EXPERIENCE THE
ALLIANCE
DIFFERENCE

TECHNICAL MANUAL

Alliance
Smart Aqua R32 Pool Heat Pump
INVERTER

· ALLPH70R32 - INV - Smart Aqua · ALLPH12R32 - INV - Smart Aqua
· ALLPH18R32 - INV - Smart Aqua · ALLPH24R32 - INV - Smart Aqua
· ALLPH28R32 - INV - Smart Aqua

Alliance

1. Preface

To provide our customers with quality, reliability and versatility, this product has been made to strict production standards. This manual includes all the necessary information about installation, debugging, discharging and maintenance. Please read this manual carefully before you open or maintain the unit. The manufacture of this product will not be held responsible if someone is injured or the unit is damaged, because of improper installation, debugging, or unnecessary maintenance. It is vital that the instructions within this manual are always adhered to. The unit must be installed by qualified personnel.

The unit can only be repaired by qualified personnel or an authorised dealer.

Maintenance and operation must be carried out according to the recommended time and frequency, as stated in this manual.

Use genuine standard spare parts only. Failure to comply with these recommendations will invalidate the warranty.

Swimming Pool Heat Pump Unit heats the swimming pool water and keeps the temperature constant. Our

heat pump has the following characteristics:

- **Durable**
  The heat exchanger is made of PVC & Titanium tube which can withstand prolonged exposure to swimming pool water.

- **Quiet operation**
  The unit comprises an efficient inverter compressor and fan motor, which guarantees its quiet operation.

- **Advanced control**
  The unit includes micro-computer controlling, allowing all operation parameters to be set. Operation status can be displayed on the LCD wired controller.

2. General Specifications

Performance Data

UNIT		ALLPH70R32 - INV – Smart Aqua	ALLPH12R32 - INV – Smart Aqua
Heating Capacity	kW	2.0 – 7	2.56 – 11.5
Consumed power	kW	0.196 – 1.21	0.246 – 1.92
COP		10.2 – 5.78	10.4 – 5.99
Operating air temperature	°C	-7 to 43	-7 to 43
Power supply		230V~/ 50Hz	230V~/ 50Hz
Max power input	kW	1.57	2.35
Rated current input	A	6.8	11.5
Compressor quantity		1	1
Compressor type		Rotary	Rotary
Refrigerant		R32	R32
Fan quantity		1	1
Fan rotary speed	RPM	500 - 700	500 - 850
Fan direction		Horizontal	Horizontal
Noise	dB(A)	38 - 47	38 - 48
Water connection	mm	50	50
Nominal water flow	m3/h	3	4.7
Water pressure drop (max)	kPa	1.8	2.7
Set water temperature Cooling / Heating	°C	9 / 40	9 / 40
Unit net dimensions (L*W*H)	mm	935*360*608	935*360*608
Net weight	kg	40	46
Test conditions - Air 27°C / Water 26°C / Humidity 80%			

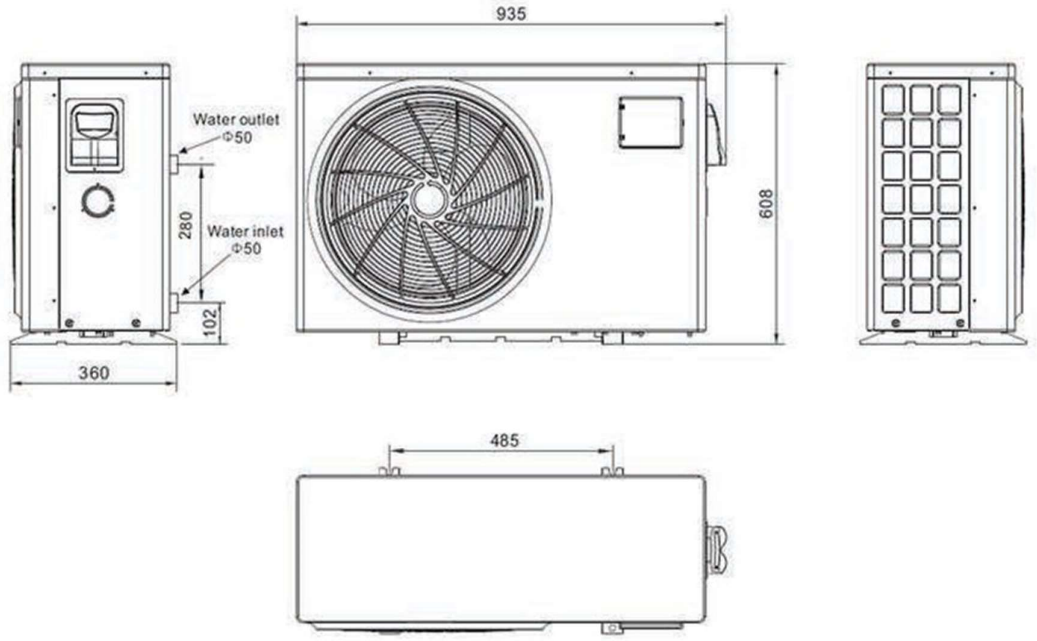
UNIT		ALLPH18R32 - INV – Smart Aqua	ALLPH24R32 - INV – Smart Aqua
Heating Capacity	kW	4.38 – 18.4	8.7 – 24.6
Consumed power	kW	0.44 – 3.17	0.71 – 3.89
COP		9.95 – 5.8	12.2 – 6.3
Operating air temperature	°C	-7 to 43	-7 to 43
Power supply		230V / 50Hz	230V / 50Hz
Max power input	kW	0.438 – 3.17	0.71 – 3.89
Rated current input	A	15.72	22.5
Compressor quantity		1	1
Compressor type		Rotary	Rotary
Refrigerant		R32	R32
Fan quantity		1	1
Fan rotary speed	RPM	500 - 750	600 - 800
Fan direction		Horizontal	Horizontal
Noise	dB(A)	44 - 56	49 - 56
Water connection	mm	50	50
Nominal water flow	m3/h	7.5	12
Water pressure drop (max)	kPa	6	14
Set water temperature Cooling / Heating	°C	9 / 40	9 / 40
Unit net dimensions (L*W*H)	mm	1002*453*767.5	1161*490*862
Net weight	kg	60	92
Test conditions - Air 27°C / Water 26°C / Humidity 80%			

Performance Data

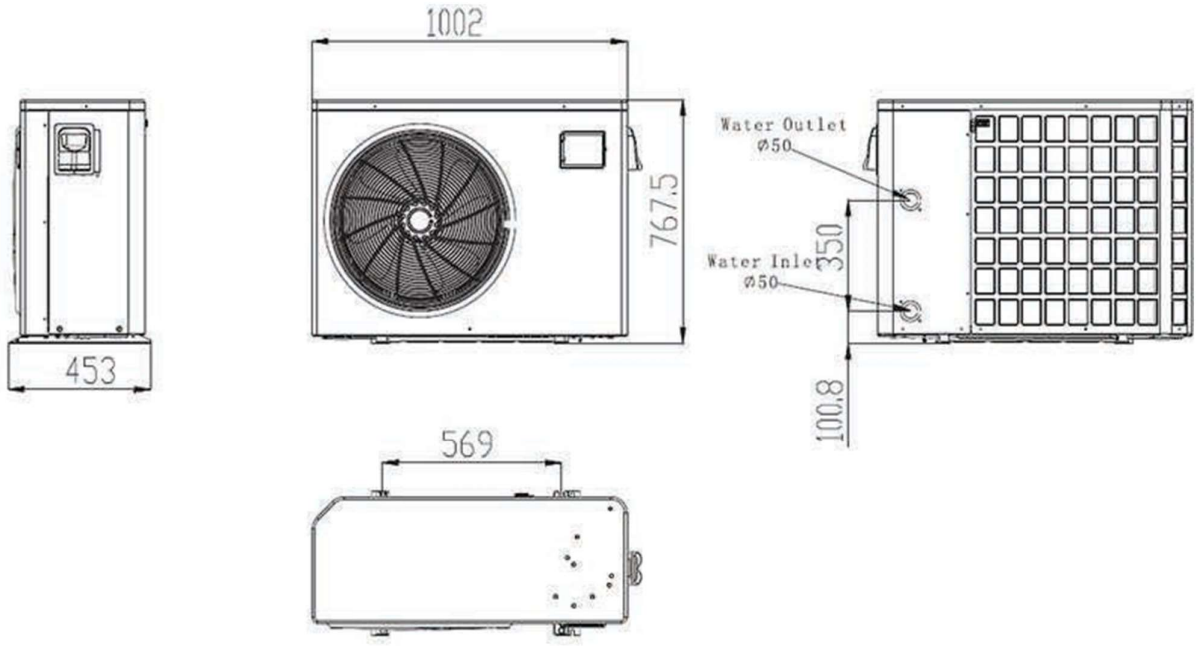
Unit		ALLPH28R32 - INV – Smart Aqua
Heating Capacity	kW	10.3 – 28
Consumed power	kW	0.82 – 4.49
COP		12.56 – 6.24
Operating air temperature	°C	-7 to 43
Power supply		380-415V / 3Ph
Max power input	kW	6.3
Rated current input	A	10.22
Compressor quantity		1
Compressor type		Rotary
Refrigerant		R32
Fan quantity		1
Fan rotary speed	RPM	400 - 800
Fan direction		Horizontal
Noise	dB(A)	47 - 55
Water connection	mm	50
Nominal water flow	m3/h	12
Water pressure drop (max)	kPa	17
Unit net dimensions (L*W*H)	mm	1160*490*862
Set water temperature Cooling / Heating	°C	9 / 40
Net weight	kg	96
Test conditions - Air 27°C / Water 26°C / Humidity 80%		

