

VXT

R410A

TECHNICAL MANUAL INSTALLATION MAINTENANCE
Water/water or geothermic heat pumps



Dear Customer,

Thank you for choosing an AERMEC product. This product is the result of many years of experience and in-depth engineering research, and it is built using top quality materials and advanced technologies.

In addition, the CE mark guarantees that our appliances fully comply with the requirements of the European Machinery Directive in terms of safety. We constantly monitor the quality level of our products, and as a result AERMEC products are synonymous with Safety, Quality, and Reliability.

Product data may be subject to modifications deemed necessary for improving the product without the obligation to give prior notice.

**Thank you again.
AERMEC S.p.A**

The technical data given on the following documentation is not binding. Aermec reserves the right to apply at any time all the modifications deemed necessary for improving the product.

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For the installation of the appliance, please follow the safety rules and regulations contained in this instruction manual



Moving parts hazard



High temperature hazard



Voltage hazard



Danger: Disconnect voltage



Generic danger



Useful information and warnings



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VXT

SERIAL NUMBER	
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EC DECLARATION OF CONFORMITY

We, the undersigned, hereby declare under our own responsibility that the assembly in question, defined as follows:

NAME VXT
TYPE WATER/WATER HEAT PUMP
MODEL

To which this declaration refers, complies with the following harmonised standards:

- | | |
|--------------------------|--|
| IEC EN 60335-2-40 | Safety standard regarding electrical heat pumps, air conditioners and dehumidifiers |
| IEC EN 61000-6-1 | Immunity and electromagnetic emissions for residential environments |
| IEC EN 61000-6-3 | |
| IEC EN 61000-6-2 | Immunity and electromagnetic emissions for industrial environments |
| IEC EN 61000-6-4 | |
| EN378 | Refrigerating systems and heat pumps - Safety and environmental requirements |
| EN12753 | Copper and copper alloys - Seamless, round copper tubes for air conditioning and refrigeration |
| UNI EN 12735 | Seamless, round copper tubes for air conditioning and refrigeration |
| UNI EN 14276 | Pressure equipment for cooling systems and heat pumps |

Therefore complying with the essential requirements of the following directives:

- LVD Directive: 2006/95/CE
- Directive for electromagnetic compatibility 2004/108/CE
- Machinery Directive 98/37/CE
- PED Directive regarding pressurised devices 97/23/CE

The product, in agreement with Directive 97/23/CE, satisfies the Total quality Guarantee procedure (form H) with certificate n.06/270-QT3664 Rev.3 issued by the notified body n.1131 CEC via Pisacane 46 Legnano (MI) - Italy

Bevilacqua 05/12/2008

Marketing Manager
Signature

1. WARNINGS REGARDING THE DOCUMENTATION

1.1. USE IN COMPLIANCE WITH THE DOCUMENTATION

AERMEC VXT heat pumps are constructed according to the recognised technical standards and safety regulations. However, dangers to the user or third parties may arise, as well as damage to the appliance and other objects, in the event of improper use not in compliance with the type of use envisaged.

The VXT heat pumps are designed as heat generators for centralised closed cooling systems and for systems producing domestic hot water (DHW). **Any use not expressly indicated in this manual is not permitted. Consequently**

AERMEC will not assume any responsibility for damage that may occur due to failure to comply with these instructions.

1.2. PRESERVATION OF THE DOCUMENTATION

The installation instructions along with all the related documentation must be given to the user of the system, who assumes the responsibility to keep the instructions so that they are always at hand in case of need.

READ THIS DOCUMENT CAREFULLY, the installation of the appliance must be carried out by qualified and suitably

prepared staff in compliance with the national legislation effective in the country of destination. (Ministerial Decree 329/2004).

The appliance must be installed in such a way as to enable maintenance and/or repairs to be carried out. The appliance warranty does not cover the costs for ladder trucks, scaffolding, or other elevation systems that may become necessary for carrying out servicing under warranty.

The validity of the warranty shall be void in the event of failure to comply with the above-mentioned indications.

2. FUNDAMENTAL SAFETY RULES

We remind you that the use of products that employ electrical energy and water requires that a number of essential safety rules be followed, including:

- This appliance is not suitable for use by persons (including children) with limited physical, sensory, or mental capacities or those lacking experience or knowledge, unless they are supervised or instructed regarding the use of the appliance by a person who is responsible for their safety. Children must always be supervised to ensure they do not play with the appliance.
- It is prohibited to carry out any technical or maintenance operation before the unit has been disconnected from the electrical mains by switching off the master switch of the system and the main power switch on the control panel.
- It is prohibited to modify the safety or adjustment devices without the manufacturer's authorisation and precise instructions
- It is prohibited to pull, detach, or twist the electrical cables coming from the unit even if it is disconnected from the electrical mains
- It is prohibited to leave containers and flammable substances near to the chiller.
- It is prohibited to touch the appliance when you are barefoot and with parts of the body that are wet or damp.
- It is prohibited to open the doors for accessing the internal parts of the appliance without first having switched off the master switch of the system.
- It is prohibited to disperse, abandon or leave the packing materials within the reach of children, as they are a potential source of danger.

3. PRODUCT IDENTIFICATION

The VXT can be identified by:

- **Packaging label**
which shows the product identification data
- **Technical plate**
positioned on the base inside the machine.

NOTE

Tampering, removal, lack of the identification plate or other does not allow the safe identification of the product and will make any installation or maintenance operation to be performed difficult.

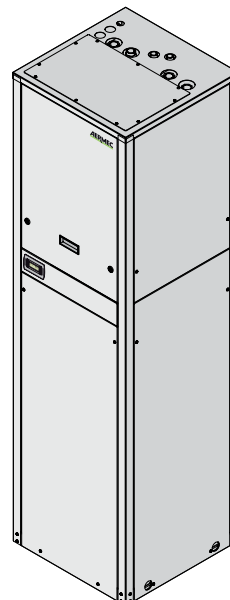


Fig.1. Identification plate

4. DESCRIPTION AND CHOICE OF UNIT

The water-cooled heat pumps in the VXT range with R410A refrigerant have been designed and to satisfy winter/summer air-conditioning needs and the production of domestic hot water (DHW) for medium to small users in residential or commercial buildings.

The heat-carrying fluid used is water from a WELL- SHEET - or installation can be GEOTHERMIC with the use of probes inserted into the ground.

It is a unit with **INDOOR INSTALLATION ONLY**, (IP20 protection rating) with very small dimensions.

This makes it easy to introduce into the home context e.g. in the kitchen or inside a cabinet used to contain a refrigerator. The careful choice of the sound-absorbent materials makes the unit particularly silent. The change of season takes place by inverting the flow of refrigerant by means of the 4-way valve.

These units, available in 5 sizes, have extremely silent functioning and are highly efficient and reliable, thanks to

the use of exchangers with a large exchange surface and a low-noise high-efficiency scroll compressor.

The VXT units remove heat from the ground with the aid of selectors or probes. As the temperature of the ground tends to remain constant the deeper you go, the power of the heat pump does not depend on the external temperature and even in cold days it covers the total heat requirements of a home with low energy consumption. The VXT units also allow the complete production of domestic hot water (DHW) UP TO 55°C

The use of this heat pump contributes to respecting the environment. For efficient use it is very important to carefully analyse the heating system of the geothermic circuit. Pay particular attention that the temperature of the flow water is as low as possible.

4.1. FIELD OF USE

The VXT can be used in heating plants

that already exist or new ones.

To exclude the risk of corrosion of the braze-welded heat exchangers the water from the well is analysed to evaluate potential corrodibility regarding metal materials, in compliance with the EN 12502-1:2005 Standard

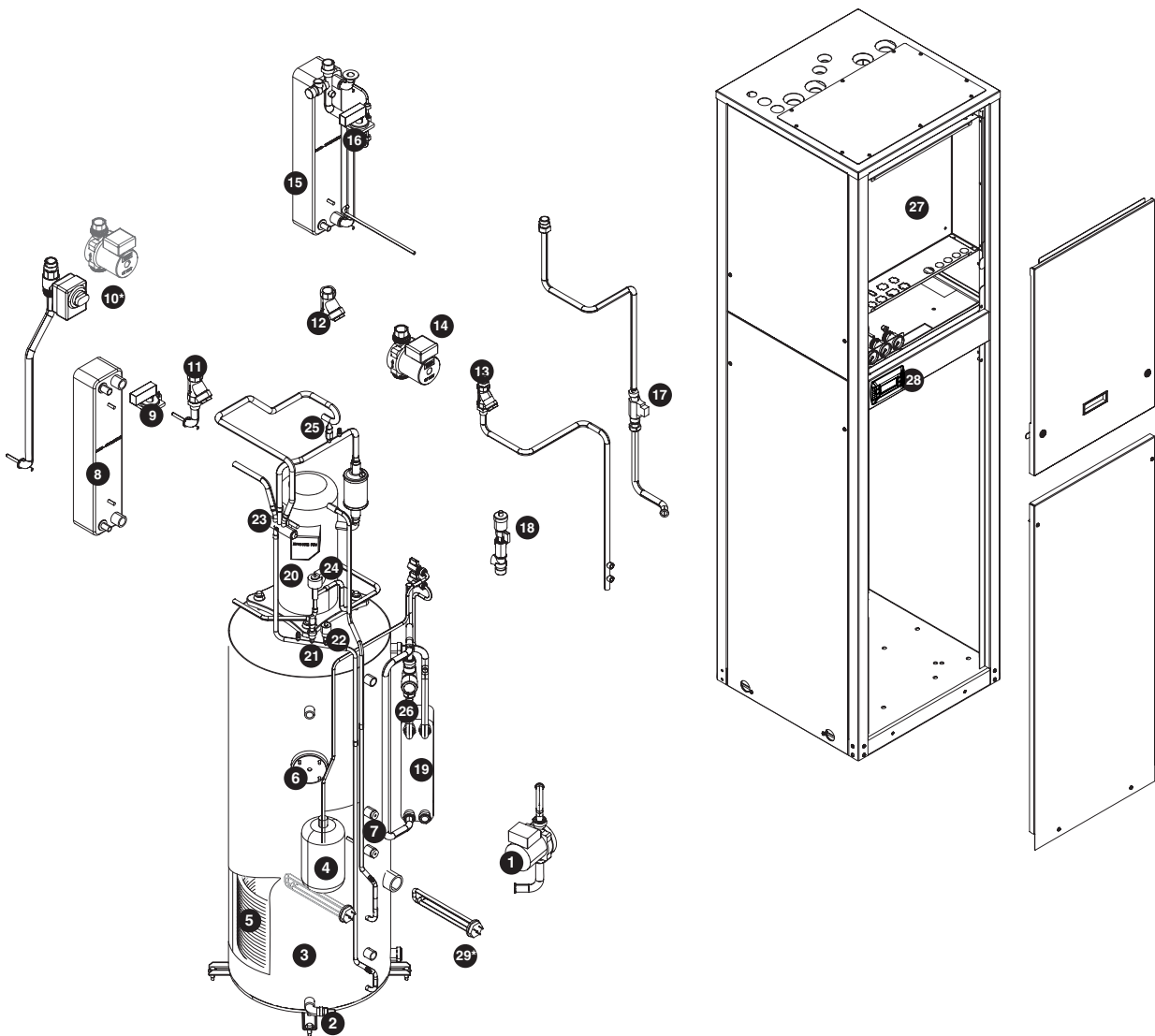
4.2. AVAILABLE VERSIONS

Several different solutions are available for just as many system requirements. With the aid of the configurator, stated below, it is possible to select the heat pump that satisfies the requirements of the system into which it must be introduced.

1,2,3	4,5	6	7	8	9
VXT	10	P	R	S	T

Field	Identification		
1, 2, 3	VXT		
4, 5	Sizes	06, 08, 10, 14, 16	
6	Application		
	P	ON-OFF pump	FOR GEOTHERMIC APPLICATIONS
	F	Pump with phase cut set-up	FOR GEOTHERMIC APPLICATIONS
	X	Inverter Pump	FOR GEOTHERMIC APPLICATIONS
	V	With 2-way modulating valve	FOR APPLICATIONS WITH WATER SHEET
7	Electric resistances		
	°	Standard (without DHW integrative resistances)	
	R	With DHW integrative resistances	
8	Soft start	(as per standard in 230V/~ /50 Hz versions)	
	°	Standard (without soft-start)	
	S	With Soft-start	
9	Power supply		
	M	230V/~ /50 Hz	
	T	400V/~ 3N/50 Hz	

5. DESCRIPTION OF COMPONENTS



HYDRAULIC CIRCUIT

- 1 DHW Pump
- 2 DHW storage tank drain
- 3 DHW storage tank
- 4 System side expansion vessel (2lt)
- 5 DHW storage tank coil
- 6 Expansion membrane flange (8lt) inserted inside the storage tank domestic hot water DHW
- 7 Domestic hot water temperature probe DHW
- 8 Plate heat exchangers
- 9 Differential pressure switch
- 10 Modulating 2-way valve/pump:
 - Modulating 2-way valve for sheet or well water applications
 - Pump (ON-OFF / PHASE CUT-OFF / INVERTER) for geothermic applications

- 11 Water filter geothermic or sheet or well water side
- 12 Domestic hot water side water filter
- 13 User side water filter
- 14 User side pump
- 15 Plate heat exchangers
- 16 Differential pressure switch
- 17 DHW side flow switch
- 18 Automatic air vent valve interrupted
- 19 Heat exchanger for the instantaneous supply of domestic hot water

COOLING CIRCUIT

- 20 Compressor
- 21 High pressure transducer
- 22 High pressure pressure switch with manual rearm
- 23 Cycle reversing valve
- 24 Bi-flow electronic valve

- 25 Low pressure transducer
- 26 Liquid indicator
- 27 Electric box
- 28 PGDO control keyboard
- 29 Integrative electrical resistances

6. DESCRIPTION OF THE COMPONENTS

6.1. COOLING CIRCUIT

The cooling circuit is contained in an appropriately insulated compartment in order to limit vibrations and noise.

Compressor

High efficiency scroll on anti-vibration mounts, activated by a 2-pole electric motor with internal heat protection.

Condenser

Unit with (AISI 316) heat plate, insulated externally with closed cell material to reduce heat loss.

Liquid indicator

Used to check the refrigerant gas load and any presence of humidity in the cooling circuit.

Evaporator

Unit with (AISI 316) heat plate, insulated externally with closed cell material to reduce heat loss.

Dehydrator filter

Mechanical type with ceramic body and hygroscopic material, able to withhold impurities and any traces of humidity present in the cooling circuit, mounted on compressor intake.

Electronic THERMOSTATIC VALVE

The bi-flow valve, positioned on the liquid line, modulates the flow of gas to the evaporator depending on the heat load, in order to ensure a correct heating level of the intake gas. The valve has a large adjustment capacity and always allows optimal work conditions.

Cycle reversing valve

Inverts the flow of refrigerant in summer/winter switch-over and vice versa.

6.2. FRAME

Support frame

Made in hot galvanised sheet steel with suitable thickness and painted with polyester powders able to resist atmospheric agents through time. The panelling is insulated with sound-absorbent material that guarantees particularly silent functioning.

6.3. HYDRAULIC CIRCUIT

Water filters

3 water filters are present positioned

- At evaporator inlet (USER SIDE),
- At the condenser inlet (GEOTHERMIC APPLICATION / WATER SHEET SIDE)

At inlet (DHW CIRCUIT)

These allow to block and eliminate any impurities present in the hydraulic circuits.

They contain a steel filtering mesh with holes no bigger than 1 mm.

THEY ARE INDISPENSABLE IN ORDER TO PREVENT SERIOUS DAMAGE TO THE PLATE EXCHANGERS.

6.3.1. UTILITIES CIRCUIT

Circulation pump

Three-speed pump

System side expansion vessel

with nitrogen pre-load membrane

Safety valve

Calibrated at 3 Bar and with piped discharger that discharges if abnormal pressure occurs

Differential pressure switch/flow switch

Positioned between the evaporator inlet and outlet, it has the task of controlling that there is water circulation. If this is not the case it blocks the unit.

6.3.2. DHW CIRCUIT

Storage tank (lt. 180)

Steel storage tank for the production of domestic hot water (DHW). With copper coil always passed by the hot gas leaving the compressor.

The tank has an internal expansion membrane (8 litre) and is prepared with attachments for solar panels and integrative electric resistances.

The insulation reduces heat loss to a minimum, thus increasing tank efficiency.

Instantaneous heat exchanger

Unit with (AISI 316) heat plate, insulated externally with closed cell material to reduce heat loss, it allows the instantaneous production of domestic hot water (DHW).

Mixer valve

The manual type, it allows to adjust the temperature of the DHW to the temperature set by appropriately mixing the hot water coming from the storage tank with that withdrawn from the network.

Circulation pump

- Three-speed pump

Manual air vent interrupted

Manual air vent valve interrupted to ease replacement, if necessary.

6.4. SAFETY AND CONTROL COMPONENTS

High pressure transducer (TAP)

Positioned on the high pressure side, it is used to manage the alarms and management of the condensation pressure control devices.

High pressure switch (AP) (with manual rearm)

Placed on the high pressure side of the cooling circuit, it inhibits functioning of compressor if abnormal work pressures occur.

Low pressure transducer (TBP)

Positioned on the low pressure side, it is used to manage the alarms and management of the condensation pressure control devices.

Domestic hot water temperature probe (DHW)

Positioned inside the storage tank (DHW). It controls the temperature of the water and allows the management of the integrative resistances if envisioned and to prevent overheating.

Soft-start

Peak current reduction electronic device
AS PER STANDARD FOR SINGLE-PHASE VERSIONS ONLY

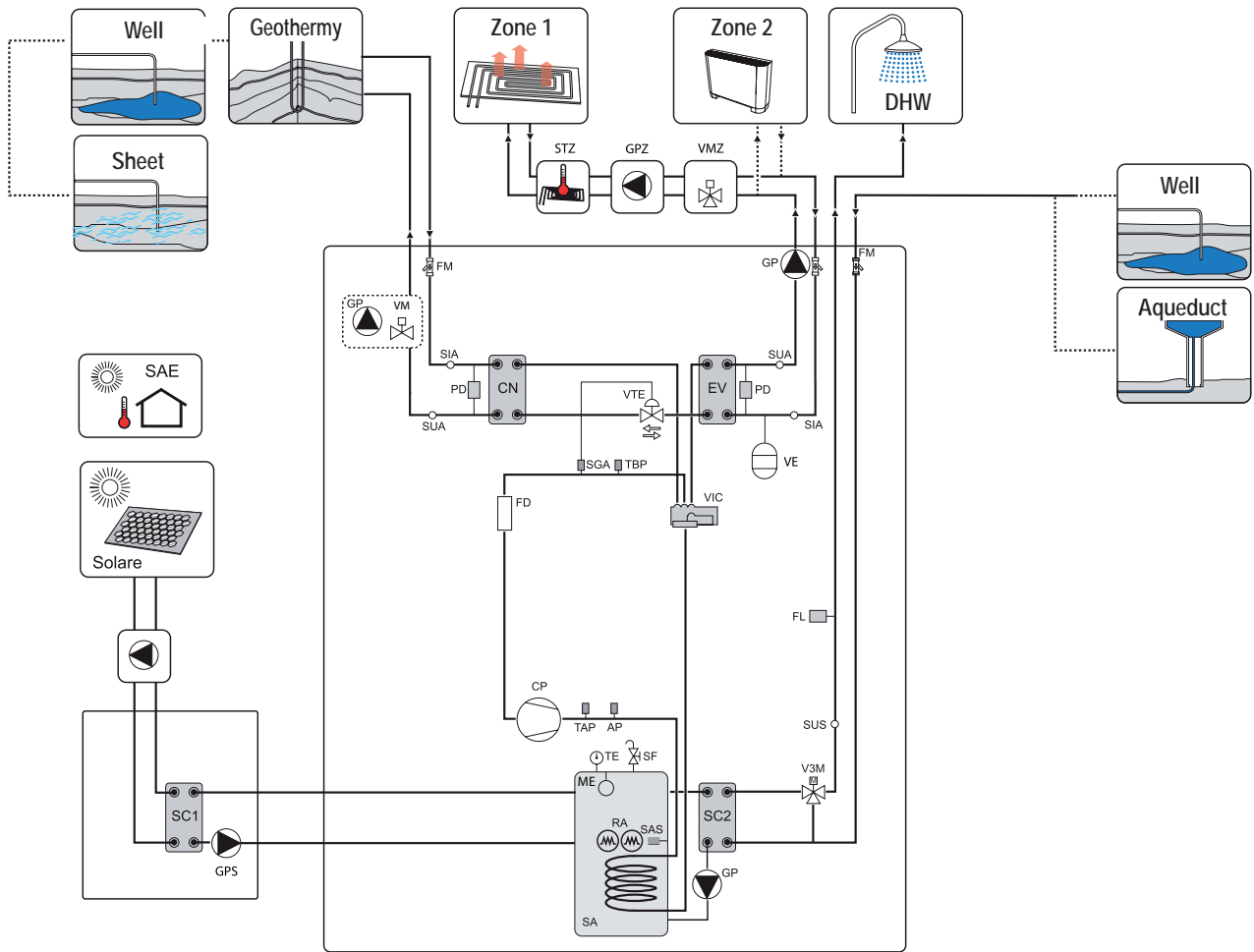
6.5. ELECTRONIC CONTROL

The microprocessor supplied can manage control of:

- Hydraulic pumps on the system and geothermic circuit sides
- Radiant plant temperature probes
- Domestic hot water (DHW) tank temperature probe
- External air temperature probe for the compensation of the system water set point
- System mixer valve
- Free-cooling kit available as an ACCESSORY
- Control kit for the solar integration ACCESSORY
- Management of up to two environment areas

