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Accessory Manual
D-EIOOC03206-26_02EN

AC Modular scroll unit

EWYK-QZ

Contents

1 MAIN OVERVIEW 3
1.1 Introduction 3
1.2 Accessories list 4
2 COMMUNICATION MODULES (MODBUS RTU , BACNET / IP , BACNET / MSTP) 5
3 SMART GRID READY BOX 6
4 INTELLIGENT PUMP MANAGER 7
5 INTELLIGENT SECONDARY MANAGER 8
6 DAIKIN ON SITE MODEM WITH M2M CARD DAIKIN ON SITE 9
6.1 Modem Kit 9
6.2 Electrical Connection 11
6.3 Mechanical Connection 13
6.3.1 Installation on DIN bar 13
6.3.2 Cable glands installation 14
6.3.3 Cables routing and antenna positioning 15
7 DIFFERENTIAL PRESSURE TRANSDUCER FOR VPF 16
7.1 Mechanical installation 16
7.2 Electrical installation 16
7.3 Software configuration 16
8 SINGLE POWER SUPPLY KIT UP TO 4 MODULES + PUMP 17
8.1 Electrical cabinet mechanical installation 18
8.1.1 Single power supply electrical connection 20
9 TEMPERATURE SENSOR FOR MUSE AND ICM CONFIGURATION 22
9.1 Mechanical installation 22
9.2 Electrical Connection: 22
9.3 Software configuration 22
10 TEMPERATURE SENSOR FOR DHW 23
10.1 Mechanical installation 23
10.2 Electrical connection 23
10.3 Software configuration 23
11 WATER FILTER 24
12 ANTI VIBRATION MOUNTS 25
13 MANIFOLD MODULE 26
13.1 Connection between manifold module and chiller unit 26
13.2 Connection between manifold module to plant water piping 27
14 PUMP MODULE 28
14.1 Mechanical installation 28
14.2 Handling of pump module 29
15 CONTAINER KIT 31
16 TRANSPORT KIT 32
17 PARALLEL AND SERIES CONNECTION KIT 33
18 PUMP CONNECTION KIT 35
19 REMOTE TOUCH PANEL 15.6” 36
19.1 Single unit connection 36
19.2 Unit array connection 36
20 IO MODULE FOR DHW HEATING APPLICATION 37
21 EXTERNAL TANK 38

1 MAIN OVERVIEW

1.1 Introduction

This manual provides the information for the correct installation of each accessory for EWYK-QZ units.

	***Read this manual carefully.***
	***All operation must be performed by authorised professional operator/technician.*** ***All activities have to be performed according to local laws and regulation.***
	***If all instruction contained in this manual are not clear, contact the manufacturer representative for advice and information.***
	***Make sure suitable tooling and work materials are available.***
	***All wiring must be performed by an authorised electrician and must comply with the national wiring regulations.*** ***Make electrical conncections to the fixed wiring.***

1.2 Accessories list

Below the list of the accessories.

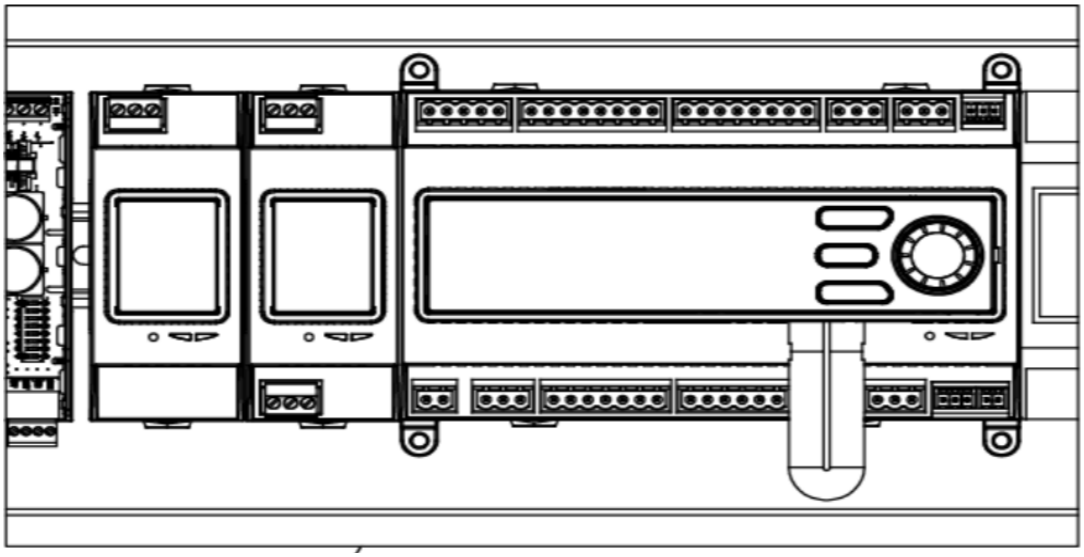
SAP CODE	DESCRIPTION
EKCM200J	MODBUS RTU COMMUNICATION MODULE
EKCMBACIP	BACNET/IP COMMUNICATION MODULE
EKCMBACMSTP	BACNET/MSTP COMMUNICATION MODULE
EKCMSGW	SMART GRID READY BOX
EKDIPM05	INTELLIGENT PUMP MANAGER FOR ICM 5 PUMPS
EKDIPM10	INTELLIGENT PUMP MANAGER FOR ICM 10 PUMPS
EKDISM	INTELLIGENT SECONDARY MANAGER FOR ICM
EKRSCSMP	KIT DOS ROUTER WITH ANTENNA FOR MODULAR UNIT
EKSCDP	DIFFERENTIAL PRESSURE TRASDUCER FOR VPF (MTO)
EKPWSPLY	SINGLE POWER SUPPLY KIT UP TO 4 MODULES + PUMP
EKTSMSP	Temperature sensor for MUSE and iCM conf
EKSCTDH	TEMPERATURE SENSOR FOR DHW
EKWTRFLTR3	WATER FILTER 3"
EKWTRFLTR5	WATER FILTER 5"
EKPMPRUBAVM	PUMP MODULE RUBBER ANTI VIBRATION MOUNTS
EKPMPSPRAVM	PUMP MODULE SPRING ANTI VIBRATION MOUNTS
EKRUBAVM	UNIT RUBBER ANTIVIBRATION MOUNTS
EKSPRAVM	SPRING ANTI VIBRATION MOUNTS
EKMNFLD3	MANIFOLD MODULE 3"
EKMNFLD5	MANIFOLD MODULE 5"
EKPMPLOW1	PUMP MODULE WITH VFD LOW LIFT 1
EKPMPLOW2	PUMP MODULE WITH VFD LOW LIFT 2
EKPMPLOW3	PUMP MODULE WITH VFD LOW LIFT 3
EKPMPLOW4	PUMP MODULE WITH VFD LOW LIFT 4
EKPMPLOW5	PUMP MODULE WITH VFD LOW LIFT 5
EKPMPLOW6	PUMP MODULE WITH VFD LOW LIFT 6
EKPMPHGH1	PUMP MODULE WITH VFD HIGH LIFT 1
EKPMPHGH2	PUMP MODULE WITH VFD HIGH LIFT 2
EKPMPHGH3	PUMP MODULE WITH VFD HIGH LIFT 3
EKPMPHGH4	PUMP MODULE WITH VFD HIGH LIFT 4
EKPMPHGH5	PUMP MODULE WITH VFD HIGH LIFT 5
EKPMPHGH6	PUMP MODULE WITH VFD HIGH LIFT 6
EKPMPHGH7	PUMP MODULE WITH VFD HIGH LIFT 7
EKCONTKIT	CONTAINER KIT
EKTRANSKIT	TRANSPORT KIT
EKMODPAR3	PARALLEL CONNECTION KIT 3"
EKMODPAR5	PARALLEL CONNECTION KIT 5"
EKMODSER3	SERIES CONNECTION KIT 3"
EKCONNPMP3	PUMP CONNECTION KIT 3"
EKCONNPMP5	PUMP CONNECTION KIT 5"
EKRTPH	Remote Touch Panel 15.6"
EKIODHW	IO module for DHW heating application
EKTANK500	EXTERNAL TANK WITHOUT CABINET (500 L)
EKTANK1000	EXTERNAL TANK WITHOUT CABINET (1000 L)
EKTANK500C	EXTERNAL TANK WITH CABINET (500 L)
EKTANK1000C	EXTERNAL TANK WITH CABINET (1000 L)

2 COMMUNICATION MODULES (MODBUS RTU , BACNET / IP , BACNET / MSTP)

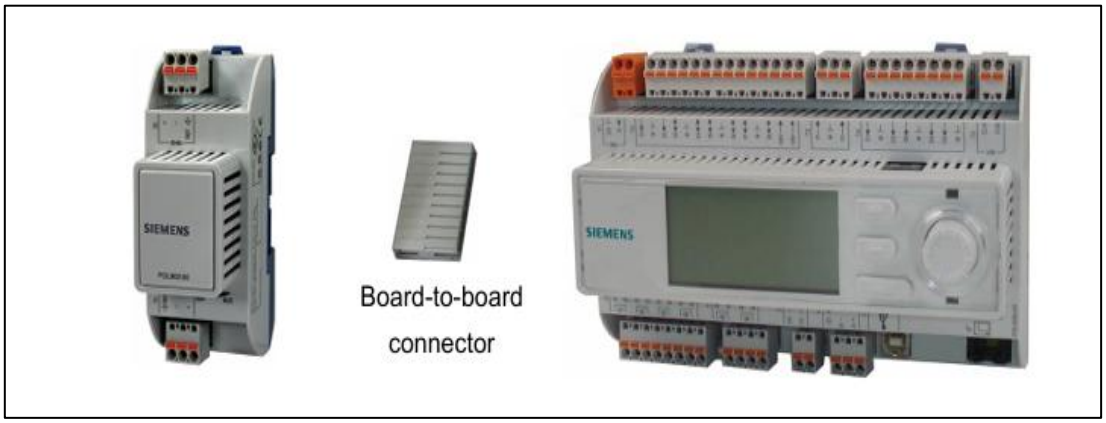
Any of the following modules can be connected directly to the left side of the main controller to allow a BAS or other remote interface to function. The controller should automatically detect and configure itself for new modules after booting up. Removing modules from the unit will require manually changing the configuration.

Module	Siemens Part Number
Modbus RTU	POL902.00/MCQ
BACnet/MSTP	POL904.00/MCQ
BacNet/IP	POL908.00/MCQ

For electrical installation refer to the photo below:



These modules must be connected to the left of the controller (UC) using the board to board connection as shown in the Siemens supplier manuals:



For electrical connection details, refer to the unit's wiring diagram.

3 SMART GRID READY BOX



Ensure the Smart Grid Ready Box installation is carried out outside the flammable zone. Please refer to the unit's Installation, Operation, and Maintenance manual to identify the flammable zone for your specific installation.

The gateway box is an accessory needed to allow the proper communication between units and an interface-compatible system components in accordance with Smart Grid applications.
To enable Smart Grid functionalities please refer to instructions showed in the unit's Operating Manual.
Specific mechanical and electrical installation notes can be found in Smart Grid Ready Box Installation & Operating Manual **D–EIOCP00301-23**.

4 INTELLIGENT PUMP MANAGER

iPM© (Intelligent Pump Manager) is a control panel that can manage only manifolded pump systems and water circuit devices such as Pumps, Header Bypass Valve and Sensors on Evaporator or Condenser side of Daikin Units.
iPM© has two different hardware configurations:

- iPM05: management up to five pumps.
- iPM10: management up to ten pumps.

iPM© is an "*accessory"* of Daikin Units and it can be used in conjunction with iCM© (Intelligent Chiller Manager Software Option 184).
To work, iPM© must be connected in the Controller communication network of the Daikin Unit (Daikin Communication Network: DCN).