3. Dimensional Drawings

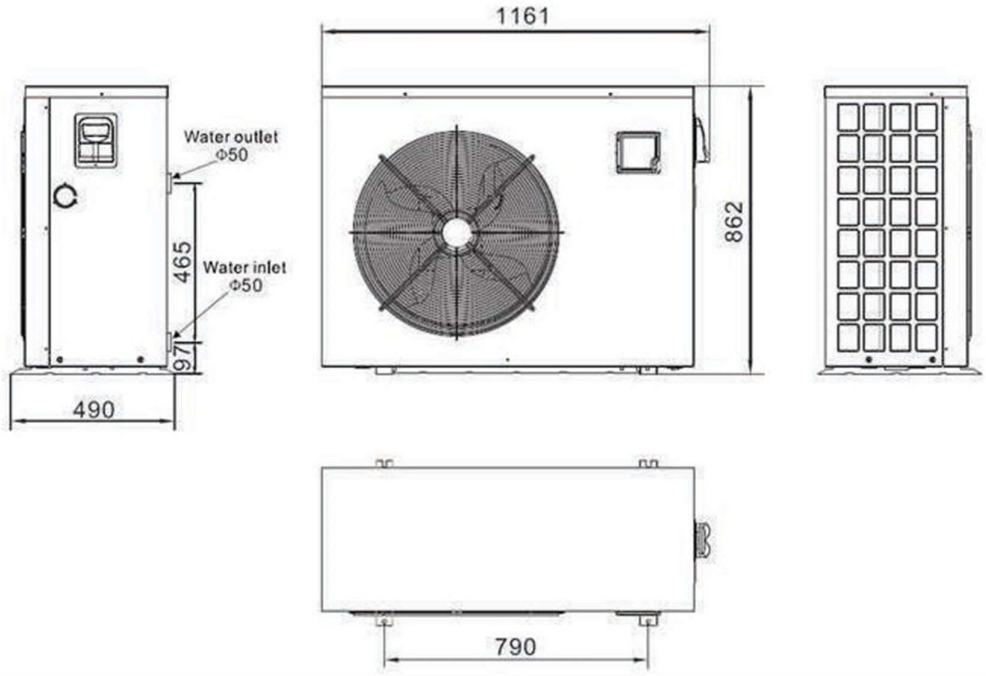
Alliance Inverter 7kW / 12kW



Alliance Inverter 18kW



Alliance Inverter 24kW / 28kW



4. Installation

R32 REFRIGERANT

The unit MUST NOT be installed in any enclosed area.

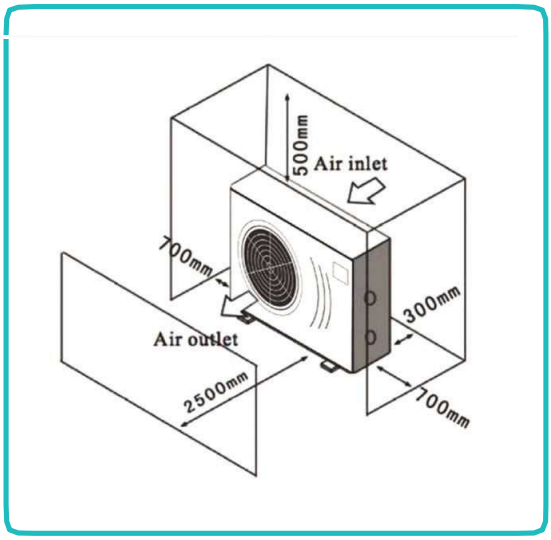
Heat Pump Location

The unit will perform well in any outdoor location provided that the following three factors are presented:

1. Fresh Air - 2. Electricity - 3. Pool filter piping

The unit may be installed virtually anywhere outdoors. For indoor pools please consult the supplier.

DO NOT place the unit close to bushes or shrubs which can block air inlet / outlet. These locations deny the unit of a continuous source of fresh air which reduces its efficiency and may prevent adequate heat delivery.

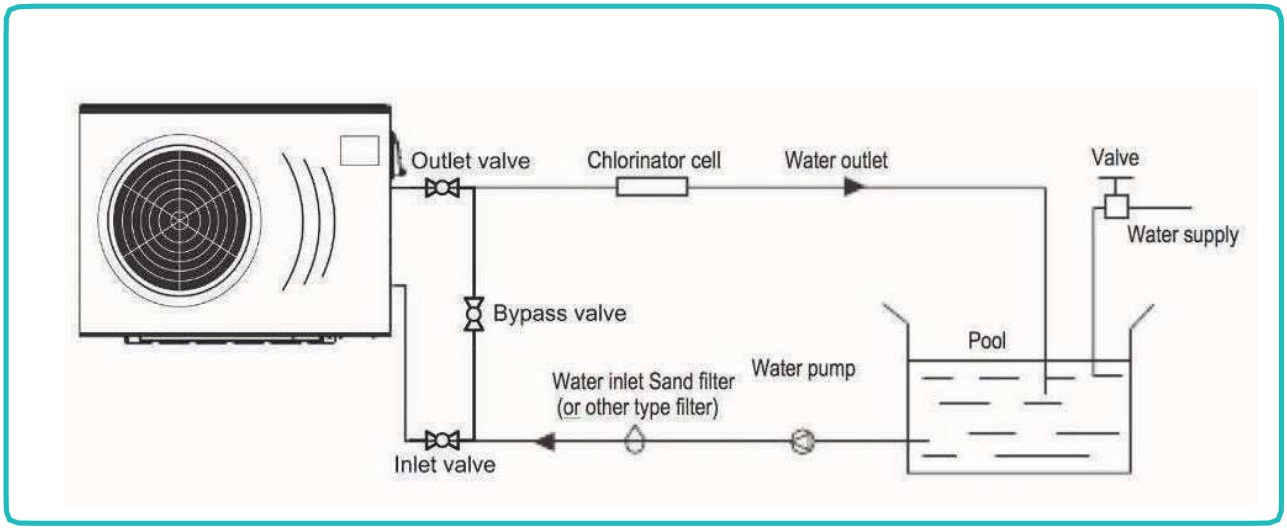


How close to your pool?

Normally, the pool heat pump is installed within 7.5 meters of the pool. The longer the distance from the pool, the greater the heat loss from the piping. For the most part, the piping is buried. Therefore, the heat loss is minimal for runs of up to15 meters (15 meters to and from the pump = 30 meters total), unless the ground is wet, or the water table is high.

A very rough estimate of heat loss per 30 meters is 0.6 kW-hour, (2000BTU) for every 5°C difference in temperature between the pool water and the ground surrounding the pipe, which translates to about 3% to5% increase in run time.

INSTALLATION ILLUSTRATION



Remarks:

The factory only provides the heat pump. Other parts, including a by-pass are to be provided by the user or installer.

Attention:

Please take the following steps when installing the heat pump:

1. Each addition of chemicals must be performed through the piping located AFTER the heat pump.
2. Install a by-pass for easy maintenance.
3. Always place the heat pump on a solid base and use the supplied rubber blocks to avoid vibrations and noise.
4. Always keep the heat pump in an upright position. If the unit has been tilted, you should wait for at least24 hours before turning it on.

Installation of a check valve

When using automatic chlorine and pH dosage systems, it is of extremely import to protect the heat pump from high concentrations of these chemicals that could corrode the heat exchanger Therefore, such systems should add the chemicals in the pipes DOWNSTREAM of the heat pump and it is recommended to install a check valve in order to prevent backflow when there is no water circulation. Damage to the heat pump caused by disregarding these recommendations will invalidate the warranty.

5. Electrical

Important - Although the heat pump is electrically isolated from the rest of the unit, this only prevents the passage of electricity to or from the pool water. Grounding the unit is still required to protect yourself from short circuits inside the unit. Make for adequate ground connection.

Check if the electrical mains voltage corresponds with the operating voltage of the heat pump prior to installing the heat pump.

It is recommended to use a separate fuse (C-curve) as well as adequate size wiring (see table below). Connect the electrical wires with the terminal; block labelled 'TO POWER SUPPLY'.
Next to this connection, there is a second block labelled 'TO PUMP', to which the pool pump (max. 5A/230V) or an electrical relay for the filtration pump can be connected. This connection makes it possible to control the pool pump operation with the heat pump. It is recommendation not to use the 'TO PUMP' wiring terminal.

However, we do not recommend that you wire the pool circulation pump to the heat pump. Run separate power supplies to the heat pump and the pool circulation pump. This allows the pool circulation pump to be put on a time clock and operated for the required time to give adequate filtration for the pool and the pool circulation pump can be manually operated when required to backwash the filter etc.

Model	Voltage (V)	Fuse (C-curve)	Max current (A)	Cable section*
ALLPH70R32 – Smart Aqua	220-240V	20	6.8	1.5 mm
ALLPH12R32 – Smart Aqua	220-240V	32	11.5	2.5 mm
ALLPH18R32 – Smart Aqua	220-240V	32	15.72	2.5 mm
ALLPH24R32 – Smart Aqua	220-240V	40	22.5	4 mm
ALLPH28R32 – Smart Aqua	380-415V/3N	32	10.22	2.5 mm

* For a maximum cable length of 50m

Note: Due to the unstable and unreliable power supply in South Africa, Under / Over voltage protection is required to protect electronic components inside the heat pumps. Failure to install Under / Over voltage protection will void the warranty.

6. Initial Start Up

NOTE - For the unit to heat the pool or spa, the filter pump must be running to circulate water through the heat exchanger.

Startup Procedure - After installation is completed, you should follow these steps:

1. Turn on your pool pump. Check for water leaks and verify flow to and from the pool.
2. Turn on the electrical power supply to the heat pump, then press the key ON/OFF on the wire controller. It should start in several seconds.
3. After running a few minutes make sure the air leaving the fan opening of the unit is cooler (between 5-10°C)
4. With the unit operating turn, the pool pumps of. The unit should also turn of automatically,
5. Allow the unit and pool pump to run 24 hours per day until desired pool water temperature is reached. When the desired pool water temperature reaches the setting, the unit just shuts off.
6. The unit will now automatically restart (if your pool pump is running) when the pool temperature drops more than 2°C below set temperature.

Time Delay - The unit is equipped with a 3-minute built-in solid state restart delay included to protect control circuit components and to eliminate restart cycling and contactor chatter.

This time delay will automatically restart the unit approximately 3 minutes after each control circuit interruption. Even a brief power interruption will activate the solid state 3-minute restart delay and prevent the unit from starting until the 3-minute countdown is completed. Power interruptions during the delay period will have no effect on the 3-minute countdown.

7. Condensation

Since the Heat pump cools down the air about 5°C, water may condense on the fins of the evaporator. If the relative humidity is very high, this could be as much as several litres an hour. The water will run down the fins into the base pan and drain out through the barbed plastic condensation drain fitting on the side of the base pan.