For further information please refer to use manual

6.6. BASE DRAWING



HYDRAULIC CIRCUIT

FL	Flow switch
FM	Water filters <ul style="list-style-type: none"> • Geothermic inlet • Domestic hot water circuit inlet • User circuit inlet
GP	3-way pumps <ul style="list-style-type: none"> • geothermic side (if envisioned) • DHW side • User side
GPS	Solar heating kit pump (ACCESSORY)
GPZ	Area pump NOT SUPPLIED
ME	Expansion membrane
PD	Differential pressure switch/flow switch
RA	Integrative resistances set-up
SA	Domestic hot water storage tank (DHW)
SAE	External air temperature probe to be connected electrically
SAS	DHW temperature probe

SC1	Solar heating kit heat exchanger (ACCESSORY)
SC2	Domestic hot water instantaneous heat exchanger (DHW)
SF	Automatic vent valve interrupted
SIA	Inlet water probe
STZ	Area temperature probe to be connected electrically
SUA	Outlet water probe
SUS	Domestic hot water outlet temperature probe (DHW)
TE	Thermometer
V3M	Manual mixer valve
VM	Mixer valve (if envisioned at configurator)
VMZ	Area mixer valve NOT SUPPLIED

COOLING CIRCUIT

AP	High pressure switch
CN	Condenser

CP	Compressor
EV	Evaporator
FD	Dehydrator filter
SGA	Outtake gas probe
TAP	High pressure transducer
TBP	Low pressure transducer
VIC	Cycle reversing valve

7. ACCESSORIES

VXT		6	8	10	14	16
REMOTE PANEL						
PGDO	Allows basic control functioning of unit (start-up/switch-off, change function mode, alarm summary). The maximum installation distance allowed BETWEEN pCO2 and PGDO is: <ul style="list-style-type: none"> • 50 m. with supplied telephone wire • 500 m. with shielded twin AWG22 cable and TCONN6J000 NOTE: to reach the maximum length use a type with bus with branches that do not exceed 5 m.	•	•	•	•	•
ANTI-VIBRATION						
VT	Group of four anti-vibration mounts to be installed under the sheet steel base in the prepared points. They serve to reduce vibrations produced by the compressor whilst functioning.					
SOLAR HEAT KIT						
KST	Made up from a metal cabinet painted with RAL 9002 polyester powders - plate heat exchanger - pump	•	•	•	•	•
ADDITIONAL TEMPERATURE AND HUMIDITY CONTROL MODULE						
KTU	Additional module to control the humidity and temperature in the two areas	•	•	•	•	•
FREE COOLING KIT						
KFC		06	08	10	14	16

8. VERSIONS TECHNICAL DATA

8.1. 230V ~ 50Hz FLOOR SYSTEM

			VXT 6	VXT 8	VXT 10
HEATING					
Heating capacity	230V	kW	7.6	9.7	12.3
Total input power	230V	kW	1.6	2.0	2.6
Condenser water capacity (user)	230V	l/h	1310	1670	2120
Available useful static pressures (user)	230V	kPa	33	43	46
Water consumption at the evaporator	230V	l/h	1050	1350	1700
Evaporator pressure drop	230V	kPa	8	13	9.5
Geothermic pump useful static pressure if envisioned	230V	kPa	41	53	55
COOLING					
Cooling capacity	230V	kW	8.7	10.5	13.6
Total input power	230V	kW	1.7	2.0	2.5
Evaporator water capacity (user)	230V	l/h	1500	1810	2340
Available useful static pressures (user)	230V	kPa	50.3	43.2	40.8
Water consumption at the condenser	230V	l/h	1770	2140	2750
Condenser pressure drop	230V	kPa	21	30	25
Geothermic pump useful static pressure if envisioned	230V	kPa	17	28	30
ENERGETIC INDEX					
COP* (UNI EN 14511:2004)		W/W	4.75	4.85	4.73
EER* (UNI EN 14511:2004)		W/W	5.12	5.25	5.44
ELECTRICAL DATA					
Total input power (when HOT)	230V	A	8	10.6	13.3
Total input power (when COLD)	230V	A	8.2	10.7	13.5
Maximum current (FLA)	230V	A	16.0	19.0	23.0
Peak current with soft-start (LRA)	230V	A	29.5	37.5	45.0
SCROLL (COMPRESSORS)					
Number per circuit		n°	1/1	1/1	1/1
REFRIGERANT GAS			R410A		
DOMESTIC HOT WATER DHW MAXIMUM TEMPERATURE					
Continuous distribution of domestic hot water at the flow rate of 12 lt/min. and temperature of 40°C		min.	12	13.5	15
EVAPORATOR (PLATES)					
Number		n°	1	1	1
CONDENSER (PLATES)					
Number		n°	1	1	1
WATER/WATER HEAT EXCHANGER (PLATES)					
Number		n°	1	1	1
STORAGE TANK					
Amount of water		lt.	180	180	180
PUMP SIDE UTILITIES/GEOTHERMIC					
Input power		W	85	120	120
DHW SIDE PUMP					
Input power		W	50	50	50
INTEGRATIVE RESISTANCES IF ENVISIONED					
Resistance power		W	1X2000	1X3000	2X2000
HYDRAULIC CONNECTIONS					
System water inlet/outlet	IN/OUT	Ø	1" F	1" F	1" F
Domestic hot water inlet/outlet	IN/OUT	Ø	3/4" M	3/4" M	3/4" M
Sheet inlet/outlet	IN/OUT	Ø	1" F	1" F	1" F
SOUND DATA					
Sound power		dB(A)	43	45	45
Sound Pressure		dB(A)	35	37	37

DATA DECLARED ACCORDING TO EN 14511:2004

8.1.1. NOMINAL REFERENCE CONDITIONS

HEATING:

- Condenser IN/OUT water temp.	30/35 °C
- Evaporator IN/OUT water temp.	10/5 °C
- Δt	5 °C

COOLING:

- Evaporator IN/OUT water temp.	23/18 °C
- Condenser IN/OUT water temp.	30/35 °C
- Δt	5 °C

SOUND DATA

Sound power

Aermec determines sound power values with measurements taken in agreement with the 9614-2 Standard, in compliance with that requested by Eurovent certification.

Sound Pressure

Environment volume of 80m³, reverberation time 0.5s, distance 3 metres and directionality factor 4.

FLA = Max. Input current at full load

LRA = Peak current at full load

8.2. 400V 3N~ 50Hz FLOOR SYSTEM

			VXT 6	VXT 8	VXT 10	VXT 14	VXT 16
HEATING							
Heating capacity	400V	kW	7.6	9.9	12.3	16.4	18.6
Total input power	400V	kW	1.6	1.9	2.4	3.2	3.6
Condenser water capacity (user)	400V	l/h	1310	1700	2110	2820	3200
Available useful static pressures (user)	400V	kPa	33	44	47	46	43
Water consumption at the evaporator	400V	l/h	1050	1390	1720	2300	2610
Evaporator pressure drop	400V	kPa	8	13	10	10	10
Geothermic pump useful static pressure if envisioned	400V	kPa	41	54	55	51	50
COOLING							
Cooling capacity	400V	kW	8.5	10.1	13.7	17.8	20.3
Total input power	400V	kW	1.6	1.9	2.4	3.3	3.5
Evaporator water capacity (user)	400V	l/h	1450	1740	2360	3070	3500
Available useful static pressures (user)	400V	kPa	28	42	43	41	37
Water consumption at the condenser	400V	l/h	1720	2060	2760	3600	4080
Condenser pressure drop	400V	kPa	20	27	25	25	23
Geothermic pump useful static pressure if envisioned	400V	kPa	18	30	30	30	20
ENERGETIC INDEX							
COP* (UNI EN 14511:2004)		W/W	4.75	5.21	5.13	5.13	5.17
EER* (UNI EN 14511:2004)		W/W	5.31	5.32	5.71	5.39	5.80
ELECTRICAL DATA							
Total input power (when HOT)	400V	A	3.6	3.4	5.3	7.3	7.5
Total input power (when COLD)	400V	A	3.7	3.6	5.4	7.5	7.5
Maximum current (FLA)	400V	A	5.5	6.0	8.0	10.0	11.8
Peak current with soft-start (LRA)	400V	A	32.0	35.0	48.0	64.0	64.0
SCROLL (COMPRESSORS)							
Number per circuit		n°	1/1	1/1	1/1	1/1	1/1
REFRIGERANT GAS			R410A				
DOMESTIC HOT WATER DHW MAXIMUM TEMPERATURE							
Continuous distribution of domestic hot water at the flow rate of 12 lt./min. and temperature of 40°C		min.	12	13.5	15	16	16.5
EVAPORATOR (PLATES)							
Number		n°	1	1	1	1	1
CONDENSER (PLATES)							
Number		n°	1	1	1	1	1
WATER/WATER HEAT EXCHANGER (PLATES)							
Number		n°	1	1	1	1	1
STORAGE TANK							
Amount of water		lt.	180	180	180	180	180
PUMP SIDE UTILITIES/ GEOTHERMIC							
Input power		W	85	120	120	175	175
DHW SIDE PUMP							
Input power		W	50	50	50	50	50
INTEGRATIVE RESISTANCES IF ENVISIONED							
Resistance power		W	1X2000	1X3000	2X2000	2X3000	2X3000
HYDRAULIC CONNECTIONS							
System water inlet/outlet	IN/OUT	Ø	1" F	1" F	1" F	1" F	1" F
Domestic hot water inlet/outlet	IN/OUT	Ø	3/4" M	3/4" M	3/4" M	3/4" M	3/4" M
Sheet inlet/outlet	IN/OUT	Ø	1" F	1" F	1" F	1" F	1" F
SOUND DATA							
Sound power		dB(A)	43	45	45	47	49.5
Sound Pressure		dB(A)	35	37	37	39	41.5

DATA DECLARED ACCORDING TO EN 14511:2004

8.2.1. NOMINAL REFERENCE CONDITIONS

HEATING:

- Condenser IN/OUT water temp. 30/35 °C
- Evaporator IN/OUT water temp. 10/5 °C
- Δt 5 °C

COOLING:

- Evaporator IN/OUT water temp. 23/18 °C
- Condenser IN/OUT water temp. 30/35 °C
- Δt 5 °C

SOUND DATA

Sound power

Aermec determines sound power values with measurements taken in agreement with the 9614-2 Standard, in compliance with that requested by Eurovent certification.

Sound Pressure

Environment volume of 80m³, reverberation time 0.5s, distance 3 metres and directionality factor 4.

FLA = Max. Input current at full load

LRA = Peak current at full load

8.3. 230V ~ 50Hz fan coils

			VXT 06	VXT 08	VXT 10
HEATING					
Heating capacity	230V	kW	7.52	9.28	12.18
Total input power	230V	kW	2.21	2.59	3.25
Condenser water capacity (user)	230V	l/h	1,290	1,600	2,090
Available useful static pressures (user)	230V	kPa	35	47	46
Water consumption at the evaporator	230V	l/h	930	1170	1560
Evaporator pressure drop	230V	kPa	6	9	8
Geothermic pump useful static pressure if envisioned	230V	kPa	43	57	56
COOLING					
Cooling capacity	230V	kW	6.21	7.89	10.23
Total input power	230V	kW	1.71	2.01	2.51
Evaporator water capacity (user)	230V	l/h	1070	1360	1760
Available useful static pressures (user)	230V	kPa	42	55	53
Water consumption at the condenser	230V	l/h	1350	1690	2170
Condenser pressure drop	230V	kPa	13	20	15
Geothermic pump useful static pressure if envisioned	230V	kPa	33	43	45
ENERGETIC INDEX					
COP* (UNI EN 14511:2004)		W/W	3.40	3.58	3.75
EER* (UNI EN 14511:2004)		W/W	3.63	3.93	4.08
ELECTRICAL DATA					
Total input power (when HOT)	230V	A	10	13	16.4
Total input power (when COLD)	230V	A	8	10.6	13.3
Maximum current (FLA)	230V	A	16.0	19.0	23.0
Peak current with soft-start (LRA)	230V	A	29.5	37.5	45.0
SCROLL (COMPRESSORS)					
Number per circuit		n°	1/1	1/1	1/1
REFRIGERANT GAS			R410A		
DOMESTIC HOT WATER DHW MAXIMUM TEMPERATURE					
Continuous distribution of domestic hot water at the flow rate of 12 lt/min. and temperature of 40°C		min.	12	13.5	15
EVAPORATOR (PLATES)					
Number		n°	1	1	1
CONDENSER (PLATES)					
Number		n°	1	1	1
WATER/WATER HEAT EXCHANGER (PLATES)					
Number		n°	1	1	1
STORAGE TANK					
Amount of water		lt.	180	180	180
PUMP SIDE UTILITIES/GEOTHERMIC					
Input power		W	85	120	120
DHW SIDE PUMP					
Input power		W	50	50	50
INTEGRATIVE RESISTANCES IF ENVISIONED					
Resistance power		W	1X2000	1X3000	2X2000
HYDRAULIC CONNECTIONS					
System water inlet/outlet	IN/OUT	Ø	1" F	1" F	1" F
Domestic hot water inlet/outlet	IN/OUT	Ø	3/4" M	3/4" M	3/4" M
Sheet inlet/outlet	IN/OUT	Ø	1" F	1" F	1" F
SOUND DATA					
Sound power		dB(A)	43	45	45
Sound Pressure		dB(A)	35	37	37

DATA DECLARED ACCORDING TO EN 14511:2004

8.3.1. NOMINAL REFERENCE CONDITIONS

HEATING:

- Condenser IN/OUT water temp.	40/45 °C
- Evaporator IN/OUT water temp.	10/5 °C
- Δt	5 °C

COOLING:

- Evaporator IN/OUT water temp.	12/7 °C
- Condenser IN/OUT water temp	30/35 °C
- Δt	5 °C

SOUND DATA

Sound power

Aermec determines sound power values with measurements taken in agreement with the 9614-2 Standard, in compliance with that requested by Eurovent certification.

Sound Pressure

Environment volume of 80m³, reverberation time 0.5s, distance 3 metres and directionality factor 4.

FLA = Max. Input current at full load

LRA = Peak current at full load

8.4. 400V 3N~ 50Hz fan coils

			VXT 06	VXT 08	VXT 10	VXT 14	VXT 16
HEATING							
Heating capacity	400V	kW	7.52	9.47	11.76	16.24	17.79
Total input power	400V	kW	2.07	2.46	3.00	4.00	4.50
Condenser water capacity (user)	400V	l/h	1,290	1,630	2,020	2,790	3,060
Available useful static pressures (user)	400V	kPa	33	45	47	46	45
Water consumption at the evaporator	400V	l/h	960	1230	1530	2140	2320
Evaporator pressure drop	400V	kPa	6	11	8	8	8
Geothermic pump useful static pressure if envisioned	400V	kPa	43	56	47	56	56
COOLING							
Cooling capacity	400V	kW	6.39	8.21	10.30	13.38	15.26
Total input power	400V	kW	1.61	1.92	2.41	3.32	3.52
Evaporator water capacity (user)	400V	l/h	1100	1410	1770	2300	2620
Available useful static pressures (user)	400V	kPa	54.2	47.6	47.9	40.5	38.5
Water consumption at the condenser	400V	l/h	1360	1730	2170	2840	3200
Condenser pressure drop	400V	kPa	13	21	15	15	15
Geothermic pump useful static pressure if envisioned	400V	kPa	32	43	46	44	43
ENERGETIC INDEX							
COP* (UNI EN 14511:2004)		W/W	3.63	3.85	3.92	4.06	3.95
EER* (UNI EN 14511:2004)		W/W	3.97	4.28	4.27	4.03	4.34
ELECTRICAL DATA							
Total input power (when HOT)	400V	A	4.2	4.6	6.3	8.9	8.8
Total input power (when COLD)	400V	A	3.6	3.4	5.3	7.3	7.5
Maximum current (FLA)	400V	A	5.5	6.0	8.0	10.0	11.8
Peak current with soft-start (LRA)	400V	A	32.0	35.0	48.0	64.0	64.0
SCROLL (COMPRESSORS)							
Number per circuit		n°	1/1	1/1	1/1	1/1	1/1
REFRIGERANT GAS			R410A				
DOMESTIC HOT WATER DHW MAXIMUM TEMPERATURE							
Continuous distribution of domestic hot water at the flow rate of 12 lt/min. and temperature of 40°C		min.	12	13.5	15	16	16.5
EVAPORATOR (PLATES)							
Number		n°	1	1	1	1	1
CONDENSER (PLATES)							
Number		n°	1	1	1	1	1
WATER/WATER HEAT EXCHANGER (PLATES)							
Number		n°	1	1	1	1	1
STORAGE TANK							
Amount of water		lt.	180	180	180	180	180
PUMP SIDE UTILITIES/GEOTHERMIC							
Input power		W	85	110	110	175	175
DHW SIDE PUMP							
Input power		W	50	50	50	50	50
INTEGRATIVE RESISTANCES IF ENVISIONED							
Resistance power		W	1X2000	1X3000	2X2000	2X3000	2X3000
HYDRAULIC CONNECTIONS							
System water inlet/outlet	IN/OUT	Ø	1" F	1" F	1" F	1" F	1" F
Domestic hot water inlet/outlet	IN/OUT	Ø	3/4" M	3/4" M	3/4" M	3/4" M	3/4" M
Sheet inlet/outlet	IN/OUT	Ø	1" F	1" F	1" F	1" F	1" F
SOUND DATA							
Sound power		dB(A)	43	45	45	47	49.5
Sound Pressure		dB(A)	35	37	37	39	41.5

DATA DECLARED ACCORDING TO EN 14511:2004

8.4.1. NOMINAL REFERENCE CONDITIONS

HEATING:

- Condenser IN/OUT water temp. 40/45 °C
- Evaporator IN/OUT water temp. 10/5 °C
- Δt 5 °C

COOLING:

- Evaporator IN/OUT water temp. 12/7 °C
- Condenser IN/OUT water temp. 30/35 °C
- Δt 5 °C

SOUND DATA

Sound power

Aermec determines sound power values with measurements taken in agreement with the 9614-2 Standard, in compliance with that requested by Eurovent certification.

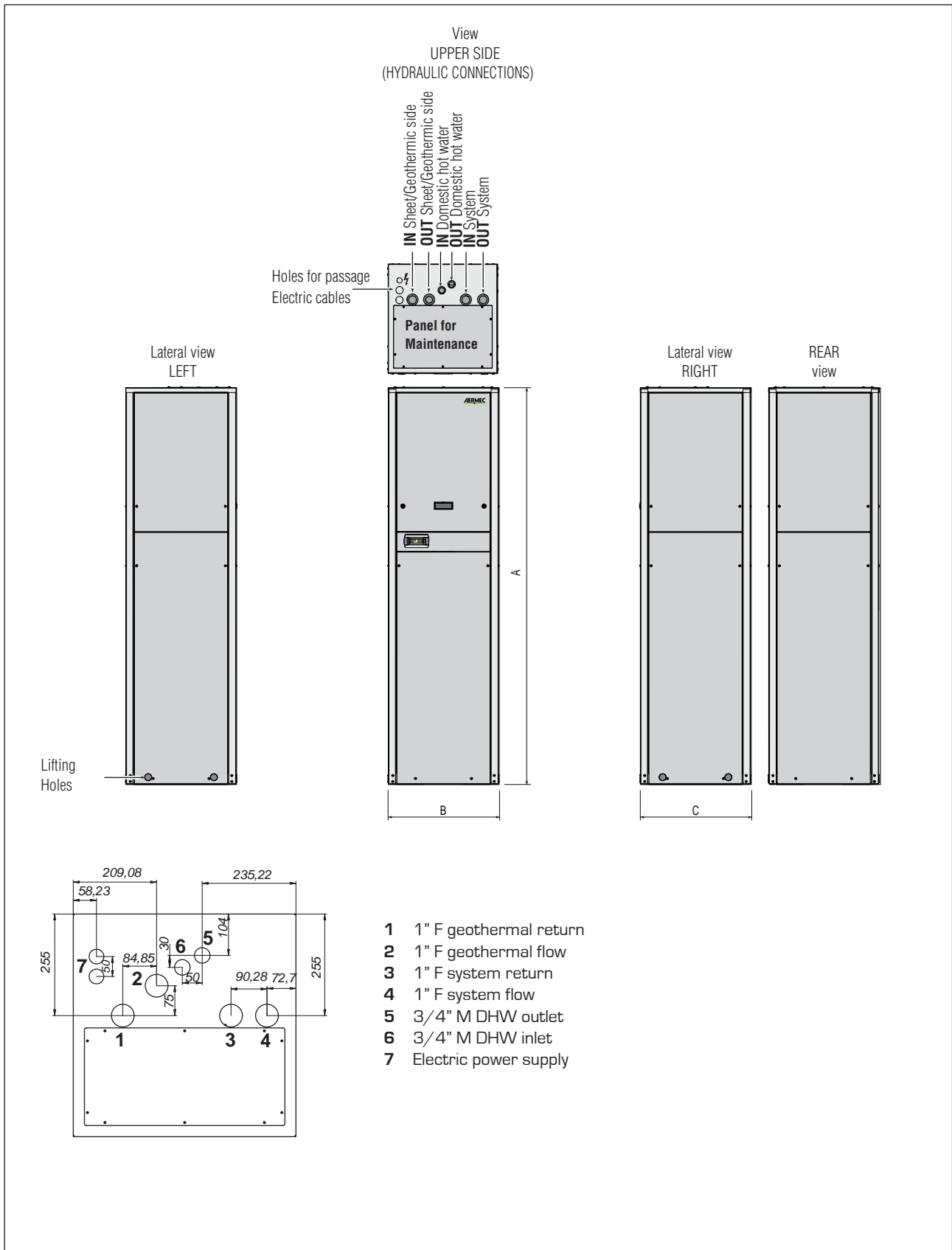
Sound Pressure

Environment volume of 80m³, reverberation time 0.5s, distance 3 metres and directionality factor 4.