For further details on the iPM accessory, please refer to specific documentation **D-EOMOC00710-21.**

5 INTELLIGENT SECONDARY MANAGER

iSM© (Intelligent Secondary Circuits Manager) is a control panel that can manage secondary water circuit devices such as Pumps, Bypass Valve, Sensors and Energy Meters in a building water distribution system.
iSM© is an "*accessory"* of Daikin Units and it can be used as standalone panel or in conjunction with iCM© (Intelligent Chiller Manager Software Option 184).
iSM© can manage secondary circuit, working locally or communicating with a BMS (Building Management System).
iSM© can be connected in the controller communication network of the Daikin Unit (Daikin Communication Network: DCN) and communicating with iCM©, sharing the most important information of secondary circuit management. Up to three iSM© can be connected to each other and the iSM©, elected as Master, can be connected to DCN.

For further details on the iSM accessory, please refer to specific documentation **D-EOMOC00907-22.**

6 DAIKIN ON SITE MODEM WITH M2M CARD DAIKIN ON SITE

Daikin on site kit can be used to connect the unit to Daikin on site cloud. Cloud connection offers the possibility to monitor and control the unit by remote. In order to enable Daikin On Site, refer to instructions showed in the Operating Manual.
DOS is incompatible with Remote touch panel accessory EKRTPH

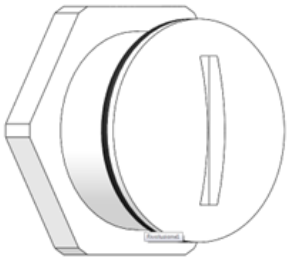
6.1 Modem Kit

Modem Teltonika Kit is used to establish the connection to Daikin On Site.

Main components

		
Router rut241 global esim	2 x mobile magnetic sma antenna - pr1ks210	Wi-fi antenna swivel, rp-sma male - pr1urf51
		
Ethernet cable (1.5 m)	SIM Adapter kit	Quick Start Guide
		
4 pin power supply - PR2FK20M	Compact din rail kit - PR5MEC11	Packaging box

Additional components

			
Power supply MEAN WELL AC/DC 10W	SIM DAE-Sparkle	2 Cable glandes CEMBRE 1910-m16	Cap CEMBRE M16

The kit consists of different types of antennas. In particular, with reference to the previous figures:

- 1x Wi-Fi swivel antenna, RP-SMA male (PR1URF51)
- 2x LTE mobile magnetic SMA antenna (PR1KS210)

Antenna placements starting from the left:

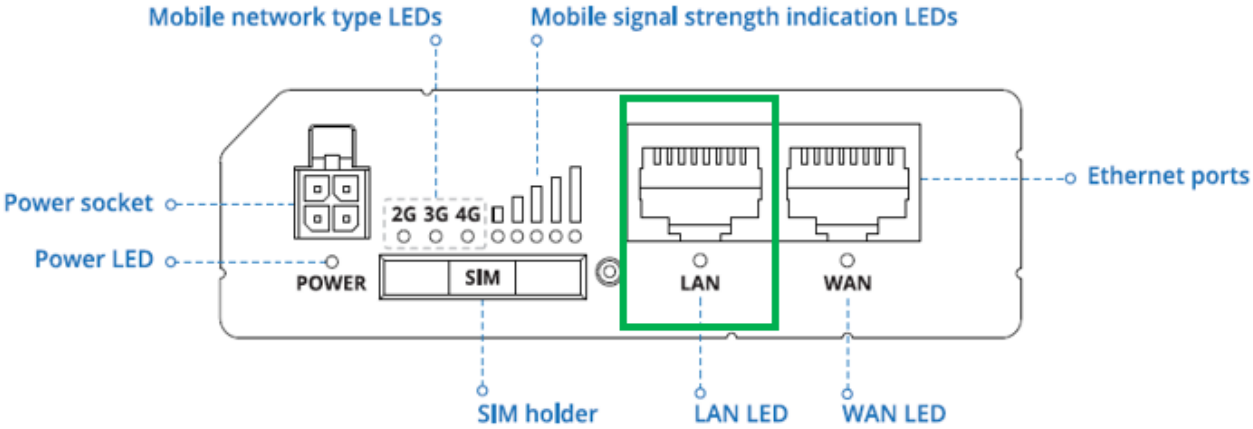


- The WiFi antenna included in the Teltonika RUT241 kit will be connected to the SMA male “WiFi” connector
- One of the 2 LTE SMA ANTENNA (PR1KS210) stick antennas must be connected to the central “Mobile” SMA female connector.
- The SMA ANTENNA connector (PR1KS210) will be connected to the right “Mobile” SMA female connector.
- To transport the electrical panel and the unit, place the additional antenna and the cable gland inside the electrical panel. The hole must be plugged with the relevant IP68 cap. and black (-) cable to the power supply, respecting the polarity, while the other two cables must be appropriately insulated (e.g. with heat shrink or on the terminal block if the cable is originally equipped with it).

The passage of the antenna connection cable with the router must avoid as much as possible overlaps with cables on which the driving signals of inductive loads travel (coils, relays, etc.), in order to reduce any disturbances to a minimum.

6.2 Electrical Connection

The data connection between Router and C600 will be made using a network patch cable of category 5S or higher also included in the Teltonika kit.This connection on the Teltonika RUT240 Router side must be made by connecting the cable exclusively to the port indicated as "LAN" ; connect the cable to the Ethernet port on the C600 side.

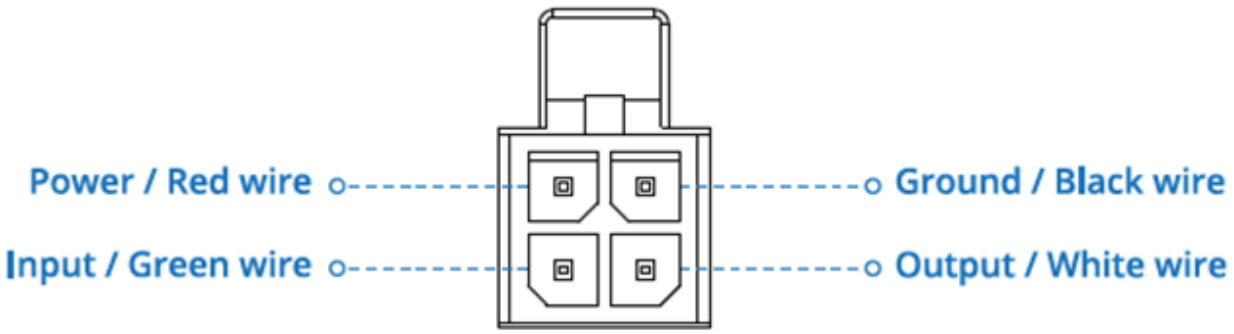




The power will be supplied via an additional power supply MEAN WELL AC/DC 10W at 12Vdc and brought to the Router via connection using the appropriate 4-pin Tamiya connector included in the Teltonika Kit and indicated in the Teltonika Router Components table as "4 pin power supply - PR2FK20M".

It will be sufficient to connect only the red (+) and black (-) cable to the power supply, respecting the polarity, while the other two cables must be appropriately insulated (e.g. with heat shrink or on the terminal block, if the cable is originally equipped with it).

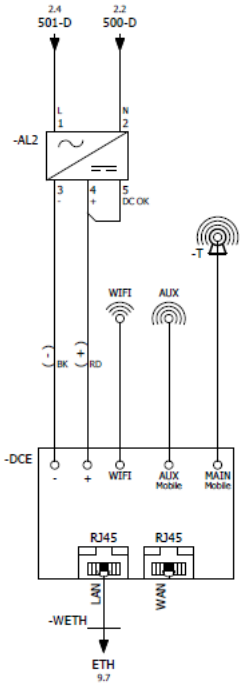
POWER SOCKET PINOUT



The power supply for the MEAN WELL AC/DC 10W power supply can be taken from the auxiliary voltage of the machine (115Vac or 230Vac).
The modem router will be installed on a din rail using the appropriate adapter and screws included in the Teltonica kit " Compact din rail kit - PR5MEC11".

The data connection between the router and the unit's POL688/C400 controller will instead be made via a network patch cable of category 5S or higher. Where the connection distance allows it, the one included in the Teltonika kit can be used, indicated in the Teltonika Router Components table as " Ethernet cable (1.5 m)". Evaluate whether it is of sufficient length or replace it with a suitable one. This connection on the Teltonika RUT241 router side must be made by connecting the cable exclusively to the port indicated as "LAN".

The following diagram illustrates how to connect the components.
For further details and the latest updates, please refer to the unit's wiring diagram.



6.3 Mechanical Connection

Ensure that the electrical control panel is disconnected from the power supply before carrying out any operation

Installation must be performed by qualified personnel only

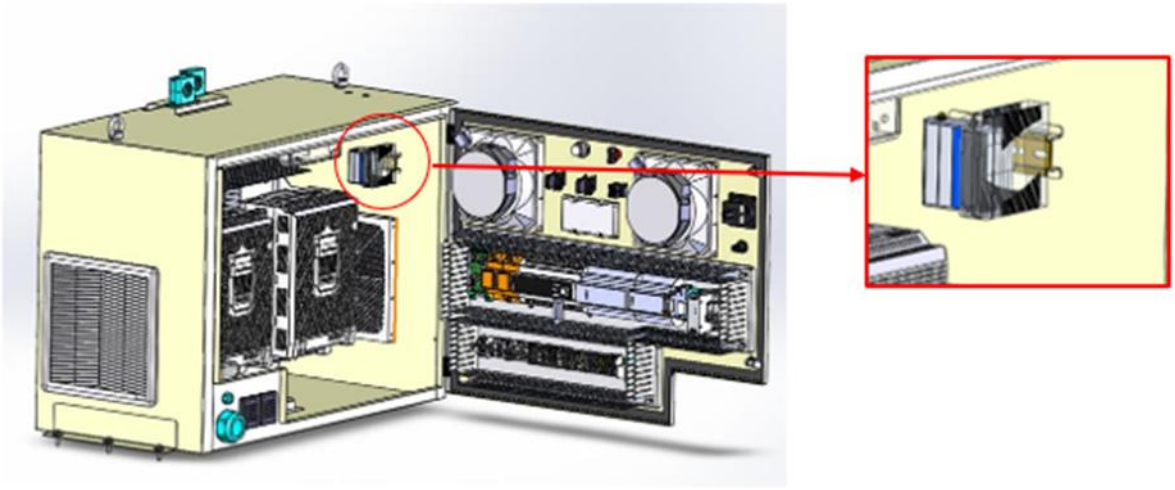
Observe the specified tightening torques to prevent damage or loosening

To ensure proper installation, make sure the following items are available:

- Device with corresponding power supply unit
- Cable glands, model 1910.M16, supplied with the kit
- Cable ties
- Torque wrench (measuring range ≥ 5 Nm)

6.3.1 Installation on DIN bar

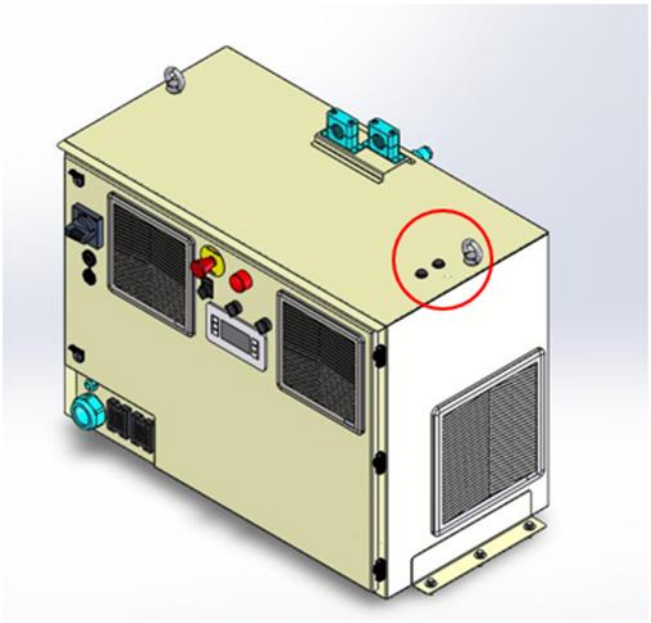
Once located the DIN rail inside the electrical panel, install the device together with its corresponding power supply unit onto the DIN rail, ensuring it is securely fastened.