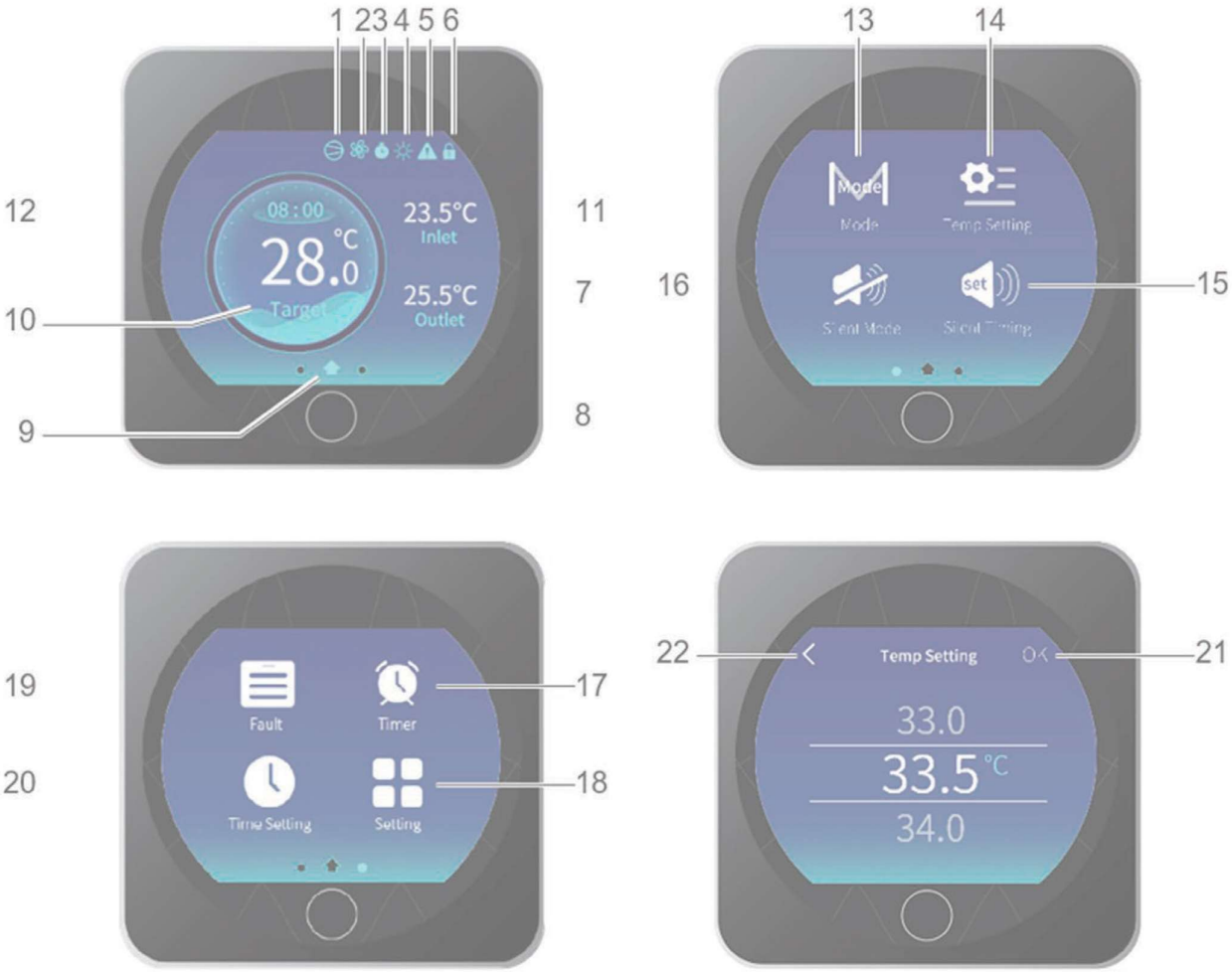
This fitting is designed to accept 20mm clear vinyl tubing which can be pushed on by hand and run to a suitable drain. It is easy to mistake the condensation for a water leak inside the unit.

TIP:
A quick way to verify that the water is condensation is to shut of the unit and keep the pool pump running. If the water stops running out of the base pan after a couple of hours, it is condensation. AN EVEN QUICKER WAY IS TO TEST THE DRAIN WATER FOR CHLORINE with a PH strip - if there is no chlorine present, then it is condensation.

8. Controller Operation

Controller display

The heat pump is equipped with a digital control panel with a touch screen, electronically connected and pre-set at the factory in heating mode.



Legend

1	Compressor's ON indicator	12	System time
2	Fan	13	Operating mode selection
3	Timer	14	Adjust setpoint
4	Current mode	15	Setting silence mode timer
5	Alarm	16	Activate silent mode
6	Lock screen	17	Set On/Off timers
7	Water output temperature	18	Access advanced settings
8	On/Off/Back	19	Access list of faults
9	Main screen	20	Set data and time
10	Setpoint temperature	21	Confirm
11	Water input temperature	22	Back (changes not confirmed)

OFF mode

When the heat pump is idle (in standby mode), OFF is displayed as shown on the screen.
The black screen indicates that the heat pump is idle; settings can be adjusted in this mode.

ON mode

When the heat pump is running or priming (setpoint reached), the screen turns blue.

To switch from OFF to ON mode and vice versa, press the ● button for 0.5s.

Time settings

The date and time can be set either in ON or in OFF mode.

Press ● 1 time on to return to the main screen.

Setting the On/Off timers

Setting this function is necessary if you would like to run the heat pump for a shorter period than what is defined by the filtration clock. Therefore, you can program a preferred start and an anticipated stop or simply stop a certain time frame from running (at night, for example).

It is possible to set one Start Timer and one Stop Timer. The setting step is "hour to hour".

Blue highlighting = Activated
Grey = Deactivated

Press ● 2 times to return to the main screen.

PV Ready function

The PV Ready icon is displayed on the setting interface. Click to enter the PV control interface. Wiring diagram, description of mode and parameter setting interface can be selected.

If the PV Ready function is not available, the PV Ready icon is not visible.

Press ● 2 times to return to the main screen.

Spot time

Spot time control function means that the heat pump in a certain period of time can be set for different target temperatures. Therefore, customers can set the parameters to adjust the spot time temperature control function of the heat pump.

A total of 6 timer periods can be set, which can be selected by turning the page.

Blue highlighting = Activated
Grey = Deactivated

Press 1 time to return to the main screen.

Adjust set point

The setpoint can be changed either in ON or in OFF mode with an accuracy of 0.5°C.

Press ● 1 time to return to the main screen.

Press ● 1 time to return to the main screen.

Mode selection – Heating / Cooling / Auto

Press ● 1 time to return to the main screen.

The screen can be locked or unlocked either in ON or in OFF mode.

Locking and unlocking the touch screen

The screen can be locked or unlocked either in ON or in OFF mode.

Lock activated

Lock deactivated

Silent mode function settings

Silent mode means that the heat pump is in economic and silent mode. When the energy demand is low, only maintain the temperature of the swimming pool or for the silence running of the unit
This function can be Activated/Deactivated manually or using a Timer Activation/Deactivation.

Silent mode deactivated

Silent mode activated

Press ● 1 time to return to the main screen

Adjusting the Silent mode timer

Press ● 2 times to return to the main screen.

⚠ The setting step is “hour to hour”.

Once the Timer is activated, it is active 7 days a week.

Troubleshooting guide

Certain operations must be carried out by an authorized technician.

If a fault occurs on the heat pump appears in the top left-hand corner of the screen. Refer to following table.

When the problem is resolved, the error is automatically acknowledged and the triangle disappears.

- To delete the error list, press on .
- Press 2 times to return to the main screen.

When the problem is resolved, the error is automatically acknowledged and the triangle disappears.

9. Error Codes

Protection / Fault	Fault code	Reason	Solution
Inlet Temp. Sensor Fault	P01	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Outlet Temp. Sensor Fault	P02	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Ambient Temp. Sensor Fault	P04	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Coil 1 Temp. Sensor Fault	P05	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Coil 2 Temp. Sensor Fault	P15	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Suction Temp. Sensor Fault	P07	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Discharge Temp. Sensor Fault	P081	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Exhaust Air over Temp Prot.	P082	The compressor is overload	Check whether the system of the compressor running normally
Antifreeze Temp. Sensor Fault	P09	Antifreeze temp. sensor is broken or short circuit	Check or change the temp. sensor
Pressure Sensor Fault	PP	The pressure sensor is broken	Check or change the pressure sensor or pressure
High Pressure Prot.	E01	The high-pressure switch is broken	Check the pressure switch and cold circuit
Low Pressure Prot.	E02	The low-pressure switch is broken	Check the pressure switch and cold circuit
Flow Switch Prot.	E03	No water/little water in water system	Check the pipe water flow and water pump
Waterway Anti-freezing Prot.	E05	Water temp or ambient is too low	Check the water temp. and ambient temp.
Inlet and outlet temp. too big	E06	Water flow is not enough and low differential pressure	Check the pipe water flow and whether water system is jammed or not
Anti-freezing Prot.	E07	Water flow is not enough	Check the pipe water flow and whether water system is jammed or not system is jammed or not
Primary Anti-freezing Prot.	E19	The ambient temp. is low	Check the ambient temp. sensor
Secondary Anti-freezing Prot.	E29	The ambient temp. is low	Check the ambient temp. sensor
Comp. Overcurrent Prot.	E051	The compressor is overload	Check whether the system of the compressor running normally running normally
Communication Fault	E08	Communication failure between wire controller and mainboard	Check the wire connection between remote wire controller and main board
Communication Fault (speed control module)	E081	Speed control module and main board communication fail	Check the communication connection
Low AT Protection	TP	Ambient temp. is too low	Check the ambient temp. sensor
EC fan feedback Fault	F051	There is something wrong with fan motor and fan motor stops running	Check whether fan motor is broken or locked or not
Fan Motor1 Fault	F031	1. Motor is in locked-rotor state 2. The wire connection between DC-fan motor module and fan motor is in bad contact	1. Change a new fan motor 2. Check the wire connection and make sure they are in good contact
Fan Motor 2 Fault	F032	1. Motor is in locked-rotor state 2. The wire connection between DC-fan motor module and fan motor is in bad contact	1. Change a new fan motor 2. Check the wire connection and make sure they are in good contact