FLA = Max. Input current at full load

LRA = Peak current at full load

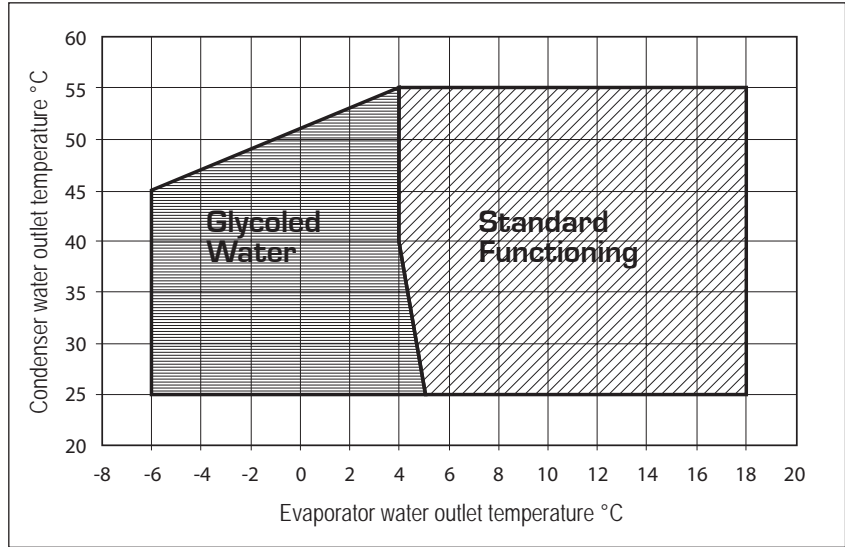
9. DIMENSIONS



DIMENSIONS			VXT 06	VXT 08	VXT 10	VXT 14	VXT 16
Height	A	mm	2,000	2,000	2,000	2,000	2,000
Width	B	mm	560	560	560	560	560
Depth	C	mm	560	560	560	560	560
Empty weight		kg	254	256	268	283	291

10. OPERATIONAL LIMITS

The functioning limits diagram is relative to a Δt on the evaporator and on the condenser of 5°C.



PROJECT DATA

		High pressure side	Low pressure side
Acceptable maximum pressure	bar	42	25
Acceptable maximum temperature	°C	120	52
Acceptable minimum temperature	°C	-10	-16

11. YIELDS AND ABSORPTION AT CONDITIONS DIFFERENT TO NOMINAL

11.1. HEATING CAPACITY / INPUT POWER (KW) VXT 06 230V

CONDENSER WATER TEMPERATURE °C	EVAPORATOR WATER TEMPERATURE °C													
	25		30		35		40		45		50		55	
	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	5.67	1.28	5.55	1.45	5.44	1.64	5.32	1.91	5.21	2.10	-	-	-	-
-4	6.05	1.27	5.94	1.44	5.83	1.63	5.73	1.91	5.63	2.12	-	-	-	-
-2	6.42	1.26	6.32	1.43	6.22	1.63	6.14	1.90	6.05	2.14	5.85	2.37	-	-
0	6.80	1.26	6.71	1.43	6.62	1.62	6.54	1.90	6.47	2.16	6.31	2.37	-	-
2	7.18	1.25	7.10	1.42	7.01	1.61	6.95	1.89	6.89	2.18	6.76	2.37	-	-
4	7.56	1.24	7.48	1.41	7.40	1.60	7.36	1.89	7.31	2.20	7.22	2.37	7.30	2.56
5	7.75	1.24	7.68	1.41	7.60	1.60	7.56	1.89	7.52	2.21	7.45	2.38	7.37	2.54
6	8.04	1.23	7.94	1.40	7.84	1.59	7.77	1.87	7.71	2.19	7.61	2.37	7.52	2.55
8	8.61	1.22	8.46	1.39	8.31	1.58	8.19	1.84	8.07	2.15	7.93	2.34	7.81	2.55
10	9.18	1.21	8.98	1.38	8.78	1.56	8.61	1.82	8.43	2.11	8.26	2.32	8.10	2.56
12	9.75	1.20	9.50	1.38	9.26	1.55	9.02	1.79	8.80	2.06	8.58	2.30	8.38	2.57
14	10.32	1.19	10.02	1.37	9.73	1.53	9.44	1.76	9.16	2.02	8.90	2.28	8.67	2.57
16	10.89	1.18	10.54	1.36	10.21	1.52	9.86	1.73	9.52	1.98	9.23	2.26	8.96	2.58
18	11.46	1.17	11.06	1.35	10.68	1.50	10.28	1.70	9.89	1.94	9.55	2.24	9.25	2.58

DATA DECLARED ACCORDING TO EN 14511:2004

11.2. HEATING CAPACITY / INPUT POWER (KW) VXT 08 230V

CONDENSER WATER TEMPERATURE °C	EVAPORATOR WATER TEMPERATURE °C													
	25		30		35		40		45		50		55	
	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	7.23	1.60	7.09	1.81	6.94	2.05	6.79	2.39	6.65	2.62	-	-	-	-
-4	7.77	1.59	7.60	1.80	7.44	2.04	7.28	2.37	7.13	2.62	-	-	-	-
-2	8.31	1.58	8.12	1.79	7.94	2.03	7.77	2.34	7.61	2.61	7.47	2.96	-	-
0	8.85	1.57	8.64	1.78	8.45	2.02	8.25	2.32	8.08	2.61	7.94	2.94	-	-
2	9.39	1.56	9.16	1.77	8.95	2.01	8.74	2.30	8.56	2.60	8.41	2.92	-	-
4	9.92	1.54	9.68	1.76	9.45	2.00	9.23	2.27	9.04	2.59	8.87	2.89	8.63	3.18
5	10.19	1.55	9.94	1.76	9.70	2.00	9.47	2.28	9.28	2.59	9.11	2.90	8.83	3.20
6	10.53	1.54	10.26	1.75	10.00	1.99	9.76	2.26	9.54	2.58	9.35	2.89	9.07	3.18
8	11.19	1.53	10.89	1.74	10.61	1.97	10.33	2.24	10.07	2.56	9.85	2.87	9.56	3.19
10	11.86	1.51	11.53	1.73	11.21	1.95	10.90	2.22	10.60	2.55	10.34	2.86	10.04	3.20
12	12.53	1.50	12.16	1.72	11.82	1.93	11.46	2.21	11.13	2.53	10.83	2.85	10.53	3.21
14	13.20	1.49	12.80	1.71	12.42	1.91	12.03	2.19	11.66	2.51	11.32	2.84	11.01	3.21
16	13.86	1.48	13.44	1.70	13.03	1.89	12.60	2.17	12.19	2.49	11.82	2.83	11.50	3.22
18	14.53	1.46	14.07	1.69	13.63	1.88	13.17	2.16	12.72	2.48	12.31	2.82	11.98	3.23

11.3. HEATING CAPACITY / INPUT POWER (KW) VXT 10 230V

CONDENSER WATER TEMPERATURE °C	EVAPORATOR WATER TEMPERATURE °C													
	25		30		35		40		45		50		55	
	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	9.17	2.08	8.99	2.36	8.80	2.67	8.62	3.10	8.43	3.41	-	-	-	-
-4	9.78	2.07	9.61	2.34	9.44	2.65	9.27	3.07	9.11	3.38	-	-	-	-
-2	10.40	2.05	10.24	2.33	10.07	2.64	9.93	3.04	9.79	3.35	9.47	3.85	-	-
0	11.01	2.04	10.86	2.32	10.71	2.63	10.59	3.01	10.47	3.32	10.21	3.81	-	-
2	11.63	2.03	11.49	2.30	11.35	2.62	11.25	2.97	11.16	3.29	10.95	3.77	-	-
4	12.24	2.01	12.11	2.29	11.98	2.61	11.91	2.94	11.84	3.26	11.69	3.74	11.81	4.08
5	12.55	2.01	12.42	2.28	12.30	2.60	12.24	2.93	12.18	3.25	12.05	3.72	11.93	4.08
6	13.01	2.00	12.84	2.28	12.68	2.59	12.58	2.92	12.47	3.25	12.32	3.72	12.17	4.09
8	13.93	1.98	13.69	2.26	13.45	2.56	13.25	2.90	13.06	3.25	12.84	3.71	12.63	4.11
10	14.85	1.97	14.53	2.25	14.22	2.54	13.93	2.88	13.65	3.25	13.36	3.70	13.10	4.13
12	15.77	1.95	15.37	2.24	14.98	2.51	14.61	2.86	14.24	3.25	13.89	3.70	13.57	4.15
14	16.70	1.94	16.21	2.22	15.75	2.49	15.28	2.84	14.83	3.25	14.41	3.69	14.04	4.17
16	17.62	1.92	17.06	2.21	16.52	2.46	15.96	2.83	15.41	3.25	14.93	3.69	14.51	4.19
18	18.54	1.90	17.90	2.19	17.29	2.44	16.64	2.81	16.00	3.25	15.46	3.68	14.98	4.21

DATA DECLARED ACCORDING TO EN 14511:2004

11.4. COOLING CAPACITY / INPUT POWER (KW) VXT 06 400V

CONDENSER WATER TEMPERATURE °C		EVAPORATOR WATER TEMPERATURE °C													
		25		30		35		40		45		50		55	
		Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	5.67	1.28	5.55	1.45	5.44	1.64	5.32	1.91	5.21	2.10	-	-	-	-	
-4	6.05	1.27	5.94	1.44	5.83	1.63	5.73	1.89	5.63	2.09	-	-	-	-	
-2	6.42	1.26	6.32	1.43	6.22	1.63	6.14	1.87	6.05	2.09	5.85	2.37	-	-	
0	6.80	1.26	6.71	1.43	6.62	1.62	6.54	1.86	6.47	2.08	6.31	2.35	-	-	
2	7.18	1.25	7.10	1.42	7.01	1.61	6.95	1.84	6.89	2.08	6.76	2.34	-	-	
4	7.56	1.24	7.48	1.41	7.40	1.60	7.36	1.82	7.31	2.07	7.22	2.32	7.30	2.56	
5	7.75	1.24	7.68	1.41	7.60	1.60	7.56	1.81	7.52	2.07	7.45	2.31	7.37	2.54	
6	8.04	1.23	7.94	1.40	7.84	1.59	7.77	1.81	7.71	2.07	7.61	2.31	7.52	2.55	
8	8.61	1.22	8.46	1.39	8.31	1.58	8.19	1.79	8.07	2.05	7.93	2.30	7.81	2.55	
10	9.18	1.21	8.98	1.38	8.78	1.56	8.61	1.78	8.43	2.04	8.26	2.29	8.10	2.56	
12	9.75	1.20	9.50	1.38	9.26	1.55	9.02	1.77	8.80	2.02	8.58	2.28	8.38	2.57	
14	10.32	1.19	10.02	1.37	9.73	1.53	9.44	1.75	9.16	2.01	8.90	2.28	8.67	2.57	
16	10.89	1.18	10.54	1.36	10.21	1.52	9.86	1.74	9.52	2.00	9.23	2.27	8.96	2.58	
18	11.46	1.17	11.06	1.35	10.68	1.50	10.28	1.72	9.89	1.98	9.55	2.26	9.25	2.58	

11.5. HEATING CAPACITY / INPUT POWER (KW) VXT 08 400V

CONDENSER WATER TEMPERATURE °C		EVAPORATOR WATER TEMPERATURE °C													
		25		30		35		40		45		50		55	
		Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	7.38	1.52	7.23	1.72	7.08	1.95	6.94	2.27	6.79	2.49	-	-	-	-	
-4	7.93	1.51	7.76	1.71	7.60	1.94	7.43	2.25	7.27	2.49	-	-	-	-	
-2	8.48	1.50	8.29	1.70	8.11	1.93	7.93	2.23	7.76	2.48	7.62	2.81	-	-	
0	9.03	1.49	8.82	1.69	8.62	1.92	8.43	2.21	8.25	2.48	8.10	2.79	-	-	
2	9.58	1.48	9.35	1.68	9.13	1.91	8.92	2.18	8.74	2.47	8.58	2.77	-	-	
4	10.13	1.47	9.88	1.67	9.64	1.90	9.42	2.16	9.23	2.46	9.06	2.76	8.81	3.04	
5	10.40	1.47	10.14	1.67	9.90	1.90	9.67	2.15	9.47	2.46	9.30	2.75	9.01	3.02	
6	10.74	1.46	10.47	1.66	10.21	1.89	9.96	2.14	9.74	2.45	9.55	2.74	9.26	3.02	
8	11.42	1.45	11.12	1.65	10.83	1.87	10.54	2.13	10.28	2.44	10.05	2.73	9.75	3.03	
10	12.11	1.44	11.77	1.64	11.44	1.85	11.12	2.11	10.82	2.42	10.55	2.72	10.25	3.04	
12	12.79	1.43	12.42	1.63	12.06	1.84	11.70	2.10	11.36	2.40	11.05	2.71	10.74	3.05	
14	13.47	1.41	13.07	1.62	12.68	1.82	12.28	2.08	11.90	2.39	11.56	2.70	11.24	3.05	
16	14.15	1.40	13.71	1.61	13.30	1.80	12.86	2.06	12.44	2.37	12.06	2.69	11.74	3.06	
18	14.83	1.39	14.36	1.60	13.91	1.78	13.44	2.05	12.98	2.35	12.56	2.68	12.23	3.07	

DATA DECLARED ACCORDING TO EN 14511:2004

11.6. HEATING CAPACITY / INPUT POWER (KW) VXT 10 400V

CONDENSER WATER TEMPERATURE °C		EVAPORATOR WATER TEMPERATURE °C													
		25		30		35		40		45		50		55	
		Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	9.17	1.92	8.99	2.18	8.80	2.46	8.62	2.86	8.43	3.15	-	-	-	-	
-4	9.85	1.91	9.64	2.16	9.44	2.45	9.23	2.83	9.04	3.12	-	-	-	-	
-2	10.54	1.89	10.30	2.15	10.07	2.44	9.85	2.80	9.64	3.09	9.47	3.55	-	-	
0	11.22	1.88	10.96	2.14	10.71	2.43	10.47	2.77	10.25	3.07	10.07	3.52	-	-	
2	11.90	1.87	11.62	2.13	11.35	2.42	11.08	2.74	10.86	3.04	10.66	3.48	-	-	
4	12.58	1.86	12.27	2.11	11.98	2.41	11.70	2.71	11.46	3.01	11.25	3.45	10.95	3.77	
5	12.93	1.85	12.60	2.11	12.30	2.40	12.01	2.70	11.76	3.00	11.55	3.43	11.19	3.77	
6	13.35	1.85	13.01	2.10	12.68	2.39	12.37	2.69	12.10	3.00	11.86	3.43	11.50	3.78	
8	14.19	1.83	13.81	2.09	13.45	2.37	13.09	2.68	12.77	3.00	12.49	3.42	12.12	3.80	
10	15.04	1.82	14.62	2.08	14.22	2.34	13.82	2.66	13.44	3.00	13.11	3.42	12.73	3.81	
12	15.89	1.80	15.43	2.06	14.98	2.32	14.54	2.64	14.11	3.00	13.73	3.41	13.35	3.83	
14	16.73	1.79	16.23	2.05	15.75	2.30	15.26	2.63	14.78	3.00	14.36	3.41	13.96	3.85	
16	17.58	1.77	17.04	2.04	16.52	2.27	15.98	2.61	15.45	3.00	14.98	3.40	14.58	3.87	
18	18.43	1.76	17.85	2.02	17.29	2.25	16.70	2.59	16.13	3.00	15.61	3.40	15.20	3.89	

11.7. HEATING CAPACITY / INPUT POWER (KW) VXT 14 400V

CONDENSER WATER TEMPERATURE °C		EVAPORATOR WATER TEMPERATURE °C													
		25		30		35		40		45		50		55	
		Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	12.23	2.56	11.98	2.90	11.73	3.28	11.49	3.82	11.24	4.20	-	-	-	-	
-4	13.04	2.54	12.81	2.89	12.58	3.27	12.37	3.78	12.15	4.16	-	-	-	-	
-2	13.86	2.53	13.65	2.87	13.43	3.25	13.24	3.74	13.06	4.13	12.63	4.74	-	-	
0	14.68	2.51	14.48	2.85	14.28	3.24	14.12	3.70	13.97	4.09	13.61	4.69	-	-	
2	15.50	2.50	15.31	2.84	15.13	3.22	15.00	3.66	14.87	4.05	14.60	4.64	-	-	
4	16.32	2.48	16.15	2.82	15.98	3.21	15.88	3.62	15.78	4.02	15.58	4.60	15.74	5.02	
5	16.73	2.47	16.56	2.81	16.40	3.20	16.32	3.60	16.24	4.00	16.07	4.58	15.91	5.02	
6	17.34	2.46	17.13	2.80	16.91	3.18	16.77	3.59	16.63	4.00	16.42	4.57	16.22	5.04	
8	18.57	2.44	18.25	2.79	17.93	3.15	17.67	3.57	17.41	4.00	17.12	4.57	16.84	5.06	
10	19.80	2.42	19.37	2.77	18.96	3.12	18.57	3.54	18.20	4.00	17.82	4.56	17.47	5.09	
12	21.03	2.40	20.50	2.75	19.98	3.09	19.47	3.52	18.98	4.00	18.51	4.55	18.09	5.11	
14	22.26	2.38	21.62	2.73	21.00	3.06	20.38	3.50	19.77	4.00	19.21	4.55	18.72	5.14	
16	23.49	2.36	22.74	2.72	22.03	3.03	21.28	3.48	20.55	4.00	19.91	4.54	19.34	5.16	
18	24.72	2.34	23.87	2.70	23.05	3.00	22.18	3.46	21.34	4.01	20.61	4.53	19.97	5.19	

DATA DECLARED ACCORDING TO EN 14511:2004

11.8. COOLING CAPACITY / INPUT POWER (KW) VXT 06 230V

CONDENSER WATER TEMPERATURE °C	EVAPORATOR WATER TEMPERATURE °C													
	25		30		35		40		45		50		55	
	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	4.41	1.35	4.17	1.56	3.93	1.81	3.68	2.10	3.41	2.42				
-4	4.80	1.34	4.54	1.55	4.28	1.79	4.00	2.08	3.71	2.41				
-2	5.19	1.33	4.91	1.54	4.63	1.78	4.32	2.07	4.02	2.39	3.71	2.70		
0	5.57	1.32	5.28	1.53	4.98	1.76	4.64	2.06	4.32	2.38	3.99	2.70		
2	5.96	1.31	5.65	1.51	5.34	1.75	4.96	2.05	4.62	2.36	4.27	2.69		
4	6.35	1.30	6.02	1.50	5.69	1.73	5.28	2.04	4.92	2.35	4.55	2.68	4.16	2.98
6	6.74	1.29	6.39	1.49	6.04	1.72	5.60	2.03	5.23	2.34	4.83	2.68	4.42	3.05
7	6.93	1.29	6.58	1.48	6.21	1.71	5.76	2.02	5.38	2.33	4.97	2.68	4.54	3.08
8	7.18	1.28	6.81	1.48	6.44	1.71	5.98	2.01	5.58	2.32	5.17	2.67	4.73	3.07
10	7.67	1.28	7.28	1.48	6.89	1.71	6.42	2.00	6.00	2.31	5.56	2.65	5.11	3.04
12	8.17	1.28	7.76	1.48	7.34	1.71	6.86	1.99	6.41	2.29	5.96	2.63	5.48	3.02
14	8.66	1.28	8.23	1.48	7.80	1.70	7.30	1.98	6.83	2.27	6.35	2.61	5.86	3.00
16	9.16	1.27	8.70	1.48	8.25	1.70	7.74	1.97	7.24	2.26	6.74	2.60	6.23	2.97
18	9.65	1.27	9.17	1.48	8.70	1.70	8.18	1.95	7.66	2.24	7.13	2.58	6.61	2.95

11.9. COOLING CAPACITY / INPUT POWER (KW) VXT 08 230V

CONDENSER WATER TEMPERATURE °C	EVAPORATOR WATER TEMPERATURE °C													
	25		30		35		40		45		50		55	
	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	5.61	1.59	5.30	1.84	4.99	2.13	4.67	2.47	4.33	2.85				
-4	6.10	1.58	5.77	1.82	5.44	2.11	5.08	2.45	4.72	2.83				
-2	6.59	1.57	6.24	1.81	5.88	2.09	5.49	2.44	5.10	2.82	4.72	3.18		
0	7.08	1.56	6.71	1.80	6.33	2.07	5.89	2.42	5.49	2.80	5.07	3.17		
2	7.57	1.54	7.18	1.78	6.78	2.06	6.30	2.41	5.87	2.78	5.43	3.17		
4	8.06	1.53	7.65	1.77	7.22	2.04	6.71	2.40	6.25	2.76	5.79	3.16	5.29	3.51
6	8.56	1.52	8.12	1.75	7.67	2.02	7.11	2.38	6.64	2.75	6.14	3.15	5.61	3.58
7	8.80	1.51	8.35	1.75	7.89	2.01	7.32	2.38	6.83	2.74	6.32	3.15	5.77	3.62
8	9.07	1.51	8.60	1.75	8.13	2.01	7.54	2.37	7.04	2.73	6.52	3.14	5.96	3.61
10	9.59	1.51	9.10	1.75	8.61	2.01	8.00	2.36	7.47	2.71	6.92	3.12	6.34	3.58
12	10.12	1.51	9.60	1.74	9.08	2.01	8.46	2.34	7.89	2.69	7.31	3.10	6.71	3.55
14	10.65	1.50	10.10	1.74	9.55	2.00	8.92	2.33	8.32	2.68	7.71	3.08	7.09	3.52
16	11.18	1.50	10.60	1.74	10.03	2.00	9.38	2.31	8.75	2.66	8.11	3.05	7.47	3.50
18	11.71	1.50	11.10	1.74	10.50	2.00	9.84	2.30	9.17	2.64	8.51	3.03	7.85	3.47

