



HAYWARD®

ENERGYLINE PRO INVERTER SERIES



SWIMMING POOL/SPA HEAT PUMP UNIT

Installation & Operation Manual

To prevent potential injury and to avoid unnecessary service calls, read this manual carefully and completely. Retain and ensure this manual is passed on to the end user.

PLEASE KEEP THIS MANUAL FOR FUTURE REFERENCE

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IMPORTANT SAFETY INSTRUCTIONS

Before installing or servicing this electrical equipment, turn OFF and ISOLATE power supply.





WARNING


Read and follow all instructions in this owner's manual and on the equipment. Failure to follow instructions can cause severe injury and/or death


 **WARNING** - This manual contains important information about the installation, operation, and safe use of this heat pump that must be transferred through to the end user of this product.

 **WARNING** - This product should be installed and serviced ONLY by a qualified professional.


 **WARNING** - All electrical wiring MUST be performed by a qualified electrical contractor, and must conform to Local/State/Federal Government electrical regulations and the Latest Edition AS/NZS 3000 Wiring Rules.


 **WARNING** - 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.


 **CAUTION** - This heater is intended for use on permanently installed swimming pools and may also be used with hot tubs and spas if so marked. Do NOT use with storable pools. A permanently installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity. Though this product is designed for outdoor use, it is strongly advised to protect the electrical components from the weather. Select a well-drained area, one that will not flood when it rains. It requires free circulation of air for proper operation. Do not install in a damp or non-ventilated location.


 **WARNING** - Pool and spa components have a finite life. All components should be inspected frequently and replaced at least every ten years, or if found to be damaged, broken, cracked, missing, or not securely attached.




 **WARNING - Risk of Electric Shock.** All electrical wiring must be performed by a qualified electrical contractor, and must conform to Local/State/Federal electrical regulations and the Latest Edition AS/NZ 3000 Wiring Rules. **All electrical circuits must be supplied through a Residual Current Device - RCD (Safety Switch), with a residual operating current not exceeding 30 mA.** Hazardous voltage can shock, burn and cause death or serious property damage.

 **WARNING** - The power supply to the heat pump must be supplied through an isolator switch located next to the unit and complying with the Latest Edition of the AS/NZS 3000 Wiring Rules.


 **WARNING** - Hayward recommends that a **Lightning Surge Protector Device (SPD)** is installed on the feed circuit to the heat pump by a qualified electrical contractor in accordance with AS/NZS 3000 Australian Wiring Rules Latest Edition.

 **WARNING** - To reduce the risk of electric shock replace damaged wiring immediately. Locate the power cord so that it cannot be damaged by lawn mowers, hedge trimmers and other equipment.


 **WARNING** - Never operate the circulation system at more than 344 kPa (50 PSI) maximum.

IMPORTANT SAFETY INSTRUCTIONS


Before installing or servicing this electrical equipment, turn OFF and ISOLATE power supply.

 **WARNING – Hazardous Pressure.** Pool and spa water circulation systems operate under hazardous pressure during start-up, normal operation, and after pump shut-off. Stand clear of circulation system equipment during pump start-up. Failure to follow safety and operation instructions could result in violent separation of the pump housing and cover due to pressure in the system. This separation could cause property damage, severe personal injury, or death. Before servicing the pool and spa water circulation system, all system and pump controls must be in the off position and the Filter Manual Air Relief Valve must be in the open position. Before starting the system pump, all valves must be set in a position to allow system water to return back to the pool. Do not change the Filter Control Valve position while the system pump is running. Before starting the system pump, fully open the Filter Manual Air Relief Valve. Do not close the Filter Manual Air Relief valve until all the air is expelled and a steady stream of water is discharged from the valve. All suction and discharge valves **MUST BE OPEN** when starting the circulation system. Failure to do so could result in severe personal injury and/or property damage.