10. Inverter Board Errors

Protection / Fault	Fault code	Reason	Solution
Drv1 MOP alarm	F01	MOP drive alarm	Recovery after the 150s
Inverter offline	F02	Frequency conversion board and mainboard communication failure	Check the communication connection
IPM protection	F03	IPM modular protection	Recovery after the 150s
Comp. Driver Failure	F04	Lack of phase, step or drive hardware damage	Check the measuring voltage , check frequency conversion board hardware
DC Fan Fault	F05	Motor current feedback open circuit or short circuit	Check whether current return wires connected motor
IPM Overcurrent	F06	IPM Input current is large	Check and adjust the current measurement
Inv. DC Over voltage	F07	DC bus voltage>Dc bus over-voltage protection value	Check the input voltage measurement
Inv. DC Under voltage	F08	DC bus voltage<Dc bus over-voltage protection value	Check the input voltage measurement
Inv. Input Low volt.	F09	The input voltage is low, causing the input current to be high	Check the input voltage measurement
Inv. Input Over volt.	F10	The input voltage is too high, more than outage protection current RMS	Check the input voltage measurement
Inv. Sampling Volt.	F11	The input voltage sampling fault	Check and adjust the current measurement
Comm. Err DSP-PFC	F12	DSP and PFC connect fault	Check the communication connection
Input Over Cur.	F13	The equipment load is too large	Check whether the unit is overloaded
PFC fault	F14	The PFC circuit protection	Check the PFC switch tube short circuit or not
IPM Overheating	F15	The IPM module is overheat	Check and adjust the current measurement
Weak Magnetic Warning	F16	Compressor magnetic force is not enough	Restart the unit after multiple power failures, if the fault still exists, replace the compressor
Inv. Input Out Phase	F17	The input voltage lost phase	Check and measure the voltage adjustment
IPM Sampling Cur.	F18	IPM sampling electricity is fault	Check and adjust the current measurement
Inv. Temp. Probe Failure	F19	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Inverter Overheating	F20	The transducer is overheated	Check and adjust the current measurement
Inv. Overheating Warning	F22	Transducer temperature is too high	Check and adjust the current measurement
Comp. Over Cur. Warning	F23	Compressor electricity is large	The compressor over-current protection
Input Over Cur. Warning	F24	Input current is too large	Check and adjust the current measurement
EEPROM Error Warning	F25	MCU error	Check whether the chip is damaged, replace the chip
V15V over/undervoltage fault	F26	The V15V is overload or under voltage	Check the V15V input voltage in range 13.5v~16.5v or not

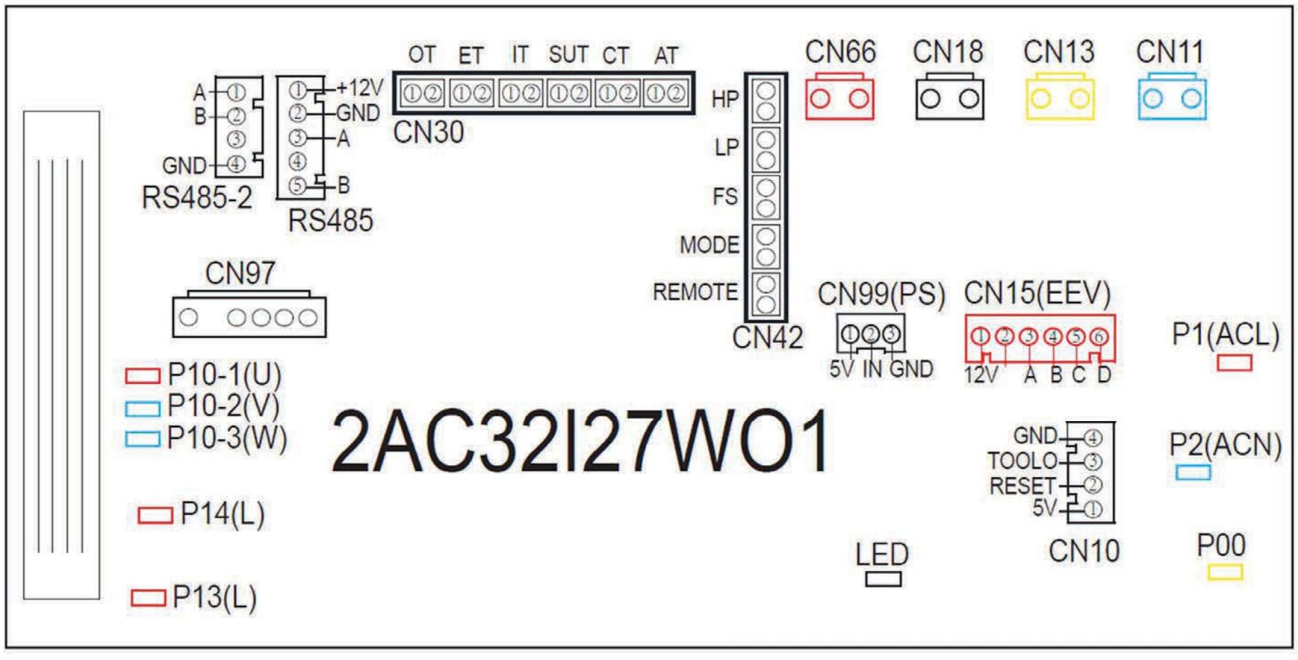
11. Parameter List

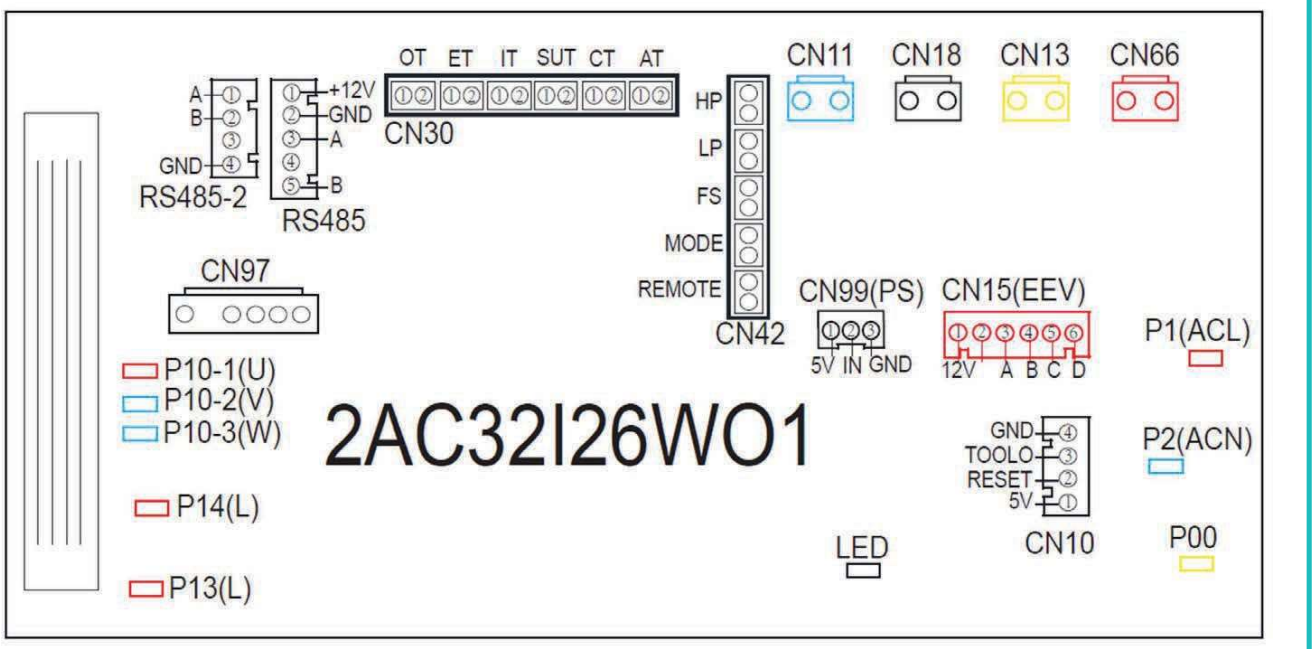
Meaning	Default	Remarks
Refrigeration target temperature set point	27℃	Adjustable
Heating target temperature set point	27℃	Adjustable
Automatic target temperature set point	27℃	Adjustable

Wire control interface diagram and definition

Sign	Meaning
V	12V(power+)
A	485A
B	485B
G	GND (power-)