DATA DECLARED ACCORDING TO EN 14511:2004

11.10. COOLING CAPACITY / INPUT POWER (KW) VXT 10 230V

CONDENSER WATER TEMPERATURE °C	EVAPORATOR WATER TEMPERATURE °C													
	25		30		35		40		45		50		55	
	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	7.26	1.99	6.86	2.30	6.46	2.66	6.05	3.08	5.61	3.56				
-4	7.90	1.97	7.47	2.28	7.04	2.64	6.58	3.07	6.11	3.54				
-2	8.54	1.96	8.08	2.26	7.62	2.62	7.11	3.05	6.61	3.52	6.11	3.97		
0	9.17	1.94	8.69	2.25	8.20	2.59	7.63	3.03	7.10	3.50	6.57	3.96		
2	9.81	1.93	9.30	2.23	8.78	2.57	8.16	3.01	7.60	3.48	7.03	3.96		
4	10.45	1.91	9.91	2.21	9.36	2.55	8.69	3.00	8.10	3.46	7.49	3.95	6.85	4.38
6	11.08	1.90	10.52	2.19	9.94	2.53	9.21	2.98	8.60	3.43	7.95	3.94	7.27	4.48
7	11.40	1.89	10.82	2.18	10.23	2.51	9.48	2.97	8.85	3.42	8.18	3.94	7.47	4.53
8	11.74	1.89	11.14	2.18	10.53	2.51	9.77	2.96	9.12	3.41	8.44	3.92	7.72	4.51
10	12.43	1.89	11.79	2.18	11.15	2.51	10.37	2.94	9.67	3.39	8.96	3.90	8.21	4.48
12	13.11	1.88	12.44	2.18	11.76	2.51	10.96	2.93	10.23	3.37	9.47	3.87	8.70	4.44
14	13.80	1.88	13.09	2.18	12.37	2.51	11.55	2.91	10.78	3.34	9.99	3.84	9.18	4.41
16	14.48	1.87	13.73	2.18	12.99	2.50	12.15	2.89	11.33	3.32	10.51	3.82	9.67	4.37
18	15.16	1.87	14.38	2.18	13.60	2.50	12.74	2.87	11.88	3.30	11.02	3.79	10.16	4.34

11.11. COOLING CAPACITY / INPUT POWER (KW) VXT 06 400V

CONDENSER WATER TEMPERATURE °C	EVAPORATOR WATER TEMPERATURE °C													
	25		30		35		40		45		50		55	
	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	4.54	1.27	4.29	1.47	4.04	1.70	3.78	1.97	3.51	2.28				
-4	4.94	1.26	4.67	1.46	4.40	1.69	4.11	1.96	3.82	2.27				
-2	5.33	1.25	5.05	1.45	4.76	1.67	4.44	1.95	4.13	2.25	3.82	2.54		
0	5.73	1.24	5.43	1.44	5.13	1.66	4.77	1.94	4.44	2.24	4.11	2.54		
2	6.13	1.23	5.81	1.43	5.49	1.65	5.10	1.93	4.75	2.23	4.40	2.53		
4	6.53	1.22	6.19	1.41	5.85	1.63	5.43	1.92	5.06	2.21	4.68	2.53	4.28	2.81
6	6.93	1.22	6.57	1.40	6.21	1.62	5.76	1.91	5.37	2.20	4.97	2.52	4.54	2.87
7	7.13	1.21	6.76	1.40	6.39	1.61	5.92	1.90	5.53	2.19	5.12	2.52	4.67	2.90
8	7.34	1.21	6.96	1.40	6.58	1.61	6.11	1.90	5.70	2.18	5.28	2.51	4.82	2.89
10	7.77	1.21	7.37	1.40	6.97	1.61	6.48	1.88	6.05	2.17	5.60	2.49	5.13	2.86
12	8.19	1.20	7.77	1.40	7.35	1.60	6.85	1.87	6.39	2.16	5.92	2.48	5.43	2.84
14	8.62	1.20	8.18	1.39	7.73	1.60	7.22	1.86	6.74	2.14	6.24	2.46	5.74	2.82
16	9.05	1.20	8.58	1.39	8.12	1.60	7.59	1.85	7.08	2.13	6.57	2.44	6.05	2.80
18	9.48	1.20	8.99	1.39	8.50	1.60	7.96	1.84	7.43	2.11	6.89	2.43	6.35	2.78

11.12. COOLING CAPACITY / INPUT POWER (KW) VXT 08 400V

CONDENSER WATER TEMPERATURE °C	EVAPORATOR WATER TEMPERATURE °C													
	25		30		35		40		45		50		55	
	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	5.83	1.51	5.51	1.75	5.19	2.02	4.86	2.34	4.51	2.71				
-4	6.34	1.50	6.00	1.73	5.66	2.00	5.28	2.33	4.91	2.69				
-2	6.85	1.49	6.49	1.72	6.12	1.99	5.71	2.32	5.31	2.68	4.91	3.02		
0	7.37	1.48	6.98	1.71	6.59	1.97	6.13	2.30	5.71	2.66	5.28	3.01		
2	7.88	1.47	7.47	1.69	7.05	1.95	6.55	2.29	6.10	2.64	5.65	3.01		
4	8.39	1.45	7.95	1.68	7.51	1.94	6.97	2.28	6.50	2.63	6.02	3.00	5.50	3.33
6	8.90	1.44	8.44	1.67	7.98	1.92	7.40	2.26	6.90	2.61	6.39	2.99	5.84	3.40
7	9.16	1.44	8.69	1.66	8.21	1.91	7.61	2.26	7.10	2.60	6.57	2.99	6.00	3.44
8	9.36	1.44	8.87	1.66	8.38	1.91	7.77	2.25	7.25	2.59	6.70	2.98	6.12	3.43
10	9.76	1.43	9.24	1.66	8.73	1.91	8.10	2.24	7.54	2.58	6.97	2.96	6.37	3.40
12	10.16	1.43	9.62	1.66	9.07	1.91	8.43	2.22	7.84	2.56	7.23	2.94	6.61	3.38
14	10.56	1.43	9.99	1.66	9.41	1.90	8.75	2.21	8.13	2.54	7.50	2.92	6.85	3.35
16	10.96	1.42	10.36	1.66	9.76	1.90	9.08	2.20	8.43	2.52	7.76	2.90	7.10	3.32
18	11.36	1.42	10.73	1.65	10.10	1.90	9.41	2.18	8.72	2.51	8.03	2.88	7.34	3.30

11.13. COOLING CAPACITY / INPUT POWER (KW) VXT 10 400V

CONDENSER WATER TEMPERATURE °C	EVAPORATOR WATER TEMPERATURE °C													
	25		30		35		40		45		50		55	
	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	7.32	1.91	6.91	2.21	6.51	2.55	6.10	2.96	5.65	3.42				
-4	7.96	1.90	7.53	2.19	7.10	2.53	6.63	2.94	6.15	3.40				
-2	8.60	1.88	8.14	2.17	7.68	2.51	7.16	2.93	6.66	3.38	6.16	3.81		
0	9.24	1.87	8.75	2.16	8.26	2.49	7.69	2.91	7.16	3.36	6.62	3.81		
2	9.88	1.85	9.37	2.14	8.84	2.47	8.22	2.89	7.66	3.34	7.08	3.80		
4	10.52	1.84	9.98	2.12	9.43	2.45	8.75	2.88	8.16	3.32	7.55	3.79	6.90	4.21
6	11.16	1.82	10.59	2.10	10.01	2.42	9.28	2.86	8.66	3.30	8.01	3.78	7.32	4.30
7	11.48	1.82	10.90	2.10	10.30	2.41	9.54	2.85	8.91	3.29	8.24	3.78	7.53	4.35
8	11.83	1.81	11.23	2.10	10.61	2.41	9.84	2.84	9.19	3.28	8.50	3.77	7.78	4.33
10	12.52	1.81	11.88	2.09	11.23	2.41	10.44	2.83	9.75	3.25	9.02	3.74	8.27	4.30
12	13.21	1.81	12.53	2.09	11.85	2.41	11.04	2.81	10.30	3.23	9.54	3.72	8.76	4.26
14	13.90	1.80	13.18	2.09	12.46	2.40	11.64	2.79	10.86	3.21	10.06	3.69	9.25	4.23
16	14.59	1.80	13.83	2.09	13.08	2.40	12.24	2.78	11.41	3.19	10.58	3.67	9.74	4.20
18	15.27	1.80	14.49	2.09	13.70	2.40	12.83	2.76	11.97	3.17	11.10	3.64	10.24	4.16

DATA DECLARED ACCORDING TO EN 14511:2004

11.14. COOLING CAPACITY / INPUT POWER (KW) VXT 14 400V

CONDENSER WATER TEMPERATURE °C	EVAPORATOR WATER TEMPERATURE °C													
	25		30		35		40		45		50		55	
	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	9.50	2.63	8.98	3.03	8.46	3.51	7.92	4.07	7.34	4.70				
-4	10.34	2.61	9.78	3.01	9.22	3.48	8.61	4.05	8.00	4.68				
-2	11.17	2.59	10.57	2.99	9.98	3.45	9.30	4.02	8.65	4.65	8.00	5.24		
0	12.00	2.57	11.37	2.96	10.73	3.42	9.99	4.00	9.30	4.62	8.60	5.23		
2	12.84	2.55	12.17	2.94	11.49	3.39	10.68	3.98	9.95	4.59	9.20	5.22		
4	13.67	2.53	12.97	2.92	12.25	3.36	11.37	3.96	10.60	4.56	9.81	5.21	8.97	5.79
6	14.51	2.51	13.76	2.89	13.00	3.33	12.06	3.93	11.25	4.53	10.41	5.20	9.51	5.91
7	14.92	2.50	14.16	2.88	13.38	3.32	12.40	3.92	11.58	4.52	10.71	5.20	9.78	5.98
8	15.37	2.49	14.58	2.88	13.78	3.32	12.79	3.91	11.94	4.50	11.05	5.18	10.10	5.95
10	16.26	2.49	15.43	2.88	14.59	3.31	13.57	3.89	12.66	4.47	11.72	5.14	10.74	5.91
12	17.16	2.48	16.28	2.88	15.39	3.31	14.34	3.86	13.38	4.44	12.40	5.11	11.38	5.86
14	18.06	2.48	17.13	2.88	16.19	3.31	15.12	3.84	14.11	4.41	13.07	5.08	12.02	5.82
16	18.95	2.47	17.98	2.88	17.00	3.30	15.90	3.82	14.83	4.38	13.75	5.04	12.66	5.77
18	19.85	2.47	18.82	2.87	17.80	3.30	16.67	3.79	15.55	4.36	14.42	5.01	13.30	5.72

11.15. COOLING CAPACITY / INPUT POWER (KW) VXT 16 400V

CONDENSER WATER TEMPERATURE °C	EVAPORATOR WATER TEMPERATURE °C													
	25		30		35		40		45		50		55	
	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	10.84	2.79	10.24	3.22	9.65	3.72	9.03	4.32	8.38	4.99				
-4	11.79	2.76	11.15	3.19	10.51	3.69	9.82	4.29	9.12	4.96				
-2	12.74	2.74	12.06	3.17	11.38	3.66	10.61	4.27	9.86	4.93	9.12	5.56		
0	13.69	2.72	12.97	3.14	12.24	3.63	11.39	4.24	10.60	4.90	9.81	5.55		
2	14.64	2.70	13.88	3.12	13.10	3.60	12.18	4.22	11.35	4.87	10.50	5.54		
4	15.59	2.68	14.79	3.09	13.97	3.57	12.96	4.20	12.09	4.84	11.18	5.53	10.23	6.14
6	16.54	2.66	15.70	3.07	14.83	3.54	13.75	4.17	12.83	4.81	11.87	5.52	10.85	6.27
7	17.02	2.65	16.15	3.06	15.26	3.52	14.14	4.16	13.21	4.79	12.22	5.51	11.16	6.34
8	17.53	2.65	16.63	3.06	15.72	3.52	14.59	4.15	13.62	4.78	12.60	5.49	11.52	6.31
10	18.55	2.64	17.60	3.05	16.64	3.51	15.47	4.12	14.44	4.75	13.37	5.46	12.25	6.27
12	19.57	2.63	18.57	3.05	17.55	3.51	16.36	4.10	15.26	4.71	14.14	5.42	12.98	6.22
14	20.59	2.63	19.53	3.05	18.47	3.51	17.24	4.07	16.09	4.68	14.91	5.38	13.71	6.17
16	21.61	2.62	20.50	3.05	19.38	3.50	18.13	4.05	16.91	4.65	15.68	5.35	14.44	6.12
18	22.63	2.62	21.47	3.05	20.30	3.50	19.02	4.02	17.73	4.62	16.45	5.31	15.17	6.07

DATA DECLARED ACCORDING TO EN 14511:2004

11.16. HEATING CAPACITY / INPUT POWER (KW) VXT 16 400V

COLD WATER TEMPERATURE °C	HOT WATER TEMPERATURE °C													
	25		30		35		40		45		50		55	
	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa	Pt	Pa
-6	13.87	2.88	13.59	3.27	13.31	3.69	13.03	4.30	12.75	4.72	-	-	-	-
-4	14.90	2.86	14.58	3.25	14.27	3.67	13.96	4.25	13.67	4.68	-	-	-	-
-2	15.93	2.84	15.58	3.23	15.23	3.66	14.90	4.21	14.58	4.64	14.32	5.33	-	-
0	16.96	2.82	16.57	3.21	16.19	3.64	15.83	4.16	15.50	4.60	15.22	5.28	-	-
2	18.00	2.81	17.57	3.19	17.16	3.62	16.76	4.12	16.42	4.56	16.12	5.23	-	-
4	19.03	2.79	18.56	3.17	18.12	3.61	17.70	4.07	17.33	4.52	17.02	5.17	16.55	5.65
6	19.55	2.78	19.06	3.16	18.60	3.60	18.16	4.05	17.79	4.50	17.47	5.15	16.93	5.65
7	20.19	2.77	19.67	3.15	19.18	3.58	18.71	4.04	18.30	4.50	17.94	5.14	17.39	5.67
8	21.47	2.75	20.89	3.13	20.34	3.55	19.80	4.01	19.31	4.50	18.88	5.14	18.32	5.69
10	22.74	2.72	22.11	3.11	21.50	3.51	20.89	3.99	20.33	4.50	19.83	5.13	19.25	5.72
12	24.02	2.70	23.33	3.10	22.66	3.48	21.98	3.96	21.34	4.50	20.77	5.12	20.19	5.75
14	25.30	2.68	24.55	3.08	23.82	3.44	23.08	3.94	22.36	4.50	21.71	5.11	21.12	5.78
16	26.58	2.66	25.77	3.06	24.98	3.41	24.17	3.91	23.37	4.51	22.66	5.11	22.05	5.81
18	27.86	2.64	26.99	3.04	26.14	3.38	25.26	3.89	24.39	4.51	23.60	5.10	22.98	5.83

DATA DECLARED ACCORDING TO EN 14511:2004

11.17. FOR ΔT DIFFERENT FROM NOMINAL

For Δt different to 5°C, use the table to obtain the corrective factors of the cooling/heating capacity and input power.

For Δt different on the evaporator

	3	5	8	10
Cooling capacity correction factors	0,99	1	1,02	1,03
Heating capacity correction factors	0,99	1	1,02	1,03
Input power correction factors	0,99	1	1,01	1,02

For Δt different on the condenser

	5	10	15
Cooling capacity correction factors	1	1,01	1,02
Input power correction factors	1	0,99	0,98
The variations can be ignored for the heating capacity			

11.18. DEPOSIT FACTORS

The performance supplied by the table refer to clean pipe conditions with deposit factor = 1. For different deposit factor values, multiply the performance table data by the coefficients given.

11.18.1. Deposit factors

	[K*m ²]/[W]	0,00001	0,00002	0,00005
Cooling capacity correction factors		1	0,99	0,98
Input power correction factors		1	1	1
Heating capacity correction factors		1	1	0,99
Input power correction factors		1	1	1,02

12. ETHYLENE GLYCOL SOLUTIONS

- The correction factors of cooling power and input power take into account the presence of glycol and diverse evaporation temperatures.
- The pressure drop correction factor considers the different flow rate resulting from the application of the water flow rate correction factor.
- Correction factor of water flow rate is calculated to keep the same Δt that would be present with the absence of glycol.

NOTE

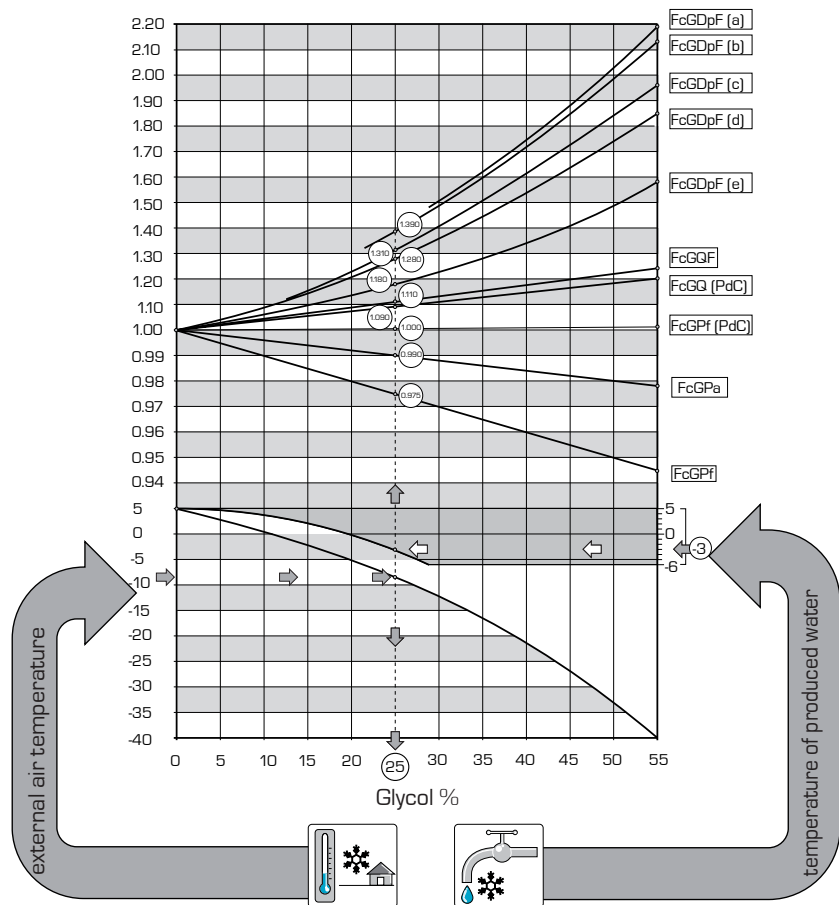
On the following page an example is given to help graph reading.

to determine the percentage of glycol required, see below diagram; this percentage calculation can take into consideration one of the following factors: Depending on which fluid is considered (water or air), the graph is interpreted by the right or left side at the crossing point on the curves with the external temperature line or the water produced line. A point from which the vertical line will pass is obtained and this will distinguish both glycol percentage and relative correction coefficients.

12.1. HOW TO INTERPRET GLYCOL CURVES

The curves shown in the diagram summarise a significant number of data, each of which is represented by a specific curve. In order to use these curves correctly it is first necessary to make some initial reflections.

- If you wish to calculate the percentage of glycol on the basis of the external air temperature, enter from the left axis and on reaching the curve draw a vertical line, which in turn will intercept all the other curves; the points obtained from the upper curves represent the coefficients for the correction of the cooling capacity and input power, the flow rates and the pressure drops (remember that these coefficients must be multiplied by the nominal value of the size in question); while the glycol percentage value recommended to produce desired water temperature is on the lower axis.
- If you wish to calculate the percentage of glycol on the basis of the temperature of the water produced, enter from the right axis and on reaching the curve draw a vertical line, which in turn will intercept all the other curves; the points obtained from the upper curves represent the coefficients for the cooling capacity and input power, the flow rates and the pressure drops (remember that these coefficients



KEY:

FcGPF	Corrective factors for cooling capacity
FcGPa	Corrective factors of the input power
FcGDPf (a)	Correction factors for pressure drop (evaporator) (av. temp. = -3.5 °C)
FcGDPf (b)	Correction factors for pressure drops (av. temp. = 0.5 °C)
FcGDPf (c)	Correction factors for pressure drops (av. temp. = 5.5 °C)
FcGDPf (d)	Correction factors for pressure drops (av. temp. = 9.5 °C)
FcGDPf (e)	Correction factors for pressure drops (av. temp. = 47.5 °C)
FcGQF	Correction factor of flow rates (evap.) (av. temp. = 9.5 °C)
FcGQC	Correction factors of flow rates (condenser) (av. temp. = 47.5 °C)

NOTE

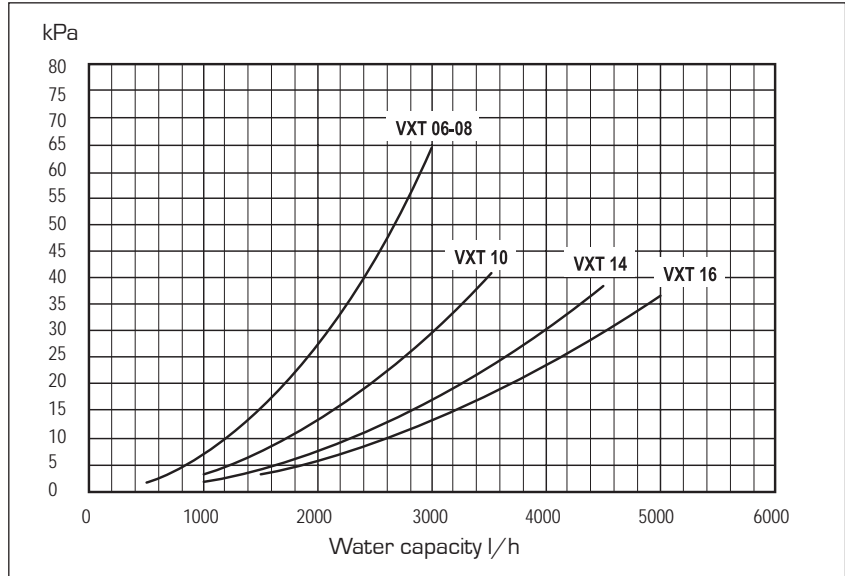
Although graph shows up to external air temperature of -40°C, unit operational limits must be considered.

must be multiplied by the nominal value of the size in question); while the glycol percentage value recommended to produce water at the desired temperature.