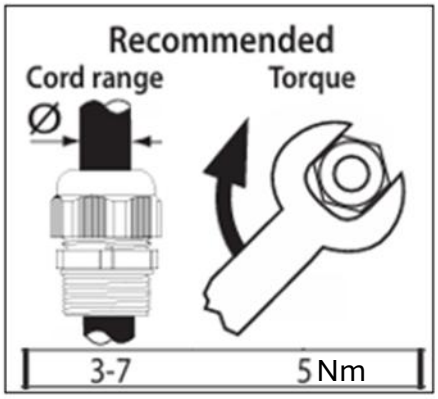
DIN rail location

6.3.2 Cable glands installation

1. Locate the pre-drilled holes on the top of the electrical panel, closed with M16 plugs and locking nuts.
2. Unscrew the M16 plugs.
3. Store the plugs and their corresponding nuts inside the panel for future use

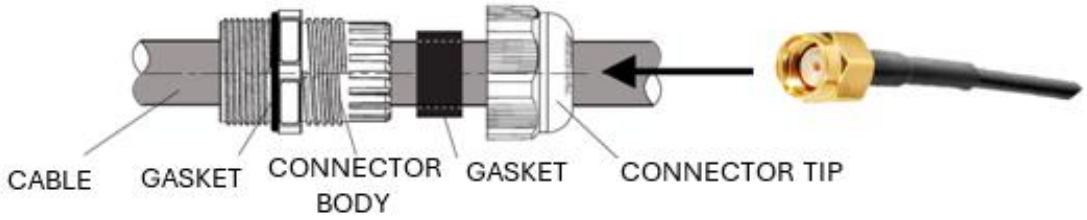


Holes location



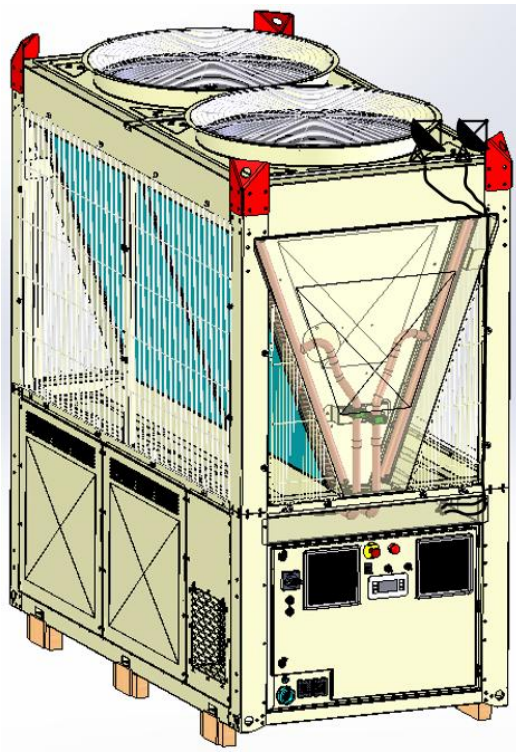
Nominal torque for cable glands

4. Insert the SMA connectors into the 1910.M16 cable glands, observing the orientation shown in the reference figure.
5. Position the cable glands into the holes on the top of the panel.
6. Use the previously removed nuts for fastening.
7. Tighten the cable glands to a torque of 5 Nm.



6.3.3 Cables routing and antenna positioning

1. Route the cable through the control panel cover plate.
2. Guide the cabling along the side of the grid.
3. Secure the cable to the structure using cable ties, ensuring it is stable and free of tension.
4. Position the device on the fan deck.
5. Secure it using the supplied magnets, checking proper adhesion and stability.



7 DIFFERENTIAL PRESSURE TRANSDUCER FOR VPF

7.1 Mechanical installation

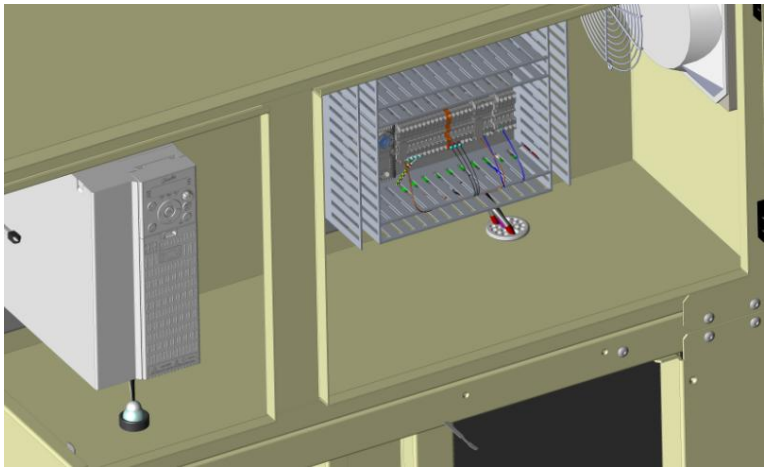
The differential pressure transducer can be installed on the system according to client requirements. Provide the connections to the system piping in accordance with the following guidelines:

- Connect the high-pressure transducer downstream of the pumping module
- Connect the low-pressure transducer to the inlet piping of the pumping module

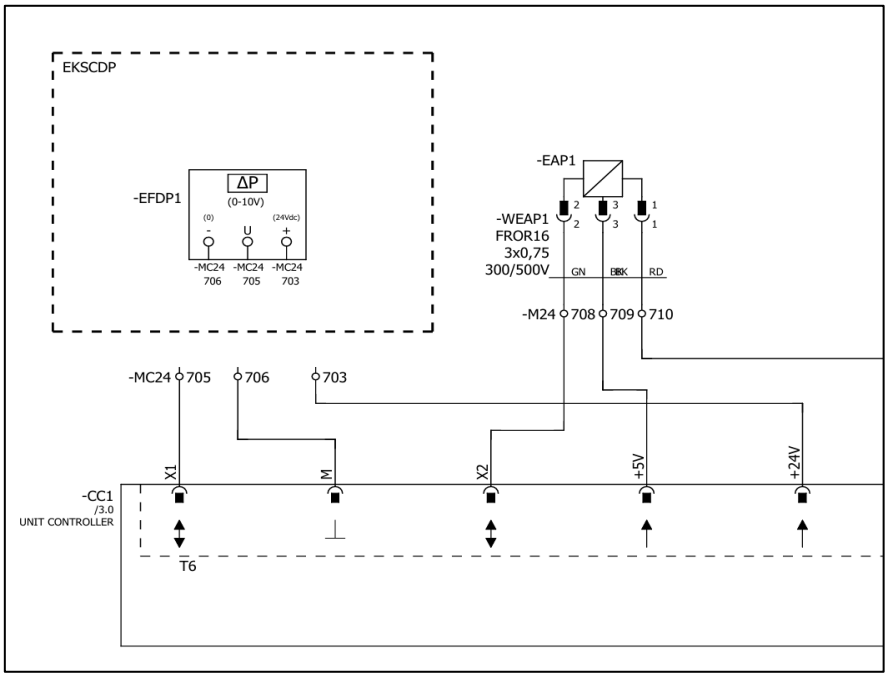
The component must be necessarily installed outside of the flammable zone, Please refer to the unit's Installation, Operation, and Maintenance manual to identify the flammable zone for your specific installation.

7.2 Electrical installation

The differential pressure transducer electrical cable must be laid inside the machine together with the bundle already present for the other auxiliary & control cables, if possible, securing it with cable ties.
To enter the cable inside the electrical panel, a spare hole in the multi-hole membrane positioned on the base of the panel must be used. This membrane is also used to route other control cables, as shown in the photo below:



The transducer must be connected to the POL985 present in the electrical panel referring to the pumpskid wiring diagram on page 8, as shown in the photo below:



7.3 Software configuration

For the software configuration and control of VPF please refer to specific documentation D-EIOOC00410-22 Variable Primary Flow

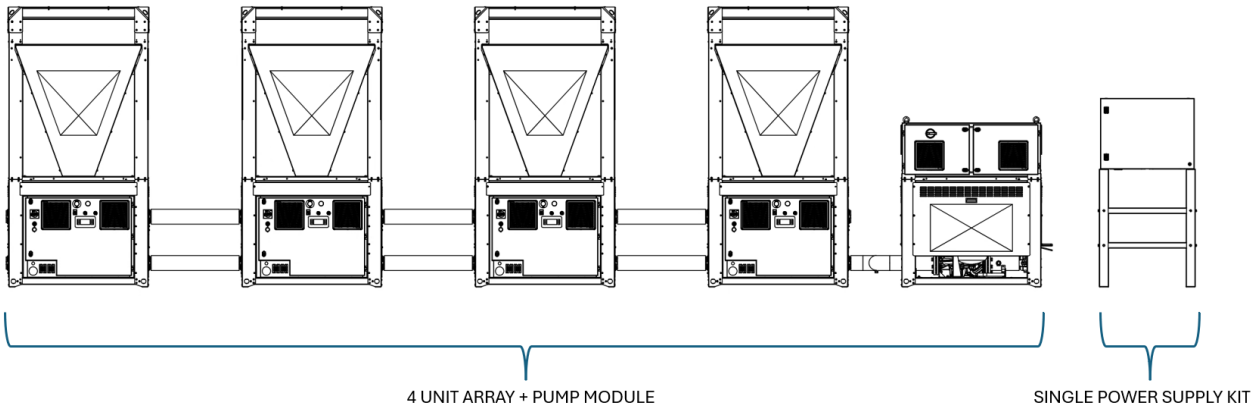
8 SINGLE POWER SUPPLY KIT UP TO 4 MODULES + PUMP

All the electrical connections to the unit must be carried out in compliance with national laws and european directive and regulations in force.
The connections to the terminals must be made with copper terminals and cables, otherwise overheating or corrosion may occur at the connection points with the risk of damaging the unit. The electrical connection must be carried out by qualified personnel, in compliance with the laws in force. there is a risk of electric shock.

Failure to disconnect power before servicing could result in death or serious injury.
Disconnect all electric power, including remote disconnects before servicing. follow proper lockout/ tagout procedures to ensure the power can not be inadvertently energized. Verify that no power is present with a voltmeter.

Before any installation and connection works, the unit must be switched off and secured. Since this unit includes inverters, the intermediate circuit of the capacitors remains charged with high voltage for a short period of time after being switched off.
Do not operate to the unit before 20 minutes after the unit has been switched off.

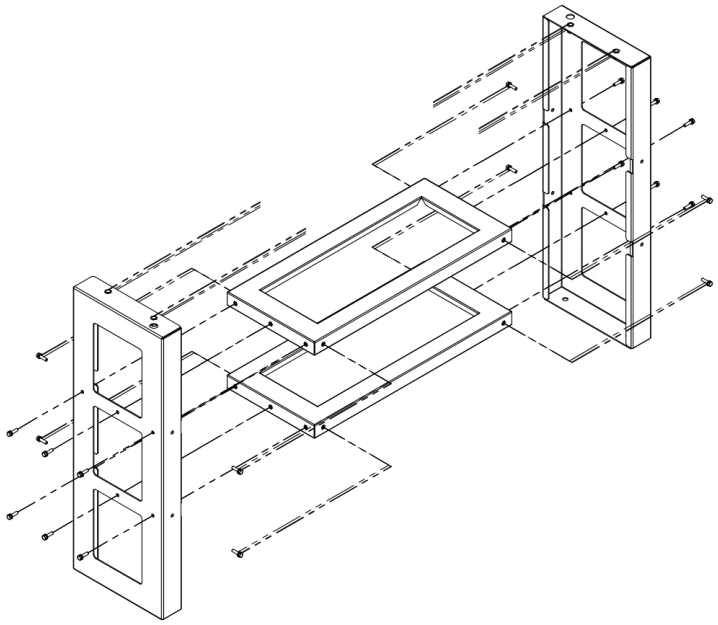
Unit modules and pump modules can be electrically connected through the single power supply kit. The kit comprises an electrical cabinet and a specific metal bracket.
The position of the kit relative to the array shown in the following image is for illustrative reference only.
The Electrical cabinet must not be located within the flammable zone, whereas there is no restriction for the mounting base.
Taking, for example, the case of a single-unit installation, the electrical cabinet may be located within the perimeter of the flammable zone, provided it is positioned at a height of more than 30 cm above the unit's base surface as it is located within the non-restricted area.