Controller interface diagram and definition

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REMOTE
CN42
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CN99(PS)
5V IN GND
CN15(EEV)
12V A B C D
P1(ACL)
P10-1(U)
P10-2(V)
P10-3(W)
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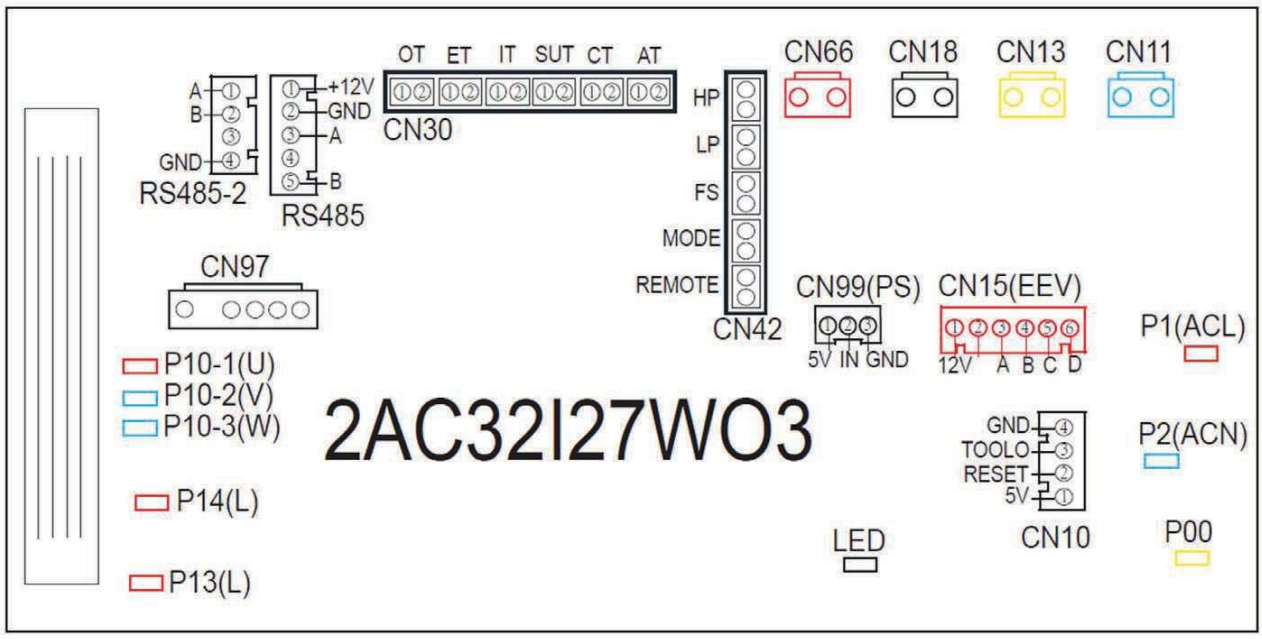
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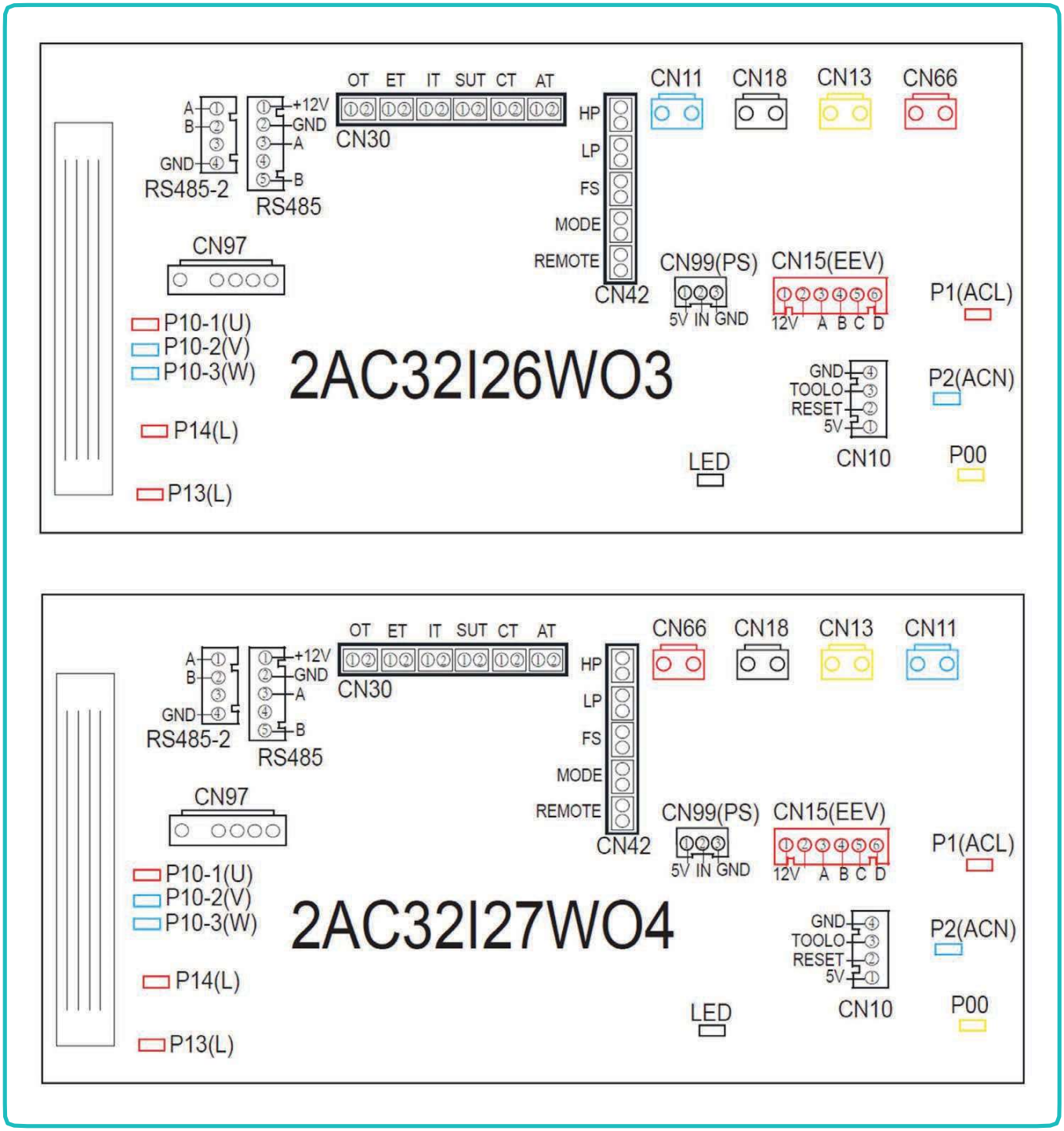
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5V IN GND
CN15(EEV)
12V A B C D
P1(ACL)
P10-1(U)
P10-2(V)
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CN10
P2(ACN)
P14(L)
LED
P00
P13(L)

OT ET IT SUT CT AT
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CN66
CN18
CN13
CN11
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GND
RS485-2
+12V
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RS485
HP
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FS
MODE
REMOTE
CN42
CN97
CN99(PS)
5V IN GND
CN15(EEV)
12V A B C D
P1(ACL)
P10-1(U)
P10-2(V)
P10-3(W)
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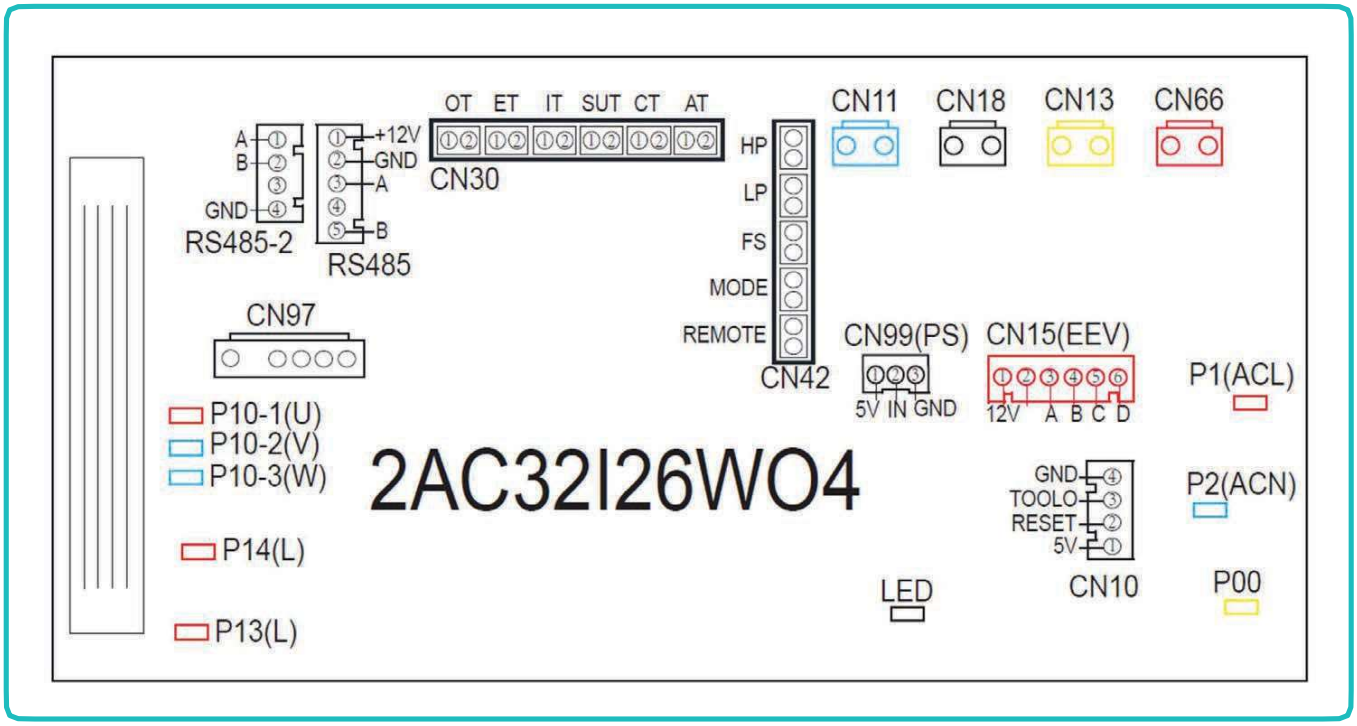
GND
TOOLO
RESET
5V
CN10
P2(ACN)
P14(L)
LED
P00
P13(L)