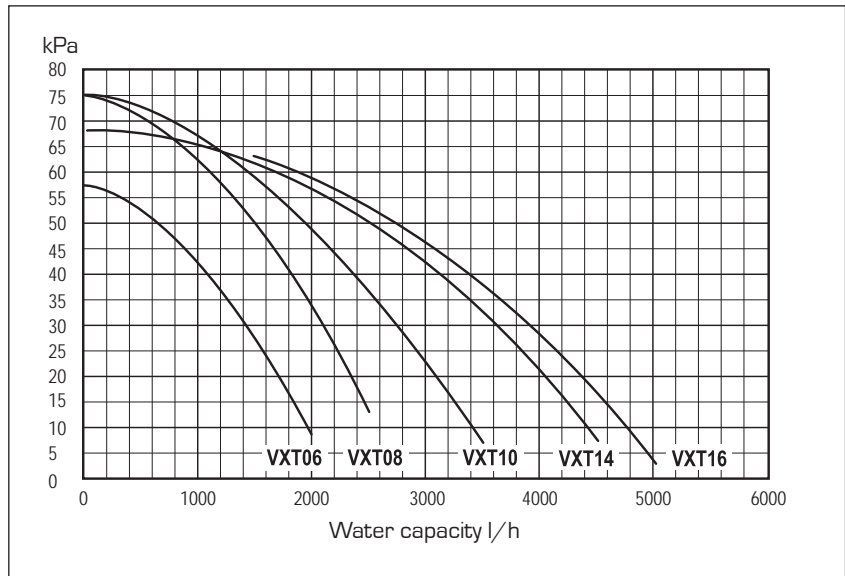
- Initial rates for "EXTERNAL AIR TEMPERATURE" and "TEMPERATURE OF PRODUCED WATER", are not directly related, therefore it is not possible to refer to the curve of one of these rates to obtain corresponding point on the curve of the other rate.

13. PRESSURE DROPS AND STATIC PRESSURES

13.1. GEOTHERMIC / WATER SHEET SIDE PRESSURE DROPS



13.2. STATIC PRESSURE AVAILABILITY USEFUL TO THE SYSTEM



14. EXPANSION VESSEL CALIBRATION

14.1. EXPANSION VESSEL CALIBRATION

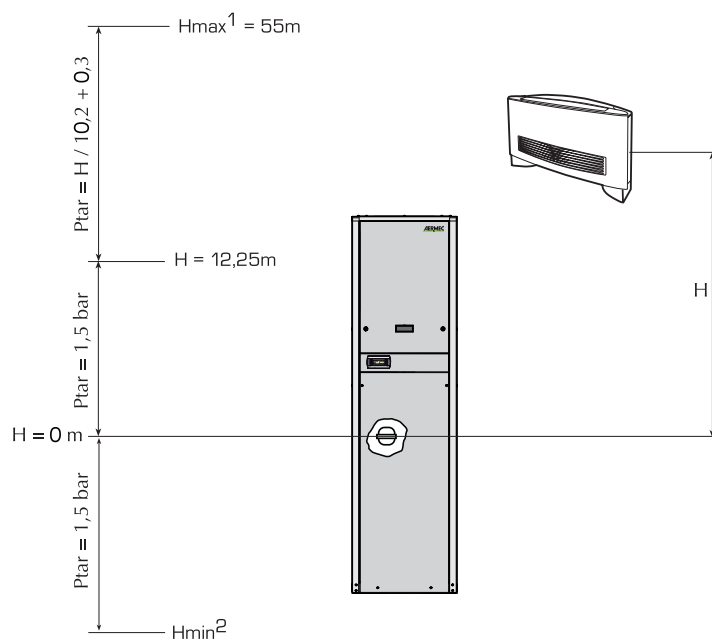
Standard pressure value of expansion tank when empty is 1.5 bar. Maximum value is 6 bar.

Calibration of the vessel must be regulated using the maximum level difference (H) of the user (see diagram) by using the following formula:

p [calibration] [bar] = H [m] / 10.2 + 0.3.

For example: if level difference (H) is equal to 20m, the calibration value of the vessel will be 2.3 bar.

If calibration value obtained from formula is less than 1.5 bar (that is for $H < 12.25$), keep calibration as standard.



KEY

- (1) Check that highest installation is not higher than 55 metres.
- (2) Ensure that lowest installation can withstand global pressure in that position.

15. SOUND DATA

To prevent the transmission of noise to the heating system, it is recommended to install VT anti-vibration mounts (ACCESSORY) and flexible pipes between the VXT and the heating system.

Sound power

The data given express the total sound power emitted from the machine in nominal functioning conditions

Sound Pressure

(*) Environment volume of 80m³, reverberation time 0.5s, distance 3 metres and directionality factor 4.

COOLING MODE HEATING MODE	Total sound levels		Octave band [Hz]						
	Power: dB(A)	Pressure: dB(A) *	125	250	500	1000	2000	4000	8000
Sound potential for centre of band [dB] frequency									
VXT06	43.0	35.0	57.0	45.8	35.4	30.3	22.0	18.3	12.1
VXT08	45.0	37.0	59.0	47.8	37.4	32.3	24.0	20.3	14.1
VXT10	45.0	37.0	59.0	47.8	37.4	32.3	24.0	20.3	14.1
VXT14	47.0	39.0	61.1	49.9	39.5	34.4	26.1	22.4	16.2
VXT16	49.5	41.5	63.2	52.0	41.6	36.5	28.2	24.5	18.3

16. CALIBRATION OF SAFETY PARAMETERS

CONTROL PARAMETERS

VXT		min	standard	max
Cooling set point	°C	-6	7	18
Heating set point	°C	35	48	55
Defrosting mode	°C	-9	3	4
Total differential	°C	3	5	10
Autostart		auto		

VXT		06	08	10	14	16
MAGNET CIRCUIT BREAKER COMPRESSORS						
MTC1	230V A	20	25	25	-	-
MTC1	400V A		10	16	16	16

TRANSDUCERS AND PRESSURE SWITCHES							
High pressure pressure switch		bar	42	42	42	42	42
Low pressure transducer	cooling mode	bar	30	30	30	30	30
	heating mode	bar	30	30	30	30	30
High pressure transducer		bar	45	45	45	45	45

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For the installation of the appliance, please comply with the safety rules and regulations contained in these instructions



Moving parts hazard



High temperature hazard



Voltage hazard



Danger: Disconnect voltage



Generic danger



Useful information and notices

17. WARNINGS REGARDING DOCUMENTATION

17.1. USE IN COMPLIANCE WITH DESTINATION

The AERMEC VXT heat pumps water/water are constructed according to the recognised technical standards and safety regulations. In spite of this, dangers to the user or third parties may arise, as well as damage to the appliance and other objects, in the event of improper use and use that is not in compliance with that envisioned. The VXT heat pumps are designed as heat generators for centralised cooling closed systems and for plants producing domestic hot water (DHW.). **Any use not expressly indicated in this manual is not permitted. Consequently**

AERMEC will not assume any responsibility for damage that may occur due to failure to comply with these instructions

17.2. PRESERVATION OF THE DOCUMENTATION

The installation instructions, along with all the related documentation, must be given to the user of the system, who assumes the responsibility of keeping the instructions so that they are always at hand in case of need.

READ THIS DOCUMENT CAREFULLY, the appliance must be installed by qualified and suitably prepared staff in compliance

with the national legislation effective in the country of destination. (Ministerial Decree 329/2004).

The appliance must be installed so that maintenance and/or repairs can be carried out. The appliance warranty does not cover the costs for ladders, scaffolding, or other elevation systems that may become necessary for carrying out servicing under warranty.

The validity of the warranty shall be void in the event of failure to comply with the above-mentioned indications.

18. FUNDAMENTAL SAFETY REGULATIONS

We remind you that the use of products that employ electrical energy and water requires that a number of essential safety rules be followed, such as:

- This appliance is not suitable for use by persons (including children) with limited physical, sensory, or mental capacities or those lacking experience or know-how, unless they are supervised or instructed regarding the use of the appliance by a person who is responsible for their safety. Children must always be supervised to ensure they do not play with the appliance.
- It is prohibited to carry out any technical or maintenance operation before the unit has been disconnected from the electrical mains by switching off the master switch of the system and the main power switch on the control panel.
- It is prohibited to modify the safety or adjustment devices without the manufacturer's authorisation and precise instructions
- It is prohibited to pull, disconnect, or twist the electrical cables coming from the unit even if disconnected from the electrical mains.
- It is prohibited to leave containers and flammable substances near to the chiller.
- It is prohibited to touch the appliance when you are barefoot and with parts of the body that are wet or damp. It is prohibited to open the access hatches to the internal parts of the appliance without first having switched off the system master switch.
- It is prohibited to disperse or abandon the packing materials and they must be kept out of the reach of children, as they are a potential source of danger.

19. PRODUCT IDENTIFICATION

The VXT can be identified by:

- **Packing label** that reports the identification data of the product
- **Technical plate** positioned on the base inside the machine.

NOTE

Tampering, removal, lack of the identification plate or other does not allow safe identification of the product and will make any installation or maintenance operation to be performed difficult.

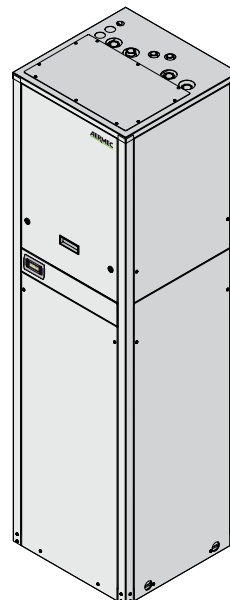


Fig.3. Identification plate

20. SAFETY WARNINGS AND INSTALLATION REGULATIONS

20.2.1. Safety warnings

i The heat pump must be installed by a qualified and suitably trained technician, in compliance with the national legislation in force in the country of destination (Ministerial Decree 329/2004). A e r m e c

will not assume any responsibility for damage due to failure to follow these instructions.

i Before starting any operation READ THE INSTRUCTIONS CAREFULLY AND PERFORM SAFETY CONTROLS IN ORDER TO REDUCE ANY DANGER

TO A MINIMUM.

All staff involved must have thorough knowledge of the operations and any dangers that may arise at the time in which the installation operations are carried out.

Danger!

The refrigerant circuit is pressurised. Moreover, very high temperatures can be reached. The appliance may only be opened by an after-sales service technician or by a qualified technician. Interventions on the cooling circuit may only be carried out by a qualified refrigeration technician.

410A GAS

The unit comes supplied with a sufficient quantity of 410A refrigerant fluid. This is a chlorine-free refrigerant and does not damage the ozone layer. R410A is not flammable. However, all maintenance operations must be carried out exclusively by a specialised technician using suitable protective equipment.

Danger of electric shock!

Before opening the unit, disconnect the appliance completely from the mains power supply.

21. INSTALLATION

21.1. CHOICE OF THE PLACE OF INSTALLATION

Before beginning installation agree on the place of positioning with client and pay attention to the following points:

- The support surface must be able to support the weight of the unit.
- The selected place must have enough space to permit laying of the necessary pipes.
- Remember that whilst operational the heat pump can cause vibrations; therefore anti-vibration mounts (VT accessories) are recommended. Fix them to the holes on the base.

21.2. POSITIONING

- The unit is sent from the factory protected by a cage of wood and wrapped in plastic placed on a pallet
- Before handling the unit, verify the lifting capacity of the machinery used.
- To prevent the VXT structure being damaged by the belts place protections between the latter and the machine.
- On removal of the packaging, handling must be carried out by qualified staff, which is suitably equipped to handle the machine

“ON HORIZONTAL SURFACES”

- Use lifting trucks or similar in the most appropriate way and paying

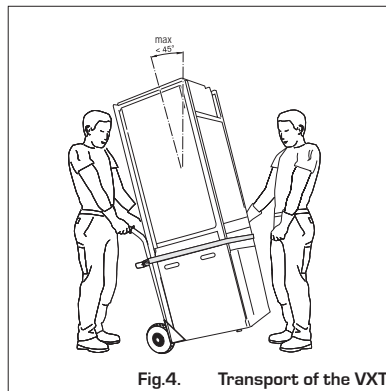


Fig.4. Transport of the VXT

attention to the distribution of unit weights. (fig. 3).

- Remove packaging carefully, paying attention not to damage the various components of the appliance
- Loosen the safety blocks used for transport with which the heat pump is fixed onto the bed (once the blocks are removed they are no longer necessary).

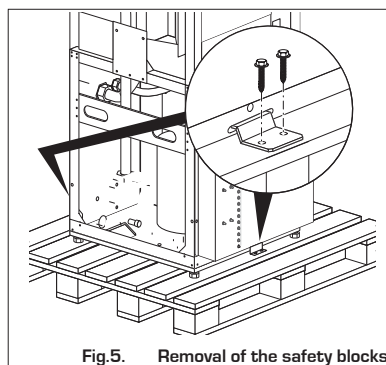


Fig.5. Removal of the safety blocks

ATTENTION:

THE WEIGHT OF THE UNIT CAN REACH 291 KG., LIFT IT IN COMPLIANCE WITH THAT STATED BY THE RELATIVE SAFETY STANDARDS

- It is prohibited to stop under the unit
- It is mandatory to envision the technical spaces necessary,

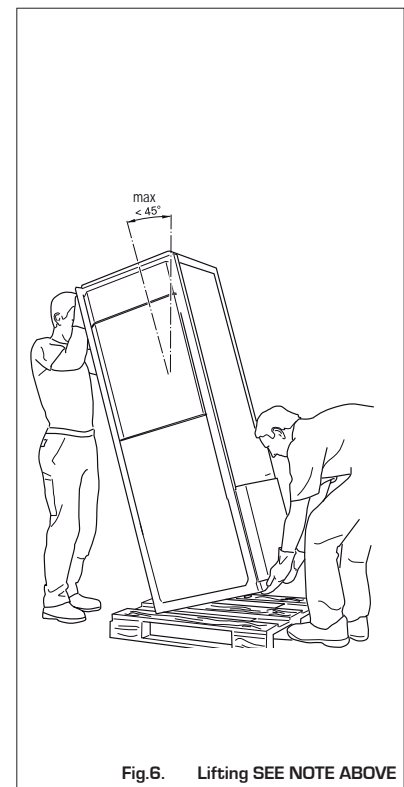
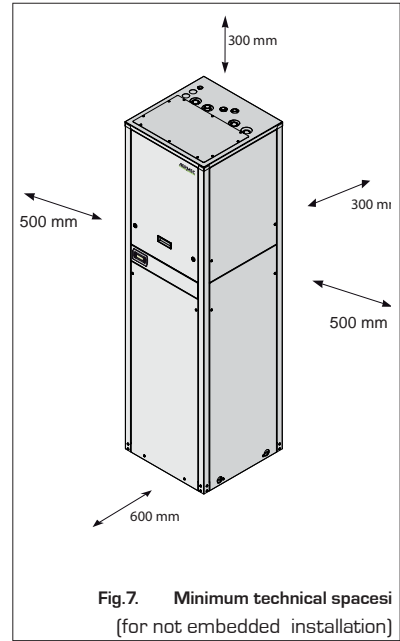


Fig.6. Lifting SEE NOTE ABOVE

to allow ROUTINE AND EXTRAORDINARY MAINTENANCE AND FOR FUNCTIONING NEEDS. (fig. 5)

- The selected place must be such to permit laying of the necessary pipes



22. HYDRAULIC CIRCUIT

22.1. HYDRAULIC CIRCUIT INSIDE THE VXT HEAT PUMP

The heat pump is destined to connection with a closed air-conditioning plant and a domestic hot water production circuit. To guarantee correct functioning, the plant must have been set-up by authorised technicians in compliance with the provisions in force on the subject.

NOTE

The presence of filters is TO BE CONSIDERED MANDATORY, REMOVAL MAKES THE WARRANTY VOID. They must be kept clean. It is therefore necessary to check cleanliness after installation of the unit and to periodically check their state.

VXT external hydraulic circuit (components not supplied)

The choice and installation of components outside the VXT is up to the installer, who must operate

according to the rules of good practice and in compliance with the regulations in force in the country of destination [Ministerial Decree 329/2004].

22.2. HEATING CIRCUIT REQUISITES

For installation of the heating system the EN 12828 Standard prescribes the inclusion of certain components of planting, some of them have already mounted inside the unit:

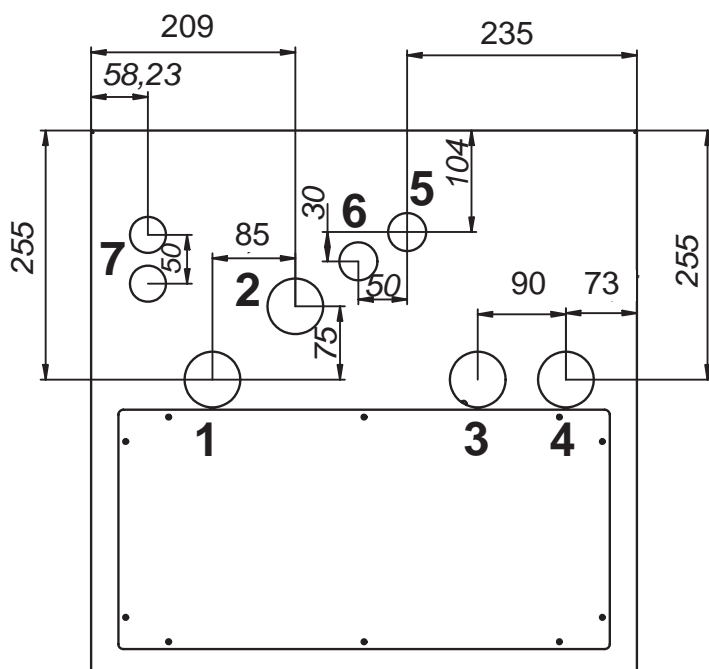
- An expansion vessel with membrane in the return pipe of the heating system
- All of the exchangers are equipped with pressure differential and mechanical filter input
- Flow switch positioned in the output DHW circuit
- Mechanical filter input to the DHW circuit
- A filling manual valve that allows to fill and drain the water from the heating system

- In addition, the following are necessary components of plant not supplied:
 - A safety valve against over-pressures (opening pressure 3 bar)
 - Manometer (safety unit) in the heating circuit flow pipe, directly behind the appliance
 - A separator of air and dirt in the heating circuit return pipe.
 - To prevent heat loss and to prevent freezing insulate all connection pipes as prescribed by the decree relative to energy saving.
 - The piping must be clean; if necessary, rinse it carefully before filling.

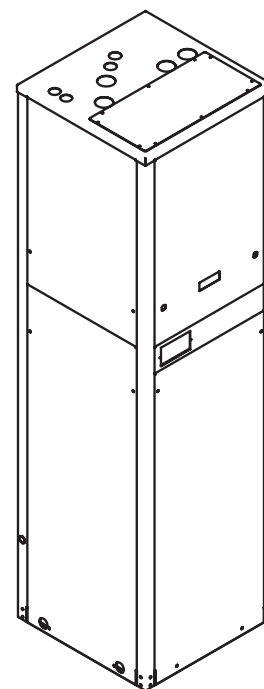
The installation of the following is recommended:

- Anti-vibration joints
- Shut-off cocks
- Safety valve (if not supplied with the machine)
- Manometers

23. POSITION OF HYDRAULIC CONNECTIONS



- 1 1" F geothermal return
- 2 1" F geothermal flow
- 3 1" F system return
- 4 1" F system flow
- 5 3/4" M DHW outlet
- 6 3/4" M DHW inlet
- 7 Electric power supply



24. ELECTRIC CONNECTIONS

<p>⚠ All the electrical operations must be carried out by STAFF IN POSSESSION OF THE NECESSARY QUALIFICATIONS BY LAW suitably trained and informed regarding the risks related to these operations</p>	<p>⚠ The features of the electrical lines and of the related components must be determined by STAFF QUALIFIED TO DESIGN ELECTRIC SYSTEMS, in compliance with the international and national regulations of the place of installation of the unit and in compliance with the regulations in force at the moment of installation</p>	<p>⚠ For the installation requirements refer only to the wiring diagram supplied with the appliance. The wiring diagram along with the manuals must be kept in good condition and ALWAYS AVAILABLE FOR ANY FUTURE SERVICING IN THE UNIT.</p>	<p>⚠ It is mandatory to verify that the machine's watertight integrity before making the electrical connections, and it must only be powered after the hydraulic and electrical works have been completed.</p>
--	--	--	--

The VXT heat pumps are completely wired in the factory and on installation only require connection to the electric power supply mains. Please verify that the characteristics of your electrical mains are suitable for the absorption values indicated in the table of electrical data (CHAPTER 8).