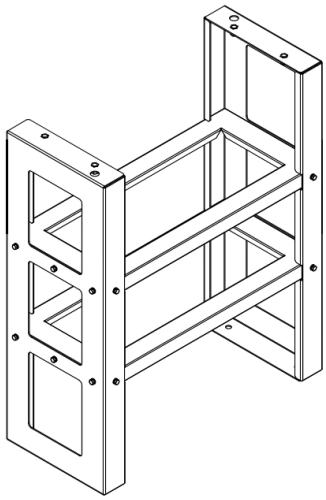


Ensure the <u>Electrical Cabinet</u> installation is carried out outside the flammable zone. Please refer to the unit's Installation, Operation, and Maintenance manual to identify the flammable zone for your specific installation.

8.1 Electrical cabinet mechanical installation

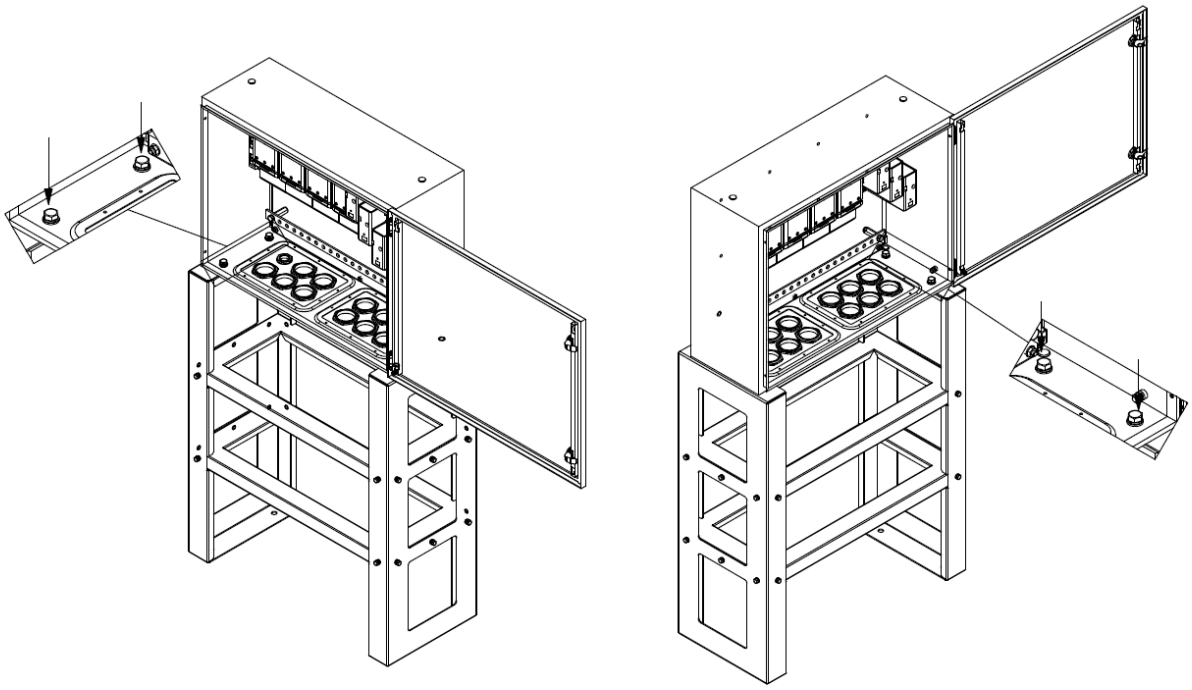
The single power supply kit will be shipped unassembled and must be mounted on-site.
The support consists of 4 parts that must be assembled using the provided M12 screws, as shown in the following image.



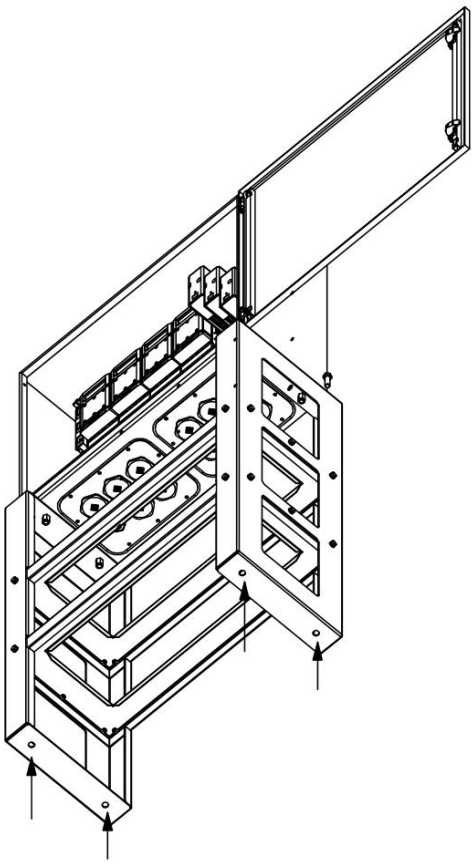


Once the assembly of the support is complete, the electrical panel can be positioned on top of it.

The fastening of the electrical panel to the support must be carried out using four M12 screws, as shown in the figure.



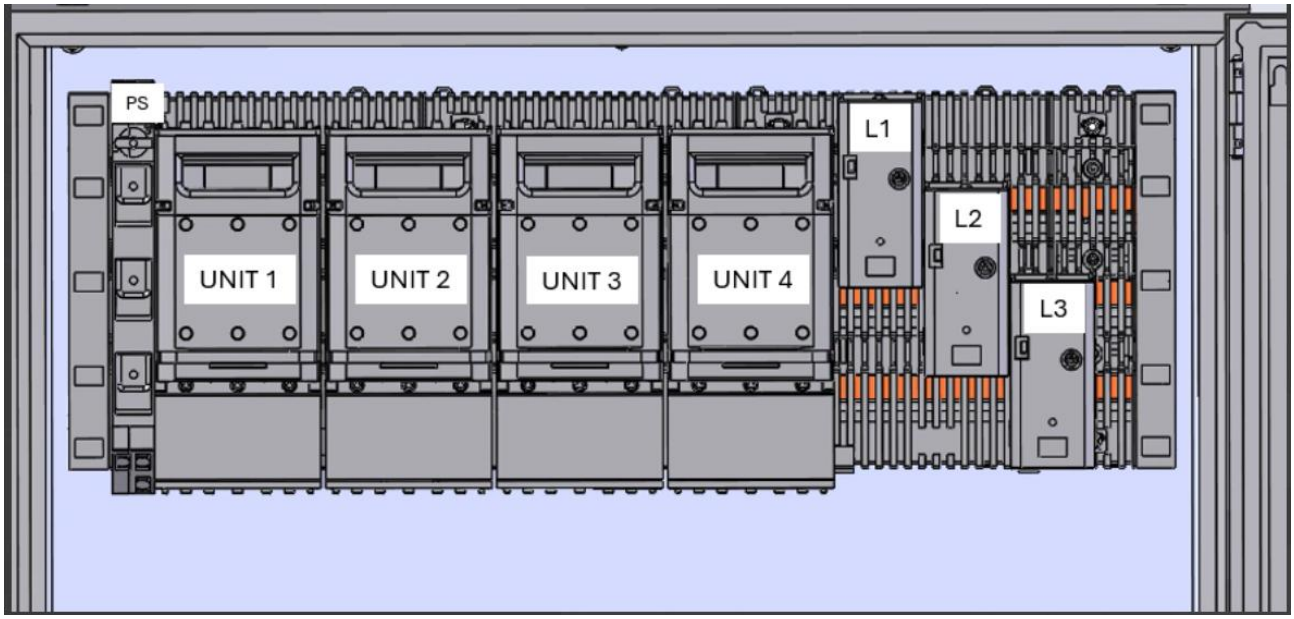
The lower part of the support features four 16mm diameter holes for floor mounting. Ensure the structure is securely fastened to the ground.



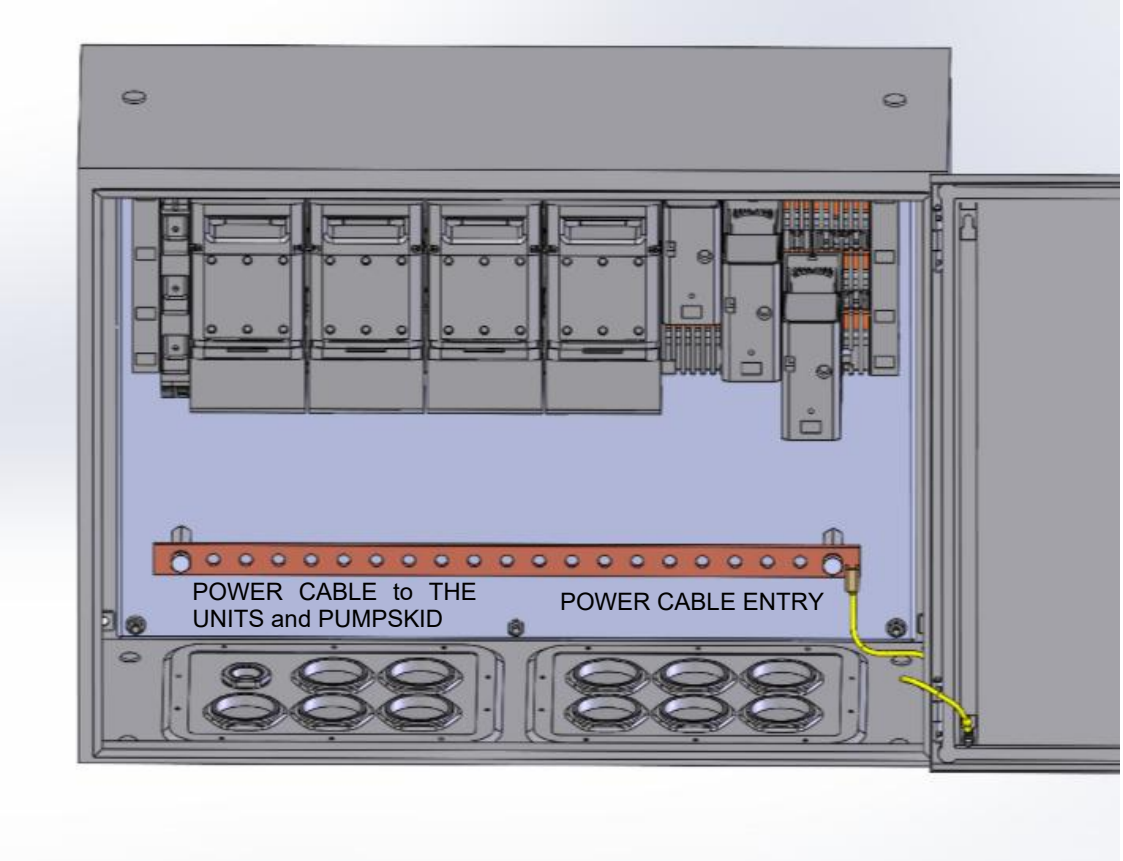
8.1.1 Single power supply electrical connection

The power supply of the electrical panel for the single power supply, as declared for the units in the Installation, Operation, and Maintenance manual, must be 3PH + PE 400V +-10% 50/60Hz.

The connection terminals for the electrical panel power supply are labeled L1,L2,L3 as shown in the photo below:



For the power cable entry use the 6 holes provided under the L1,L2,L3 terminals as shown in the photo below:



The holes are M63 and IP68 cable glands must be used for entry cables. The maximum connectable cross-section is 2 300m2 single core cables for each terminal. Alternatively, the connection cross-section can be calculated based on the maximum current of the array to be powered.
An M63 cable gland is suitable for a 300mm2 single-core cable, if smaller cables are used it is necessary to provide reductions.