 **WARNING – Separation Hazard.** Failure to follow safety and operation instructions could result in violent separation of pump components. Strainer cover must be properly secured to pump housing with the strainer cover lock ring. Before servicing pool and spa circulation system, all system and pump controls must be in off position and the Filter Manual Air Relief Valve must be in open position. Do not operate pool and spa circulation system if system components are not assembled properly, damaged, or missing. Do not operate pool and spa circulation system unless the Filter Air Relief Valve body is in locked position within the filter upper body. All suction and discharge valves **MUST BE OPEN** when starting the circulation system. Failure to do so could result in severe personal injury and/or property damage.



 **WARNING – Suction Entrapment Hazard.** The force from suction in suction outlets and/or suction outlet covers which are damaged, broken, cracked, missing, or unsecured, can cause severe injury and/or death due to the following entrapment hazards:



Hair Entrapment - Hair can become entangled in suction outlet cover.



Limb Entrapment - A limb inserted into an opening of a suction outlet sump or suction outlet cover that is damaged, broken, cracked, missing, or not securely attached, can result in a mechanical bind or swelling of the limb.



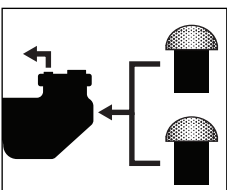
Body Suction Entrapment - A differential pressure applied to a large portion of the body or limbs can result in an entrapment.



Evisceration/Disembowelment - A negative pressure applied directly to the intestines through an unprotected suction outlet sump or suction outlet cover which is damaged, broken, cracked, missing, or unsecured, can result in evisceration/disembowelment.

Mechanical Entrapment - There is potential for jewelry, swimsuits, hair decorations, fingers, toes, or knuckles, to be caught in an opening of a suction outlet cover resulting in mechanical entrapment.

 **WARNING – To Reduce the risk of Entrapment Hazards:**



- » When outlets are small enough to be blocked by a person, a minimum of two functioning suction outlets per pump must be installed. Suction outlets in the same plane (i.e. floor or wall), must be installed a minimum of 0.91 metres or three feet (3') apart, as measured from near point to near point to avoid dual blockage by a user.
- » Dual suction fittings shall not be located on seating areas or on the backrest for such seating areas.
- » Never use pool or spa if any suction outlet component is damaged, broken, cracked, missing, or not securely attached.

- » Replace damaged, broken, cracked, missing, or not securely attached suction outlet components immediately.
- » In addition to installing two or more suction outlets per pump, follow all national, state and local government regulations as well as AS 1926.3 Latest Edition.
- » Installation of a vacuum release or vent system, which relieves entrapping suction, is recommended.

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1. INTRODUCTION

1.1 Preface

We thank you for purchasing this Hayward swimming pool heat pump unit. The Energyline Pro INVERTER was designed according to strict manufacturing standards to meet the highest quality requirements. The Energyline Pro INVERTER will offer you exceptional performance throughout the swimming season by adapting its power, electricity consumption and sound level to your swimming pool's heating needs with its INVERTER control logic.

This manual includes all of the necessary information concerning installation, debugging and maintenance. Please attentively read this manual before opening the unit or before carrying out any maintenance operations on it. The manufacturer of this product will not, under any circumstances, be held responsible in the case of injury to the user or damage to the unit resulting from improper installation, debugging or unnecessary maintenance. It is essential to follow all of the instructions specified in the manual at all times.

- » The unit must only be installed by a qualified professional.
- » Repairs must only be made by a qualified professional.
- » All electrical connections must be made by a qualified electrician in accordance with all Local/State/Federal Government electrical regulations and the Latest Edition of the AS/NZS 3000 Wiring Rules.
- » Maintenance and the different operations must be carried out at the recommended times and frequencies as specified in this manual.
- » Only use genuine Hayward spare parts.
- » Failure to comply with these recommendations will void the warranty.
- » This swimming pool/spa heat pump unit heats swimming pool water and maintains a constant temperature; it should not be used for any other purpose.

After having read this manual, keep it for future reference.

This product contains greenhouse effect fluorinated gases covered by the Kyoto protocol.

Type of refrigerant: R410A

GWP Value⁽¹⁾: 2088, Value based on the 4th GIEC report.