UNIT LINES AND DATA

NOTE

The cable sections shown in the Chapter 12 are recommended for a standard length; For longer lengths, the PLANT ENGINEER is responsible for the power supply line sizing and the earth connection, according to:

- the length
- the type of cable
- the absorption of the unit, the physical location and the environmental temperature

The following electrical connections must be made on the heat pump:

24.1. CONNECTION TO THE ELECTRIC POWER SUPPLY MAINS TABXX

- Make sure that the electric line is not live
- To access the electric box:
 1. Open the front panel by turning the screw ¼ of a turn
 2. Open the panel by positioning the door-lock isolating switch at OFF (fig.6)
- Pass the cables through the holes prepared in the left side upper panel. Protect the cables using cable-glands of suitable size.
- Connection of the power line on the terminal board of the L/N/PE versions single-phase control board or by using

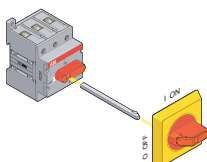


Fig.8.

clamps L1/L2/L3/N/PE for the three-phase versions.

- Before electrically powering the unit, make sure that all guards that were previously removed have been restored.

24.2. REMOTE CONTROL CONNECTION

- PGDO totally repeats the on-board panel functions.
- Place the cable away from the power cables and any source of interference. Do not lay the cable in the vicinity of equipment that can create electromagnetic interference.
- The shielding must be connected to an earth without interference.
- Check that the continuity of the shielding is effective for the entire length of the cable.

For further information refer to the accessory instructions, where envisioned.

NOTE:

Check the tightness of all power wire clamps on commissioning and after 30 days from start-up. Then check the tightness of all power clamps every 6 months. Loose terminals can lead to overheating of cables and components.

24.3. EXTERNAL AIR TEMPERATURE PROBE CONNECTION FOR COMPENSATION SEE TAB. 9

Connect clamps 9 and 10 of the external air probe kit with the respective clamps 9 -10 positioned inside the electric control board of the VXT unit.

Use a cable with minimum section of 0.5 mm and up to 50 m. for the connection. Then pass to a section of 1 mm up to 100 m.

24.4. CONNECTION OF AN ADDITIONAL MODULE FOR

TEMPERATURE AND HUMIDITY CONTROL (ACCESSORY KTU) SEE TAB.11

24.5. CONNECTION OF SOLAR HEATING KIT (ACCESSORY KST) SEE TAB.12

25. COMMISSIONING

25.1. PREPARATION FOR COMMISSIONING

ATTENTION

Before carrying out the controls indicated below, **make sure that the unit is disconnected from the power mains by acting on the relevant instruments**

25.1.1. Electrical controls on the unit without voltage

- Check that all the electrical connections have been made correctly and all the terminals adequately tightened.

25.2. COMMISSIONING

- Restore the domestic mains power supply.
- Apply voltage to the unit by placing the master switch at the ON position.

ATTENTION:

ON COMMISSIONING A SEQUENCE OF SCREENS WILL APPEAR THAT ARE DEDICATED TO THE SETTINGS OF THE PLANT TO WHICH THE UNIT IS CONNECTED;

THIS DISPLAY IS THE EXCLUSIVE COMPETENCE OF THE TECHNICAL STAFF AUTHORISED FOR INSTALLATION AND THAT MUST SET THE FUNCTIONING PARAMETERS NECESSARY TO THE UNIT FOR CORRECT FUNCTIONING.

ONCE THE GUIDED SEQUENCE HAS BEEN COMPLETED IT CAN NO LONGER BE VIEWED.

- Check the set functioning parameters [set-point]

25.2.1. Electric controls of the live unit

- Use a tester to verify that the value of the power supply voltage is equal to 230V/400V $\pm 10\%$. IN AGREEMENT WITH UNIT POWER SUPPLY
- Check that the connections made by the installer are in compliance with wiring diagrams on the machine.

25.2.2. Hydraulic circuit

- Check that the plant has been washed and this water has been drained before the unit was connected to the plant
- Check that all the hydraulic connections have been made correctly,
- Check that the hydraulic system is filled and under pressure and also make sure that no air is present; bleed if necessary.
- Verify that any shut-off valves present in the system are correctly opened

25.2.3. Cooling circuit controls

- Check for any leaks of refrigerant gas, particularly in correspondence with the manometer pressure points, pressure transducers, and pressure switches (vibrations during transport may have loosened the fittings).

Once the heat pump has been started check:

- THE HIGH PRESSURE PRESSURE SWITCH stops the compressor, generating the relative alarm, when the flow pressure exceeds the calibration value. Its correct functioning can be checked by closing the condenser water and checking that the intervention takes place in correspondence with the calibration value read by the high pressure transducer.

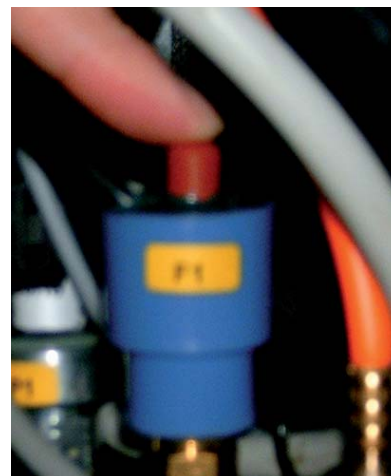
ATTENTION

If there is no intervention at the calibration value, stop the compressor immediately and check the causes. ALARM reset is manual by control and can only take place when the pressure drops below the differential value.

ATTENTION

THE HIGH PRESSURE PRESSURE SWITCH CAN ALSO BE MANUALLY RE-ARMED THEREFORE PROCEED AS FOLLOWS IN THE PHOTO

- THE LOW PRESSURE TRANSDUCER Sends the signal to the control to stop the compressor, when the intake pressure falls below the set



value.

ATTENTION

If there is no intervention at the calibration value, stop the compressor immediately and check the causes. ALARM reset is manual by control and can only take place when the pressure rises above the differential value.

25.2.4. Over-heating

Can be read on the display

25.2.5. Subcooling

Can be read on the display

25.2.6. Pressing line temperature

If the subcooling and overheating values are regular, the temperature measured in the pressing line pipe at the compressor outlet must be 30/40°C above the condensation temperature.

25.3. DRAINING THE PLANT

It is recommended only to empty the plant when maintenance that requires draining must be performed.

- Before emptying place the plant master switch at "OFF":
- Check that the loading/plant water reintegration cock is closed
- Open the draining cock and all vent valves of the plant and relative terminals

ATTENTION

If the plant contains glycol, the latter must not be discharged of freely as it is a pollutant. It must be connected and re-used if possible.

Circuit with glycol

- Functioning with glycoled water, with a percentage of glycol chosen based on the minimum outdoor temperature expected. In this case you must take into account the


different outputs and absorptions and pressure drops as indicated in the technical booklet.

NOTE

All routine and special maintenance operations must be carried out exclusively by qualified staff.

Before starting any servicing operation or cleaning, be sure to disconnect the power supply to the unit.

26.1. WARNINGS REGARDING MAINTENANCE

-  The inspection, maintenance and any repairs must only be carried out by a legally qualified technician. Lack of controls and maintenance can cause injury/damage to persons/objects.

Periodical maintenance is recommended in order to guarantee the efficiency of performance and duration of the unit through time.

26.1.1. Hydraulic circuit

Check

- System pressure
- Clean the water filters
- Flow switch/pressure switch intervention
- Presence of air in the circuit
- Plant ΔT
- The hydraulic pipe heat insulation status

- The quality of the water mixture
- DHW integrative resistance efficiency, if envisioned

26.1.2. Electrical circuit

Check

- Electric power supply voltage
- Efficiency of safety devices
- Electrical absorption
- Tightness of electrical connections
- The status of the electrical connections

26.1.3. Cooling circuit


Check

- Compressor status
- The work parameters
- Check for any R410A gas leaks from the cooling circuit and the integrity of the piping circuit.
- Check the intervention of the pressure switches and high and low pressure transducers, replace them in the presence of malfunctioning
- Check the status of furring on the dehydrator filter; replace the filter if necessary.

26.1.4. Mechanical controls

- Check the tightness of the screws, the compressors and the electric box of the external panelling of the unit. Incorrect fastening can lead to

- anomalous noise and vibrations
- Check the condition of the structure.
- If there are any oxidised parts, treat with paint suitable to eliminate or reduce oxidation.

-  Keep a maintenance log on the machine (not supplied with the unit, the user's responsibility) that enables you to keep track of the servicing carried out on the unit. This makes it easy to organise the work appropriately and facilitates troubleshooting on the machine. In the log, record the date, type of work carried out (routine maintenance, inspection, or repair), a description of the work, any measures taken, and so on.

26.2. EXTRAORDINARY MAINTENANCE

The VXT heat pumps are loaded in the factory with R410A gas and inspected. In normal conditions they do not need intervention of the After-sales Service relative to refrigerant gas control. In order to guarantee the efficiency of the heat pump through time it is recommended to periodically check the integrity of the refrigerant load. Through time, however, small leaks may be generated at the joints that

allow the refrigerant to escape and unload the circuit, causing appliance malfunctioning. In these cases the leakage points must be found and repaired and the cooling circuit must be refilled, operating in compliance with the Law 28 n°549 dated 28

December 1993.

ATTENTION
It is prohibited TO LOAD the cooling circuits with a refrigerant different to that indicated. Using a different refrigerant gas can

cause serious damage to the compressor.

The amount of refrigerant gas contained in the plate is shown on a feature board machine

27. IMPROPER USE

The appliance is designed and built to guarantee maximum safety in the immediate vicinity.

27.1. IMPORTANT SAFETY INFORMATION

Correct functioning of the unit is not guaranteed following a fire; before restarting the machine, have it checked by an authorised after-sales service centre.

Wind, earthquakes, and other natural phenomena of exceptional intensity have not been considered.

If the unit is used in an aggressive atmosphere or with aggressive water, please contact the head offices.

ATTENTION
-Following extraordinary maintenance work
-on the cooling circuit involving the replacement of components, before

restarting the machine, carry out the following operations:

- Pay the maximum attention in restoring the load of refrigerant indicated on the machine plate
- Open all the cocks present in the cooling circuit.
- Connect the electric power supply and earth correctly.

28. ELECTRICAL DATA

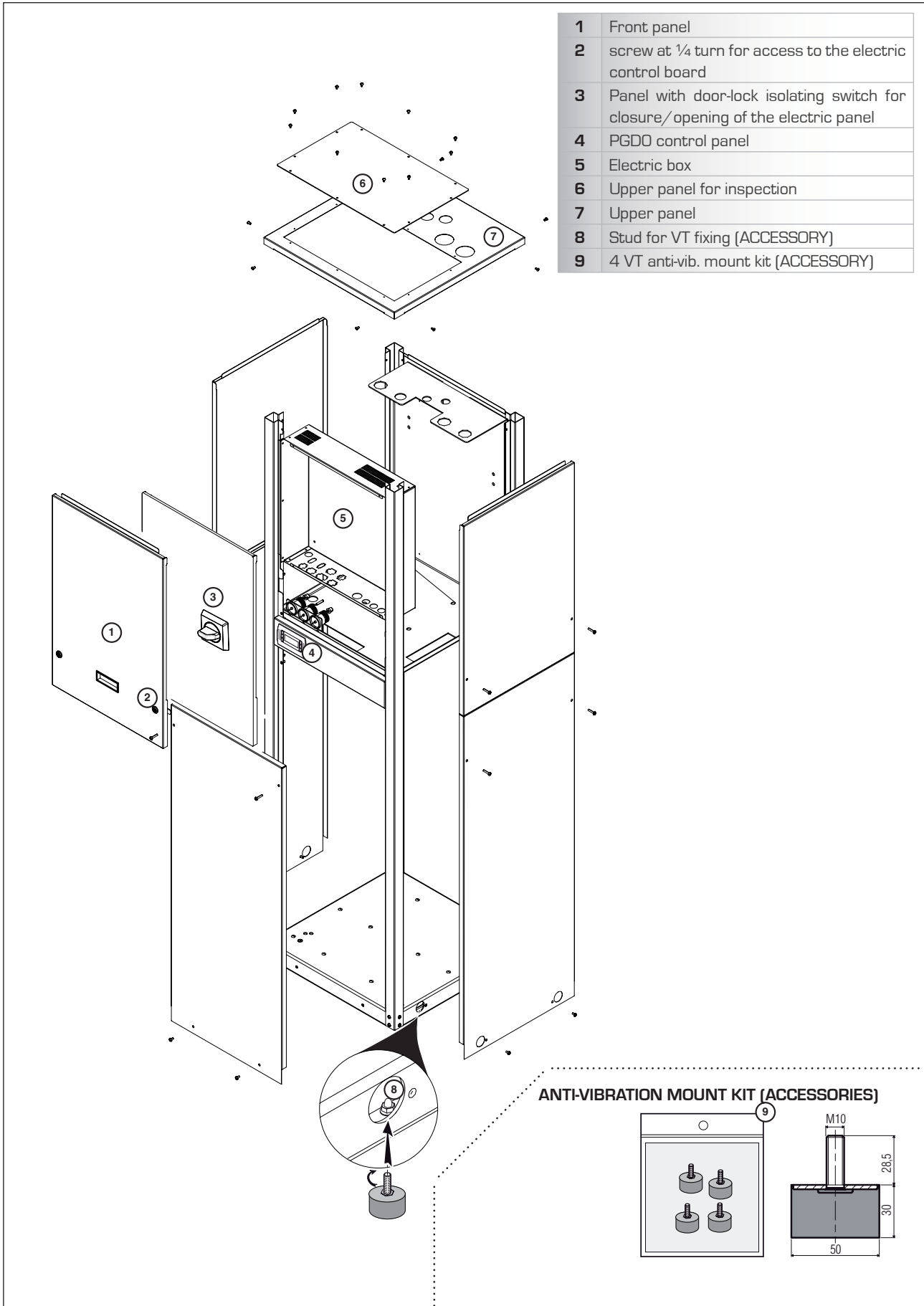
KEY

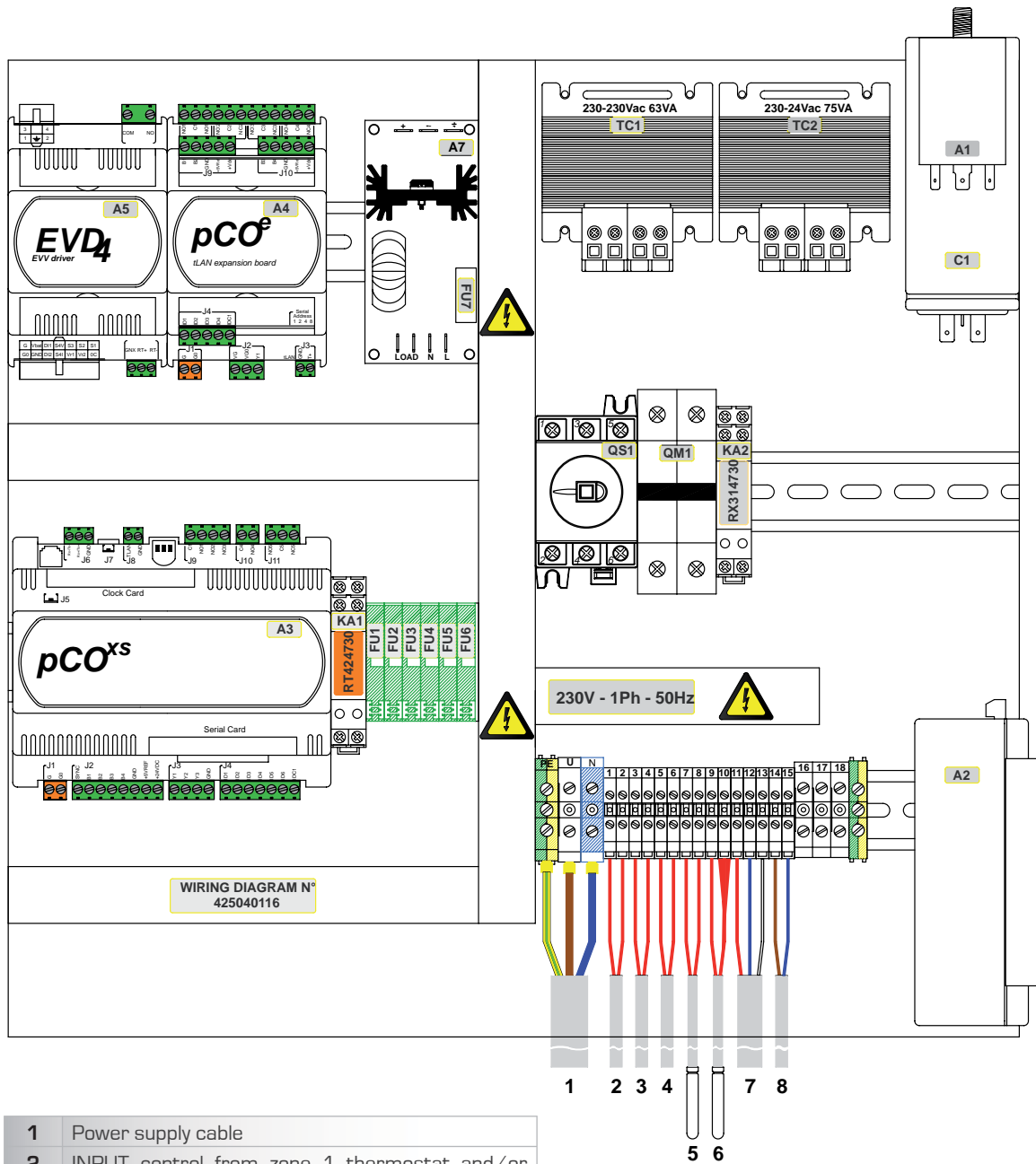
SEZ.A	<i>Alimentazione</i>
TERRA	<i>connection to earth</i>
IL	<i>General switch</i>

VXT		6	8	10	14	16	
SEZ A	230V	n° x mm ²	3 x 10	3 x 10	3 x 10	-	-
	400V	n° x mm ²	-	5 x 4	5 x 6	5 x 6	5 x 6
Terra	230V	mm ²	10	10	10	-	-
	400V	mm ²	-	4	6	6	6
IL	230V	A	40	40	40	-	-
		Type	3 phase	3 phase	3 phase	-	-
	400V	A	-	40	40	40	40
		Type	-	3 phase + N	3 phase + N	3 phase + N	3 phase + N

29. TABLES

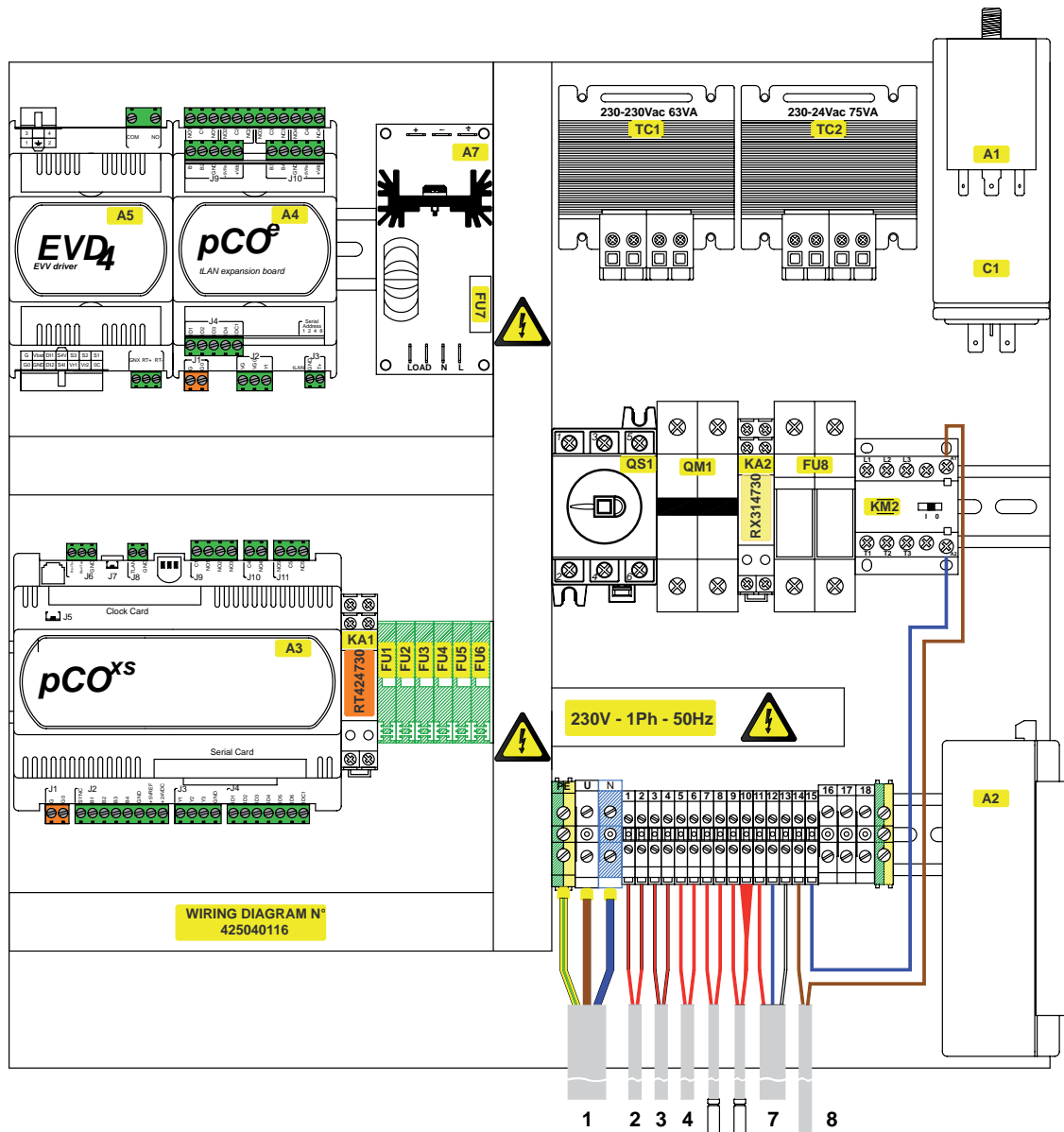
29.1. TAB.1 PANELLING (colour RAL 9002)





