REV	01
Data	February 2022
Supersedes	N/A

Service Manual

Startup Guide – EWAD-TZB, EWAH-TZB, EWAD-TZC, EWAH-TZC, EWAD-MZB, EWAD-MZC

Original instructions

Contents

1 Technician Qualifications

Initial startup on Daikin chillers must be performed only by Daikin Service Technicians or Authorized Service Providers. The contents of this manual are not intended as a substitute for professional skills training, or knowledge and practice of industry standards. Additional literature will be required that is product and component specific, including: product Installation Manuals, Service Bulletins, selection data, system control and piping specifications, etc. (see List of References on *Paragraph 2* for a list of some supplemental items).

The following information is intended only as a guide for authorized personnel with a sound basic knowledge of HVAC equipment, mechanical systems, electrical wiring, controls, & microprocessors. Attempts by untrained or unauthorized persons to start, operate and service this equipment can result in equipment failure, personal injury, or death, as well as invalidation of product warranty. It is the responsibility of the technician to ensure that proper safety equipment safe practices are used.

Be sure that before beginning any work, the Startup Service Technician has reviewed and is thoroughly familiar with all Daikin Factory Service Safety Policies and Procedures and has reviewed any Service Bulletins or Rapid News regarding this product.

2 Required Tools and Supplies

In addition to standard tools needed on most service jobs, be sure to bring the following items to the jobsite for Startup:

- ☑ Personal Protective Equipment (Safety)
- ☑ Commissioning Sheet
- ☑ Chiller Technical Data, Selection Sheet, and Certified Submittal Drawings
- ☑ Manuals:

  Note: Be sure that all manuals are the current revision appropriate for this unit.
  - This Manual: Startup Guide – EWAD-TZB, EWAH-TZB, EWAD-TZC, EWAH-TZC, EWAD-MZB, EWAD-MZC
  - Installation, Operation and Maintenance Manual Air cooled chiller with inverter driven screw compressor (D-EIMAC01603-18_03EN)
  - Control Manual: Air cooled chiller with inverter driven screw compressor (D-EOMZC00309-19_02EN)
  - EWAD_TZ P&ID (last revision) – check in IOM Manual
  - Wiring Diagram

- ☑ Other technical reference material as necessary
- ☑ Current operating software version downloaded and ready to install if needed:
  - Last ATLAS version available on official repository

- ☑ Miscellaneous gauges and hand tools, including:
  - Electronic Leak Detector
  - Differential Pressure Gauge (*adequate for system pressures)*
  - Phase Rotation Meter
  - Refrigeration Gauge Manifold (*Range: 50bar, Accuracy: ±0.5% of Final Value, Resolution: 0.01bar/0.1psi/1kPa*)
  - Digital thermometer (*Range: -50°C/+150°C, Accuracy: ±0.1°C, Resolution: 0.1°C*)
  - Amp probe
  - Voltmeters
  - Recover refrigerant cylinder (*for eventual charge adjustments*)
  - Full refrigerant cylinder *(for eventual charge adjustments)*
  - Recovery pump (*for eventual charge adjustments*)

3 Collaboration and Responsibilities

Throughout the installation and startup process, members of the Daikin Service Department (Supervisor / Coordinator / Technician) must establish contact and meet regularly with the following persons and/or their designated representatives:

- Mechanical, Electrical, and Controls Contractors
- Installing Contractor
- Daikin Sales Department
- Customer/Owner
- Personnel to be trained in unit operation

It is the responsibility of the Daikin Service Representative to ensure that all items on the *Pre-Power On Checklist* are complete and the system is ready for start-up. Upon arrival at the jobsite, the DAIKIN Service technician will verify that all items on the *Pre-Power On Checklist* are complete.
The Chiller Start-up Technician must confirm that the unit installation conforms to Daikin specifications and requirements. This includes mounting and support, piping, electrical and control installations related to the unit. These items must, as a minimum, meet acceptable industry standards and Daikin published requirements. All factory supplied controls and valves must be set and, where required, calibrated. Electrical power and control wiring must be selected and sized as specified by Daikin and the applicable electrical code.
The various contractors associated with the installation have the responsibility to provide the following items (as noted on the Pre-Start Checklist), in accordance with the product IOM, applicable codes and acceptable practices for the trade involved. Note any discrepancies on Commissioning Sheet and notify Supervisor as appropriate. Ensure that access to appropriate systems is available for startup operations.

4 Before Arriving at Jobsite

- Review and Verify Pre-Commissioning Sheet received from the Installer/Customer (*Table D*) Company/Contractor.
- Review Required Materials List on (refer to paragraph 2) and gather necessary items.
- Review Unit Design Specifications.
- Review Unit Selection Sheet.
- Review Startup Guide and Commissioning Form.
- Review IOM.
- Review Control Manual.
- Establish estimated timeline and milestones for Startup.

5 Upon Arrival at Jobsite

Meet with Mechanical, Electrical, and Control Contractors to discuss Startup Process and identify any potential issues that may interfere with a successful startup.

Be sure to meet with the Controls Contractor to discuss and clarify the chiller control sequence and settings for the chiller, towers, pumps, BAS integration, etc…

6 Pre-Power on Checks

Initial Chiller Inspection has to be performed according to the ***Pre-Power On Checklist*** of the Commissioning Sheet by following the instruction below shown.

Verify that all the items are correct. If the system is not ready and/or items on the Pre-Power On Checklist are incomplete, the technician should immediately notify his supervisor and request direction on how to proceed. A separate work order authorization may be required.

6.1 Visual Inspection

- Inspect the chiller for shipping/installation damage including fans and internal parts of condenser.
- Verify that chiller is adequately located, and level mounted as per the IOM (***Paragraph 4.4***) according to the minimum space requirements (***Paragraph 4.5***)
- Verify that appropriate anti-vibration pads are installed.
- Visually inspect for oil and refrigerant leaks.
- Record component model and serial numbers as appropriate on Commissioning Form.
- Clean the chiller from any foreign debris and surrounding area.

Note any issues in the Commissioning Form (***Pre-Startup Comments***)

6.2 Leak Test

Before to start with Leak Test, verify that during stock period (from Delivery Date), leak tests have been performed periodically as per local FGas Regulation. Collect all leak test reports for recording purpose.

Connect service gauges. Confirm pressure in the condenser and evaporator, to verify that charge was not leaked during storage/shipping. Using Electronic Leak Detector, leak check entire unit. Be sure to note any leaks found and repairs performed on the Commissioning Sheet. Follow all applicable industry and regulatory authority standards. If refrigerant loss is catastrophic, startup may need to be postponed until appropriate warranty leak repairs are completed.

Note any issues in the Commissioning Form (***Pre-Startup Comments***)

6.3 Water Piping System Check

- Verify water piping as per IOM (***Paragraph 4.7***). The water filter must be installed as close as possible to the chiller, as in Figs. 8 and 9. If the water filter is installed in another part of the water system, the Installer has to guarantee the cleaning of the water pipes between the water filter and the evaporator. Missing filter results withdraw of heat-exchangers warranty.
- Verify if proper glycol percentage for the application in accordance with Daikin specifications is present as per IOM (Paragraph 2.12)
- Walk length of piping system (in equipment area). Ensure that connections are correctly installed, and piping is properly supported (i.e., not supported by the chiller). Flanges must not be stressed.
- Check evaporator piping for proper flow direction through vessels by consulting Dimensional Drawing. If flow is incorrect, notify Mechanical Contractor, Service Supervisor, and Sales Rep.
- Verify that water pressure gauges are installed at proper locations
- Confirm that all piping specialties (expansion tank, make-up, relief, vents, etc), water pumps are properly installed.

Note any issues in the Commissioning Form (***Pre-Startup Comments***)

6.4 Water Flow

Use Differential Pressure Gauge at the inlet/outlet nozzles of the unit connections to measure the pressure drop across the exchanger/exchangers.

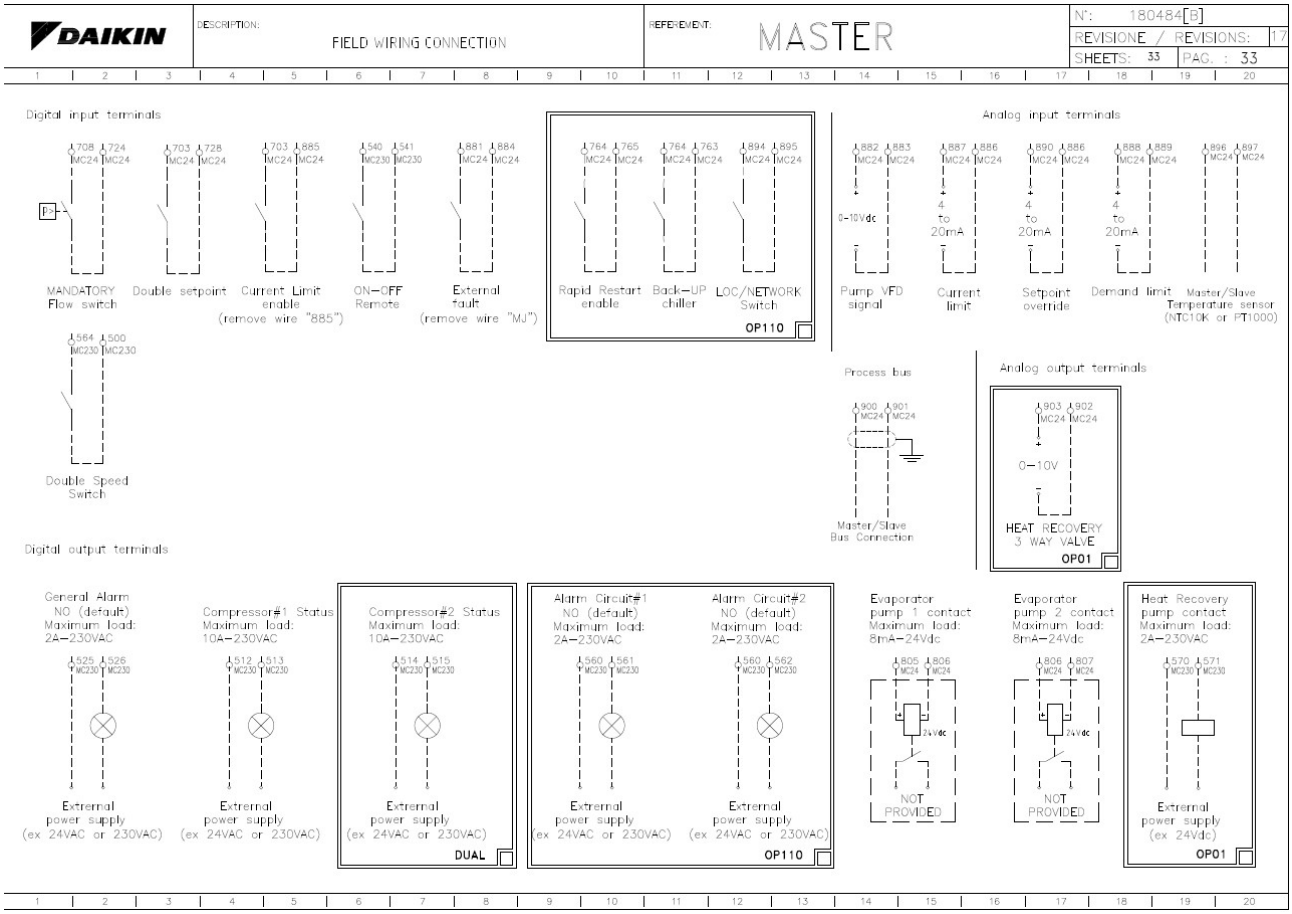
Compare actual flow with Pressure Drop specified on the Unit Selection Sheet. Verify that actual flow is in line with the selection data.

If the measured flow isn't in line with the selection data, then refer to the CSS (Chiller Selection Software) for the verification of allowability of the measured water flow.

If flow is outside of acceptable margins, corrective action is required. If flow is too high, valves may be adjusted to trim flow. If flow is too low, notify Installing Contractor, and note on the Commissioning Form. If flow is different from the selection data, notify Service Supervisor and Sales Rep. Correction may be required prior to startup.
Note any issues in the Commissioning Form (***Pre-Startup Comments***)

6.5 Electric Connections Check

- Verify the Electric connections, Cable requirements, Interconnection cables and Phase unbalance as per IOM.
- Verify the proper electrical phasing U-V-W of the loads (fans, compressors, and pumps) for L1, L2 and L3 respectively.
- Verify Field wiring correctness according to the unit wiring diagram



External power supply needed for Digital output terminals
Analog Inputs must be generated through external auxiliary voltage

Note any issues in the Commissioning Form (***Pre-Startup Comments***)

7 Pre-Startup Checks

Once the "*Pre-Power On Checks"* are completed, the technician can proceed with the Pre-Startup Checks by turning on the unit main switch.
Pre-Startup checks must be performed according to the ***Pre-Startup Checklist*** of the Commissioning Sheet by following the instruction below shown.

Make sure that unit switch (Q0) is set in OFF state before turning on the unit main switch

Verify that all the items are correct. If the system is not ready and/or items on the Pre-Startup Checklist are incomplete, the technician should immediately notify his supervisor and request direction on how to proceed. A separate work order authorization may be required.