Periodic inspections for refrigerant leakage can be required as a function of European or local legislation. Please contact your local distributor for additional information.

[1] Global warming potential

1. INTRODUCTION

1.2 Spa Use Safety Guidelines

⚠ WARNING – The following “Safety Rules for Hot Tubs” recommended by the U.S. Consumer Product Safety Commission should be observed when using the spa.

- » Spa or hot tub water temperatures should never exceed 40°C [104°F]. A temperature of 38°C [100°F] is considered safe for a healthy adult. Special caution is suggested for young children. Prolonged immersion in hot water can induce hyperthermia.
- » Drinking of alcoholic beverages before or during spa or hot tub use can cause drowsiness, which could lead to unconsciousness and subsequently result in drowning.
- » Pregnant women beware! Soaking in water above 38°C [100°F] can cause fetal damage during the first three months of pregnancy (resulting in the birth of a brain-damaged or deformed child). Pregnant women should adhere to the 38°C [100°F] maximum rule.
- » Before entering the spa or hot tub, users should check the water temperature with an accurate thermometer; spa or hot tub thermostats may err in regulating water temperatures by as much as 2.2°C [4°F].
- » Persons taking medications, which induce drowsiness, such as tranquilisers, antihistamines or anticoagulants, should not use spas or hot tubs.
- » If the pool/spa is used for therapy, it should be done with the advice of a physician. Always stir pool/spa water before entering the pool/spa to mix in any hot surface layer of water that might exceed healthful temperature limits and cause injury. Do not tamper with controls, because scalding can result if safety controls are not in proper working order.
- » Persons with a medical history of heart disease, circulatory problems, diabetes or blood pressure problems should obtain a physicians advice before using spas or hot tubs.
- » Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above normal body temperature of 37°C [98.6°F]. The symptoms of Hyperthermia include: drowsiness, lethargy, dizziness, fainting, and an increase in the internal temperature of the body.

The effects of Hyperthermia include:

- » Unawareness of impending danger.
- » Failure to perceive heat.
- » Failure to recognise the need to leave the spa.
- » Physical inability to exit the spa.
- » Fetal damage in pregnant women.
- » Unconsciousness resulting in danger of drowning.

2. SPECIFICATIONS

2.1 Technical Data for the Swimming Pool Heat Pump Unit

		ENERGYLINE PRO INVERTER SERIES MODELS					
SPECIFICATION TYPE	UNITS	ELPI-9	ELPI-12	ELPI-17	ELPI-19.5	ELPI-24.5	ELPI-29
* Rated heating capacity ^(a)	kW	2.2 ~ 9.0	2.9 ~ 12.0	3.77 ~ 17.0	4.6 ~ 19.7	5.7 ~ 24.5	6.7 ~ 29.1
* Electrical power consumption ^(a)	kW	0.16 ~ 1.6	0.21 ~ 2.12	0.30 ~ 3.02	0.37 ~ 3.94	0.46 ~ 4.80	0.54 ~ 5.57
* COP ^(a)	/	13.44 ~ 5.63	13.81 ~ 5.66	12.67 ~ 5.63	13.24 ~ 4.95	12.39 ~ 5.04	12.41 ~ 5.08
** Rated heating capacity ^(a)	kW	1.8 ~ 7.4	2.3 ~ 9.7	2.9 ~ 12.4	3.8 ~ 15.4	4.7 ~ 19.9	5.5 ~ 23.3
** Electrical power consumption ^(a)	kW	0.25 ~ 1.6	0.32 ~ 2.08	0.44 ~ 2.86	0.60 ~ 3.81	0.72 ~ 4.74	0.83 ~ 5.49
** COP ^(a)	/	7.20 ~ 4.63	7.19 ~ 4.66	6.59 ~ 4.34	6.33 ~ 4.04	6.53 ~ 4.20	6.63 ~ 4.24
Power supply	V	220V-240V ~50Hz	220V-240V ~50Hz	220V-240V ~50Hz	220V-240V ~50Hz	220V-240V ~50Hz	380V-415V/3N ~50Hz
Max. Power Input	kW	2.0	2.5	3.4	4.6	5.9	7.1
Max. Input Current	A	9.0	13.0	16.0	20.0	25.9	11.3
Curve D Circuit Breaker	D	16A	16A	25A	25A	32A	16A
Starting Current	A	Soft Start					
Water Flow Rate	ltr/min	55	70	88	110	143	167
Water Pressure Drop (max)	kPa	4	4.5	5	6	11	15
Hydraulic Connection	mm	40 mm PVC Pipe					
Sound Pressure (1m)	dB(A)	40-50	42-52	44-53	45-56	46-57	48-58
Sound Pressure (10m)	dB(A)	20-30	22-32	24-33	25-36	26-37	28-38
Fan Quantity	/	1				2	
Fan Speed	RPM	400-800	400-800	500-750	500-900	400-800	400-850
Refrigerant	/	R410A					
Weight of refrigerent	kg	0.7	0.7	1.1	1.2	1.5	2.1
Unit net dimensions (L/W/H)	mm	1000 / 435 / 767		1150 / 485 / 868		1150 / 485 / 1275	
Net weight per unit	kg	50	59	77	82	110	113