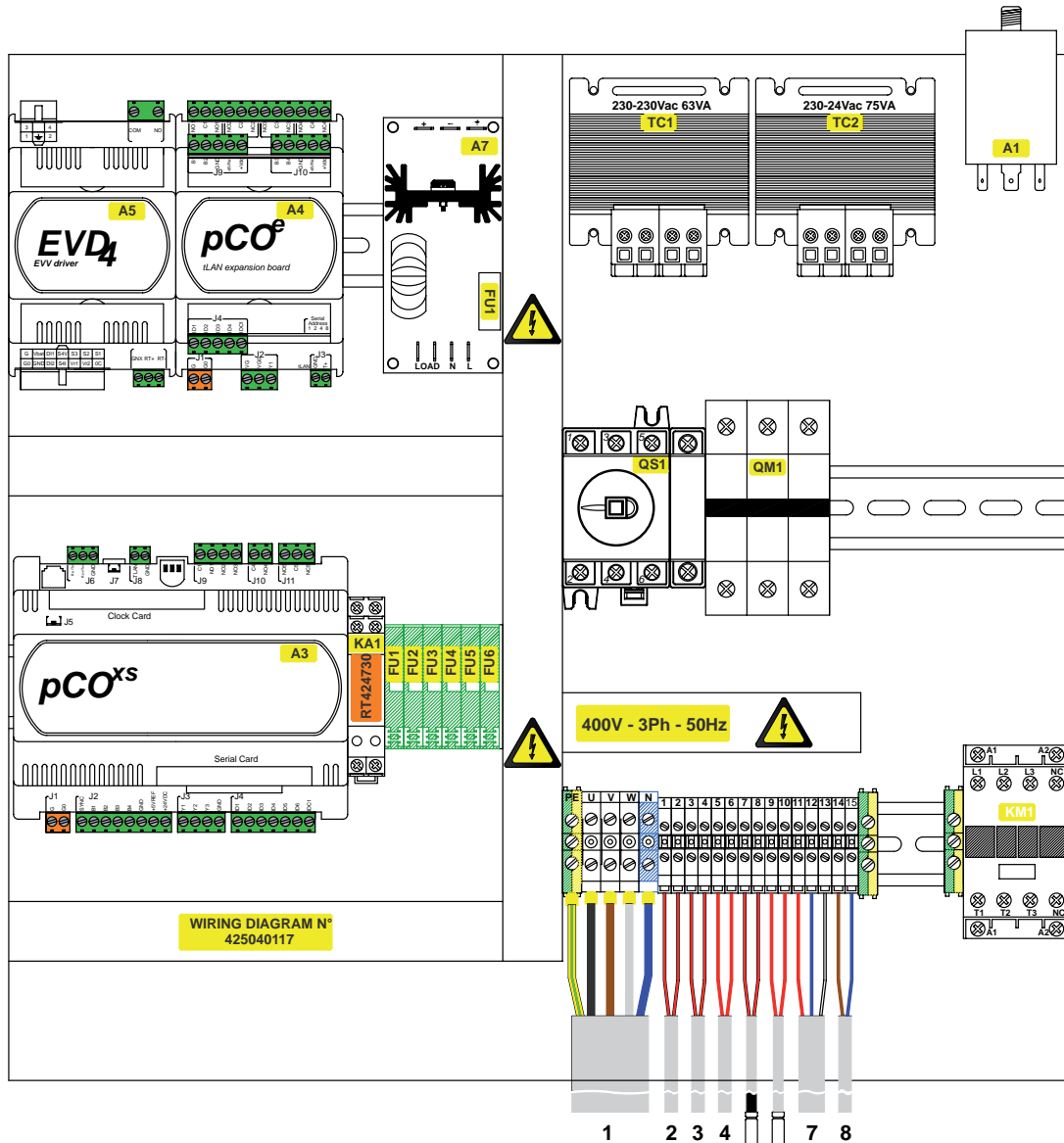
1	Power supply cable
2	INPUT control from zone 1 thermostat and/or programmer clock (ACCESSORY)
3	Reduced set-point
4	Differential pressure switch/flow switch well
5	Floor control probe
6	External air probe for compensation
7	Plant mixer valve (clamp 11 24Vac) (clamp 12 24Vac-GND) (clamp 13 0-10V)
8	Output for integration resistances control (IF ENVISIONED BY CONFIGURATOR)

29.3. TAB.3 6-8-10 SINGLE-PHASE ELECTRIC BOX with INTEGRATION RESISTANCE KIT

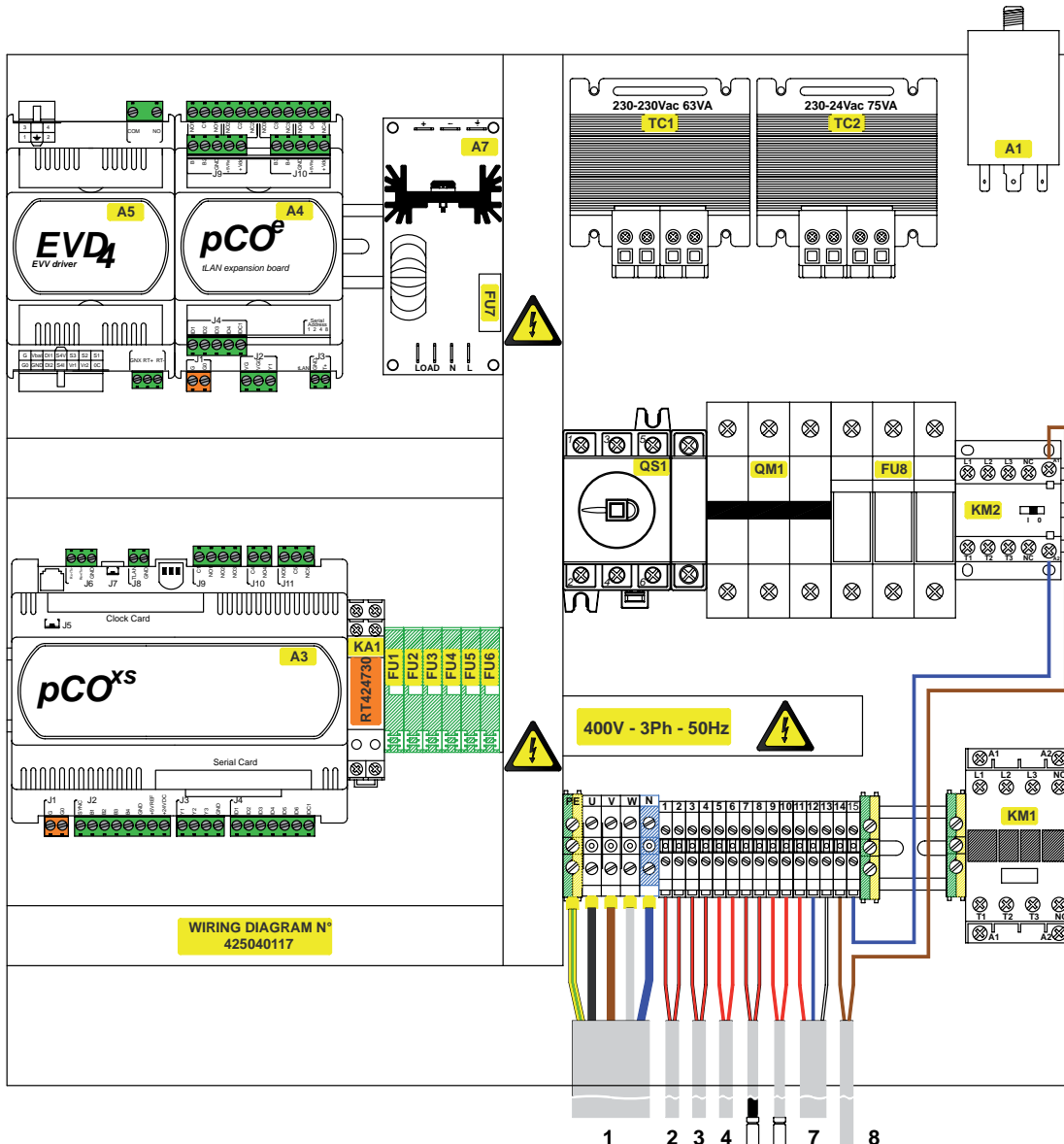


WIRING DIAGRAM N° 425040116

1	Power supply cable
2	INPUT control from zone 1 thermostat and/or programmer clock (ACCESSORY)
3	Reduced set-point
4	Differential pressure switch/flow switch well
5	Floor control probe
6	External air probe for compensation
7	Plant mixer valve (clamp 11 24Vac) (clamp 12 24Vac-GND) (clamp 13 0-10V)
8	Output for integration resistances control (IF ENVISIONED BY CONFIGURATOR)



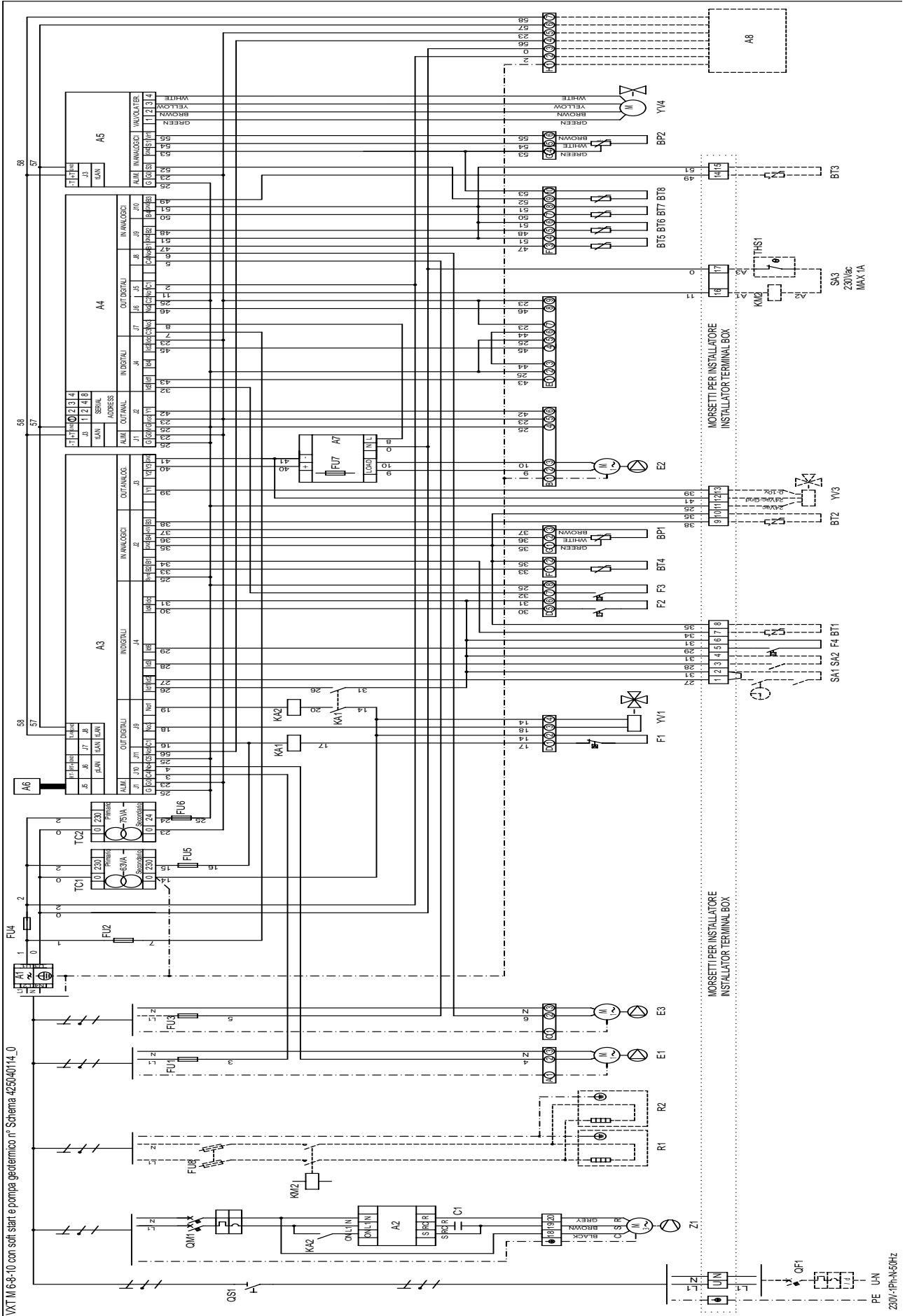
- | | |
|---|--|
| 1 | Power supply cable |
| 2 | INPUT control from zone 1 thermostat and/or programmer clock (ACCESSORY) |
| 3 | Reduced set-point |
| 4 | Differential pressure switch/flow switch well |
| 5 | Floor control probe |
| 6 | External air probe for compensation |
| 7 | Plant mixer valve (clamp 11 24Vac) (clamp 12 24Vac-GND) (clamp 13 0-10V) |
| 8 | Output for integration resistances control (IF ENVISIONED BY CONFIGURATOR) |



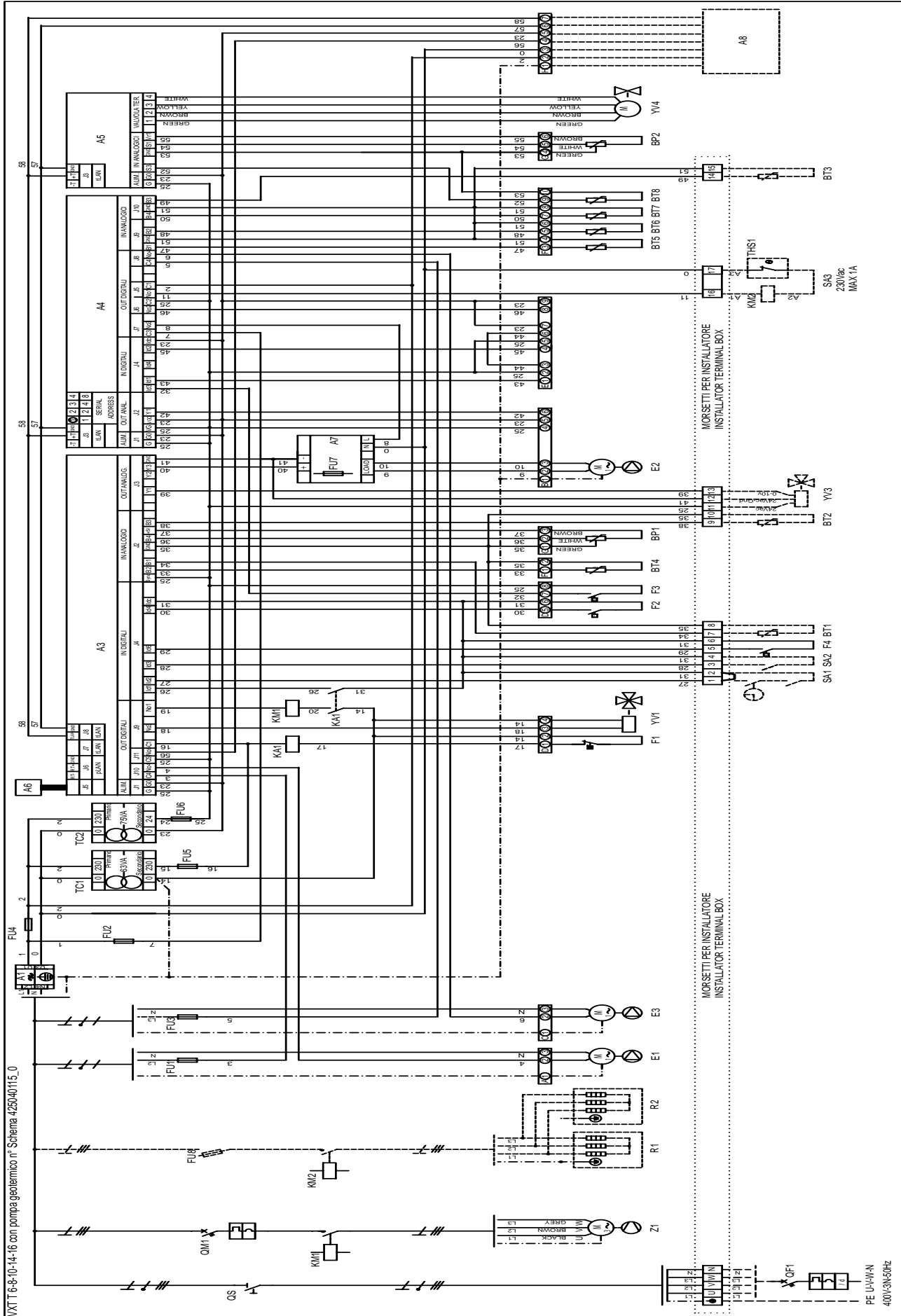
WIRING DIAGRAM N° 425040117

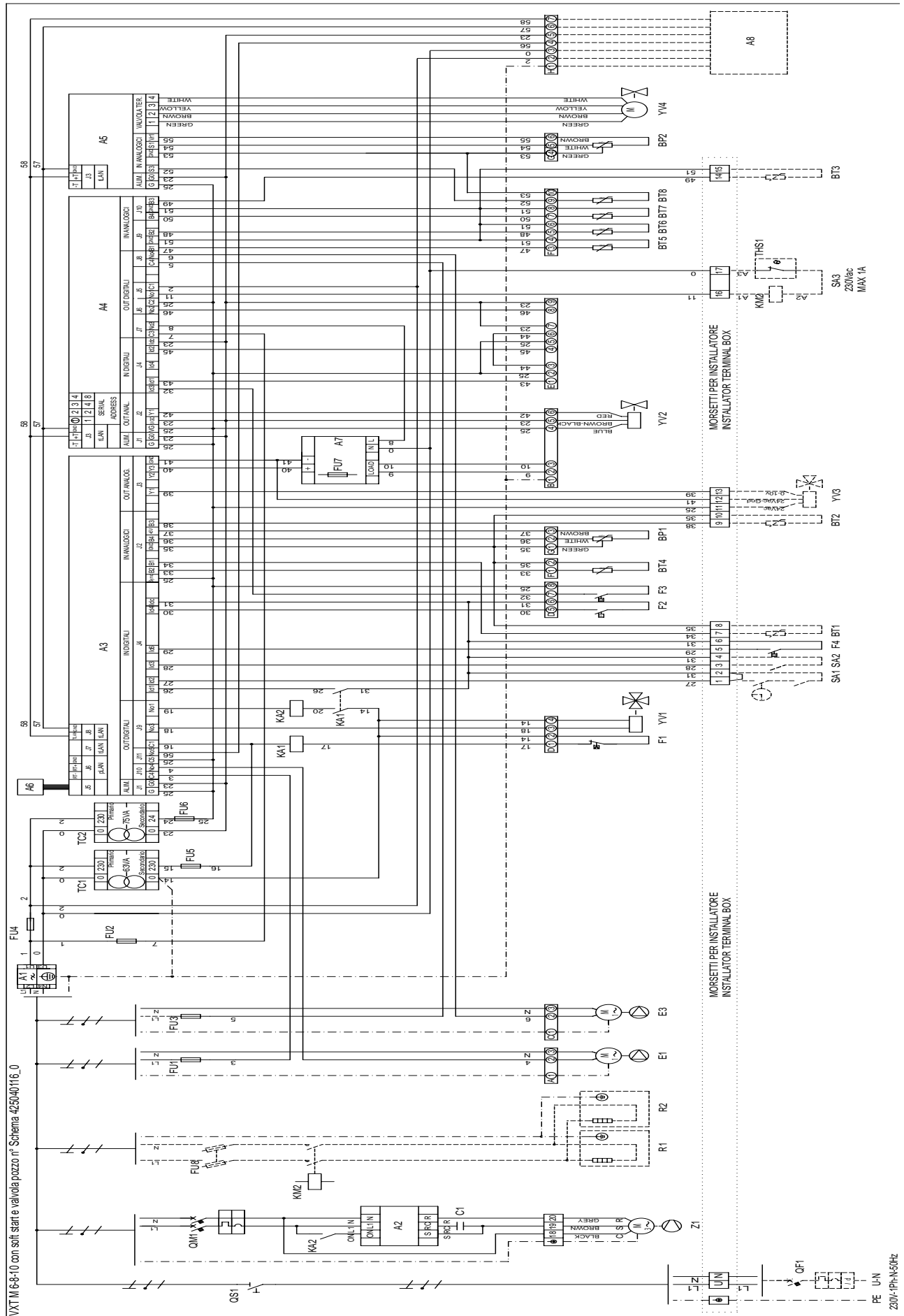
- | | |
|---|--|
| 1 | Power supply cable |
| 2 | INPUT control from zone 1 thermostat and/or programmer clock (ACCESSORY) |
| 3 | Reduced set-point |
| 4 | Differential pressure switch/flow switch well |
| 5 | Floor control probe |
| 6 | External air probe for compensation |
| 7 | Plant mixer valve (clamp 11 24Vac) (clamp 12 24Vac-GND) (clamp 13 0-10V) |
| 8 | Output for integration resistances control (IF ENVISIONED BY CONFIGURATOR) |