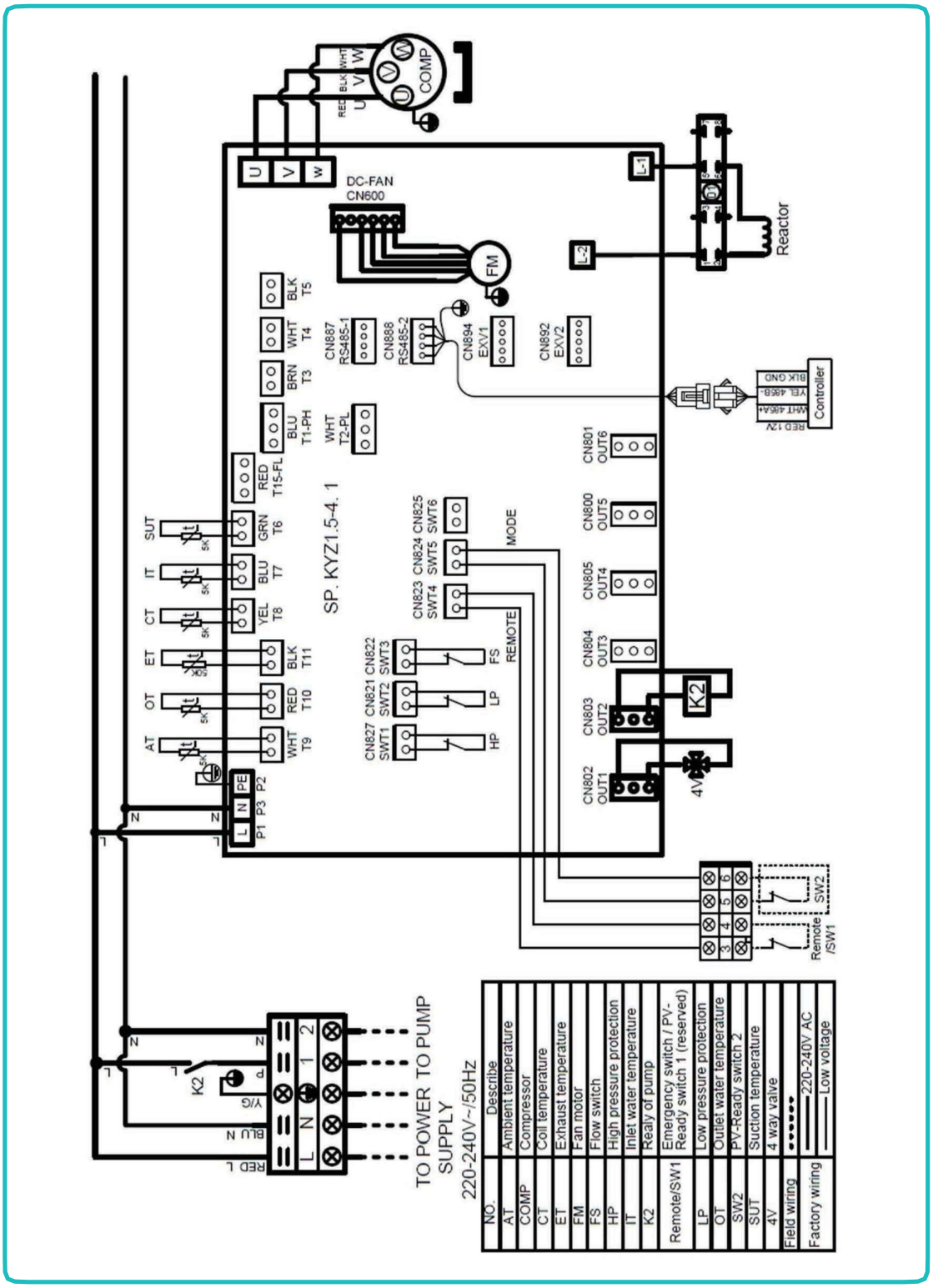
Number	Sign	Meaning
01	P10-1/2/3(U/V/W)	Compressor
02	P13(L)	Resistance
03	P14(L)	Resistance
04	CN97	DC motor
05	RS485-2	The port for centralized control
06	RS485	Colour line controller communication
07	OT	Water output temperature
08	ET	System exhaust temperature
09	IT	Water input temperature
10	SUT	System suction temperature
11	CT	System fan coil temperature
12	AT	Ambient temperature
13	HP	System high pressure
14	LP	System low pressure
15	FS	Water flow switch
16	MODE	Mode switch
17	REMOTE	Emergency switch
18	CN11	4-way value
19	CN18	Water pump
20	CN13	Reserved
21	CN66	Compressor signal
22	CN99	Low pressure sensor
23	CN15	Electronic expansion valve
24	CN10	Program download interface
25	P1	Live wire
26	P2	Neutral wire
27	P00	Grounding

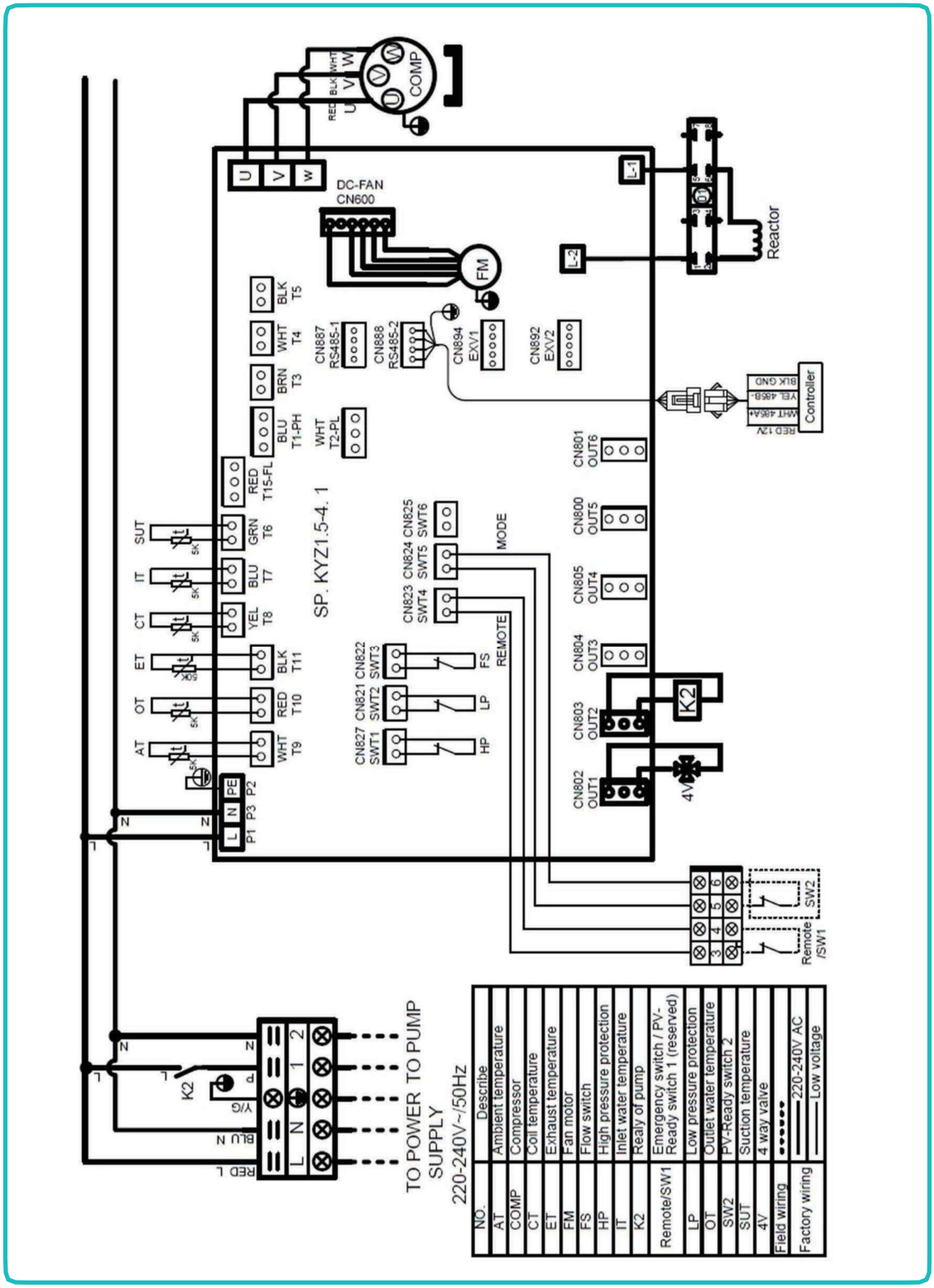
12. PC Board Wiring

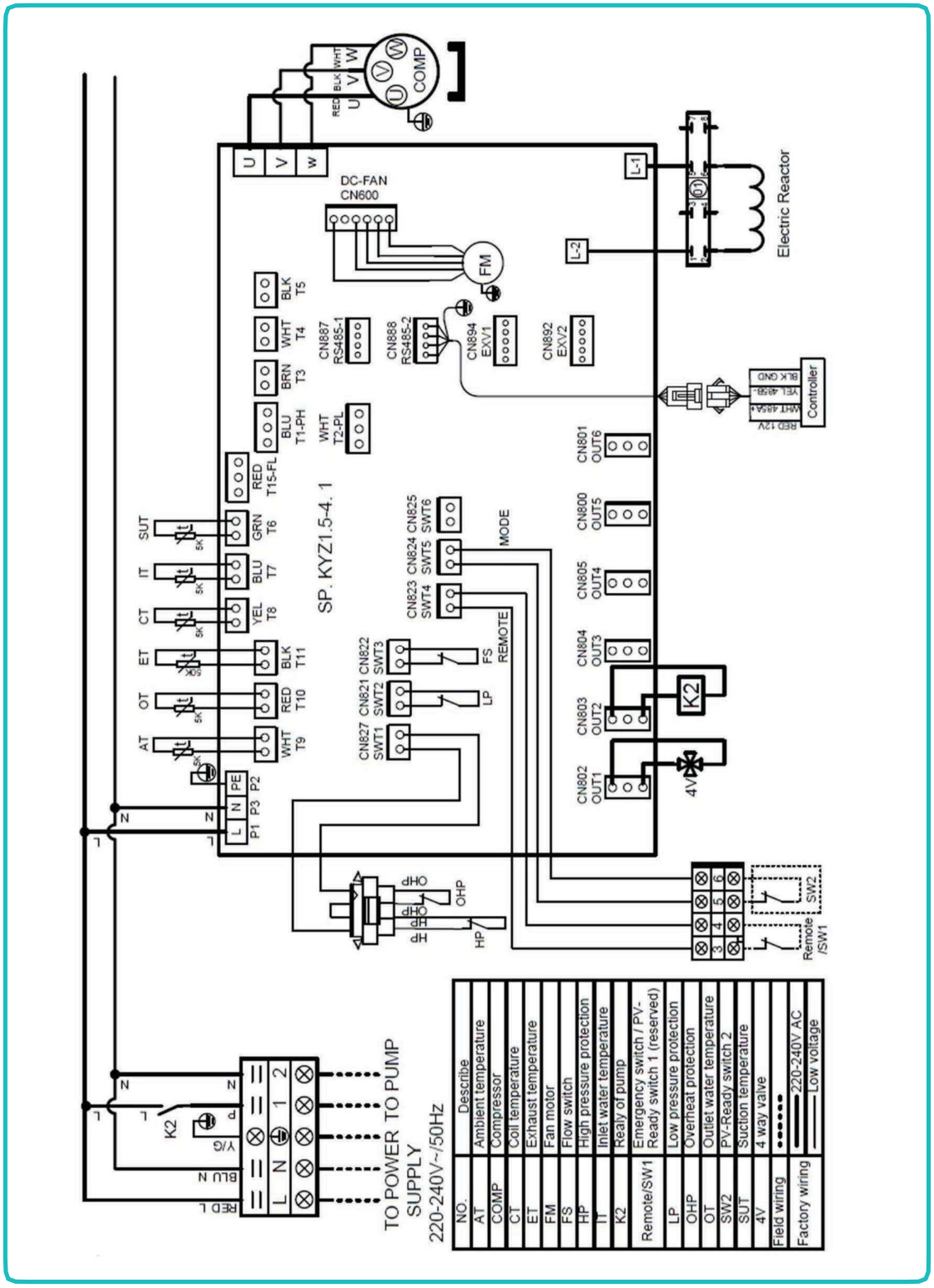
Wire control interface diagram and definition