(a) The rated heating capacities are based on Test standard NF-EN 14511, used in reference framework NF-414.


*Outdoor air 27/24.3°C - Incoming water temperature 26°C.

**Outdoor air 15/12°C - Incoming water temperature 26°C.

2. SPECIFICATIONS

2.2 Operating Range

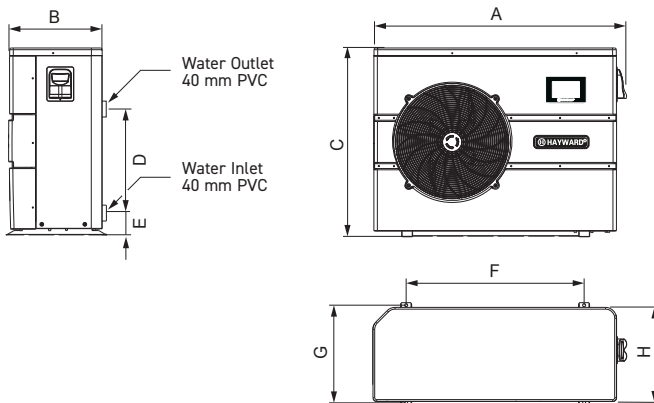
Use the swimming pool heat pump unit within the following ranges of temperature and humidity to ensure safe and efficient operation.

	Heating mode 
Outside temperature	-12°C – +35°C
Water temperature	+12°C – +40°C
Relative humidity	< 80%
Setting range from the set point	+15°C – +38°C

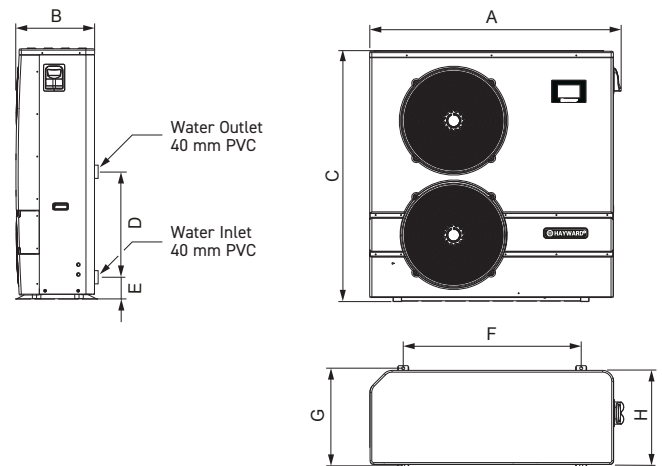
⚠ WARNING – If the temperature or humidity does not correspond to these conditions, the security measures could be activated and the swimming pool heat pump unit may no longer work.