7.1 Voltage Check

- Verify the electric Main voltage and frequency
- Verify all on-board auxiliary transformer voltages
- Check the Compressor Heater current

Note any issues in the Commissioning Form (***Pre-Startup Comments***)

7.2 Flow Switches

- Check the water flow safety switches: verify that field-installed flow switches are installed as per the manufacturer's instructions and IOM.
- Any differential pressure switch connections must be made across the vessel they protect.
- Field-installed Flow switches should not be located close to any source of turbulence and should be located in inlet or outlet piping of the vessel away from any shutoff valves or isolation devices.
- Verify flow switches operation, by throttling the flow and verify that switch opens when flow rate falls below 50% of nominal operating flow rate.

Note any issues in the Commissioning Form (***Pre-Startup Comments***)

7.3 Control Settings

- Check all MicroTech IV controller settings to verify they are optimized for application conditions.
- Download and/or install updated software as needed.
- Verify settings of all safety and operating controls.

7.3.1 Unit Configuration

On the unit controller, enter the "Technician Password" and go into Main Menu → Commission Unit → Configuration → Unit

Setpoint	Default	Range	Description
Apply Changes=	No	No Yes	Use this command to reset the controller in order to confirm the configuration made
Unit Type	EWAD TZ B	TZ TZ B TZ C MZ B	Select the type of chiller. EWADxxxTZxx → EWAD TZ EWADxxxTZxxB → EWAD TZ B EWADxxxTZxxC → EWAD TZ C EWAHxxxTZxxB → EWAH TZ B EWAHxxxTZxxC → EWAH TZ C EWADxxxMZxxB → EWAD MZ B EWADxxxMZxxC → EWAD TZ C Note: the model **EWAH** must be selected as TZ C & EWAD MZ C must be selected as TZ C.

Refrigerant	R134A	R134A R1234ZE R513A	Select the type of refrigerant
Number of Ckts=	2	1 2	Define the number of circuits
Comp Type=	None	Not Set 310240 S 310240 L F4AL VVR 3120 3122 F3AL F3AS F3BL	Select the compressor model according to the machine model, referring to the unit configuration tables (Table B) / compressor nameplates
Motor	AC	AC DC	Define the type of compressor motor by referring to the configuration Table B. All EWAD/H TZ C have AC motor compressor
Inverter Type	DAE	DAE	All production units are equipped with DAE Inverter
Inverter Size	200kW	90kW 120kW 200kW 330kW 400kW	Select the type of inverter installed on the compressor. Refer to Table B.
Fans Control	Step	Step Vfd SpdTrl	Select whether the fans are Direct-start (On Off) or if they are controlled by inverterby referring to the electrical wiring of the unit. Step = All fans are with direct start (On Off)vfd = All fans are controlled by VfD Spdtrl = Only one fan is controlled by VfD and all others are direct starting (On Off)
Fan Type=	AC700	AC700 EC900 AC900 EC900-700 EC700 EC700-600 DC1000-900 EC1400 DC1000 DC1000-700 AC900 AC900-700	Select the fan type according to the machine model by reference to the unitconfiguration table (Table B). In case of Kemao fans select AC900
Eco EXV Type=	Sporlan	Sporlan Danfoss Colibri	Select the electronic valve model of the Economizer. The model can be read directly on the engine body of the valve itself

After termination of the Unit configuration it's necessary to restart the controller to activate the settings made through the "Apply changes" command.

The control part of Micro-channel EWAD/H TZ C, EWAD/H TZ B and EWAD-MZ B/C machines is composed of the controller POL688 + 1 or 2 modules POL98U (depending on whether the machine is Mono or Dual).Once the **unit** has been **configured,** after the controller has been restarted, a part of the program will be automatically be transferred on the POL98U modules. Be careful not to remove the power supply if the BSP and BUS LEDs of both POL98U modules have become green.

7.3.2 Circuit configuration

Technician Password -> Commission Unit -> Configuration -> circuit #1/circuit #2

Setpoint	Default	Range	Description
Apply Changes=	No		No, Yes

Comp Freq	-	Compressor 310240 S: 60 Hz; 65 Hz; 70 Hz; 75 Hz; 80 Hz; 85 Hz; 90Hz; 95 Hz; 100 Hz; 105 Hz; 110 Hz; Compressor 310240 L: 60 Hz; 65 Hz; 70 Hz; 75 Hz; 80 Hz; 85 Hz; 90 Hz; 95 Hz; 100 Hz; 105 Hz; 110 Hz; Compressor F4AL VVR: 50 Hz; 55 Hz; 60 Hz; 65 Hz; 70 Hz; 75 Hz; 80 Hz;	Select the maximum compressor frequency according to the machine model by referring to the configuration tables. (Table B)
C1/2 # Of Fans=	6		Enter the number of fans present on the machine. When the fans are all vfd controlled, this parameter can be changed between 1 and 2. Always leave the setting to 2. When configuring the number of fansin EWAD TZ C unit, be careful never to set an odd number of fans!
Heat Recovery=	Disable	Disable, Enable	Select whether the total heat recovery option, is present.

After termination of the circuit(s) configuration it's necessary to restart the controller to activate the settings made through the "Apply changes" command.

7.3.3 Software Options

Software Options (Only for Microtech 4)

The possibility to employ a set of software options has been added to the functionality of the chiller, in according with the new Microtech 4 installed on the Unit. The Software Options do not require any additional hardware and regard communication channels and the new energy functionalities.

During the commissioning the machine is delivered with the Option Set chosen by the customer; the Password inserted is permanent and depends on the Serial Machine Number and the Option Set selected.

The available options are:

1. Modbus Slave MSTP for settings refer to BAS integration guide Doc. Name: D-EIGOC00203-21EN_TZ
2. BACNet MSTP for settings refer to BAS integration guide Doc. Name: D-EIGOC00103-21EN-TZ
3. BACNet IP for settings refer to BAS integration guide Doc. Name: D-EIGOC00103-21EN-TZ
4. Performance Monitoring. The Energy Monitoring is a software option not requiring any additional hardware. It can be activated to achieve an estimation (5% accuracy) of the instantaneous performances of the chiller in terms of:
   • Cooling Capacity
   • Power Input
   • Efficiency-COP
   An integrated estimation of these quantities is provided

5. iCM Standard for settings and configuration contact servicesupport@daikinapplied.eu
6. iCM Advanced for settings and configuration contact servicesupport@daikinapplied.eu

Apply Changes=	No		No, Yes
Pump Type	On-Off	On-Off Fixed Speed VPF DT	Select whether the evaporator pump (s) are direct-start or if they are controlled by an inverter. ON OFF → Direct Start. Fixed Speed → Allows an automatic pump speed variation, between three different speed settings. VPF → Pump speed is controlled in order to maintain a minimum pressure drop in a remote location of the plant DT → The chiller will modulate the water flow rate based on the chiller delta

Load PD Sns	None	None 0-10V 4-20mA BMS	Type of pressure differential sensor used in the VPF system
Power Supply	400V/50-60Hz	400V/50-60Hz 415V/50Hz 440V/60Hz 460V/60Hz 380V/50-60Hz	Define the voltage grid system: this will determine the undervoltage/overvoltage supervision managed by the compressor inverter
Energy Mtr	None	None Nemo D4-L Nemo D4-Le	Select the type of energy meter device in case present  Nemo D4-L  Nemo D4-Le
Leak Detector	None	None Digital Analog	Select the type of leak detector device in case present.
Communication 1	None	None Modbus IP MSTP	Select whether a connected communication module is present on the left side of the controller. Modbus -> POL902 BACNet IP -> POL908 BACNet MSTP -> POL904
Communication 2	None	None Modbus IP MSTP	Select whether a connected communication module is present on the left side of the controller. Modbus -> POL902 BACNet IP -> POL908 BACNet MST -> POL904
Communication 3	None	None Modbus IP MSTP	Select whether a connected communication module is present on the left side of the controller. Modbus -> POL902 BACNet IP -> POL908 BACNet MST -> POL904
Demand Limit	Disable	Disable Enable	Set according to the client request
Flex Current Limit	Disable	Disable Enable	Set according to the client request
Setpoint Reset	None	None 4-20mA Return OAT	In case of setpoint reset request, select on the basis of which sensor the reset will be carried out 4-20 mA → External sensor Return → EEWT temp sensor OAT → Unit outside air temp sensor
Fan Alarm	No	No Yes	Select this option if the KQ1 and KQ2 relays are present in the electrical panel
Switch Box Temp	No	No Yes	Select if the switch box temperature probe is present. (HA units)
Rapid Restart	Off	Off On	Enabling the Rapid Restart Function. Check if the option is available on the unit
Ext Alarm	Event	Event Rapid Stop	Set according to the client request
Loc Net Switch	No	No Yes	Set according to the client request
M/S Address	None	None Master Slave 1 Slave 2 Slave 3	Defines if the unit is master or salve
M/S Num Of Units	2	2 3 4	Set according to the number of units in the system
M/S Sns Type	NTC10K	None NTC10K PT1000	Select the type of sensor for the common water temperature sensor?
Display Units	Metric	Metric English	Set according to the client request
Language	English	-	Set according to the client request
Liquid Sensor Enable	Off	Off On	**For Unit Type= TZ-TZB-MZ** Select On if the temperature probe and / or pressure transducer are present on the liquid line. If option 186 is present (Performance Monitoring), select On.

			<u>For Unit Type= TZC</u> For EWAD TZC and EWAAH TZC always select On.
Liquid Sensors	Standard	Standard Full	Select Standard if on the liquid line is present the temperature sensor Select Full if on the liquid line is present the temperature sensor and pressure transducer sensor
Solenoid valve	Off	Off On	**Select always On*.** See the Caution after the table
Apply Changes	No	No Yes	Use this setting to save and confirm all the settings

CAUTION

**Solenoid valve setting: This parameter is used to configure the anti-chattering system in the software*

After the apply changes function, verify the activation of the Solenoid Valve in the following menus

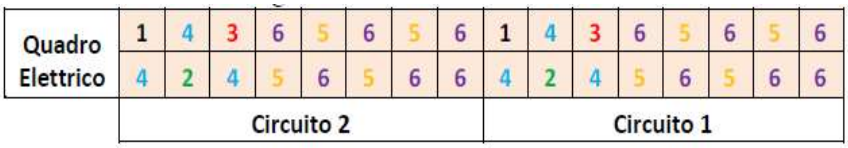
View/Set Circuit > Circuit ½ > Economizer > Sol Valve > ***With***

The parameter must be set "With". In case the parameter is "Without", change to "With"

After termination of the Software Options configuration it's necessary to restart the controller to activate the settings made through the "Apply changes" command.

7.4 Fan layout

The image below shows the activation layout of the unit's fans. The number inside the single square indicates the fan activation digital output.



7.5 Twin evaporator pump setting

In the case of twin evaporator pumps, set the automatic start-up management pumps.

1. Enter technician password in the controller
2. Open the menu:
3. *Main Menu → View / Set Unit → Pumps → Evp Pmp Ctrl → Auto*

7.6 Alarm Limits

On the unit controller, enter the "Technician password" and set the alarm limits in the following menu:

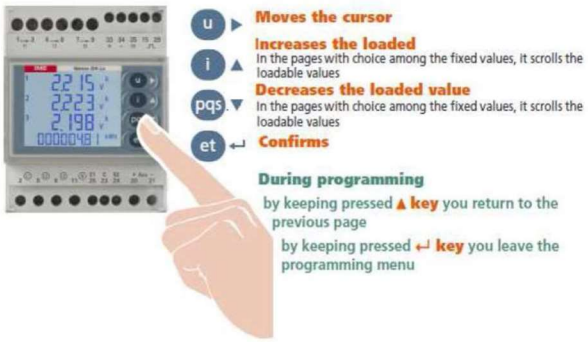
Main Menu → Commission Unit → Alarm Limits

At the end of the Alarm Limits setting a restart of the controller ("Apply Changes") is required BEFORE to proceed with the startup of the unit.

7.7 Energy Meter

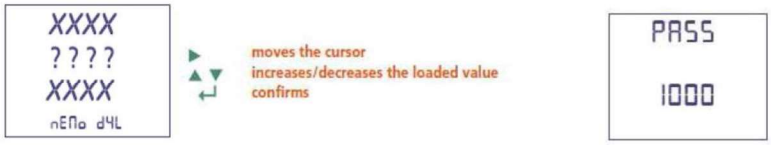
If the unit is provided with Opt.16/16a, proceed with the energy meter settings check.

Function of the buttons:



Acces the setup menu

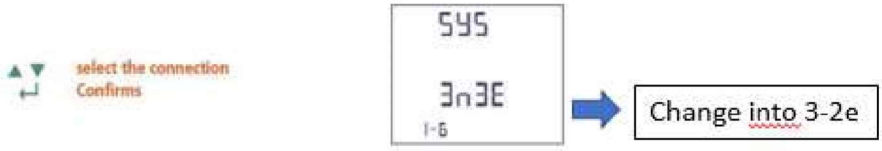
1) press "et " repeatedly until the page is displayed: "nEMo D4L "
2) Press and hold the "et " button until you see the page: "PASS "
3) Enter the password “1000” and confirm with the "et " key.



The “arrow” ▸ is used to move between the various digits, while ▲ ▼ is used to increment or decrement the numerical value of each digit. The ENTER key is used to confirm the password.