The PE ground cable must be connected to the bottom ground bar visible in the photo above using an M63 hole in the left flange for the cable entry. An IP68 cable gland must also be used for the ground cable. The cross-section of the ground cable must be half the cross-section of the phase cable.

The power cables to the units must be connected to the corresponding fuse holders labeled as shown in the first photo (unit1, unit2, unit3, unit4, pumpskid-PS).
For the cable outlets to the array units, you must use 4 M63 holes for the machines and 1 M32 hole for the pumpskid

Below is a detail of the cables to be used to power the units from the single power supply electrical panel:

- Unit: 70 mm² multi-core cable with yellow/green. IP68 M63 cable gland
- Pumpskid: 16 mm² multi-core cable with yellow/green. IP68 M32 cable gland

The ground terminals of the multi-core cables must be connected to the ground bar at the bottom of the single-power-supply electrical panel

This electrical panel supply non-linear loads, which have a natural current leakage to earth. If an Earth Leakage Detector is installed upstream the panel, a type B device with a minimum threshold of 300 mA must be used.

This product complies with EMC standards for industrial environments. Therefore, it is not intended for use in residential areas, e.g. installations where the product is connected to a low voltage public distribution system. This product needs to be connected to a low voltage public distribution system, specific additional measures will have to be taken to avoid interference with other sensitive equipment.

This electrical panel must be connected to a TN power supply system.
If the units need to be connected to a different type of power system, for example the IT system, please contact the factory.

9 TEMPERATURE SENSOR FOR MUSE AND ICM CONFIGURATION

MUSE AC can manage up to four Air-Cooled Scroll Modular R290 units as a single air-cooled unit.
The modular unit array can be configured in two different layouts

- Series
- Parallel

MUSE can also be combined with iCM, enabled through Option 184. In this configuration, the unit designated as MUSE continues to manage its own modular array and can operate either as iCM Master or iCM Slave, according to the overall plant architecture. Each MUSE-controlled array shall be equipped with its own common leaving water temperature sensor.
For MUSE configuration, the common leaving water temperature sensor is mandatory and shall be connected to the controller acting as MUSE.
For MUSE + iCM configuration, the sensor shall be connected to the controller acting as MUSE + iCM Master or MUSE + iCM Slave, according to the specific subsystem configuration. If additional iCM system temperature sensors are required by the selected iCM architecture, their connection and position shall comply with the iCM Installation, Operation, and Maintenance and the unit wiring diagram.
For detailed MUSE requirements, refer to **D-EIMOC03705-26.**
For detailed iCM requirements, refer to **D-EOMOC00610-21.**

9.1 Mechanical installation

The common leaving water temperature sensor shall be installed in a position suitable to measure the supply water temperature of the system controlled by MUSE or MUSE + iCM.
The sensor shall be installed on the common leaving water pipe / supply header of the modular array, upstream of any bypass pipe, buffer tank or common header that decouples the primary circuit from the secondary circuit.
For MUSE applications, the sensor shall measure the common leaving water temperature of the modular array.
For MUSE + iCM applications, each MUSE-controlled array shall have its own common leaving water temperature sensor installed on the corresponding supply header.
For the recommended sensor position, refer to specific documentation **D-EIMOC03705-26_MUSEAC**.
For iCM system layouts and additional system sensor requirements, refer to specific documentation **D-EOMOC00610-21_iCM**.

9.2 Electrical Connection:

Route the probe connection cable inside the electrical panel by passing it through the multi-cable entry plates.
The common leaving water temperature sensor shall be connected to the controller acting as MUSE or MUSE + iCM, using the customer terminal block dedicated to the MUSE temperature sensor. Refer to the unit wiring diagram for terminals enumeration.

		End1	End2
EWYK-QZ	Common leaving water temperaure	X5 [T9]	M

9.3 Software configuration

After completing the electrical and mechanical installation of the sensor, configure the controller according to the selected system architecture.
For MUSE configuration, enter: **Commission Unit** → **Configuration** → **MUSE Configuration** and set the following parameters:

- **MU Addr**: set **MU1 + MUSE** on the unit acting as MUSE. Set the other modular units as **MU2, MU3** or **MU4**, according to the array configuration
- **Num of Units**: set the number of modular units managed by the MUSE controller
- **Layout**: select **Parallel** or **Series**, according to the hydraulic layout of the modular array
- **CmnLWTSnsType**: set according to the installed common leaving water temperature sensor. When MU Addr = MU1 + MUSE, this parameter is automatically set to **ATEX**

Once the required parameters are configured, set Apply Changes = Yes to restart the controller and apply the configuration.
If the common leaving water temperature sensor is not connected or not correctly configured, the MUSE controller may generate a sensor alarm, and the MUSE logic may not operate correctly.
For MUSE + iCM configuration, configure first the MUSE subsystem as described above. Then configure the iCM system according to specific documentation **D-EOMOC00610-21_iCM**.
For detailed software configuration of MUSE, refer to specific documentation **D-EIMOC03705-26_MUSEAC**.
For detailed software configuration of iCM, refer to specific documentation **D-EOMOC00610-21_iCM**.

10 TEMPERATURE SENSOR FOR DHW

In case of Domestic Hot Water option, the control system is improved to manage a secondary circuit to produce domestic hot water. The water is stored in a tank and its temperature is controlled by one immersion probe.

10.1 Mechanical installation

Temperature probe must be installed in the tank following the guidlines in the specific manual **D-EIOOC00210-21 DHW Management**

10.2 Electrical connection

Route the probe connection cable inside the electrical panel by passing it through the multi-cable entry plates.
The DHW temperature sensor shall be connected to the, using the expansion terminal block AB dedicated to the DHW. Refer to the unit wiring diagram for terminals enumeration.

		End1	End2
POL965 (AB)	DHW temperature probe	X4	M

10.3 Software configuration

For the software configuration and control of DHW please refer to specific documentation **D-EIOOC00210-21 DHW Management**

11 WATER FILTER

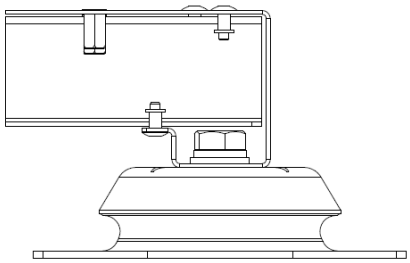
A water filter or a device that can remove particles from the liquid and is mandatory at the entry of the evaporator/condenser. When the manifold module is equipped, the water filter shall be mounted upstream the manifold module.
This filter can be supplied as accessory with the unit by DAE.
The use of a filter extends the life of the BPHE and pump and helps to keep the water system in a better condition. The water filter must be installed as close as possible to the unit. If the water filter is installed in another part of the water system, the Installer must guarantee the cleaning of the water pipes between the water filter and the BPHE.
The filter can be installed at the entrance of the pump when it is placed on the water inlet pipe, only if the cleanliness of the water installation between the pump and the evaporator is guaranteed.
Two kind of water filters can be supplied by DAE:

- 3” water filter
- 5” water filter

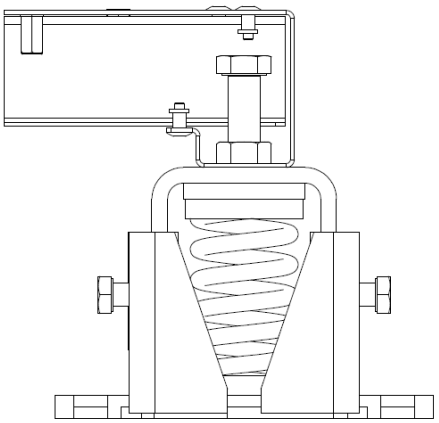
The size of the water filter depends on the diameter of the water pipe/manifold.
The opening for strainer mesh is 1.0 mm.
Please refer to the Installation, Operation, and Maintenance manual for the EKWTRFLTR3 and EKWTRFLTR5 filter kit pressure drop curves

12 ANTI VIBRATION MOUNTS

Unit and pump module must have the same type of antivibration mounts (rubber AVM or sping AVM).
The model and positioning of the anti-vibration mounts are specified in the proper pump module dimensional drawing.



RUBBER AVM



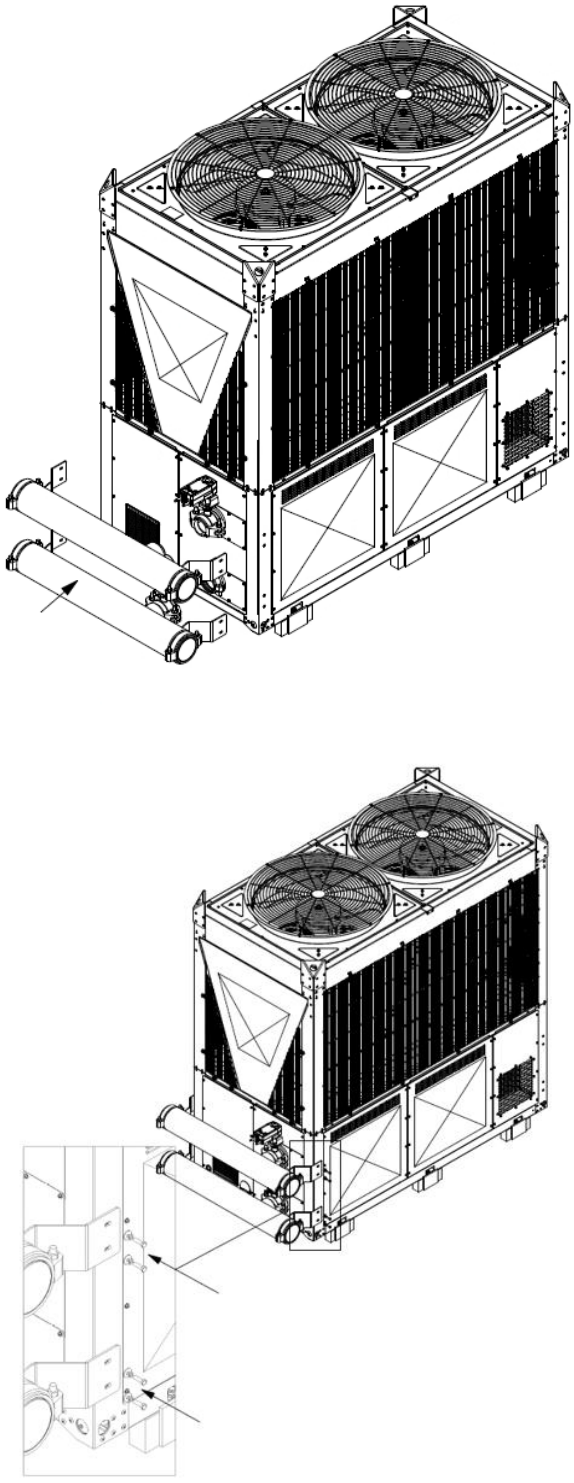
SPRING AVM

13 MANIFOLD MODULE

In case of modular application, the units shall be connected on the water side through manifold modules. The manifold allows the connection between the unit heat exchangers and the customer plant.

13.1 Connection between manifold module and chiller unit

The assembly of the manifold must be carried out slowly and carefully to avoid damaging the components. Once it is brought close to the piping, it must be fixed laterally to the unit's uprights using 4 M8 screws; finally, the Victaulic valve with the electromechanical actuator, which comes as standard on the unit, must be secured.



Connection instructions between chiller and manifold modules

After installation of manifold module and before connection to the chiller module, it is important to clean and remove welding oxides and other contamination products deriving during production of the water piping.