Alliance SMART AQUA

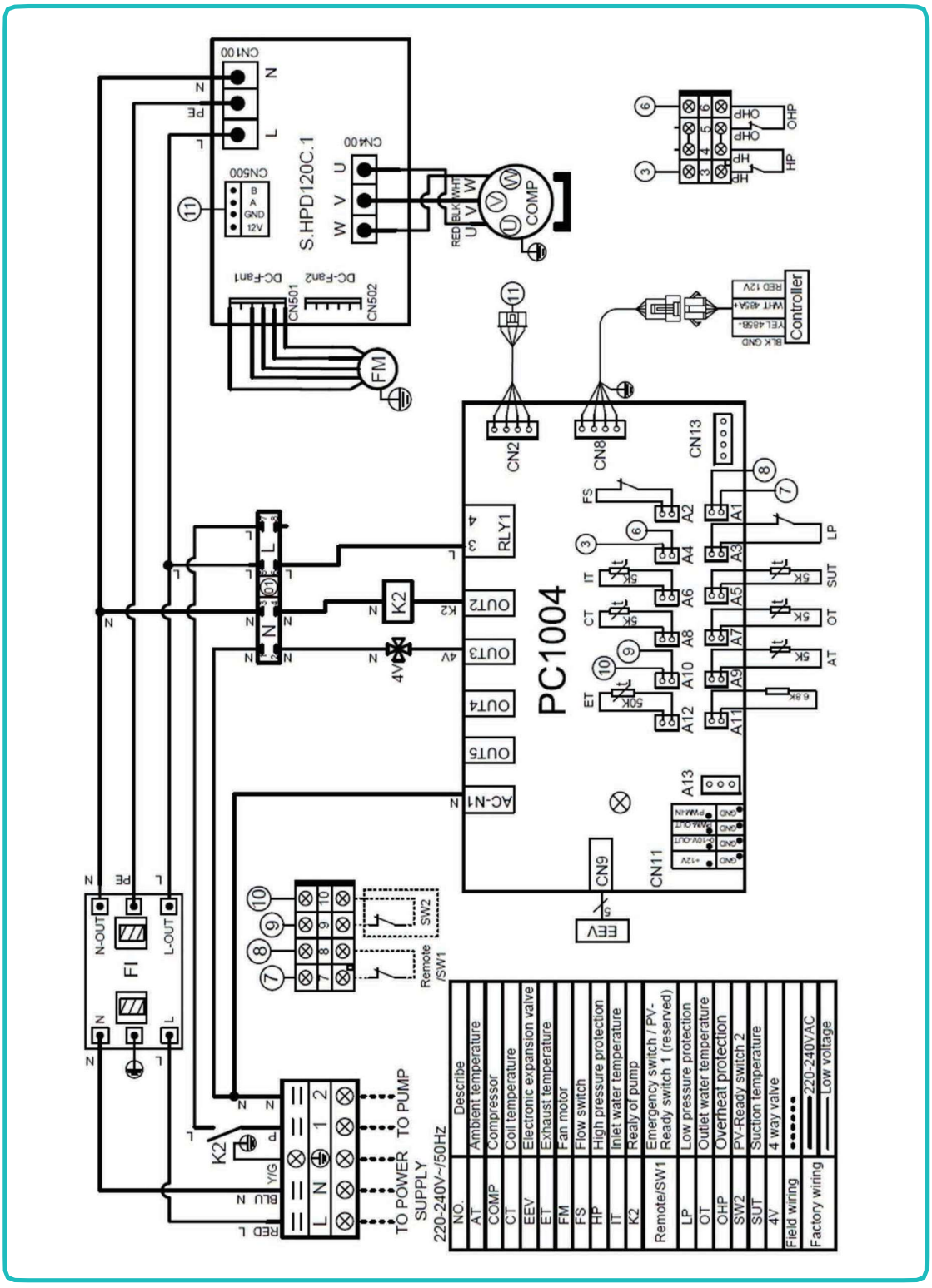
ALLPH70R32-INV



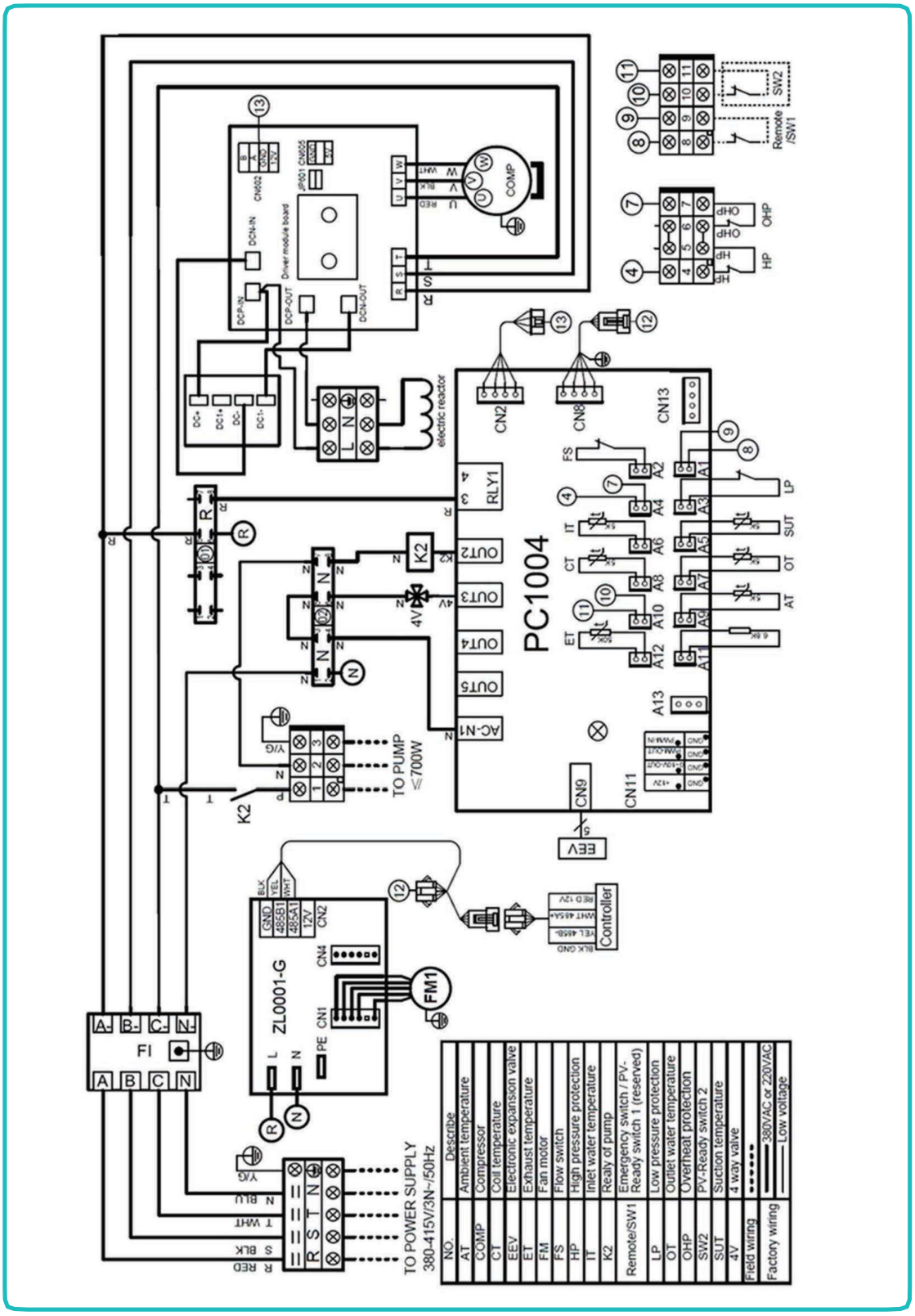

SP. KYZ1.5-4. 1
DC-FAN CN600
COMP
FM
Reactor
Controller
MODE
REMOTE
TO POWER SUPPLY 220-240V~/50Hz
TO PUMP
Remote /SW1
SW2
4V
K2
NO. Describe
AT Ambient temperature
COMP Compressor
CT Coil temperature
ET Exhaust temperature
FM Fan motor
FS Flow switch
HP High pressure protection
IT Inlet water temperature
K2 Realy of pump
Remote/SW1 Emergency switch / PV-Ready switch 1 (reserved)
LP Low pressure protection
OT Outlet water temperature
SW2 PV-Ready switch 2
SUT Suction temperature
4V 4 way valve
Field wiring 220-240V AC
Factory wiring Low voltage



NO.	Describe
AT	Ambient temperature
COMP	Compressor
CT	Coil temperature
ET	Exhaust temperature
FM	Fan motor
FS	Flow switch
HP	High pressure protection
IT	Inlet water temperature
K2	Realy of pump
Remote/SW1	Emergency switch / PV-Ready switch 1 (reserved)
LP	Low pressure protection
OHP	Overheat protection
OT	Outlet water temperature
SW2	PV-Ready switch 2
SUT	Suction temperature
4V	4 way valve
Field wiring	220-240V AC
Factory wiring	Low voltage