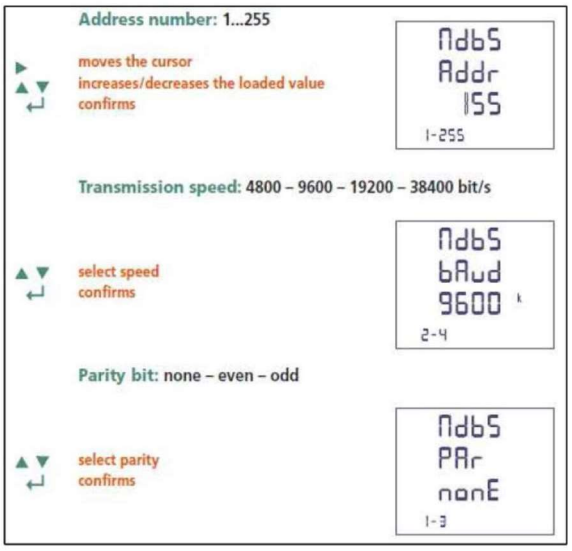
Depending on the wiring configuration, the respective programming scheme must be selected

1) log in with the password "1000 "
2) press the "et " button repeatedly until the page is displayed: "SYS "
3) Select the desired configuration: **3-2e** if the number of current transformers is 2, which is the standard configuration.



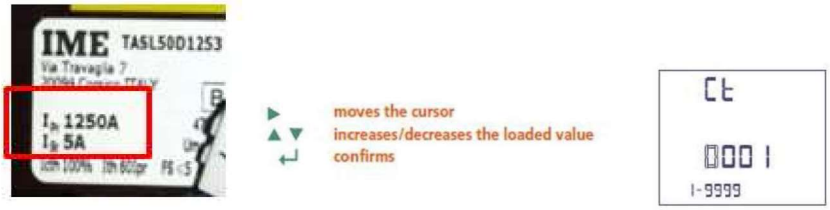
In case the energy meter is integrated in the modbus communication network of the POL687 controller of the chiller unit , the modbus parameters of the Nemo energy meter needs to be updated. It will be necessary to configure the address, transmission speed and parity bit on the energy meter corresponding to those on the chiller controller (POL 687).

1) log in with the password "**1000** "
2) press "et " repeatedly until the page is displayed: "MDB Addr "
3) Select Address **20**
4) press "et " repeatedly until the page is displayed: "MDB BAud "
5) Select the baud rate **19200**
6) press "et " repeatedly until the page is displayed: "MDB par "
7) Select **None** Parity bit



Set the transformation ratio of the current transformers (CT ratio)

On the label of the CT it's indicated what the maximum primary and secondary currents are. For example max primary current 1250A / max secondary current 5A gives an CT ratio of 250 (1250/5)



Warning: the nominal current value at the Ime Nemo Energy meter input terminals should be between 1A~5A. Do not use CT's exceed this range in order to avoid damage to the energy meter!

7.8 Pre-Running Adjustments

Pre-Running Adjustments must be separately performed for each circuit

It is highly recommended to use a double sample sensor for the calibration of temperature sensors

7.8.1 Check and calibration of unit temperature sensors

Calibration of unit temperature sensors is a fundamental step for the correct operation of the unit.
There are three temperature sensors to be calibrated (for each circuit):

- Evaporator LWT
- Evaporator EWT
- OAT

7.8.1.1 Evaporator Leaving Water Temperature

- Place the sample and Evap LWT sensors in a container with ice
- Enter in *Commission Unit → Sensors Calibration → Unit* menu and then compare the Evap *LWT* value with that detected by the sample sensor
- If the temperature value measured by the unit sensor is different from the sample one, set the difference in the *Offset* parameter.

Make sure to have a good water/ice mix and wait for the water/ice system temperature to stabilize before to proceed with the calibration.
Place both sensors (sample and unit) in the middle of the container in order to not affect the readings.

7.8.1.2 Evaporator Entering Water Temperature

- Place the sample and Evap EWT sensors in a container with ice
- Enter in *Commission Unit → Calibrate Sensors → Unit* menu and then compare the Evap *EWT* value with that detected by the sample sensor
- If the temperature value measured by the unit sensor is different from the sample one, set the difference in the *Offset* parameter.

Make sure to have a good water/ice mix and wait for the water/ice system temperature to stabilize before to proceed with the calibration.
Place both sensors (sample and unit) in the middle of the container in order to not affect the readings.

7.8.1.3 Outside Air Temperature

- Place the sample and suction temperature sensors in ambient temperature
- Enter in *Commission Unit → Sensors Calibration → Unit* menu and then compare the *OAT* value with that detected by the sample sensor
- If the temperature value measured by the unit sensor is different from the sample one, set the difference in the *Offset* parameter.

Make sure to have a stable air conditions and wait until read unit and sample temperatures are stabilized respect to air ambient temperature before to proceed with the calibration.

7.8.2 Check and calibration of circuit temperature sensors

Calibration of circuit temperature sensors is a fundamental step for the correct operation of the unit.
There are two temperature sensors to be calibrated (for each circuit):

- The Suction temperature sensor (ST-1 & ST-2)
- The Discharge temperature sensor (DT-1 & DT-2)

7.8.2.1 Suction Temperature sensor

- Place the sample and suction temperature sensors in a container with ice
- Enter in *Commission Unit → Sensors Calibration → Circuit #1/2* menu and then compare the *Suction Tmp* value with that detected by the sample sensor
- If the temperature value measured by the unit sensor is different from the sample one, set the difference in the *Suction Offset* parameter.

Make sure to have a good water/ice mix and wait for the water/ice system temperature to stabilize before to proceed with the calibration.
Place both sensors (sample and unit) in the middle of the container in order to not affect the readings.

Suction temperature sensor is the most crucial of chiller's sensors as will guarantee the correct working of the EXV and consequent safe compressor running

7.8.2.2 Discharge temperature sensor

- Place the sample and discharge temperature sensors in ambient temperature
- Enter in *Commission Unit → Sensors Calibration → Circuit #1/2* menu and then compare the *Discharge Tmp* value with that detected by the sample sensor
- If the temperature value measured by the unit sensor is different from the sample one, set the difference in the *Disch Offset* parameter.

Make sure to have a stable air conditions and wait until read unit and sample temperatures are stabilized respect to air ambient temperature before to proceed with the calibration.

7.8.2.3 Economizer temperature

- Place the sample and Economizer temperature sensors in ambient temperature
- Enter in *Commission Unit → Calibrate Sensors → Circuit #1/2* menu and then compare the *Econ Temp* value with that detected by the sample sensor
- If the temperature value measured by the unit sensor is different from the sample one, set the difference in the *Eco Tmp Offset* parameter.

Make sure to have a stable air conditions and wait until read unit and sample temperatures are stabilized respect to air ambient temperature before to proceed with the calibration.

7.8.2.4 Liquid temperature

- Place the sample and Subcooling temperature sensors in ambient temperature
- Enter in *Commission Unit → Calibrate Sensors → Circuit #1/2* menu and then compare the *Liquid Temp* value with that detected by the sample sensor
- If the temperature value measured by the unit sensor is different from the sample one, set the difference in the *Liquid Tmp Offset* parameter.

Refer to Table A for the complete overview of the components positioning.

7.9 Dry Tests

Perform the Dry Tests by setting the unit in "test mode":

1. Enter the "Technician Password" on the controller
2. Go in *Main Menu → Unit Mode → Mode*
3. Set *Test*

All the dry tests are performable through the following menu:

Main Menu → Commission Unit → Manual Control

7.9.1 Unit Alarm

Check the correct activation of the software general alarm:

Main Menu → Commission Unit → Manual Control → Unit → Unit Alarm

7.9.2 7.9.2 Pump #1/#2

Check the correct activation of the water pump (if it is controlled by the unit):

Main Menu → Commission Unit → Manual Control → Unit → Pump #1/#2 → set Pump Speed in %.

7.9.3 Circuit Alarm

Check the correct activation of the software general alarm:

Main Menu → Commission Unit → Manual Control → Circuit #1/2 → Circuit Alarm

7.9.4 Fan

Check the correct functionality of the fans:

Main Menu → Commission Unit → Manual Control → Circuit #1/2 → Fan speed

In this menu is possible choose the capacity of the fan. Moreover, during this phase check the rotation sense of the fans, if it is right the force of the air must be from the floor to the top.

7.9.5 Oil/VFD Heaters

Check the correct activation of compressor oil and VFD resistances:

Main Menu → Commission Unit → Manual Control → Circuit #1/2 → Oil Heater

Main Menu → Commission Unit → Manual Control → Circuit #1/2 → VFD Heater

7.9.6 7.9.6 VR Slides

Check the correct activation of the compressor VR slides:

Main Menu → Commission Unit → Manual Control → Circuit #1/2 → VRX

7.9.7 Expansion Valve

Verify the correct operation of the EXV valves:

*Main Menu → Commission Unit → Manual Control → Circuit #1/2 →*EXV Position

And set the opening percentage, it is possible verify the movement of the piston inside the expansion valve through the glass post on it.

7.9.8 Eco Expansion Valve

Verify the correct operation of the Eco EXV valves:

*Main Menu → Commission Unit → Manual Control → Circuit #1/2 →*EXV Position

And set the opening percentage, it is possible verify the movement of the piston inside the expansion valve through the glass post on it.

7.9.9 High Pressure Switches Test

Test the high-pressure switches by physically disconnecting them from the unit and by testing them until the intervention pressure by connecting them to a pressurized nitrogen cylinder.

7.9.10 Compressor addressing

Electrically disconnect the pressure transducer on the compressor (high or low) and check the activation of the related alarm on the correct circuit.

8 Start-Up

The first data acquisition for each circuit must be performed in “Cooling mode”, in order to also check the correctness of the refrigerant charge by measuring the subcooling at the filter dryer (refer to *E2.10* item of the *Commissioning Sheet*).

Make sure to open all the service valves before to perform the first unit Start-Up:

- ***Liquid line***
- ***Discharge line (if present)***
- ***Suction line (if present)***
- ***Turn on the water pump***

To do that, follow these steps, referring to the “Circuit #X”:

1. Enter the “Technician Password” on the controller
2. Go in Main Menu→Unit Mode → Mode and set Cool
3. Go in *Main Menu → Unit Enable*
4. Set *Circuit #1→ Enable, Circuit #2→Disable*
5. Set *Unit→ Enable*
6. *Set on Local the switch Q0*

The circuit is now ready for the Running Adjustment *(paragraph 8.1)*

8.1 Running Adjustments

Running Adjustments must be separately performed for each circuit while it is running near the rating conditions.

Make sure that the circuit is working in cooling mode in stable conditions in order to don’t affect the following operations result

Make sure that the circuit status is “Run: Normal” before to proceed with the Running Adjustments

8.1.1 Check and calibration of pressure transducers

Calibration of pressure transducers is a fundamental step for the correct operation of the unit.
There are two pressure sensors to be calibrated (for each circuit):

- The suction pressure transducers
- The discharge pressure transducers

8.1.1.1 Evaporator Pressure

- Connect the sample transducer to the “T shape” pressure port on which the suction pressure transducer is installed.
- With the unit on, with the *Suction Temperature* of 7°C ± 1°C and before making gas charge adjustments, enter the *Commission Unit → Calibrate Sensors → Circuit #1/2* menu and then compare the *Evap Pressure* value with that detected by sample transducer
- If the pressure value measured by the unit transducer is different from the sample one, set the difference in the *Evp Pr Offset* parameter.

Sample transducer is the measuring device has been calibrated and it must be very accurate.

If this difference is greater than ± 100 kPa replace the transducer and repeat the operation.

Evaporator pressure transducer is the most crucial of chiller's transducer as will guarantee the correct working of the EXV with consequent safe compressor running and since all low-pressure safeties are based on its readings.

8.1.1.2 Condenser Pressure

- Connect the transducer to the "T shape" pressure port on which the discharge pressure transducer is installed.
- With the unit on, enter in *Commission Unit* → *Calibrate Sensors* → *Circuit #1/2* menu and then compare the *Cond Pressure* value with the one detected by the sample transducer. If the value of the pressure measured by the unit transducer is different from the sample one, set the difference in the *Cond Pr Offset* parameter.

If this difference is greater than ± 100 kPa replace the transducer and repeat the operation.

8.1.1.3 Oil Pressure

- Connect the sample transducer to the "T shape" pressure port on which the oil pressure transducer is installed.
- With the unit on, enter in *Commission Unit* → *Calibrate Sensors* → *Circuit #1/2* menu and then compare *Oil Pressure* value with *Condenser Pressure*.
- If the value of the pressure measured by the *Oil Pressure* transducer is different from the *Condenser Pressure*, set the difference in the *Oil PR Offset* parameter.

If this difference is greater than ± 100 kPa replace the transducer and repeat the operation.

8.1.2 Subcooling measurement point

The calculation of the subcooling at the filter dryier (in addition to the visual inspection of any flash gas on the liquid sight glass) is the main parameter by which the need for a charge adjustment is established. This quantity must be quantified with the least possible margin of error.