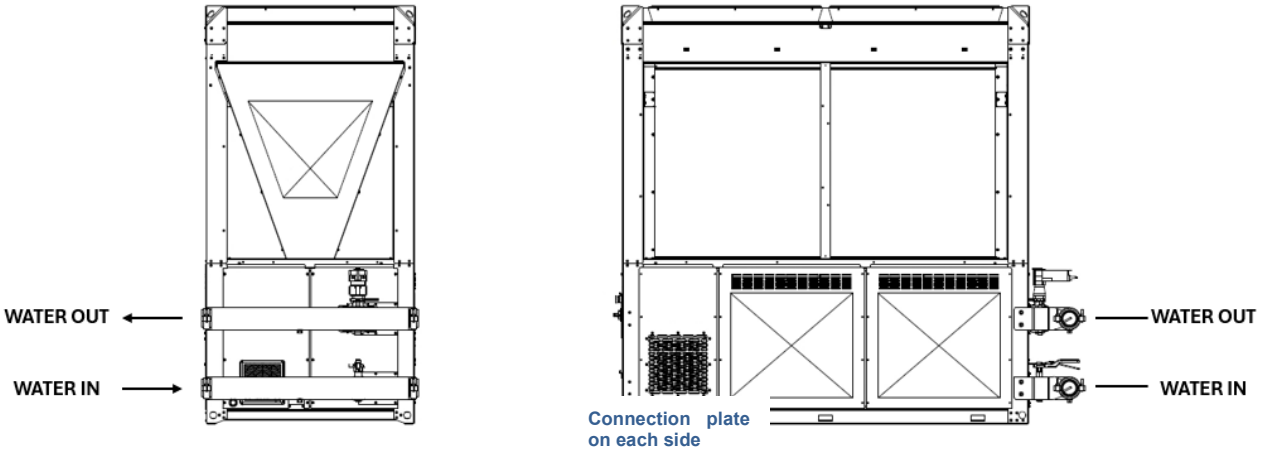
The cleaning steps are the following:

1. Flush the pipes with a solution of hot water and a mild detergent.
2. Flush with a dilute solution of phosphoric acid
3. Stop the cleaning when no more debris are visible
4. After the cleaning, flush the pipes for one hour with cold water to remove any residue

All the cleaning liquids, acids, and detergents must be compatible with stainless steel, copper, and carbon stee x 4 a professional water treatment specialist when in doubt.

13.2 Connection between manifold module to plant water piping

The EWYK-QZ series works with co-current evaporator and counter-current condenser. Thus the water inlets is always in the bottom pipe and water outlet in top pipe.



As reported in the previous picture, the water connection can be done from each side, there are no indication about constrain on right / left side.

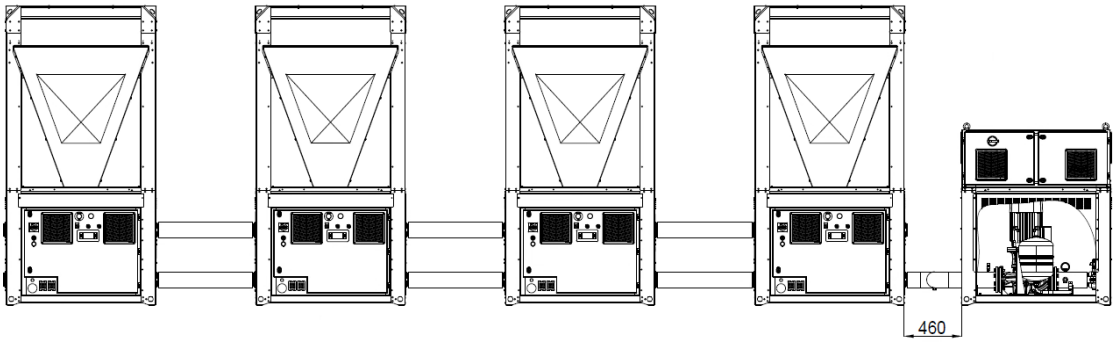
The only constraint to be respected in the water connection is the pipe where the water need to enter / leave the system (as in case of pump module). The top pipe is the water outlet while the bottom pipe is the water inlet

14 PUMP MODULE

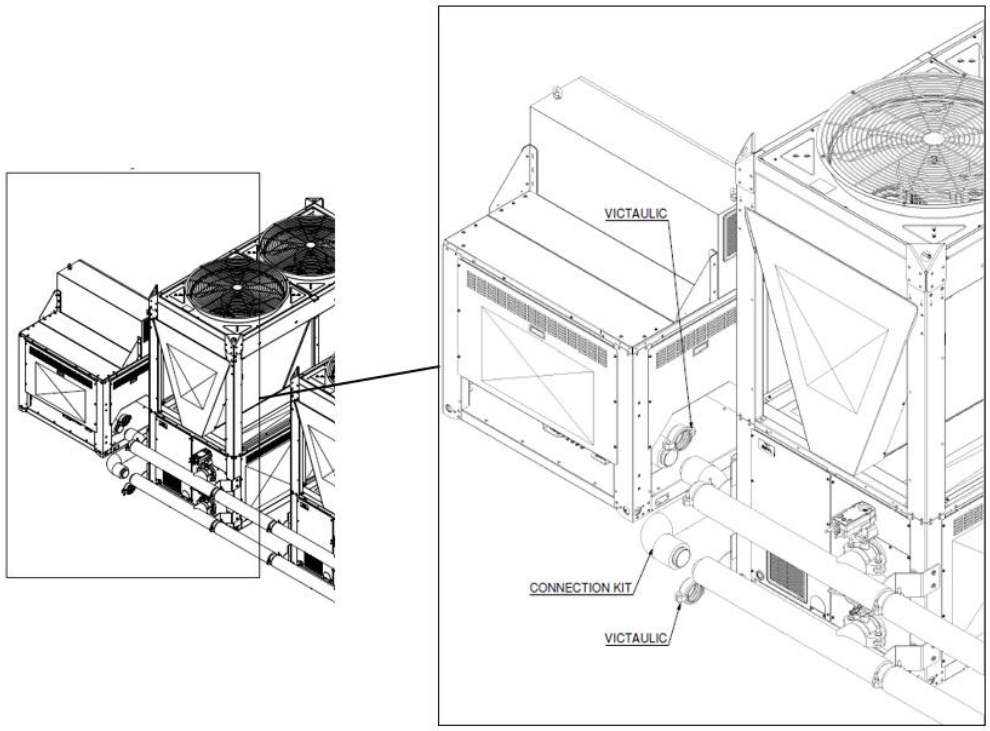
The pump module is selected on the base of the water flow rate requested at the operating point of the unit and lift required for the plant,

14.1 Mechanical installation

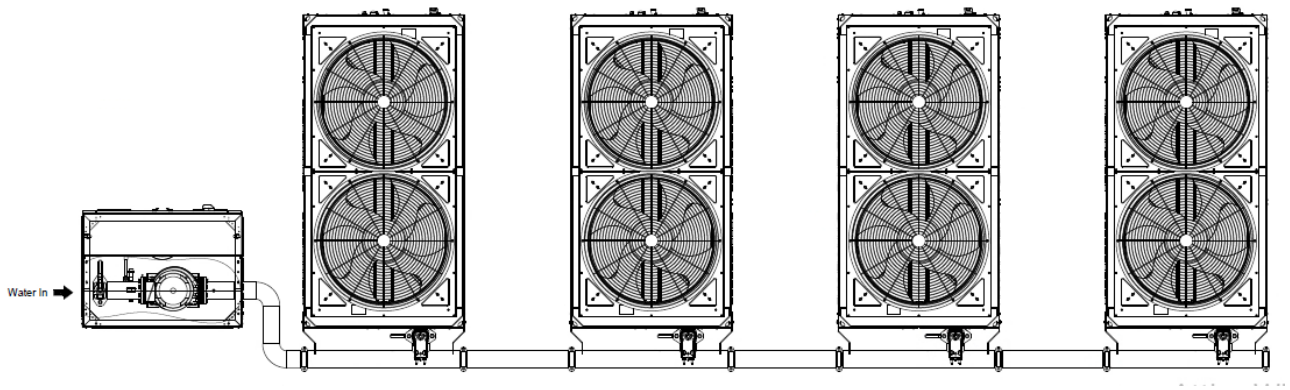
If pump module is installed, it is advisable to install the master module near to the pump module.
The pump module can be installed only on one side of the unit-manifold system.
The water inlet installation is constrained to the pump suction.



The pump could be connected to the array through the dedicated connection kit: EKCONNPMP3 or EKCONNPMP5 depending on the size of the water piping.



Detail of pump modul connection

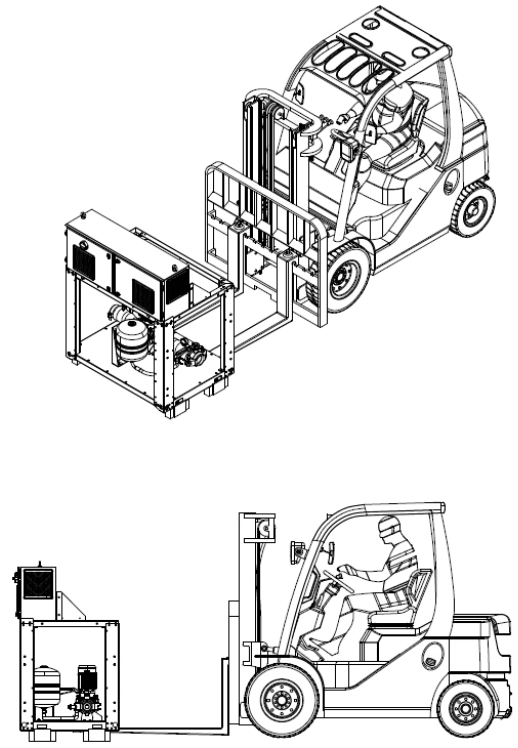


14.2 Handling of pump module

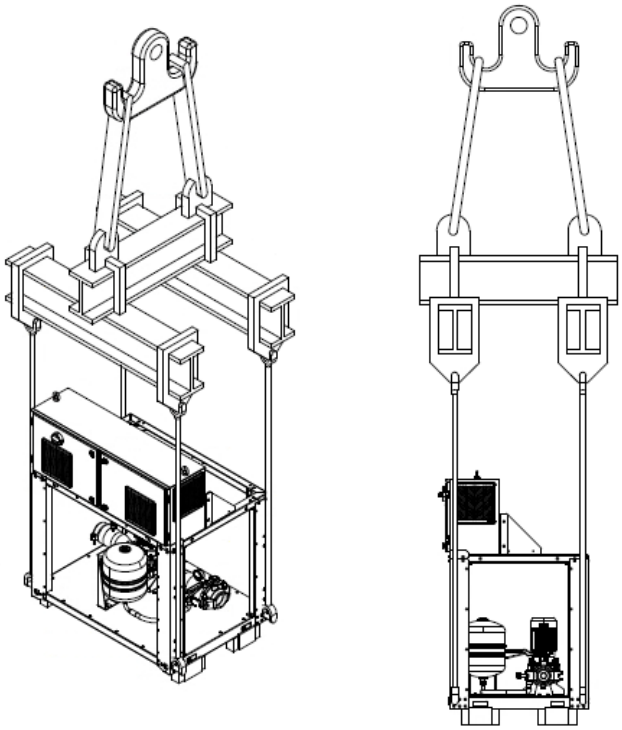
The module must be lifted with the utmost care and attention, following the lifting instructions shows on the label applied to the unit. Lift the module very slowly, keeping it perfectly levelled.
Avoid bumping and/or shaking the unit during the handling and loading/unloading operations from the transportation vehicle, push or pull the module only using the base frame. Secure the unit inside the truck to prevent it from moving and causing damages. Do not allow any part of the module to fall during loading/unloading.
Module can be lifted using the following methods:

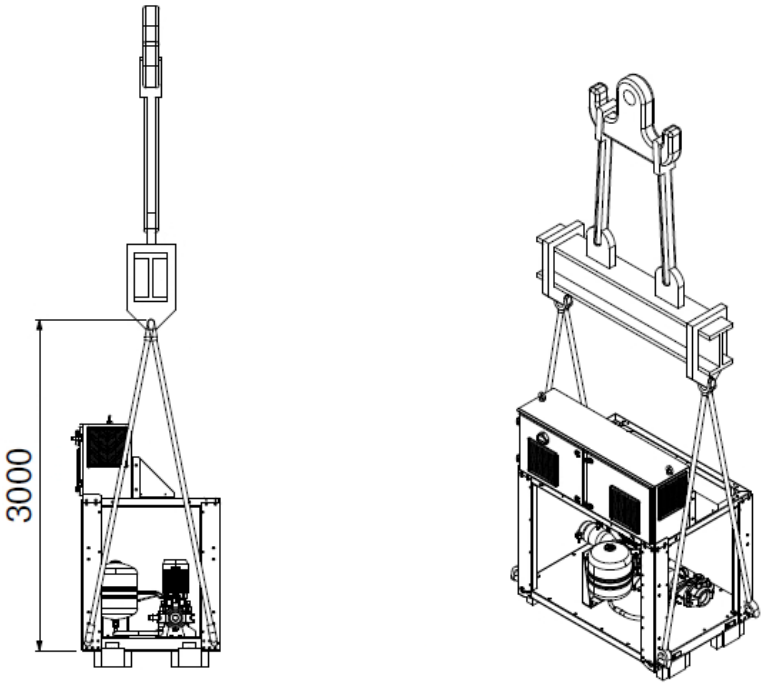
- With forklift from unit long-side
- With lower lifting points

Only these points may be used for lifting it, as shown in the following figure.
The handling and lifting with a forklift are the only rigging methods using the base frame's holes.