NO.	Describe
AT	Ambient temperature
COMP	Compressor
CT	Coil temperature
EEV	Electronic expansion valve
ET	Exhaust temperature
FM	Fan motor
FS	Flow switch
HP	High pressure protection
IT	Inlet water temperature
K2	Realy of pump
Remote/SW1	Emergency switch / PV-Ready switch 1 (reserved)
LP	Low pressure protection
OT	Outlet water temperature
OHP	Overheat protection
SW2	PV-Ready switch 2
SUT	Suction temperature
4V	4 way valve
Field wiring	220-240VAC
Factory wiring	Low voltage


PC1004
ZL0001-G
Controller
TO PUMP
≤700W
TO POWER SUPPLY
380-415V/3N~/50Hz
NO. Describe
AT Ambient temperature
COMP Compressor
CT Coil temperature
EEV Electronic expansion valve
ET Exhaust temperature
FM Fan motor
FS Flow switch
HP High pressure protection
IT Inlet water temperature
K2 Realy of pump
Remote/SW1 Emergency switch / PV-Ready switch 1 (reserved)
LP Low pressure protection
OT Outlet water temperature
OHP Overheat protection
SW2 PV-Ready switch 2
SUT Suction temperature
4V 4 way valve
Field wiring 380VAC or 220VAC
Factory wiring Low voltage

13. Maintenance

- Check the water inlet and drainage often. The water and air inflow into the system should be sufficient so that its performance and reliability does not get compromised. You should clean the pool filter regularly to avoid damage to the unit caused by clogging of the filter.
- The area around the unit should be spacious and well ventilated. Clean the sides of the heat pump regularly to maintain good heat exchange and to save energy.
- Check if all processes in the unit are operational and pay special attention to the operation pressure of the refrigerant system.
- Check the power supply and cable connections regularly. Should the unit begin to function abnormally or should you notice a smell from an electrical component, arrange for timely repair or replacement.
- Winterizing: make sure to drain all the water from the heat pump and other systems to prevent frost damage. Damage caused by freezing is not covered by the warranty.
- You should also purge the water if the unit will not work for an extended period. You should check all parts of the unit thoroughly and completely fill the system with water before turning it on again afterward.

14. Appendix

Caution & Warning

1. The unit can only be repaired by qualified installer centre personnel or an authorized dealer.

2. This appliance is not intended for use by persons (including children) with reduced physical sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

3. Please make sure that the unit and power connection have good earthing, otherwise may cause electrical shock.

4. If the power supply cord is damaged, it must be replaced by the manufacturer or our service agent or similarly qualified person to avoid a hazard.

5. Directive 2002/96/EC (WEEE):
   The symbol depicting a crossed-out waste bin that is underneath the appliance indicates that this pro duct, at the end of its useful life, must be handled separately from domestic waste, must be taken to a recycling centre for electric and electronic devices or handed back to the dealer when purchasing an equivalent appliance.

6. Directive 2002/95/EC (RoHs): This product is compliant with directive 2002/95/EC (RoHs) concerning restrictions for the use of harmful substances in electric and electronic devices.

7. The unit CANNOT be installed near flammable gas.

8. Make sure that there is a circuit breaker for the unit, lack of a circuit breaker can lead to electrical shock or fire.

9. The heat pump is equipped with an over-load protection system. It does not allow for the unit to start for at least 3 minutes from a previous stoppage.

10. Caution: Single wall heat exchanger, not suitable for potable water connection.

15. Warranty

ALLIANCE INVERTER SWIMMING
POOL HEAT PUMP WARRANTY CARD

TWO YEAR LIMITED WARRANTY ON UNIT
THREE YEAR LIMITED WARRANTY ON COMPRESSOR
FIVE YEAR LIMITED WARRANTY ON HEAT EXCHANGER

PLEASE READ CAREFULLY BEFORE FILLING IN AND STORING IN A SAFE PLACE

Terms of our comprehensive Warranty are as follows:

1.	Subject to the stated terms and conditions, warranty is given to the purchaser in respect of the Alliance Heat Pump, Model No and Serial No. as listed on the back of this card for 12 months on the unit, 12 months on the heat exchanger and 36months on the compressor, from date of installation. This warranty is subject to servicing being maintained in line with the servicing standard as set out in the schedule on the back of this warranty card. Should the equipment not be serviced as per the schedule, this warranty will become null and void.	5.	This warranty will lapse if any repairs are carried out by any dealer other than any dealer authorised by Alliance. An authorised dealer is a company that deals with Fourways Group. The warranty will also lapse if any unauthorised alteration to this warranty card is affected.
2.	This warranty covers defects caused by original manufacturing faults, defective manufacturing assembly, or faulty material. It does not cover defects as a result of incorrect installation but is a parts only warranty and excludes labour costs. It also does not extend to repairs, replacement of parts, maintenance or service necessitated by normal wear and tear, incorrect operation, failure to properly maintain, improper cleaning methods, infestation by insects or vermin, maltreatment of the product, misuse, connection to an incorrect voltage, power surges, damage caused by lightning, accidents, flooding, fire, Acts of God, public disturbances, accidental damage, rust and corrosion, work carried out by persons other than an authorised Alliance dealer, or being incorrectly sized for the application required, according to authorised dealer's recommendations. In cases of dispute, repairs, replacement of spare parts, maintenance and service shall be deemed to be beyond the scope of this warranty unless the purchaser can prove to the contrary.	6.	This warranty is not transferable and is only valid in South Africa. It is valid only for the original purchaser of the Product. This purchaser will be the person who owns the machine once installation is completed.
		7.	Any repairs carried out under this warranty will not extend the period of the warranty in any way.
		8.	Neither Alliance nor authorised Alliance service agents shall be responsible at any time during or after the period of this warranty for any loss or damage of whatsoever nature, whether general, special, or consequential which may be caused or sustained by the purchaser, whether arising from, connected with, or relating to any defect, fault, or lack in the Product, whether such inability is complete or partial.
3.	During the period of the warranty, faults covered by the warranty will be repaired as per the schedule by the installing dealer (or other authorised Alliance dealer), with only the cost of the parts covered. These will be supplied by the relevant Alliance Service Centre.	9.	This warranty replaces all common law and other rights or remedies which may otherwise be available to the purchaser.
4.	Alliance shall not be responsible, without limitation, for any charges for dismantling or reassembling the heat pump for repair, any transportation or storage expenses, injury to persons or property, work stoppage, impairment of other goods, breach of contract, negligence or other such action as may be deemed or alleged to be cause of a loss or damage to buyer, its agents, or customers.	10.	Should repairs become necessary DURING THE WARRANTY PERIOD, please phone the installation dealer as noted on the back of this warranty card. For any repairs after the warranty period is over, contact your nearest authorised Alliance Dealer.

PLEASE COMPLETE AND STORE IN A SAFE PLACE

Customer Name .....

Customer Address .....

Model No: ..... Serial No: .....

Company Name of Installer: ..... Date:.....

Name of installer: ..... Tel. Number:.....

WARRANTY:

Period	Covered
Two years	Electronic (Parts only after 1st year)
Three years	Compressor (Parts only after 1 st year)
Five years	Heat Exchanger (Parts only after 1 st year)

TERMS AND CONDITIONS OF WARRANTY:

1. This warranty is applicable only to the original purchaser and to units serviced by an authorised Alliance dealer.
2. This warranty is only valid if the unit is serviced every year as per the schedule below (or more frequently as advised by authorised Alliance installer).
3. Should the equipment be installed in very dusty or dirty environments, servicing should be done every three months (or a minimum of twice a year depending on environment). The installing dealer will advise you as to the servicing intervals required and may contact the Alliance distributor to get advice on this.
4. For export: Warranty applicable on a parts basis only, for collection in South Africa.
5. Should a fault occur on a new Heat Pump following installation and initial satisfactory operation, the Heat Pump will be repaired, not replaced with a new unit.
6. ALLIANCE domestic swimming pool heat pumps must be installed by a qualified installer that has received heat pump installation training from ALLIANCE.
7. Any unauthorized installation, alteration or repair will void this Warranty. All repairs are to be carried out by a qualified refrigeration technician who is registered in the Safe Handling of Refrigerants. (Further information in this regard may be obtained from ALLIANCE).
8. The installer must ensure that the installation fully complies with ALLIANCE'S recommendations in the installation manual concerning installation, water piping and electrical work including electrical earthing of the unit.
9. All electrical installations must comply with current specifications. Failure to install over / under voltage protection on the heat pumps power supply will void this warranty.
10. ALLIANCE heat pumps MUST always be installed outdoors, with unrestricted air flow around the heat pump.
11. The size and model of the ALLIANCE domestic swimming pool heat pump selected must be appropriate to the specific application and sized using Alliance's swimming pool sizing calculator.
12. For coastal and corrosive environment installations, BluChem or similar treatment against corrosion is required for warranty claims to remain valid.
13. Not maintaining a proper chemical balance in your pool (pH level between 7.0 and 7.8 Total Alkalinity (TA) between 80 and 150ppm. Free Chlorine between 0.5 – 1.2mg/l. Total dissolved solids 9 (TDS) less than 1200ppm. Slat maximum 8g/L) will void this warranty.
14. Overheating, incorrect wire runs, improper electrical supply, collateral damage caused by failure of O-Rings or damage cause by running the pump with insufficient water flow will void this Warranty.

15. **Parts and warranty details:**
Controller, PC boards, Capacitor, Relays, Sensors – 2 Year warranty (Part only after first year) High pressure / low pressure switch – 2 Year warranty (Part only after first year)
Water flow switch. EEV / Solenoid – 2 Year warranty (Part only after first year)
Compressor – 3 Year warranty (Part only after first year)
Titanium heat exchanger – 5 Year warranty (Part only after first year)

ALLIANCE reserves the right to update or modify this warranty (including terms and conditions) any time without prior notice.

Service Schedule:

- Clean evaporator coil (High Pressure Washer)
- Check outdoor fan motors.
- Check fan blades for damage / out of balance.
- Check all electrical connections.
- Check for oil spots on refrigerant piping.
- Check & clean condensate drains.
- Check heating operation.
- Check refrigerant standing and running pressures.
- Check running current.
- Measure on & of coil temperatures
- Clean unit cabinets

Service No	Date	Technician Name	Technician Sign
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

By signing this service record the authorised Alliance dealer technician confirms that the service has been carried out and that the unit is in a satisfactory working condition and performing to specification.

Alliance

www.allianceafrica.co.za

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Online Store