What's needed:

- Additional pressure transducer
- Additional temperature sensor

Proceed to the installation as follows:

- The pressure sensor must be installed on one of the two pressure points on the corner tap, close to the dryer filter.
- The temperature sensor must be installed on a smooth pipe section (not on a weld, for example), as close as possible to the pressure sensor mentioned above.

Temperature measurements are among the most difficult to perform. Install the temperature probes with a correct quantity of thermal paste, tighten the probes firmly to the pipe and abundantly insulate the probes so that external agents cannot affect the measurement.

- Subcooling (at the filter dryer) = 5°C ± 1°C
- Full liquid sight glass

If the Subcooling value is out of range, then proceed with the charge adjustment by using the recovery pump connected on the condenser outlet (before filter dryier).

The charge adjustment has to be performed step-by-step:

- For 50÷100kg circuits, proceed by adding/removing ±1kg of refrigerant at every step
- For 100÷500kg circuits, proceed by adding/removing ±2kg of refrigerant at every step

After every charge step, wait 5 minutes after the liquid temperature stabilizing before to proceed with the next eventual adjustment step.

8.2 Running Safeties Test

8.2.1 Flow Switches

With the running unit, disable the water pumps and check if "Water Flow Loss" alarm appears after 30sec.
If not, check proceed with the check of correct flow switch installation and calibration.

8.3 Data acquisition

Make sure that the circuit is working in stable conditions to don't affect the Data Acquisition

- Data acquisition must be performed according the ***Data Acquisition*** section of the Commissioning Sheet.
- Data acquisition must be separately performed for each circuit in Chiller and Heat Pump mode.
  To select the circuit working mode refer to the following setting:

  Start in Cool Mode:

  Main Menu → Unit Mode → Cool

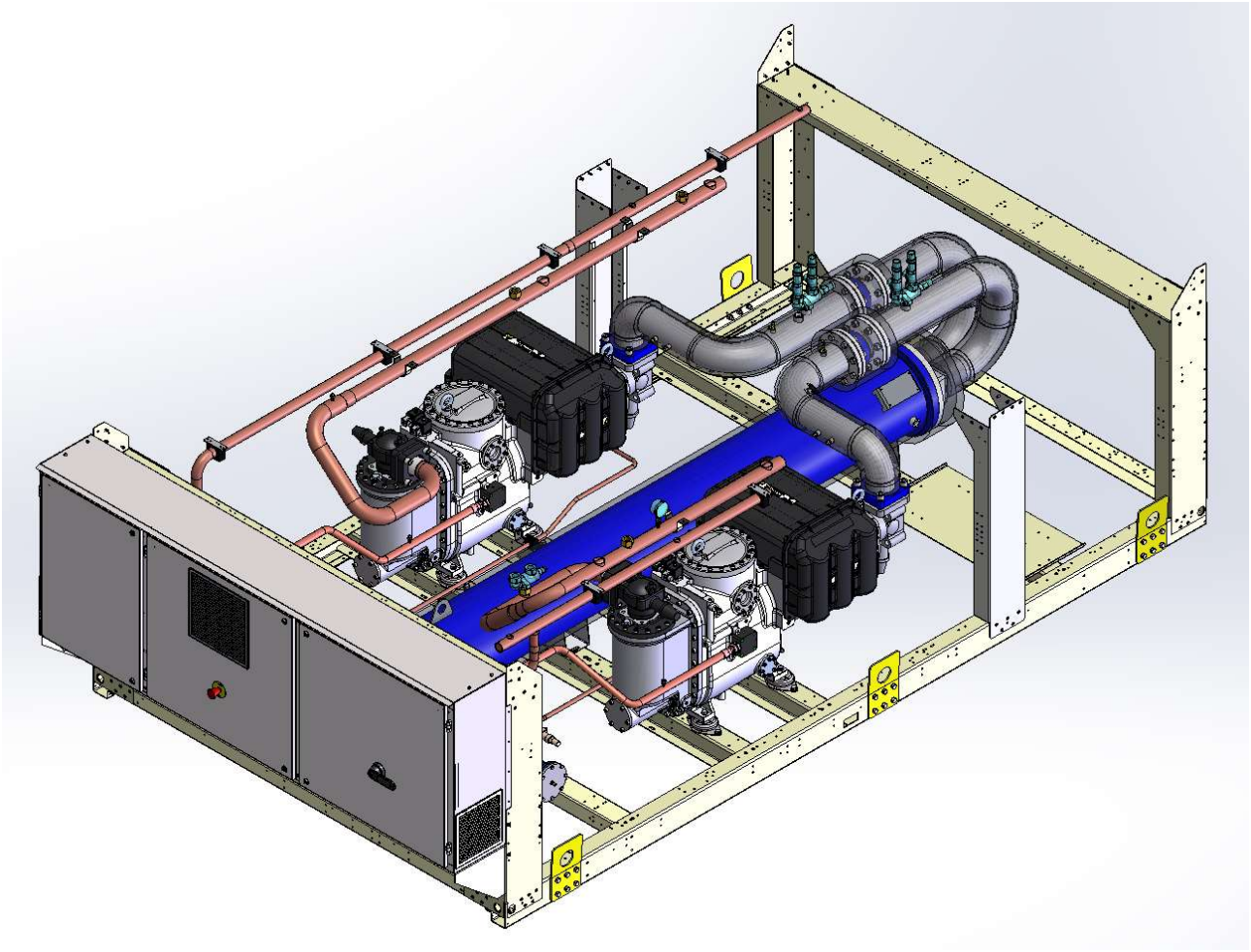
  Enable this setpoint for testing the unit in Mechanical mode and through Unit Enable to select which Circuit to test.
- It is recommended to let the circuit reach the 100% of capacity before to proceed with the data acquisition (according to the plant load conditions).
  To evaluate the stable operation of the unit check, following conditions must be satisfied:
  - Circuit Status equal to "Run=Normal"
  - ELWT and/or CLWT is as near as possible to the relative setpoint
  - EXV is working in Superheat mode:
    - Main Menu → View/Set Circuit → EXV Cool/Heat → State = SSH
  - SSH is equal to the SSH target for 5 minutes continuously:
    - Main Menu → View/Set Circuit → EXV Cool/Heat → SSH Target

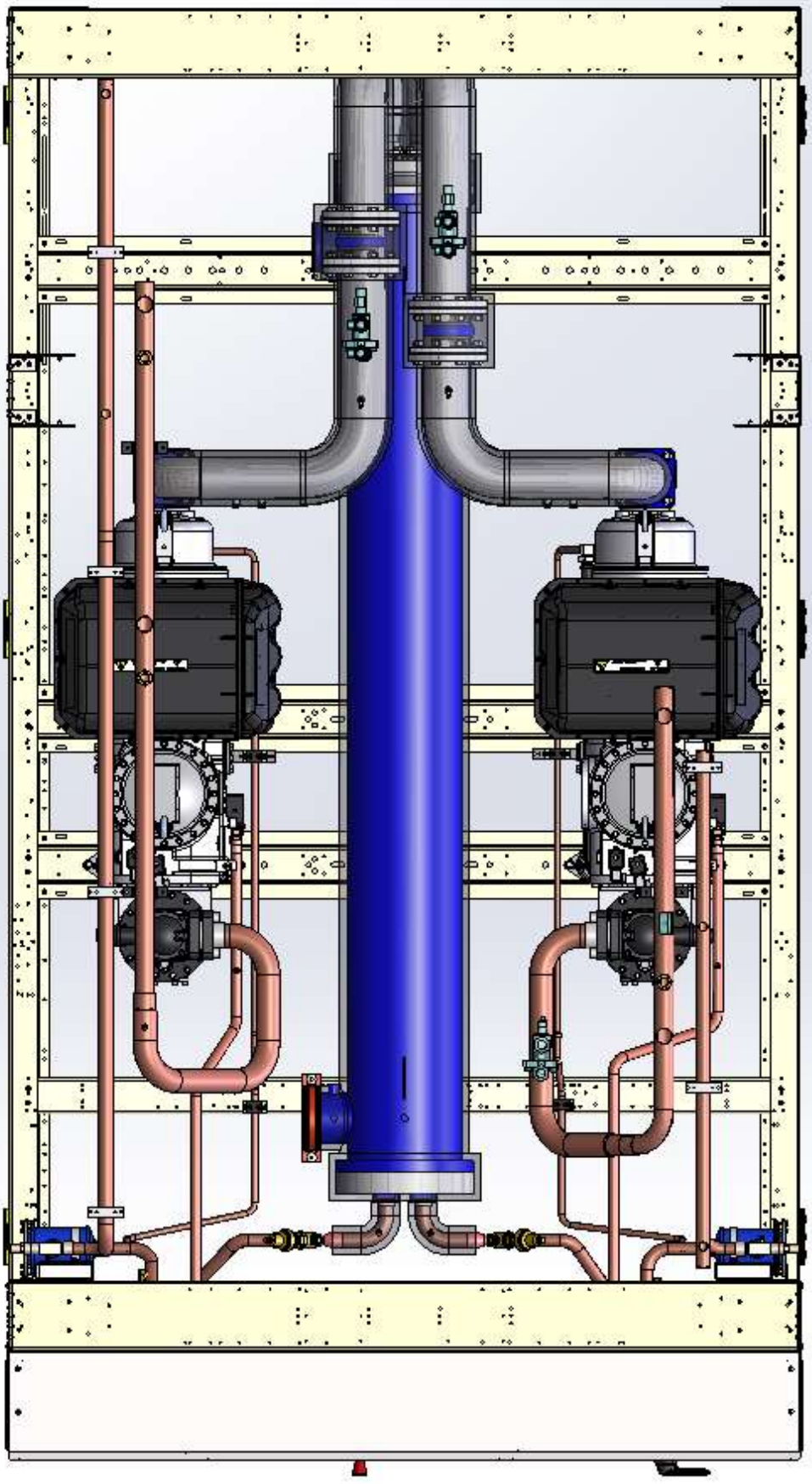
CLIMATIX Scope Light data recording during commissioning is strongly suggested.
For all material required for the recording get in contact with servicesupport@daikinapplied.eu

9 TABLES

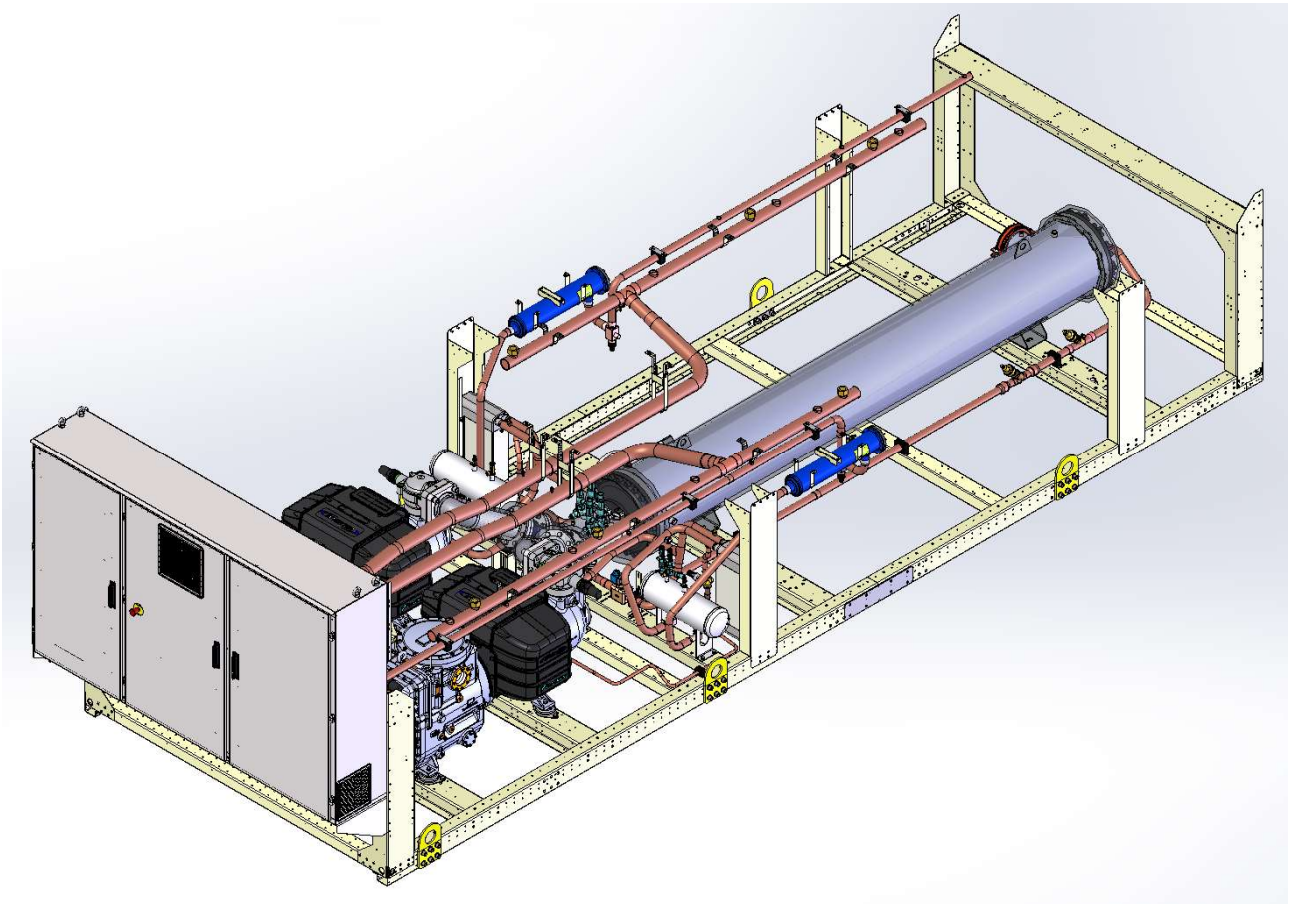
9.1 Unit Layout (Table A)