2.3 Dimensions

Models: ELPI - 9 / ELPI - 12 /
ELPI - 17 / ELPI - 19.5



Models: ELPI - 24.5 / ELPI - 29

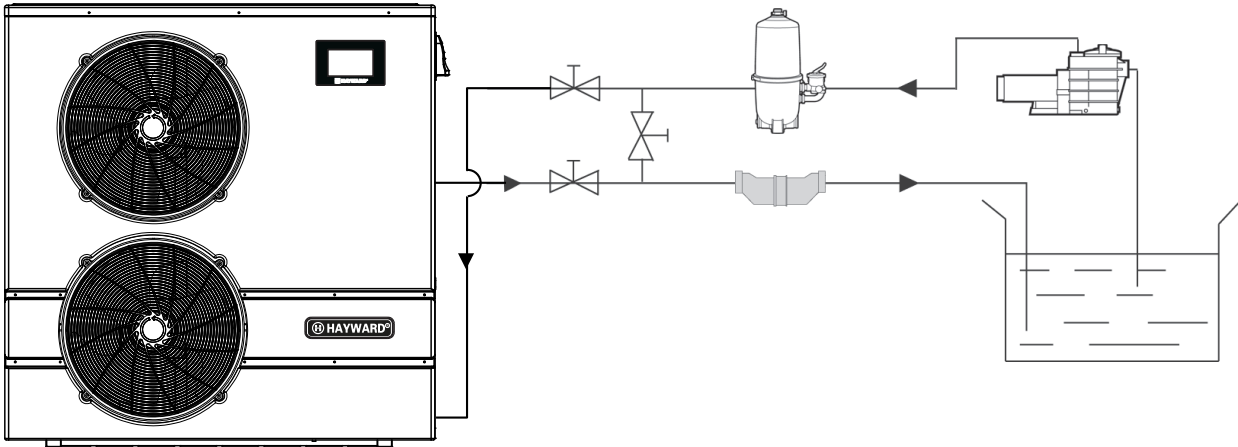


Unit: mm

SIZE \ TYPE	ELPI - 9 / ELPI - 12	ELPI - 17 / ELPI - 19.5	ELPI - 24.5 / ELPI - 29
A	1000	1150	1150
B	435	485	485
C	767	868	1275
D	400	400	470
E	100	100	98
F	630	815	790
G	410	447	447
H	369	430	430

3. INSTALLATION AND CONNECTION

3.1 Functional Diagram



Note: The swimming pool heat pump unit is sold without any treatment or filtration equipment. The components presented in the diagram are spare parts to be supplied by the installer.

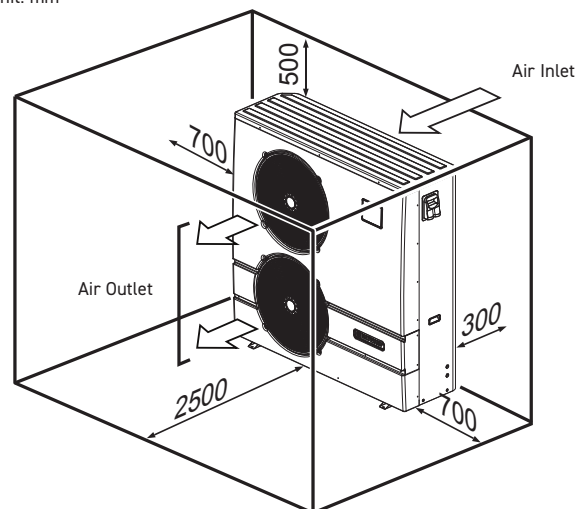
3.2 Heat Pump Unit

⚠ WARNING – Place the heat pump outdoors and away from any enclosed technical space.

Placed under a shelter, the minimum required distances shown below must be respected in order to avoid any risk of air recirculation and therefore a deficiency in the unit's overall performance.

- » It is advised to install the unit on a dissociated cement block or a mounting bracket designed for this use and to set up the unit on the supplied rubber bushing (fastenings and washers not supplied).
- » The maximum installation distance between the unit and the swimming pool is 15 metres.
- » The total length of the piping to and from the unit is 30 metres.
- » Insulate both the above ground and buried hydraulic piping.
- » The heat pump must be installed greater than 3.5 m from the edge of the pool in accordance with AS/NZS 3000 Wiring Rules.
- » Do not install the heat pump close to a heat source.
- » For installation in snowy regions we recommend sheltering the unit to avoid snow accumulating on the evaporator.