Lifting instructions with forklift



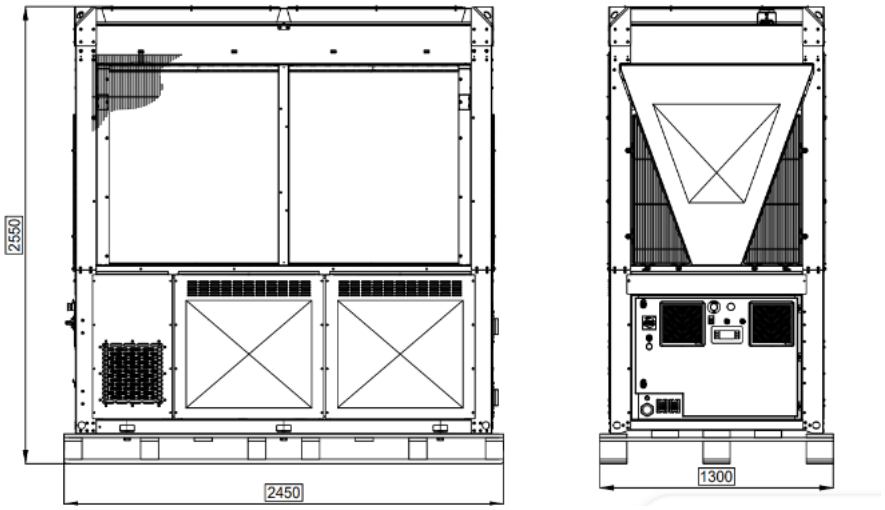


Lifting instructions with lower lifting points

The equipment, ropes, lifting accessories and handling procedures must comply with local regulations and current regulations.
The hooks must be securely fixed before handling.
The lifting ropes, hooks and spacing bars must be strong enough to support the unit safely. Please check the module weight on the nameplate.
The installer has the responsibility to ensure the selection and correct use of the lifting equipment. However, it is advisable to use ropes with a minimum vertical capacity equal to the total weight of the machine.
The machine must be lifted with the utmost attention and care following lifting label instructions; lift the module very slowly, keeping it perfectly level.

15 CONTAINER KIT

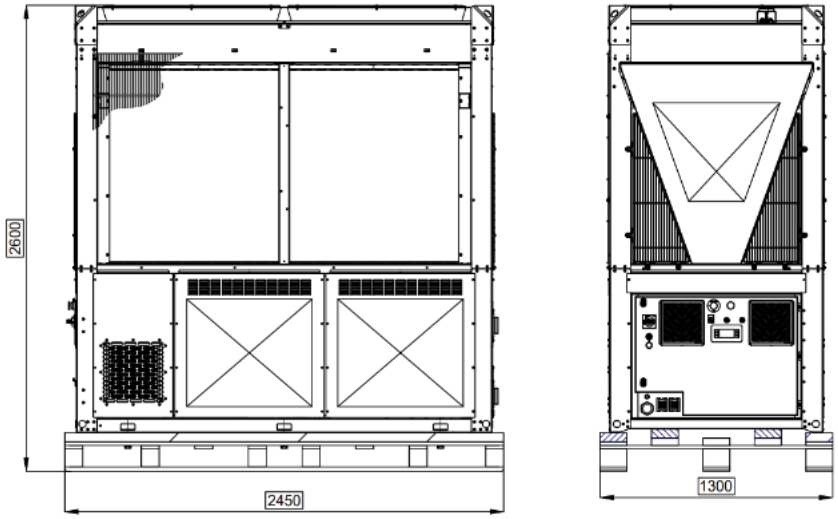
The container kit is provided with the unit at the shipment.
Before installing the unit on-site, remove it from the wooden pallet following the handling and lifting guidelines detailed in the manual **D-EIMHP01910-25**



Shipping dimensions of the unit with transport kit

16 TRANSPORT KIT

The container kit is provided with the unit at the shipment.
Before installing the unit on-site, remove it from the wooden pallet following the handling and lifting guidelines detailed in the manual **D-EIMHP01910-25**



Shipping dimensions of the unit with transport kit

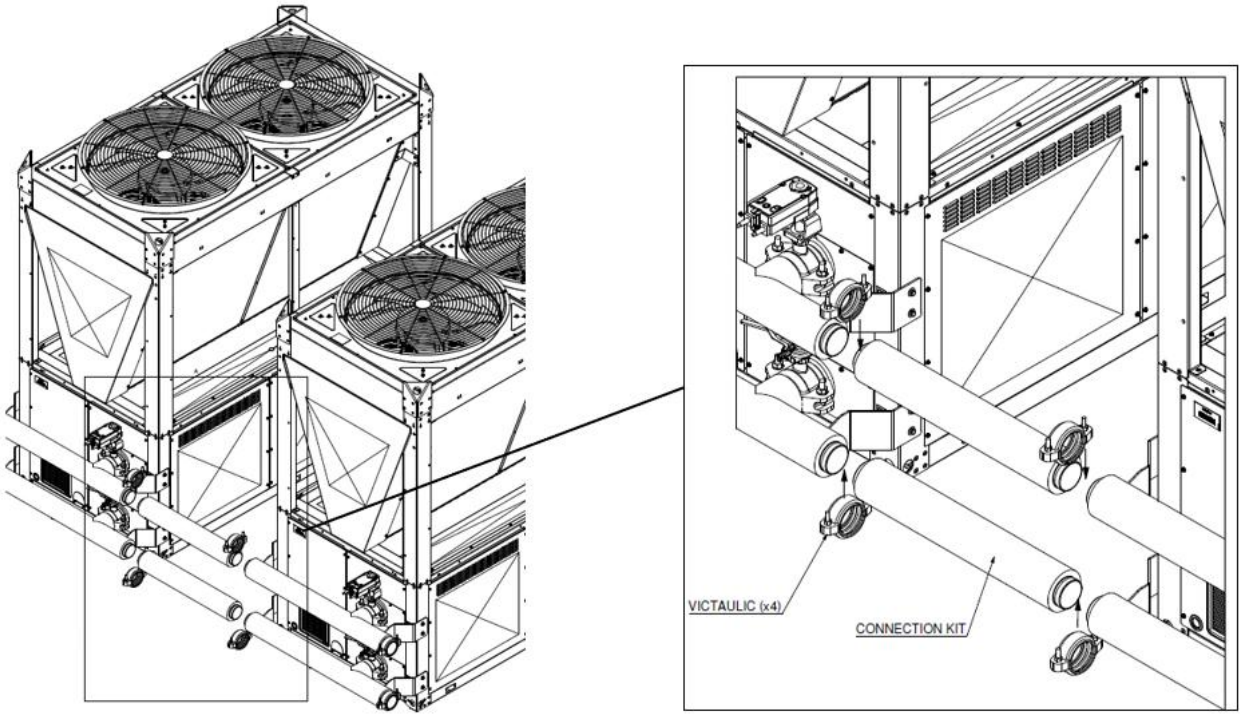
17 PARALLEL AND SERIES CONNECTION KIT

The connection kit connects two units through the manifolds. Their length also identifies the distance between two continuous units. Assembly must be carried out using Victaulic joints. For the kit with units operating in parallel, 4 Victaulic joints must be installed; for parallel assembly, two Victaulic joints and two caps are required to close the pipes that remain open.