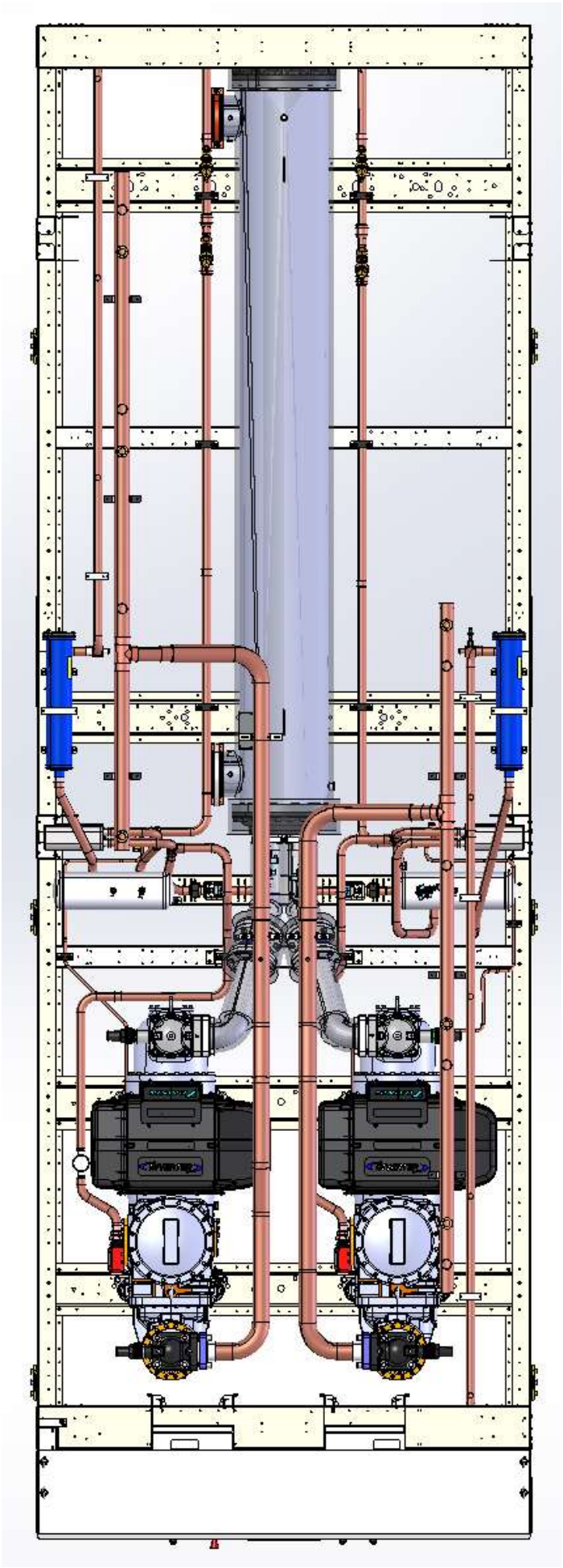
9.1.1 EWAD/H TZ-B and EWAD-MZB layout

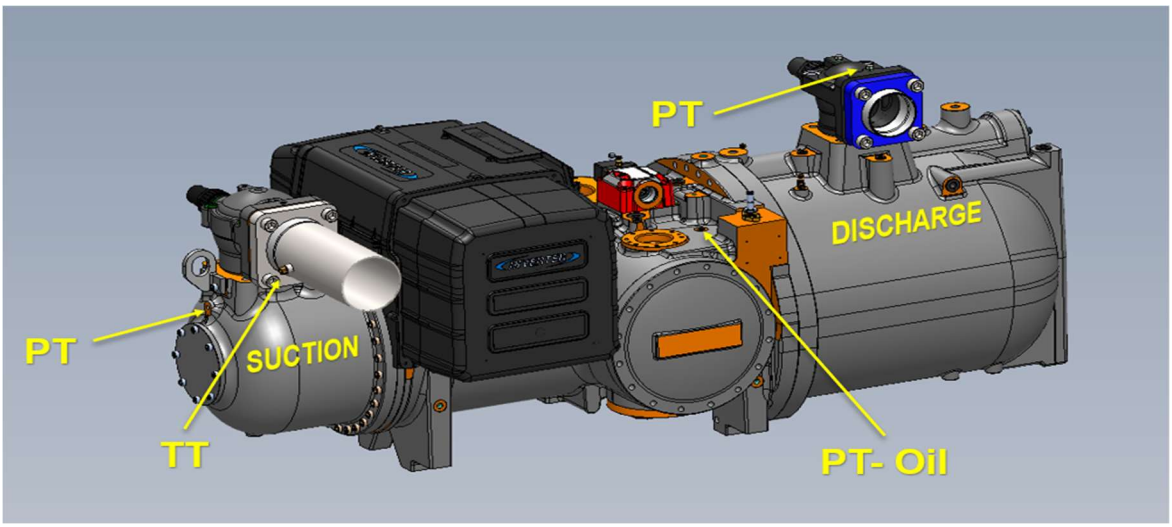




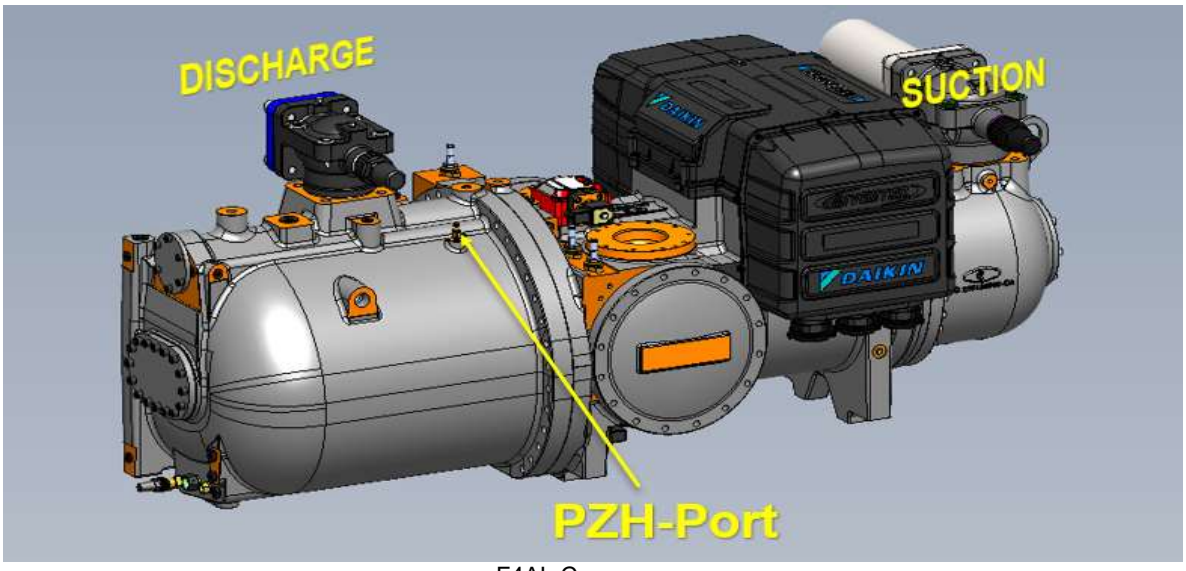
9.1.2 EWAD TZ-C, EWAH TZ-C, EWAD-MZ-C layout



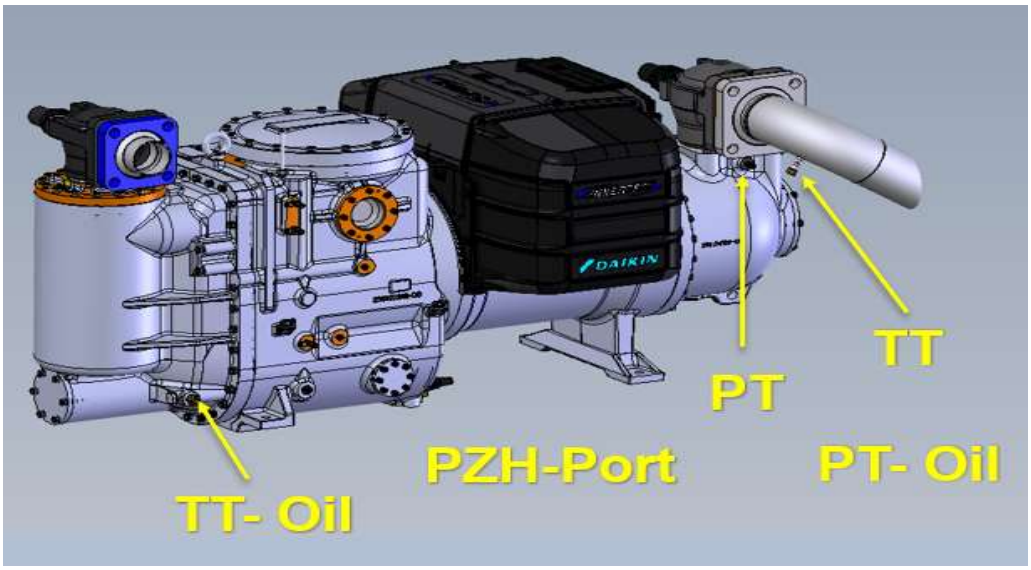




F4AL Compressor



F4AL Compressor



310240 Compressor

Sensor positioning is identical for all compressor models.

9.2 Unit configuration (Table B)

9.2.1 EWAD TZ-C, EWAH TZ-C

Unit configuration for EWAD TZC – Silver (ST,LN,XN)

Daikin Model	Compressor	Motor	Inverter	Inverter Type	FANS TYPE ST - LN	FANS TYPE XN	FANS TYPE OP.142 (HA)	FANS TYPE OP.160 (100Pa) ST - LN	FANS TYPE OP.160 (100Pa) XN	FANS TYPE OP.161 (200Pa)	Fan C1	Fan C2	EXV	Eco EXV	EXV OP.187 (Water high temperature)
EWADH11TZS-C2	310240L VR 2.6 – 80 Hz	AC	AC 200 kW	DAE	AC900	AC900L	AC900	EC900	AC900	EC1400	10	12	ETS 250	Sporlan	ETS 400
EWADH12TZS-C2	310240L VR 2.6 – 85 Hz	AC	AC 200 kW	DAE	AC900	AC900L	AC900	EC900	AC900	EC1400	10	12	ETS 250	Sporlan	ETS 400
EWADH13TZS-C2	310240L VR 2.6 – 90 Hz	AC	AC 200 kW	DAE	AC900	AC900L	AC900	EC900	AC900	EC1400	12	12	ETS 250	Sporlan	ETS 400
EWADC15TZS-C2	F4AL VVR 55 Hz	AC	AC 330 kW	DAE	AC900	AC900L	AC900	EC900	AC900	EC1400	12	12	ETS 250	Sporlan	ETS 400
EWADC16TZS-C2	F4AL VVR 60 Hz	AC	AC 330 kW	DAE	AC900	AC900L	AC900	EC900	AC900	EC1400	12	14	ETS 400	Sporlan	ETS 400
EWADH17TZS-C2	F4AL VVR 65 Hz	AC	AC 400 kW	DAE	AC900	AC900L	AC900	EC900	AC900	EC1400	14	14	ETS 400	Sporlan	ETS 400
EWADH18TZS-C2	F4AL VVR 70 Hz	AC	AC 400 kW	DAE	AC900	AC900L	AC900	EC900	AC900	EC1400	14	16	ETS 400	Sporlan	ETS 400
EWADH19TZS-C2	F4AL VVR 75 Hz	AC	AC 400 kW	DAE	AC900	AC900L	AC900	EC900	AC900	EC1400	14	16	ETS 400	Sporlan	ETS 400

Unit configuration for EWAD TZC – Gold (ST,LN,XN.)