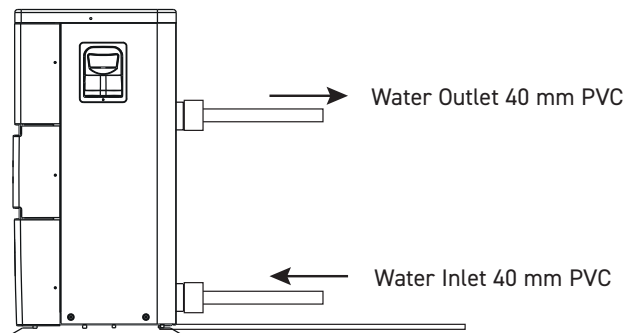
Unit: mm



3. INSTALLATION AND CONNECTION

3.3 Hydraulic Connection

The unit is supplied with two union connections to suit 40 mm PVC pipe. Connect the water inlet to the heat pump coming from the filter then connect the water outlet to the heat pump at the water conduit going to the pool/spa (see diagram below).



Install a by-pass valve between the heat pump inlet and discharge. Be sure to install the by-pass valve and the supplied union connections at the water inlet and outlet level in order to simplify purging during the winter period and to facilitate access when disassembling for maintenance. If an automatic chemical feeder or a chlorinator cell is used, it should be installed after the heat pump on the discharge line to the pool/spa with the goal of protecting the titanium condenser against an elevated concentration of chemicals.

3.4 Electrical Connection

⚠ WARNING – Electrical installation and wiring for this equipment must be in conformity with Local/State/Federal Government electrical regulations and must be in accordance with AS/NZS 3000 Latest Edition.

⚠ WARNING – Always isolate all of the power supplies before commencing any electrical work.

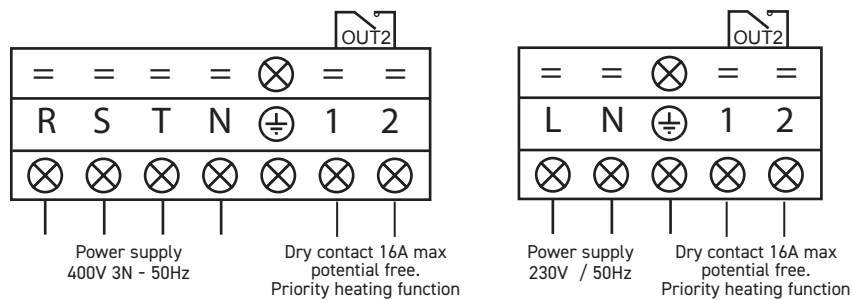
Verify that the available electrical power supply and the network frequency correspond to the required operating current taking into account the appliance's specific location, and the current required to supply any other appliance connected to the same electrical circuit. Ensure that the feed circuit is supplied through a Residual Current Device - RCD with a residual operating current not exceeding 30 mA and an Isolator Switch mounted at the unit.

MODEL	POWER SUPPLY	FREQUENCY	PHASE	CURVE D CIRCUIT BREAKER
ELPI - 9	220 - 240 V	50 HZ	1 N	16 A
ELPI - 12	220 - 240 V	50 HZ	1 N	16 A
ELPI - 17	220 - 240 V	50 HZ	1 N	25 A
ELPI - 19.5	220 - 240 V	50 HZ	1 N	25 A
ELPI - 24.5	220 - 240 V	50 HZ	1 N	32 A
ELPI - 29	380 - 415 V	50 HZ	3 N	16 A

⚠ WARNING – Check that the phases balance does not exceed 2%.



3. INSTALLATION AND CONNECTION

See the corresponding wiring diagram in the appendix. The connection box is located on the right side of the unit.



