three sides
(*) Anti-vibration mount position
(**) Suggested minimum clearance

WEIGHT DISTRIBUTION

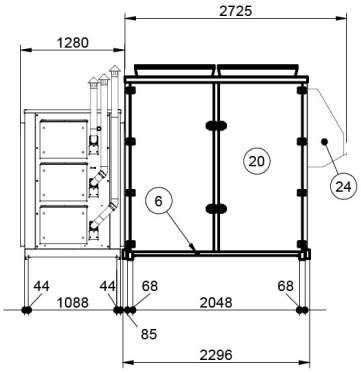
SIZE		90.4			100.4			110.4		
Configuration		CAK/CBK	CCK	CCKP	CAK/CBK	CCK	CCKP	CAK/CBK	CCK	CCKP
W1 Supporting point	kg	669	706	738	717	754	786	822	860	891
W2 Supporting point	kg	600	634	662	643	677	705	738	772	800
W3 Supporting point	kg	497	525	549	533	561	584	611	640	663
W4 Supporting point	kg	497	525	549	533	561	584	611	640	663
W5 Supporting point	kg	549	580	605	588	619	645	675	706	731
W6 Supporting point	kg	617	652	681	661	696	725	759	794	823
Operating weight	kg	3430	3622	3784	3674	3867	4029	4217	4411	4571
Shipping weight	kg	3430	3622	3784	3674	3867	4029	4217	4411	4571

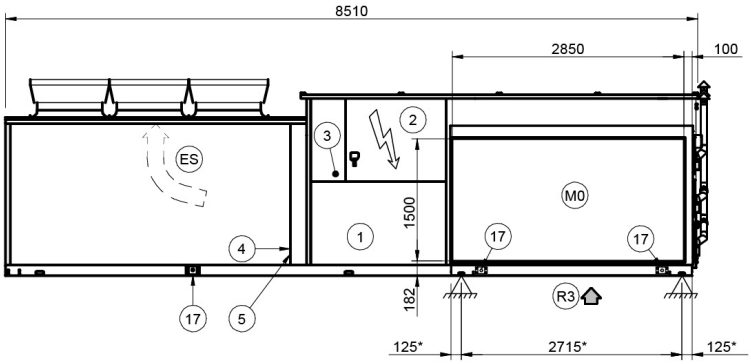
GAS MODULE WEIGHT DISTRIBUTION

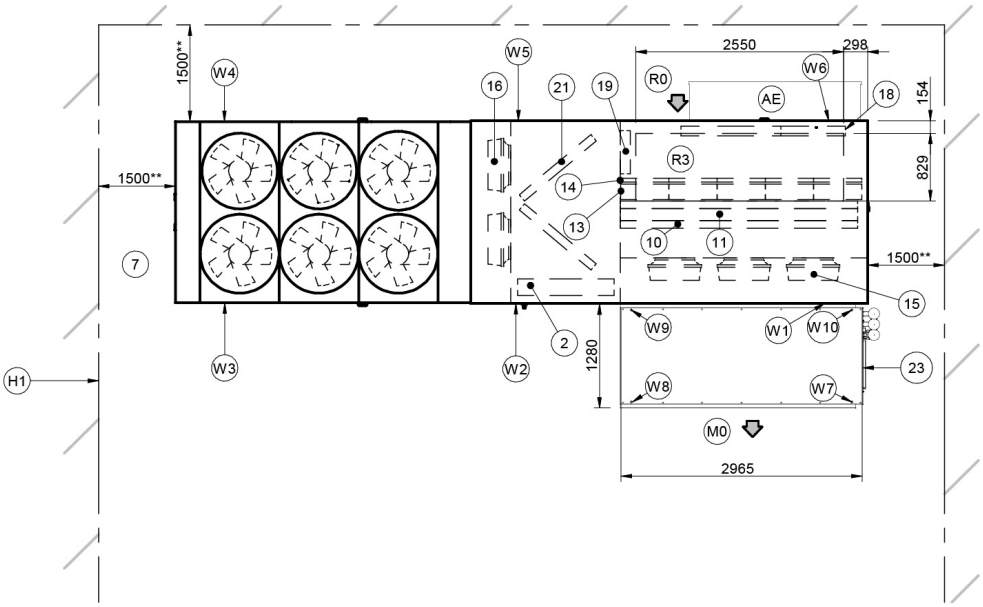
SIZE		90.4	100.4	110.4
W7 Supporting point	kg	190	190	190
W8 Supporting point	kg	165	165	165
W9 Supporting point	kg	165	165	165
W10 Supporting point	kg	190	190	190
Operating weight	kg	710	710	710
Shipping weight	kg	710	710	710

The presence of optional accessories may result in a substantial variation of the weights shown in the table.

Dimensional drawings







FOR OVER 30 YEARS, WE HAVE BEEN OFFERING SOLUTIONS TO ENSURE SUSTAINABLE COMFORT AND THE WELL-BEING OF PEOPLE AND THE ENVIRONMENT

www.clivet.com

sales and assistance

CLIVET SPA

Via Camp Lonc 25, Z.I. Villapaiera

32032 Feltre (BL) - Italy

Tel. +39 0439 3131 - Fax +39 0439 313300

info@clivet.it

A Group Company of Midea®