Daikin Model	Compressor	Motor	Inverter	Inverter Type	FANS TYPE ST	FANS TYPE XN	FANS TYPE OP.142 (HA)	FANS TYPE OP.160 (100Pa)	FANS TYPE OP.161 (200Pa)	Fan C1	Fan C2	EXV	Eco EXV	EXV OP.187 (Alta Temperatura Acqua)
EWADC11TZX-C2	310240L VR 2.6 – 75 Hz	AC	AC 200 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	10	12	ETS 250	Sporlan	ETS 400
EWADC12TZX-C2	310240L VR 2.6 – 80 Hz	AC	AC 200 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	12	12	ETS 250	Sporlan	ETS 400
EWADH12TZX-C2	310240L VR 2.6 – 85 Hz	AC	AC 200 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	12	14	ETS 250	Sporlan	ETS 400
EWADC14TZX-C2	F4ALVVR 50 Hz	AC	AC 330 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	12	12	ETS 400	Sporlan	ETS 400
EWADC15TZX-C2	F4ALVVR 55 Hz	AC	AC 330 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	12	14	ETS 400	Sporlan	ETS 400
EWADH16TZX-C2	F4ALVVR 60 Hz	AC	AC 330 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	14	14	ETS 400	Sporlan	ETS 400
EWADH17TZX-C2	F4ALVVR 65 Hz	AC	AC 400 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	14	16	ETS 400	Sporlan	ETS 400

Unit configuration for EWAH TZC – Silver (ST,LN,XN)

Daikin Model	Compressor	Motor	Inverter	Inverter Type	FANS TYPE ST - LN	FANS TYPE XN	FANS TYPE OP.142 (HA)	FANS TYPE OP.160 (100Pa)	FANS TYPE OP.161 (200Pa)	Fan C1	Fan C2	EXV	Eco EXV	EXV OP.187(Alta Temperatura Acqua)
EWAH710TZS-C2	310240S VR 2.6 – 80 Hz	AC	AC 200 kW	DAE	AC900	AC900L	AC900	EC900	EC1400	6	8	ETS 250	Sporlan	ETS 400
EWAH770TZS-C2	310240L VR 2.6 – 70 Hz	AC	AC 200 kW	DAE	AC900	AC900L	AC900	EC900	EC1400	6	8	ETS 250	Sporlan	ETS 400
EWAH880TZS-C2	310240L VR 2.6 – 80 Hz	AC	AC 200 kW	DAE	AC900	AC900L	AC900	EC900	EC1400	8	8	ETS 250	Sporlan	ETS 400
EWAH940TZS-C2	310240L VR 2.6 – 85 Hz	AC	AC 200 kW	DAE	AC900	AC900L	AC900	EC900	EC1400	8	10	ETS 250	Sporlan	ETS 400
EWAH990TZS-C2	310240L VR 2.6 – 90 Hz	AC	AC 200 kW	DAE	AC900	AC900L	AC900	EC900	EC1400	10	10	ETS 250	Sporlan	ETS 400
EWAHH10TZS-C2	310240L VR 2.6 – 95 Hz	AC	AC 200 kW	DAE	AC900	AC900L	AC900	EC900	EC1400	10	12	ETS 250	Sporlan	ETS 400
EWAHC11TZS-C2	310240L VR 2.6 – 100 Hz	AC	AC 200 kW	DAE	AC900	AC900L	AC900	EC900	EC1400	12	12	ETS 250	Sporlan	ETS 400
EWAHC12TZS-C2	310240L VR 2.6 – 110 Hz	AC	AC 200 kW	DAE	AC900	AC900L	AC900	EC900	EC1400	12	14	ETS 250	Sporlan	ETS 400
EWAHC13TZS-C2	F4AL VVR 65 Hz	AC	AC 330 kW	DAE	AC900	AC900L	AC900	EC900	EC1400	12	12	ETS 400	Sporlan	ETS 400
EWAHC14TZS-C2	F4AL VVR 70 Hz	AC	AC 330 kW	DAE	AC900	AC900L	AC900	EC900	EC1400	12	14	ETS 400	Sporlan	ETS 400
EWAHC15TZS-C2	F4AL VVR 75 Hz	AC	AC 330 kW	DAE	AC900	AC900L	AC900	EC900	EC1400	14	14	ETS 400	Sporlan	ETS 400
EWAHC16TZS-C2	F4AL VVR 80 Hz	AC	AC 330 kW	DAE	AC900	AC900L	AC900	EC900	EC1400	14	16	ETS 400	Sporlan	ETS 400

Unit configuration for EWAH TZC – Gold (ST,LN,XN)

Daikin Model	Compressor	Motor	Inverter	Inverter Type	FANS TYPE ST	FANS TYPE XN	FANS TYPE OP.142 (HA)	FANS TYPE OP.160 (100Pa)	FANS TYPE OP.161 (200Pa)	Fan C1	Fan C2	EXV	Eco EXV	EXV OP.187 (Alta Temperatura Acqua)
EWAH670TZX-C2	310240L VR 2.6 – 60 Hz	AC	AC 200 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	6	8	ETS 250	Sporlan	ETS 400
EWAH780TZX-C2	310240L VR 2.6 – 70 Hz	AC	AC 200 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	8	8	ETS 250	Sporlan	ETS 400
EWAH840TZX-C2	310240L VR 2.6 – 75 Hz	AC	AC 200 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	8	10	ETS 250	Sporlan	ETS 400
EWAH950TZX-C2	310240L VR 2.6 – 85 Hz	AC	AC 200 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	10	12	ETS 250	Sporlan	ETS 400
EWAHC10TZX-C2	310240L VR 2.6 – 90 Hz	AC	AC 200 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	12	12	ETS 250	Sporlan	ETS 400
EWAHC11TZX-C2	310240L VR 2.6 – 100 Hz	AC	AC 200 kW	DAE	AC900L	AC900L	EC900	EC900	EC1400	12	14	ETS 250	Sporlan	ETS 400
EWAHC12TZX-C2	F4ALVVR 60 Hz	AC	AC 200 kW	DAE	AC900	AC900L	EC900	EC900	EC1400	12	12	ETS 400	Sporlan	ETS 400
EWAHC13TZX-C2	F4ALVVR 65 Hz	AC	AC 330 kW	DAE	AC900	AC900L	EC900	EC900	EC1400	12	14	ETS 400	Sporlan	ETS 400
EWAHC14TZX-C2	F4ALVVR 70 Hz	AC	AC 330 kW	DAE	AC900	AC900L	EC900	EC900	EC1400	14	14	ETS 400	Sporlan	ETS 400
EWAHC15TZX-C2	F4ALVVR 75 Hz	AC	AC 330 kW	DAE	AC900	AC900L	EC900	EC900	EC1400	14	16	ETS 400	Sporlan	ETS 400

9.2.2 EWAD MZ-C

Unit configuration for EWAD MZC – Silver

Daikin Model	Compressor	Motor	Inverter	Inverter Type	FANS TYPE	FANS TYPE OP.142 (HA)	FANS TYPE OP.160 (100Pa)	FANS TYPE OP.161 (200Pa)	Fan C1	Fan C2	EXV	Eco EXV	EXV OP.187 (Alta Temperatura Acqua)
EWADH10MZSSC2	310240L VR 2.6 – 80 Hz	AC	AC 200 kW	DAE	AC900	AC900	EC900	EC1400	10	12	ETS 250	Sporlan	ETS 400
EWADC11MZSSC2	310240L VR 2.6 – 85 Hz	AC	AC 200 kW	DAE	AC900	AC900	EC900	EC1400	10	12	ETS 250	Sporlan	ETS 400
EWADH11MZSSC2	310240L VR 2.6 – 90 Hz	AC	AC 200 kW	DAE	AC900	AC900	EC900	EC1400	12	12	ETS 250	Sporlan	ETS 400
EWADC13MZSSC2	F4ALVVR 55 Hz	AC	AC 330 kW	DAE	AC900	AC900	EC900	EC1400	12	12	ETS 400	Sporlan	ETS 400
EWADC14MZSSC2	F4ALVVR 60 Hz	AC	AC 330 kW	DAE	AC900	AC900	EC900	EC1400	12	14	ETS 400	Sporlan	ETS 400
EWADC15MZSSC2	F4ALVVR 65 Hz	AC	AC 400 kW	DAE	AC900	AC900	EC900	EC1400	14	14	ETS 400	Sporlan	ETS 400
EWADC16MZSSC2	F4ALVVR 70 Hz	AC	AC 400 kW	DAE	AC900	AC900	EC900	EC1400	14	16	ETS 400	Sporlan	ETS 400

Unit configuration for EWAD MZC – Gold

Daikin model	Compressor	Motor	Inverter	Inverter Type	FANS TYPE	FANS TYPE OP.142 (HA)	FANS TYPE OP.160 (100Pa)	FANS TYPE OP.161 (200Pa)	Fan C1	Fan C2	EXV	Eco EXV	EXV OP.187 (Alta Temperatura Acqua)
EWADC10MZXSC2	310240L VR 2.6 – 75 Hz	AC	AC 200 kW	DAE	AC900	AC900	EC900	EC1400	10	12	ETS 250	Sporlan	ETS 400
EWADH10MZXSC2	310240L VR 2.6 – 80 Hz	AC	AC 200 kW	DAE	AC900	AC900	EC900	EC1400	12	12	ETS 250	Sporlan	ETS 400
EWADH11MZXSC2	310240L VR 2.6 – 85 Hz	AC	AC 200 kW	DAE	AC900	AC900	EC900	EC1400	12	14	ETS 250	Sporlan	ETS 400
EWADC12MZXSC2	F4AL VVR 50 Hz	AC	AC 330 kW	DAE	AC900	AC900	EC900	EC1400	12	12	ETS 400	Sporlan	ETS 400
EWADC13MZXSC2	F4AL VVR 55 Hz	AC	AC 330 kW	DAE	AC900	AC900	EC900	EC1400	12	14	ETS 400	Sporlan	ETS 400
EWADC14MZXSC2	F4AL VVR 60 Hz	AC	AC 330 kW	DAE	AC900	AC900	EC900	EC1400	14	14	ETS 400	Sporlan	ETS 400
EWADC15MZXSC2	F4AL VVR 65 Hz	AC	AC 400 kW	DAE	AC900	AC900	EC900	EC1400	14	16	ETS 400	Sporlan	ETS 400

Unit configuration for EWAD MZC – Platinum

Daikin Model	Compressor	Motor	Inverter	Inverter Type	FANS TYPE	FANS TYPE OP.142 (HA)	FANS TYPE OP.160 (100Pa)	FANS TYPE OP.161 (200Pa)	Fan C1	Fan C2	EXV	Eco EXV	EXV OP.187 (Alta Temperatur Acqua)
EWADC10MZPSC2	310240L VR 2.6 – 75 Hz	AC	AC 200 kW	DAE	EC900	EC900	EC900	EC1400	10	12	ETS 250	Sporlan	ETS 400
EWADH10MZPSC2	310240L VR 2.6 – 80 Hz	AC	AC 200 kW	DAE	EC900	EC900	EC900	EC1400	12	12	ETS 250	Sporlan	ETS 400
EWADH11MZPSC2	310240L VR 2.6 – 85 Hz	AC	AC 200 kW	DAE	EC900	EC900	EC900	EC1400	12	14	ETS 250	Sporlan	ETS 400
EWADC12MZPSC2	F4AL VVR 50 Hz	AC	AC 330 kW	DAE	EC900	EC900	EC900	EC1400	12	12	ETS 400	Sporlan	ETS 400
EWADC13MZPSC2	F4AL VVR 55 Hz	AC	AC 330 kW	DAE	EC900	EC900	EC900	EC1400	12	14	ETS 400	Sporlan	ETS 400
EWADC14MZPSC2	F4AL VVR 60 Hz	AC	AC 330 kW	DAE	EC900	EC900	EC900	EC1400	14	14	ETS 400	Sporlan	ETS 400
EWADC15MZPSC2	F4AL VVR 65 Hz	AC	AC 400 kW	DAE	EC900	EC900	EC900	EC1400	14	16	ETS 400	Sporlan	ETS 400

9.2.3 EWAD TZ-B and EWAH TZ-B

Modello Daikin	Modello McQuay	Compressore	Inv	Fan 50Hz	Fan 60 Hz	Fan Brine 50/60 Hz	Fan HA 50/60 Hz	OP. 158/159 Fan BRS	Opt.160 SS-SL-SR 50/60 Hz	Fan Opt.161 SS-SL-SR 50/60 Hz	EXV	FanC1	FanC2
EWAD160TZS B1	ATS 050.1 B SE	3120-60Hz-AC	90	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS100	4	-
EWAD190TZS B1	ATS 060.1 B SE	3120-70Hz-AC	90	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS100	4	-
EWAD240TZS B1	ATS 070.1 B SE	3122-60Hz-AC	90	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	4	-
EWAD270TZS B1	ATS 080.1 B SE	3122-70Hz-AC	90	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	6	-
EWAD300TZS B1	ATS 090.1 B SE	3122-80Hz-AC	120	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	6	-
EWAD360TZS B1	ATS 100.1 B SE	3122-90Hz-AC	120	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	8	-
EWAD380TZS B2	ATS 120.2 B SE	3120-70Hz-AC	90	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS100	4	4
EWAD450TZS B2	ATS 130.2 B SE	3122-60Hz-AC	90	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	4	4
EWAD495TZS B2	ATS 150.2 B SE	3122-65Hz-AC	90	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	4	6
EWAD570TZS B2	ATS 170.2 B SE	3122-75Hz-AC	120	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	6	6
EWAD610TZS B2	ATS 180.2 B SE	3122-80Hz-AC	120	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	6	6
EWAD660TZS B2	ATS 200.2 B SE	3122-85Hz-AC	120	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	6	6
EWAD700TZS B2	ATS 210.2 B SE	3122-90Hz-AC	120	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	6	8