29.6. TAB.4 VXT M 6-8-10 WITH SOFT START AND GEOTHERMAL PUMP

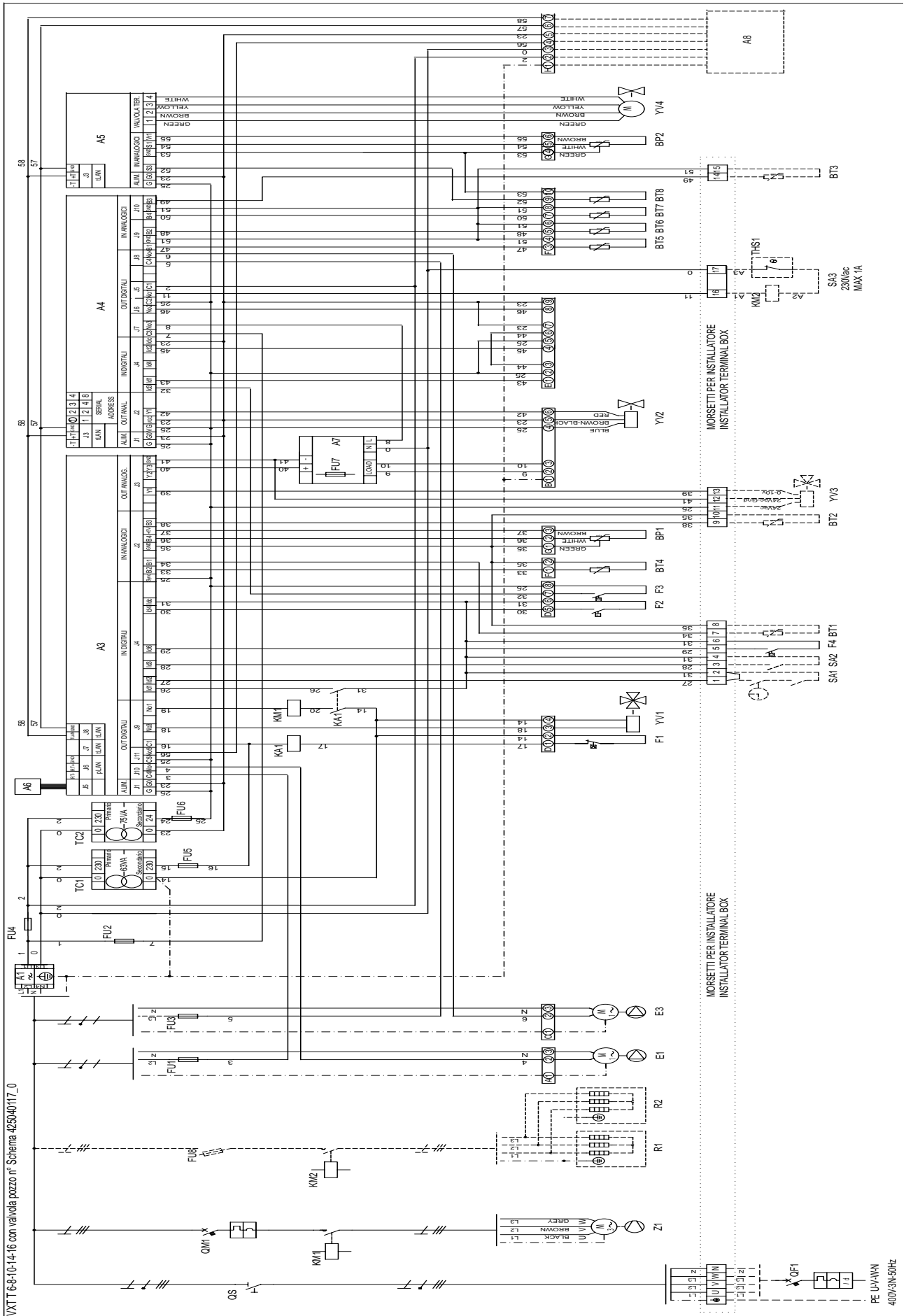


VXT M 6-8-10 con soft start e pompa geotermica n° Schema 4250.40114_0





29.9. TAB.7 VXT T 6-8-10-14-16 WITH WELL VALVE

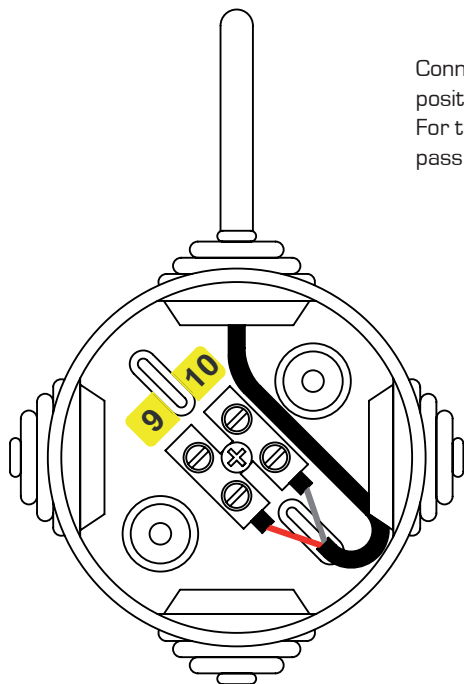


VXT T 6-8-10-14-16 con valvola pozzo n° Schema 42940117_0

29.10. TAB.8 KEY

A1	Anti-interference filter	
A2	Soft start	As per standard on single-phase versions, according to the configurator choice for the three-phase versions
A3	Electronic control (pCO [®])	
A4	Expansion of the controller (pCO [®])	
A5	Driver for thermostatic valve	
A6	Control keyboard (PGDO)	
A7	Geothermal pump condensation control board	
A8	Solar kit/ Freecooling kit / Second zone control kit	(ACCESSORY)
BP1	High pressure transducer	
BP2	Low pressure transducer	
BT1	Floor control temperature probe	USER'S RESPONSIBILITY
BT2	External air temperature probe for compensation	
BT3	Storage water temperature probe	
BT4	Plant INLET water probe	
BT5	Plant OUTLET water probe	
BT6	Geothermal or Well INLET water probe	
BT7	Geothermal or Well OUTLET water probe	
BT8	Compressor gas intake probe	
C1	Compressor start condenser	PRESENT ONLY IN SINGLE-PHASE VERSIONS
E1	Plant pump	
E2	Geothermal pump (only for geothermal applications)	
E3	DHW pump	
F1	High pressure safety pressure switch	
F2	Plant differential pressure switch	
F3	DHW flow switch	
F4	Geothermal differential flow switch/ well flow switch	
FU1	Plant pump fuse	
FU2	Geothermal pump fuse	
FU3	DHW pump fuse	
FU4	230V (3.15A) primary circuit fuse	
FU5	230V (400mA) secondary circuit fuse	
FU6	24V (5A) secondary circuit fuse	
FU7	Condensation control board fuse	
FU8	Integration resistances fuse	(IF ENVISIONED BY CONFIGURATOR)
KA1	High pressure alarm relay	
KA2	Compressor control relay	PRESENT ONLY IN SINGLE-PHASE VERSIONS
KM1	Compressor contactor	
KM2	Integration resistances contactor	(IF ENVISIONED BY CONFIGURATOR)
QF1	Main differential switch	NON FORNITO, A CARICO DELL'UTENTE
QM1	Compressor magnet circuit breaker switch	
QS1	Door-lock isolating switch	
R1-2	Domestic hot water DHW integration resistances	(IF ENVISIONED BY CONFIGURATOR)
SA1	Input control from zone 1 thermostat and/ or programmer clock	(ACCESSORY)
SA2	Reduced set-point	
SA3	Output for integration resistances control	(IF ENVISIONED BY CONFIGURATOR)
TC1	230Vac 63 VA safety transformer	
TC2	24Vac 75 VA safety transformer	
THS1	Integration resistances safety thermostat	NOT SUPPLIED, USER'S RESPONSIBILITY
YV1	Cycle reversing valve	
YV2	Well two-way valve	(ONLY PRESENT FOR SHEET WATER APPLICATIONS)
YV3	Plant mixer valve	
YV4	Electronic thermostatic valve	
Z1	Compressor	

29.11. TAB.9 **EXTERNAL AIR TEMPERATURE PROBE FOR COMPENSATION (SAE)**



Connect clamps 9 and 10 of the external air probe kit with respective clamps 9 -10 positioned inside the electric control board of the VXT unit.
For the connection use a cable with minimum section of 0.5 mm up to 50 m. to then pass to a section of 1 mm up to 100 m.

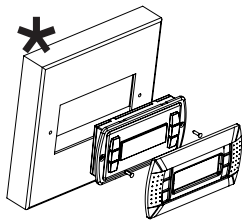


Fig.9.

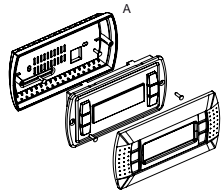


Fig.10.

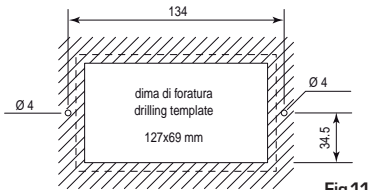


Fig.11.

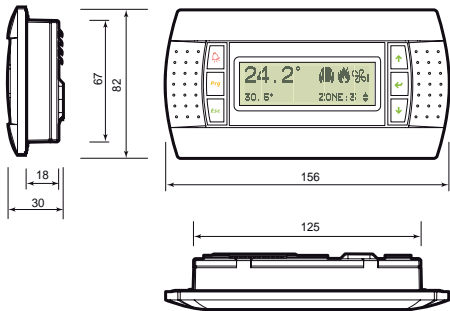


Fig.12.

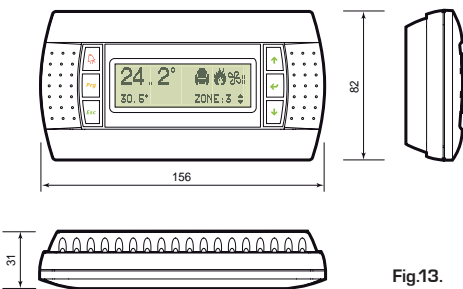


Fig.13.

The **pGDO** graphical display is an electronic device that allow complete management by the display of icons (defined at the level of application software). The software is only resident in the pCO. The terminal does not require any additional software during use.

Panel assembly

These terminals have been designed for panel assembly, the drilling template must have dimensions of 127x69 mm + 2 circular holes with diameter of 4 as indicated in fig. 9.

For installation follow the instructions given below:

1. Connect the telephone table
2. Insert the terminal into the hole without the front frame and using the countersunk screws contained inside the packaging, fix the device to the panel in the seats indicated in fig. 7 [***the box is not supplied**]
3. Finally, install the snap-action frame

Wall-mounting

Wall-mounting of the terminal envisions the initial fixing of the rear container A (Fig. 8), by means of a standard box with 3 modules for switches.

1. Fix the rear container to the box using the oval head screws present inside the packaging;
2. Connect the telephone cable;
3. Place the front piece onto the rear container and fix everything using the countersunk screws present inside the packaging as illustrated in Fig. 8;
4. Finally, install the snap-action frame.

Electric connection

Connect the telephone cable (code S90CONN00*), coming from the pCO board, to the relevant connector (RJ12) positioned on the rear of the terminal.

Technical features

Display

Type: FSTN graphics
 Backlighting: green LEDs (controlled from "application software")

Power supply

Voltage: power supply from pCO by telephone connector or external 18/30 Vdc source protected by an external 250 mA fuse
 Maximum input power: 0.8 W

Maximum distances

pLAN network max. length: 500 m with paired shielded AWG22 cables
 pCO terminal distance: 50 m with telephone cable (for longer lengths contact the head offices)

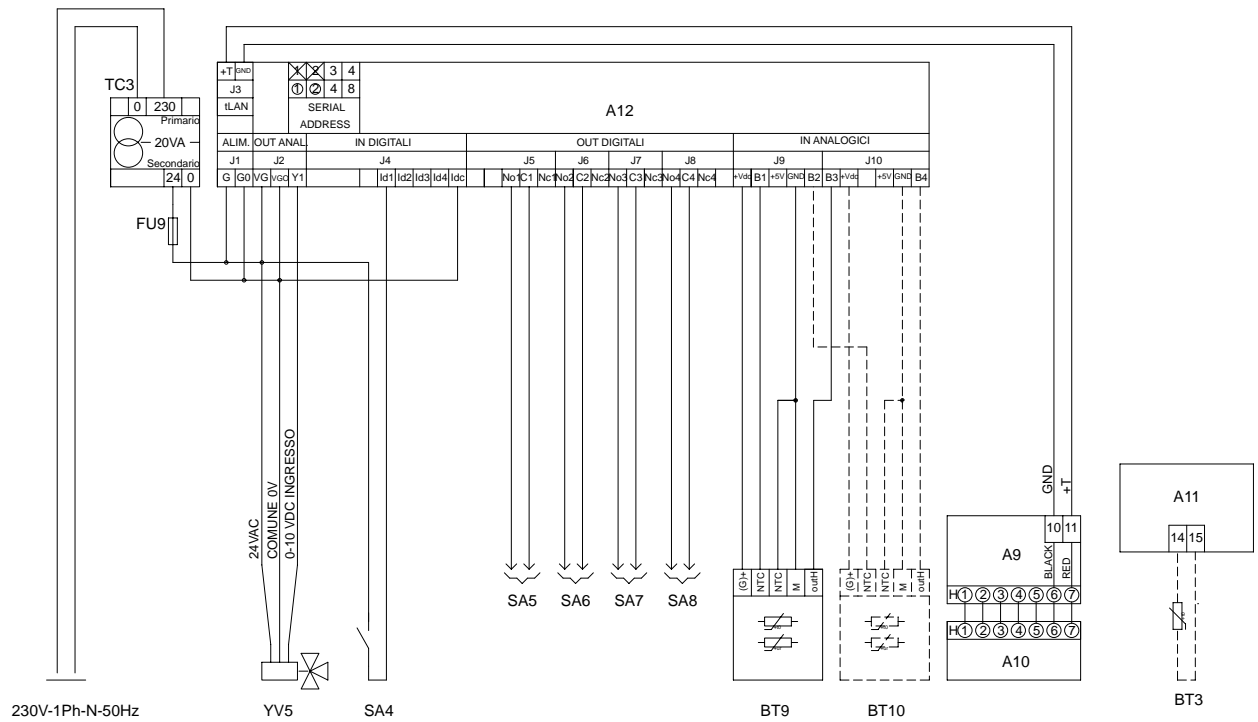
General

Protection rating: IP65 with panel assembly
 IP40 with wall-mounting

NOTE

For further information refer to the manual dedicated to the accessory

29.13. TAB.11 KTU ADDITIONAL MODULE FOR TEMPERATURE AND HUMIDITY CONTROL (ACCESSORY)



- A9 Wiring for connection between electric control board and zone 1-2 control kit
- A10 VXT unit electric control board connector H
- A11 Heat pump unit electric control board
- A12 Electronic controller
- BT3 Zone 2 floor control probe (zone 2 control only)
- BT9 Zone 1 temperature humidity probe
- BT10 Zone 2 temperature humidity probe (zone 2 control only)
- FU9 24V - 1.25A auxiliary circuit fuse
- SA4 Zone 2 called input
- SA5 Clean contact for pump/zone 1 valve control (max 230Vac 2A AC3)
- SA6 Clean contact for pump/zone 2 valve control (max 230Vac 2A AC3)
- SA7 Clean contact for dehumidifier 1 command (max 230Vac 2A AC3)
- SA8 Clean contact for dehumidifier 2 command (max 230Vac 2A AC3)
- TC3 230Vac - 24Vac 20VA transformer
- YV5 Zone 2 mixer valve (24Vac 0-10 Vdc)

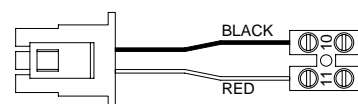
BT3
Connect probe BT3 into clamps 14 - 15 positioned inside the electric control board of the VXT unit.

BT3 - BT9 - BT10

For the connection use a cable with minimum section of 0.5 mm up to 50 Mt. to then pass to a section of 1mm up to 100 Mt.

35
3)

A9

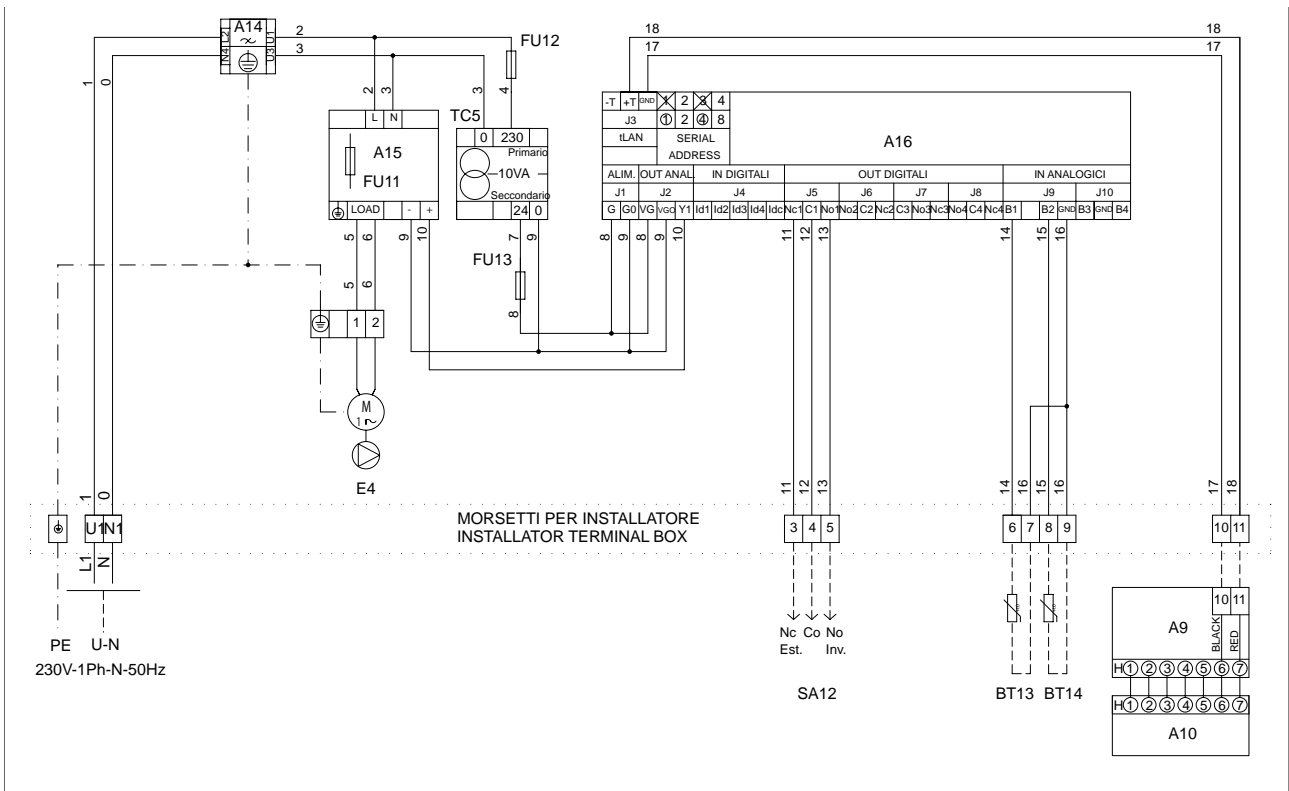


To make the Tlan connection between the kit and the VXT unit electric control board, use the following supplied wiring. If several kits are present the connections in Tlan must all be made in parallel in clamps 9-10 by a unique cable A9.
Use a cable with a minimum section of 1 mm

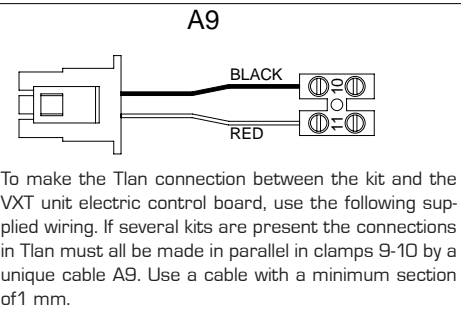
Configuration of the dip switches of the A11 pCOE electronic controller



29.14. TAB.12 KST SOLAR HEATING KIT (ACCESSORY)



- A9 Wiring for connection between electric control board and solar kit
- A10 Heat pump unit electric control board connector H
- A14 Anti-interference filter
- A15 Solar plant circulation pump control board
- A16 Electronic controller
- BT13 Collector probe
- BT14 Boiler flow probe
- E4 Solar plant circulation pump
- FU11 Pump control board protection fuse E1
- FU12 230 V 315 mA auxiliary protection fuse
- FU13 24 V 630 mA auxiliary protection fuse
- SA12 Clean contact for summer (NC) winter (NO) switch-over (MAX 230VAC 2A AC3)
- TC5 230-24Vac 10VA transformer



BT13-14

For the connection use a cable with minimum section of 0.5 mm up to 50 Mt. to then pass to a section of 1 mm up to 100 Mt.



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