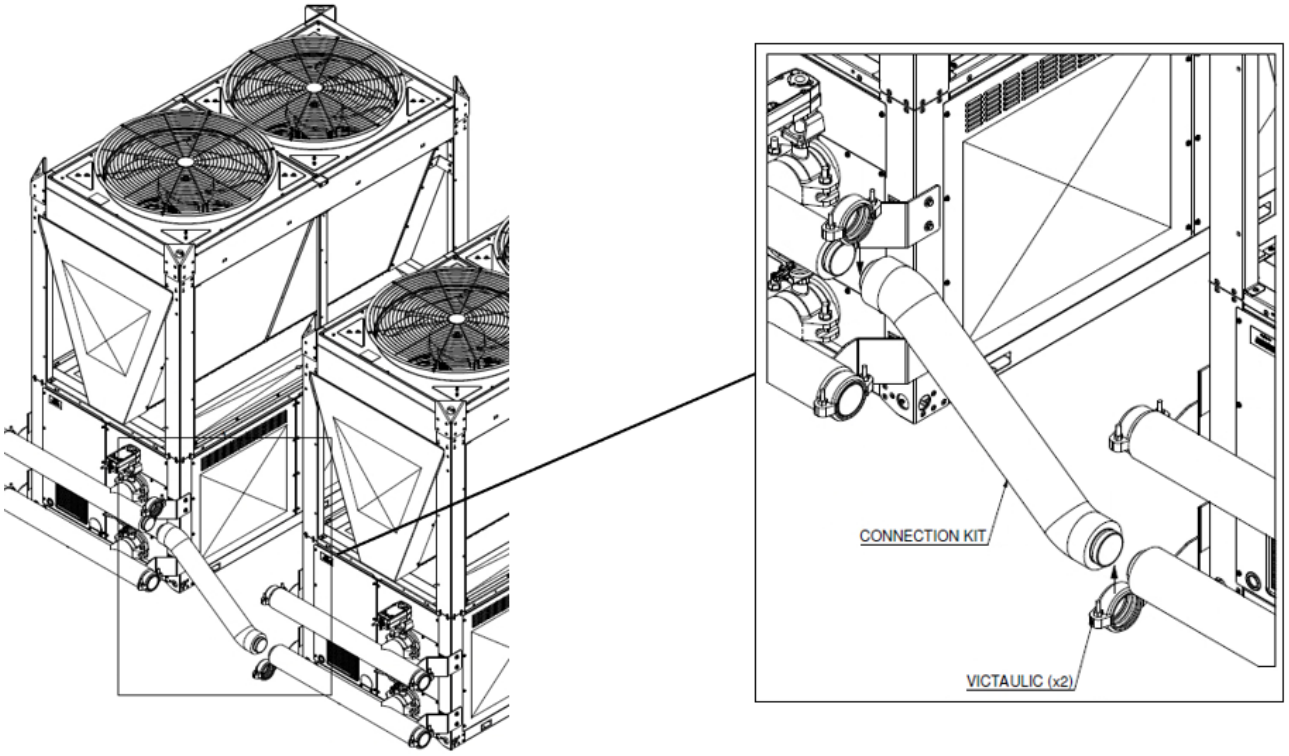
Selection table for connection kit

PIPING DIAMETER		3”	5”
CONNECTION KIT	PARALLEL	EKMODPAR3	EKMODPAR5
	SERIES	EKMODSER3	

Parallel array connection

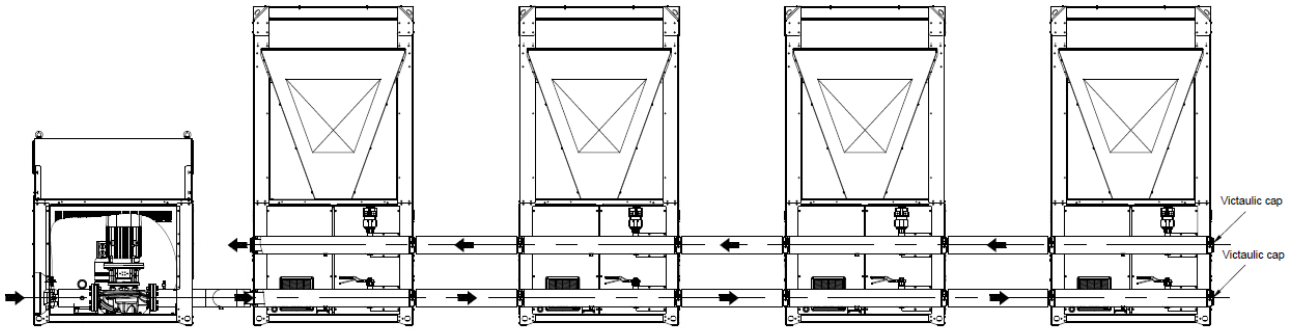


Series array connection

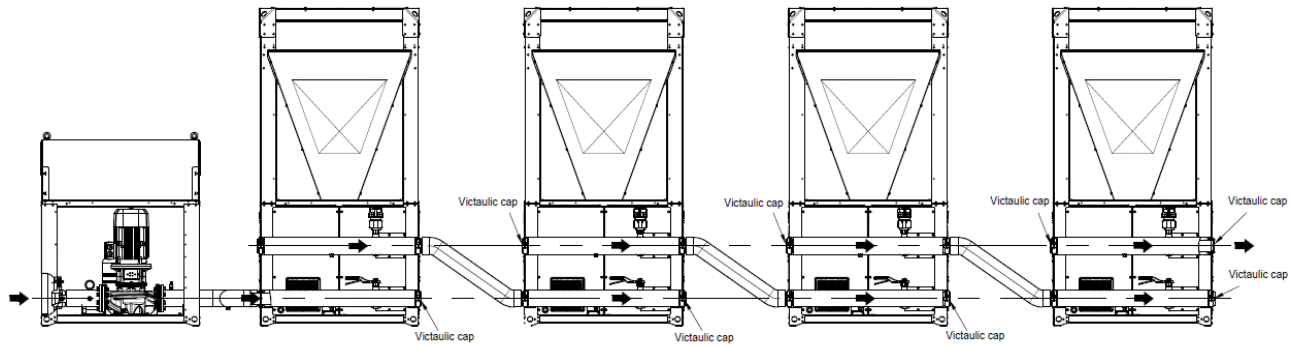


The caps position to be placed on the manifolds is indicated in the following figures. A 4-unit array has been taken as a reference. The water circulation as the array type varies is indicated in the figure as weel; the arrow shows the direction of the flow.

Parallel array connection configuration

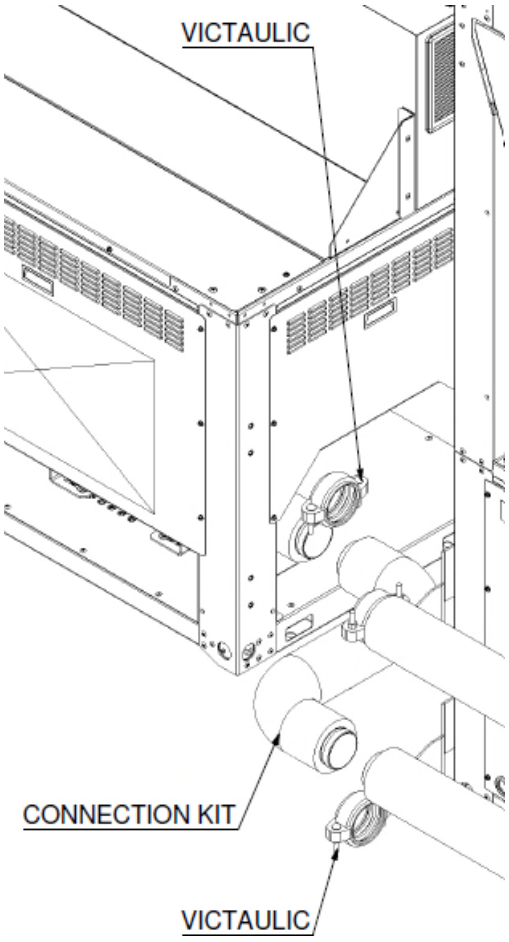


Series array connection configuration



18 PUMP CONNECTION KIT

The pump connection kit, EKCONNPMP3 for 3” pipe array and EKCONNPMP5 for 5” must be connected to the pump module and to the array’s manifold through two Victaulic joint (dimensions depending on array’s pipe size) as shown in the figure. Victaulic couplings are included in the pump kit and the manifold kit, respectively.



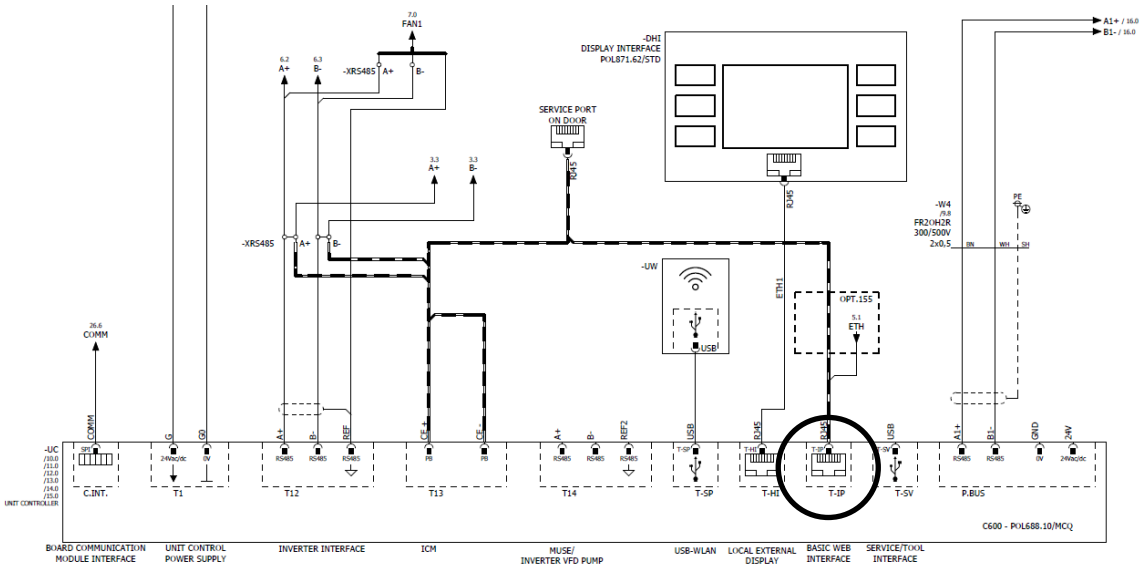
19 REMOTE TOUCH PANEL 15.6”

The component must be necessarily installed outside of the flammable zone.
Please refer to the unit's Installation, Operation, and Maintenance manual to identify the flammable zone for your specific installation.

Remote touch panel can be located from client in any location outside the flammable zone.
The remote touch panel may be connected through LAN to a single unit or a unit array.
Remote touch panel is incompatible with DOS accessory EKRSCSMP

19.1 Single unit connection

In case of a single unit, touch panel communication cable shall be directly connected to the T-IP port located in the UC module.
The LAN port may already be in use for the service port connection. Disconnect the cable and connect the remote panel link cable.



Connection port for remote touch panel

19.2 Unit array connection

In case of a unit array, the touch panel shall be connected via a network switch to every unit.

1. Connect the remote touch panel to the switch
2. Connect every unit to the switch using the T-IP port referring to the single unit connection guidelines.

Refer to the wiring diagram for further details

20 IO MODULE FOR DHW HEATING APPLICATION

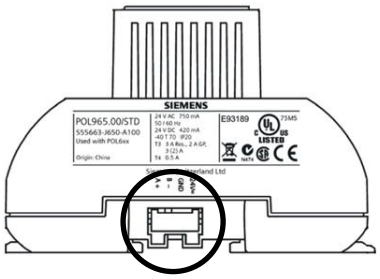
POL965.00/DAE is an input/output extension module required to increase the amount of customer functions. The control functions that are managed with the input/output extension module are the following:

- Domestic Hot Water.

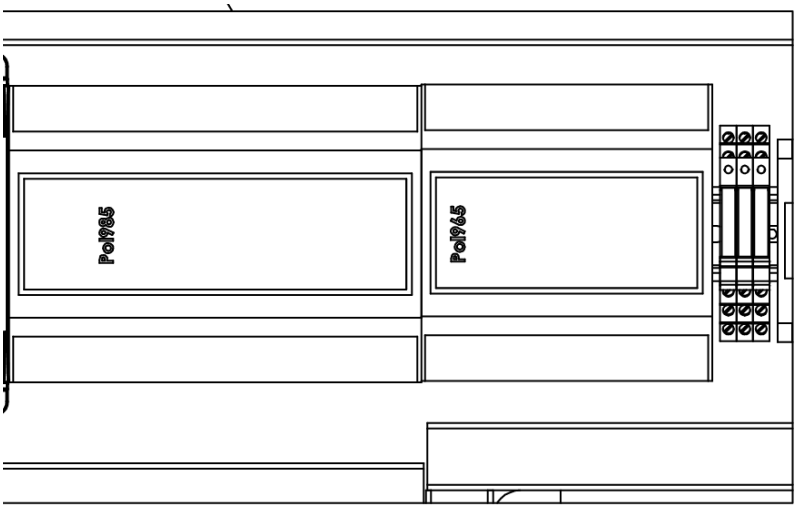
The Input / Output expansion module needs to be electrical connected to:

1. Power Supply
2. Serial communication with POL985.00/MCQ.

Both power supply and serial communication can be connected using the lateral port on module side highlighted in the picture below.



Module lateral port



Front view of POL965 installation

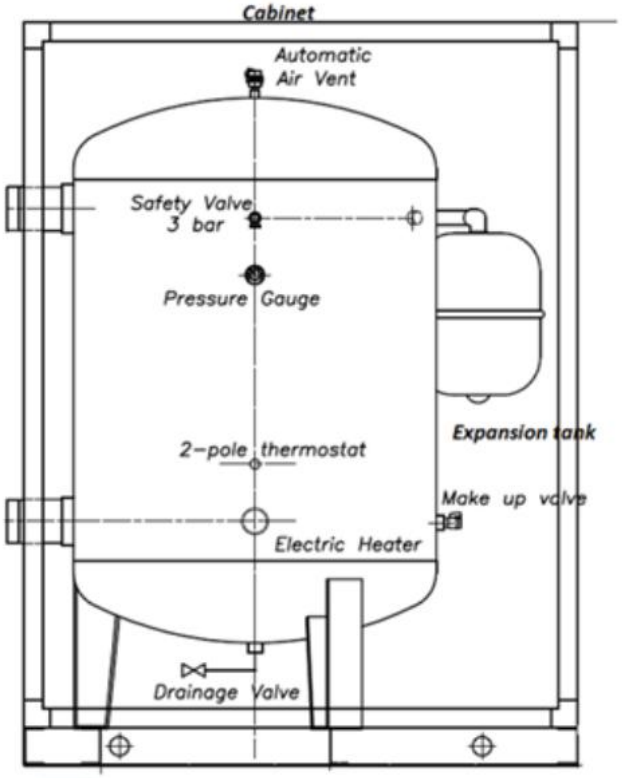
Please refer to the wiring diagram for further details.

21 EXTERNAL TANK

The component must be necessarily installed outside of the flammable zone.
Please refer to the unit's Installation, Operation, and Maintenance manual to identify the flammable zone for your specific installation.

The external tank is a free standing insulated intertial water storage. Dimensions vary depending on the size:
- 500L
- 1000L

The tank may be supplied with a cabinet.
The tank is provided with the following accessories:
- Expansion tank
- Make up valve
- Drainage valve
- Pressure gauge
- Safety valve 3 bar
- Automatic air vent
- Electric heater with 2 pole thermostat



Tank with cabinet - representative image

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