Modello Daikin	Modello McQuay	Compressor	Inv	Fan 50/60 Hz	Fan Brine 50/60Hz	Fan HA 50/60 Hz	OP. 158/159 Fan BRS	Fan Opt.160 SS-SL 50/60 Hz	Fan Opt.161 SS-SL 50/60 Hz	EXV	FanC1	FanC2
EWAD820TZS B2	ATS 230.2 B SE	F3AS-70Hz-AC	200kW	AC900	AC900	AC900	DC1000L	EC900	EC1400	ETS250	6	8
EWAD900TZS B2	ATS 260.2 B SE	F3AL-70Hz-AC	200kW	AC900	AC900	AC900	DC1000L	EC900	EC1400	ETS250	6	8
EWAD990TZS B2	ATS 280.2 B SE	F3AL-75Hz-AC	200kW	AC900	AC900	AC900	DC1000L	EC900	EC1400	ETS250	8	8
EWADC10TZS B2	ATS 290.2 B SE	F3AL-80Hz-AC	200kW	AC900	AC900	AC900	DC1000L	EC900	EC1400	ETS250	8	10
EWADC11TZS B2	ATS 310.2 B SE	F3AL-85Hz-AC	200kW	AC900	AC900	AC900	DC1000L	EC900	EC1400	ETS250	10	10

Modello Daikin	Modello McQuay	Compressore	Inverter	Fan50Hz	Fan60Hz	Fan Brine 50/60 Hz	Fan HA 50/60 Hz	OP. 158/159 Fan BRS	Fan Opt.160 50/60 Hz	Fan Opt.161 50/60 Hz	EXV	FanC1	FanC2
EWAD820TZSRB2	ATS 230.2 B SE	F3AS-70Hz-AC	200kW	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	8	8
EWAD900TZSRB2	ATS 260.2 B SE	F3AL-70Hz-AC	200kW	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	8	8
EWAD990TZSRB2	ATS 280.2 B SE	F3AL-75Hz-AC	200kW	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	8	10
EWADC10TZSRB2	ATS 290.2 B SE	F3AL-80Hz-AC	200kW	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	10	10
EWADC11TZSRB2	ATS 310.2 B SE	F3AL-85Hz-AC	200kW	AC700	AC900	AC900L	AC900	DC1000-700	AC900	EC1400	ETS250	10	12

Modello Daikin	Modello McQuay	Compressore	Inverter	Fan 50/60 Hz	Fan Brine 50/60 Hz	Fan Opt.160 50/60 Hz	Fan Opt.161 50/60 Hz	Fan HA 50/60 Hz	OP. 158/159 Fan BRS	EXV	FanC1	FanC2
EWAD190TZX B1	ATS 050.1 B XE	3120-60Hz-DC	90kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS100	6	-
EWAD220TZX B1	ATS 060.1 B XE	3120-70Hz-DC	90kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS100	6	-
EWAD240TZX B1	ATS 070.1 B XE	3122-60Hz-DC	120kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	6	-
EWAD290TZX B1	ATS 080.1 B XE	3122-70Hz-DC	120kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	8	-
EWAD320TZX B1	ATS 090.1 B XE	3122-80Hz-DC	120kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	8	-
EWAD360TZX B2	ATS 110.2 B XE	3120-60Hz-DC	90kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS100	4	6
EWAD420TZX B2	ATS 120.2 B XE	3120-70Hz-DC	90kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS100	4	6
EWAD450TZX B2	ATS 140.2 B XE	3122-60Hz-DC	120kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	6	6
EWAD540TZX B2	ATS 150.2 B XE	3122-65Hz-DC	120kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	6	6
EWAD570TZX B2	ATS 160.2 B XE	3122-70Hz-DC	120kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	6	6
EWAD610TZX B2	ATS 170.2 B XE	3122-75Hz-DC	120kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	6	8
EWAD660TZX B2	ATS 180.2 B XE	3122-80Hz-DC	120kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	8	8
EWAD680TZX B2	ATS 190.2 B XE	3122-85Hz-DC	120kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	8	8
EWAD770TZX B2	ATS 220.2 B XE	F3AS-67.5Hz-DC	200kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	8	8
EWAD850TZX B2	ATS 240.2 B XE	F3AS-75Hz-DC	200kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	8	8
EWAD910TZX B2	ATS 260.2 B XE	F3AL-70Hz-DC	200kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	8	10
EWADC10TZX B2	ATS 290.2 B XE	F3AL-75Hz-DC	200kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	10	10
EWADC11TZX B2	ATS 310.2 B XE	F3AL-80Hz-DC	200kW	AC700	AC900L	AC900	EC1400	DC1000L	DC1000-700	ETS250	10	12

Modello Daikin	Modello McQuay	Compressore	Inverter	Fan 50/60 Hz	Fan Brine 50/60 Hz	Fan HA 50/60 Hz	OP. 158/159 Fan BRS	Fan Opt.160 50/60 Hz	Fan Opt.161 50/60 Hz	EXV	FanC1	FanC2
EWAD190TZP B1	ATS 050.1 B PR	3120-60Hz-DC	90kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS100	8	-
EWAD220TZP B1	ATS 060.1 B PR	3120-70Hz-DC	90kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS100	8	-
EWAD240TZP B1	ATS 070.1 B PR	3122-60Hz-DC	120kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS250	8	-
EWAD290TZP B1	ATS 080.1 B PR	3122-70Hz-DC	120kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS250	8	-
EWAD300TZP B1	ATS 090.1 B PR	3122-80Hz-DC	120kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS250	10	-
EWAD350TZP B2	ATS 100.2 B PR	3120-60Hz-DC	90kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS100	6	6
EWAD420TZP B2	ATS 120.2 B PR	3120-70Hz-DC	90kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS100	6	8
EWAD495TZP B2	ATS 140.2 B PR	3122-60Hz-DC	120kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS250	8	8
EWAD550TZP B2	ATS 160.2 B PR	3122-65Hz-DC	120kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS250	8	10
EWAD620TZP B2	ATS 180.2 B PR	3122-75Hz-DC	120kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS250	10	10
EWAD720TZP B2	ATS 210.2 B PR	F3AS-60Hz-DC	200kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS250	10	10
EWAD820TZP B2	ATS 230.2 B PR	F3AS-70Hz-DC	200kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS250	10	12
EWAD950TZP B2	ATS 270.2 B PR	F3AL-70Hz-DC	200kW	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400	ETS250	12	12

Modello Daikin	Comp	Hz	Inverter	Fan C1	Fan C2	Fan	Fan Brine	Fan HA	OP. 158/159 Fan BRS	Fan Opt. 160	Fan Opt. 161
EWAH170TZS-B1	3122 AC	60	90 kW	4	0	AC700	AC900L	AC900	DC1000-700	AC900	EC1400
EWAH200TZS-B1	3122 AC	70	90 kW	4	0	AC700	AC900L	AC900	DC1000-700	AC900	EC1400
EWAH240TZS-B1	3122 AC	85	120 kW	6	0	AC700	AC900L	AC900	DC1000-700	AC900	EC1400
EWAH290TZS-B1	F3AS AC	75	200 kW	6	0	AC700	AC900L	AC900	DC1000-700	AC900	EC1400
EWAH330TZS-B1	F3AL AC	75	200 kW	6	0	AC700	AC900L	AC900	DC1000-700	AC900	EC1400
EWAH390TZS-B2	3122 AC	70	90 kW	4	6	AC700	AC900L	AC900	DC1000-700	AC900	EC1400
EWAH420TZS-B2	3122 AC	75	120 kW	4	6	AC700	AC900L	AC900	DC1000-700	AC900	EC1400
EWAH490TZS-B2	3122 AC	85	120 kW	6	6	AC700	AC900L	AC900	DC1000-700	AC900	EC1400
EWAH530TZS-B2	3122 AC	90	120 kW	6	6	AC700	AC900L	AC900	DC1000-700	AC900	EC1400
EWAH600TZS-B2	F3AS AC	80	200 kW	6	6	AC700	AC900L	AC900	DC1000-700	AC900	EC1400
EWAH690TZS-B2	F3AL AC	80	200 kW	6	8	AC700					
EWAH750TZS-B2	F3AL AC	86	200 kW	8	8	AC700					
EWAH820TZS-B2	F3BL AC	65	330 kW	8	8	AC700					
EWAH920TZS-B2	F3BL AC	75	330 kW	8	10	AC700					
EWAH980TZS-B2	F3BL AC	80	330 kW	10	10	AC700					
EWAHC10TZS-B2	F3BL AC	85	330 kW	10	10	AC700					

Modello Daikin	Comp	Hz	Inverter	Fan C1	Fan C2	Fan	Fan Brine	Fan HA	OP. 158/159 Fan BRS	Fan Opt.160	Fan Opt.161
EWAH180TZX-B1	3122 AC	60	90 kW	6	0	AC700	AC900L	DC1000L	DC1000-700	AC900	EC1400
EWAH220TZX-B1	3122 AC	75	120 kW	8	0	AC700	AC900L	DC1000L	DC1000-700	AC900	EC1400
EWAH270TZX-B1	F3AS AC	65	200 kW	6	0	AC700	AC900L	DC1000L	DC1000-700	AC900	EC1400
EWAH300TZX-B1	F3AS AC	75	200 kW	8	0	AC700	AC900L	DC1000L	DC1000-700	AC900	EC1400
EWAH350TZX-B2	3122 AC	60	90 kW	6	6	AC700	AC900L	DC1000L	DC1000-700	AC900	EC1400
EWAH390TZX-B2	3122 AC	65	90 kW	6	6	AC700	AC900L	DC1000L	DC1000-700	AC900	EC1400
EWAH430TZX-B2	3122 AC	70	90 kW	6	8	AC700	AC900L	DC1000L	DC1000-700	AC900	EC1400
EWAH480TZX-B2	3122 AC	80	120 kW	8	8	AC700	AC900L	DC1000L	DC1000-700	AC900	EC1400
EWAH580TZX-B2	F3AS AC	68	200 kW	6	8	AC700	AC900L	DC1000L	DC1000-700	AC900	EC1400
EWAH620TZX-B2	F3AS AC	75	200 kW	8	8	AC700	AC900L	DC1000L	DC1000-700	AC900	EC1400
EWAH670TZX-B2	F3AL AC	70	200 kW	8	8	AC700					
EWAH710TZX-B2	F3AL AC	75	200 kW	8	10	AC700					
EWAH760TZX-B2	F3AL AC	80	200 kW	10	10	AC700					
EWAH820TZX-B2	F3BL AC	60	330 kW	10	12	AC700					
EWAH930TZX-B2	F3BL AC	68	330 kW	12	12	AC700					
EWAH990TZX-B2	F3BL AC	75	330 kW	12	12	AC700					

Modello Daikin	Comp	Hz	Inverter	Fan C1	Fan C2	Fan PS-PL-PR	Fan Brine	Fan HA	OP. 158/159 Fan BRS	Fan Opt. 160	Fan Opt. 161
EWAH370TZP-B2	3122 DC	60	90 kW	8	8	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400
EWAH440TZP-B2	3122 DC	70	90 kW	10	10	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400
EWAH530TZP-B2	F3AS DC	60	200 kW	8	8	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400
EWAH610TZP-B2	F3AS DC	70	200 kW	8	10	DC1000-700	DC1000-700	DC1000L	STD	EC900	EC1400
EWAH690TZP-B2	F3AL DC	70	200 kW	10	12	DC1000-700					
EWAH770TZP-B2	F3BL DC	55	330 kW	12	12	DC1000-700					

9.2.4 EWAD MZ-B

Modello Daikin	Compressore	Opt. 260 Boost Comp	Inverter	Fan 50/60Hz	Fan Brine 50/60Hz	Fan HA 50/60 Hz	Fan Opt. 158	EXV	FanC1	FanC2
EWAD380MZ-SS B2	3120-70Hz-AC	NA	90kW	AC900	AC900	AC900	DC1000L	ETS100	4	4
EWAD450MZ-SS B2	3122-60Hz-AC	NA	90kW	AC900	AC900	AC900	DC1000L	ETS250	4	4
EWAD495MZ-SS B2	3122-65Hz-AC	NA	90kW	AC900	AC900	AC900	DC1000L	ETS250	4	6
EWAD570MZ-SS B2	3122-75Hz-AC	90 Hz	120kW	AC900	AC900	AC900	DC1000L	ETS250	6	6
EWAD610MZ-SS B2	3122-80Hz-AC	NA	120kW	AC900	AC900	AC900	DC1000L	ETS250	6	6
EWAD660MZ-SS B2	3122-85Hz-AC	NA	120kW	AC900	AC900	AC900	DC1000L	ETS250	6	6
EWAD700MZ-SS B2	3122-90Hz-AC	NA	120kW	AC900	AC900	AC900	DC1000L	ETS250	6	8
EWAD820MZ-SS B2	F3AS-70Hz-AC	80 Hz	200kW	AC900	AC900	AC900	DC1000L	ETS250	6	8
EWAD900MZ-SS B2	F3AL-70Hz-AC	NA	200kW	AC900	AC900	AC900	DC1000L	ETS250	6	8
EWADC10MZ-SS B2	F3AL-75Hz-AC	NA	200kW	AC900	AC900	AC900	DC1000L	ETS250	8	8
EWADH10MZ-SS B2	F3AL-75Hz-AC	85 Hz	200kW	AC900	AC900	AC900	DC1000L	ETS250	8	10
EWADH11MZ-SS B2	F3AL-85Hz-AC	NA	200kW	AC900	AC900	AC900	DC1000L	ETS250	10	12

Modello Daikin	Compressore	Opt. 260 Boost Comp	Inverter	Fan 50/60 Hz	Fan Brine 50/60Hz	Fan HA 50/60 Hz	EXV	FanC1	FanC2
EWAD360MZ-XS B2	3120-60Hz-DC	NA	90kW	AC900	AC900	AC900	ETS100	4	6
EWAD420MZ-XS B2	3120-70Hz-DC	NA	90kW	AC900	AC900	AC900	ETS100	4	6
EWAD450MZ-XS B2	3122-60Hz-DC	NA	120kW	AC900	AC900	AC900	ETS250	6	6
EWAD540MZ-XS B2	3122-65Hz-DC	NA	120kW	AC900	AC900	AC900	ETS250	6	6
EWAD570MZ-XS B2	3122-70Hz-DC	NA	120kW	AC900	AC900	AC900	ETS250	6	6
EWAD610MZ-XS B2	3122-75Hz-DC	NA	120kW	AC900	AC900	AC900	ETS250	6	8
EWAD660MZ-XS B2	3122-80Hz-DC	NA	120kW	AC900	AC900	AC900	ETS250	8	8
EWAD680MZ-XS B2	3122-85Hz-DC	NA	120kW	AC900	AC900	AC900	ETS250	8	8
EWAD770MZ-XS B2	F3AS-67.5Hz-DC	NA	200kW	AC900	AC900	AC900	ETS250	8	8
EWAD850MZ-XS B2	F3AS-75Hz-DC	NA	200kW	AC900	AC900	AC900	ETS250	8	8
EWAD910MZ-XS B2	F3AL-70Hz-DC	NA	200kW	AC900	AC900	AC900	ETS250	8	10
EWADC10MZ-XS B2	F3AL-75Hz-DC	NA	200kW	AC900	AC900	AC900	ETS250	10	10
EWADH10MZ-XS B2	F3AL-80Hz-DC	NA	200kW	AC900	AC900	AC900	ETS250	10	12
EWADC11MZ-XS B2	F3AL-85Hz-DC	NA	200kW	AC900	AC900	AC900	ETS250	12	12

Modello Daikin	Compressore	Opt. 260 Boost Comp	Inverter	Fan Type 50/60 Hz	Fan Brine 50/60 Hz	Fan Type Opt. 142 HA 50/60 Hz	Fan Type Opt.158	EXV	FanC1	FanC2
EWAD360MZ-PS B2	3120-60Hz-DC	NA	90kW	DC1000L	DC1000L	DC1000L	STD	ETS100	4	6
EWAD420MZ-PS B2	3120-70Hz-DC	NA	90kW	DC1000L	DC1000L	DC1000L	STD	ETS100	4	6
EWAD450MZ-PS B2	3122-60Hz-DC	NA	120kW	DC1000L	DC1000L	DC1000L	STD	ETS250	6	6
EWAD540MZ-PS B2	3122-65Hz-DC	NA	120kW	DC1000L	DC1000L	DC1000L	STD	ETS250	6	6
EWAD570MZ-PS B2	3122-70Hz-DC	NA	120kW	DC1000L	DC1000L	DC1000L	STD	ETS250	6	6
EWAD610MZ-PS B2	3122-75Hz-DC	NA	120kW	DC1000L	DC1000L	DC1000L	STD	ETS250	6	8
EWAD660MZ-PS B2	3122-80Hz-DC	NA	120kW	DC1000L	DC1000L	DC1000L	STD	ETS250	8	8
EWAD680MZ-PS B2	3122-85Hz-DC	NA	120kW	DC1000L	DC1000L	DC1000L	STD	ETS250	8	8
EWAD770MZ-PS B2	F3AS-67.5Hz-DC	NA	200kW	DC1000L	DC1000L	DC1000L	STD	ETS250	8	8
EWAD850MZ-PS B2	F3AS-75Hz-DC	NA	200kW	DC1000L	DC1000L	DC1000L	STD	ETS250	8	8
EWAD910MZ-PS B2	F3AL-70Hz-DC	NA	200kW	DC1000L	DC1000L	DC1000L	STD	ETS250	8	10
EWADC10MZ-PS B2	F3AL-75Hz-DC	NA	200kW	DC1000L	DC1000L	DC1000L	STD	ETS250	10	10
EWADH10MZ-PS B2	F3AL-80Hz-DC	NA	200kW	DC1000L	DC1000L	DC1000L	STD	ETS250	10	12
EWADC11MZ-PS B2	F3AL-85Hz-DC	NA	200kW	DC1000L	DC1000L	DC1000L	STD	ETS250	12	12

9.3 Pump Inverter Settings (Table C)

Impostazioni Parametri Inverter Danfoss per Pompe

Start-up Wizard for Open Loop Applications

Parametro	Descrizione	Settings	Default	NOTE
0-03	Regional Settings	default	*[0] International*	
0-06	Grid Type	[12] 380-440V/50Hz	*[12] 380-440V/50Hz*	*Verificare Tensione di alimentazione su R.M.*
1-10	Motor Construction	default	*[0] Asynchron*	
1-20	Motor Power	default	*Size related*	*Verificare Targa Motore*
1-22	Motor Voltage	400 V	*Size related*	*Verificare Targa Motore*
1-23	Motor Frequency	50 Hz	*Size related*	*Verificare Targa Motore*
1-24	Motor Nominal Current	default	*Size related*	*Verificare Targa Motore*
1-25	Motor Nominal Speed	See Pump Motor Label	*Size related*	*Verificare Targa Motore*
1-73	Flying Start	default	*[0] Disabled*	
3-02	Minimum Reference	-	*0*	*Con velocità comandata dal cliente, impostare a 40Hz.*
3-03	Maximum Reference	50	*50*	*Come 1-23 a meno che non sia riportata su R.M. una velocità inferiore*
3-41	Ramp-Up Time	10 s	*Size related*	*Tempo per arrivare a 1-23 frequency*
3-42	Ramp-Down Time	10 s	*Size related*	*Tempo per fermarsi da 1-23 frequency*
4-12	Motor Speed Low Limit [Hz]	default	*0*	
4-14	Motor Speed High Limit [Hz]	default	*65*	
4-19	Max Output Frequency	default	*Size related*	
5-40	Function Relay [0]	default	*Alarm*	
5-40	Function Relay [1]	default	*Drive running*	
6-10	Terminal 53 Low Voltage	default	*0.07 V*	
6-11	Terminal 53 High Voltage	default	*10 V*	
6-12	Terminal 53 Low Current	default	*4 mA*	
6-13	Terminal 53 Low Voltage	default	*20 mA*	
6-19	Terminal 53 mode	default	*1*	*Voltage input - [0] commuta all'ingresso in corrente*

9.4 Pre-Commissioning Sheet (Table D)

Pre-Commissioning Sheet

Job Name: _____

Unit Model No.(s): _____

Daikin Serial Unit No.: _____

Chilled Water	Yes	No	N/A
-Piping complete	❑	❑	❑
-Water System filled and vented	❑	❑	❑
-Pumps installed & operational (rotation checked)	❑	❑	❑
-Strainers installed and clean	❑	❑	❑
-Controls (3-way valves, bypass valves, etc.) operable	❑	❑	❑
-Flow switch installed.	❑	❑	❑
-Water system operated and flow balanced to meet unit design requirements	❑	❑	❑
-Proper glycol percentage for the application in accordance with Daikin specifications	❑	❑	❑
Condenser Water			
-Cooling tower flushed, filled and piping vented	❑	❑	❑
-Pumps installed & operational (rotation checked)	❑	❑	❑
-Strainers installed and clean	❑	❑	❑
-Controls (3-way valves, bypass valves, etc.) operable	❑	❑	❑
-Water system operated and flow balanced to meet unit design requirements	❑	❑	❑
-Proper glycol percentage for the application in accordance with Daikin specifications	❑	❑	❑
Electrical			
-Power leads connected to unit main terminal block	❑	❑	❑
-Power leads have been checked for proper electrical phasing U-V-W for L1, L2, & L3 respectively.	❑	❑	❑
-All interlock wiring complete and complies with Daikin specifications	❑	❑	❑
-Pump starter and interlocks wired	❑	❑	❑
-Cooling tower fans and controls wired	❑	❑	❑
-Wiring complies with National Electrical Code and local codes	❑	❑	❑
Miscellaneous			
-Unit installed in accordance with Daikin IOM specifications (leveling, space requirements, …)	❑	❑	❑
-Thermometer wells, thermometers, gauges, control wells, controls, etc., installed	❑	❑	❑
-A minimum system load of 60% of machine capacity is available for testing and adjusting controls	❑	❑	❑

Warning: Under no condition should these units be started prior to the authorized start-up by Daikin Applied. Failure to follow this warning may result in serious equipment damage and will negate the warranty.
All installation work has been completed as checked above; the system has been inspected and the unit is ready for start-up

Site Engineer

Name: _____

Date: _____

Signature: _____

9.5 Commissioning Sheet (Table E)

CHILLER COMMISSIONING SHEET - EWAD-TZ

End user :		Date:	
Site:		Model nr:	
Distributor:		Serial nr:	

A	PRE-POWER ON CHECK LIST		
A1	Any shipping damage?		
A2	Is the chiller adequately level mounted?		
A3	Are mimum space requirements met?		
A4	Anti vibration pads installed?		
A5	Full Leak Test performed?		
A6	Water piping system checked?		
A7	Water Flows checked?		
A8	Glycol type / percentage [Evap/Cond]		
A9	Are electrical connections correct?		
A10	Compressor model C1		
A11	Compressor serial C1		
A12	Compressor model C2		
A13	Compressor serial C2		

B	PRE-STARTUP CHECK LIST				
B1	Evaporator Flow Switch Check				
B2	Condenser Flow Switch Check				
B3	Main VOLTAGE L1-L2 (V)				
B4	Main VOLTAGE L2-L3 (V)				
B5	Main VOLTAGE L1-L3 (V)				
B6	Frequency (Hz)				
B7	Control voltage Tx IN / OUT (V)	/	/		
B8	Control voltage AL1 (V)				
B9	Oil Heaters were on before start up?				
B10	Check Heaters (A) (measure current)	C1	C2	VFD1	VFD2
B11	Unit Software Version				
B12	Unit Water Temp Set Point Cool/Heat (°C)				
B13	Unit settings checked?				
B14	Circuit settings checked?				
B15	Alarm Limits set?				
B16	Evap Water Frz Alarm Setpoint (°C)				
B17	Dry Test performed?				
B18	Can be the chiller put into operation?				

C	PRE-STARTUP COMMENTS

D	STARTUP CHECK LIST		
D1	Running Adjustments performed (calibrations)?		
D1	Safety tests performed?		
	DATA ACQUISITION		
	Mode:	Chiller	
	Percentage of Load:		
	Circuit:	C1	C2
D1	ELECTRICAL SYSTEM		
D1.1	Comp running Amps L1 (A)		
D1.2	Comp running Amps L2 (A)		
D1.3	Comp running Amps L3 (A)		
D2	REFRIGERANT SYSTEM		
D2.1	Evaporator Pressure (kPa)		
D2.2	Condenser Pressure (kPa)		
D2.3	Suction Temperature (°C)		
D2.4	Condenser Pressure (kPa)		
D2.5	Suction Temperature (°C)		
D2.6	Discharge Superheat (°C)		
D2.7	Liquid Temperature (°C)		
D2.8	Liquid Pressure (kPa)		
D2.9	Subcooling (°C)		
D2.10	Subcooling at dryer filter (°C)		
D2.11	Evaporator Approach (°C)		
D2.12	Condenser Approach (°C)		
D2.13	Oil Pressure (kPa)		
D2.14	Oil Pressure Differential (kPa)		
D2.15	EXV Position (%)		
D2.16	Fans (%)		
D2.17	Economizer/Subcooler Status		
D2.18	Economizer EXV Position (%)		
D3	EVAPORATOR (WATER)		
D3.1	Entering Water Temperature (°C)		
D3.2	Leaving Water Temperature (°C)		
D3.3	Evaporator Pressure Drop (kPa)		
D3.4	Design Evaporator Pressure Drop (kPa)		
D3.5	Flow Rate (l/s)		
D3.6	Design Flow rate (l/s)		
D3.7	Check Flow Swich status		
D5	CONDENSER (AIR)		
D4.1	UNIT IN Air Temperature (°C)		

E	POST-STARTUP COMMENTS

F	Defective items found at commissioning?
1	Parts subject to ECHC?
2	Parts requested to be directly supplied by factory?

Please mention under which conditions parts are directly requested to the factory (ie. Urgent matter, Extra Europe affiliate or others):

G	Present during commissioning	
	Name :	***Company:***
	Name :	***Company:***
	Name :	***Company:***
	Author:	**Installer:**
	Signature:	**Signature:**
	Title: Service Engineer	**Title:**

As Commissioning is a technical process performed - before the Chiller is put into definitive operation - by an "Authorised Engineer".
As Commissioning is done and is intended to achieve the following specific limited objectives:
- verify and document (via checklist) that the Chiller is installed according to the manufacturers installation manual and operation manual.
- configure the Chiller to a set of manufacturers defined parameters in order to secure the correct performance of the Chiller in the specific site related operating conditions.
Therefore the Commissioning process does not take away from or reduce the responsibility of the System Designers and/or Installers to provide a finished and fully functioning system.