3.5 Initial Start-up

Start-up procedure - After installation is complete, follow these steps:

1. Rotate the fans by hand to verify that they can turn freely by hand, and that the fan is correctly affixed to the motor shaft.
2. Ensure that the unit is connected correctly to the main power supply (see the wiring diagram in the appendix).
3. Activate the filtration/circulation pump.
4. Verify that all water valves are open and that the water flows toward the unit before switching on the heating or cooling mode.
5. Verify that the drainage hose is correctly affixed and that it causes no obstructions.
6. Activate the unit power supply, then press the On/Off button  on the control panel.
7. Ensure that the alarm signal () does not light up red. If necessary see the troubleshooting guide (see § 7.1).
8. Set the water flow using the by-pass valve (see § 3.6 and 2.1), as provided for by each model, to obtain an Entry/Exit temperature of approximately 2°C.
9. After running for several minutes, verify that the air exiting the unit is cool (between 5°C and 10°C).
10. With the unit operating, turn off the filter/circulation pump. The unit should automatically turn off and display error code E03 (See § 7.1).
11. Allow the unit and the pool pump to run 24 hours per day until the desired water temperature has been reached. When the set point water inlet temperature is reached, the unit will turn off. It will automatically restart (as long as the pool pump is running) if the pool temperature is at least 0.5°C below the set temperature.

Water flow switch

The unit is equipped with a flow switch that turns on the heat pump when the pool filtration pump is running, and deactivates it when the filtration pump is off or not pumping. If the water flow is low, the E03 alarm code will appear on the display (See § 7.1).

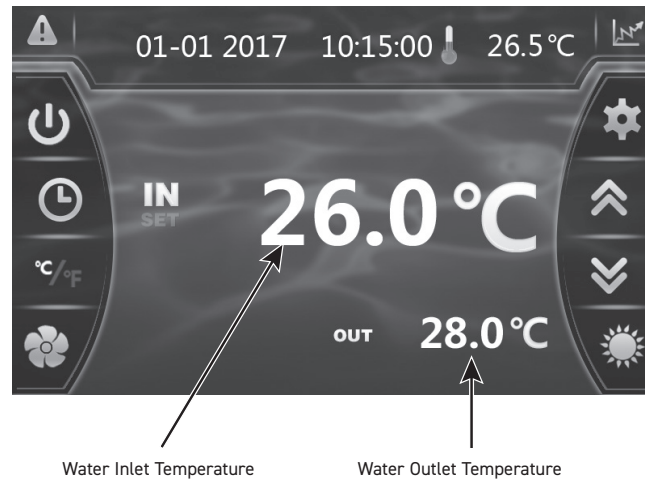
Re-start time delay

The unit is equipped with a time delay of 3 minutes in order to protect the control circuit components, to eliminate restart cycling and contactor chatter. Thanks to this time delay, the unit automatically restarts approximately 3 minutes after each control circuit interruption. Even a brief power interruption will activate the restart time delay.

3. INSTALLATION AND CONNECTION

3.6 Water Flow Setting

With the water entry and exit valves being open, adjust the by-pass valve in order to obtain a difference of approximately 2°C between the inflow and outflow temperature (see principle diagram § 3.1). You can verify the switch by seeing the entry/exit temperatures directly on the control panel.



Note that:

Opening the by-pass valve creates a weaker flow, which leads to an increase in temperature difference. Closing the by-pass valve creates a stronger flow, which leads to a decrease in temperature difference.

4. USER INTERFACE

4.1 General Presentation

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



LEGEND

1		Alarm (blinking red)	8		Scroll up / Increase	13		Conversion °C / °F
2		Locked screen	9		Scroll down / Decrease	14		Water Input temperature
3		Date	10		Heat Mode	15		Setting the Timer date and time ON/OFF
4		Time	11		Water Output temperature	16		Defrost mode (will appear when defrosting)
5		Outside air temperature	12		Selecting silence mode	17		On / Off
6		Recording base (Water temperature and power consumption)	12a		Setting silence mode timer			
7		Reading settings and saving	12b		Silence mode and activation light			

OFF Mode

When the heating pump is in sleep mode (OFF Mode), the button is grey.

ON Mode

When the heating pump is running or regulating (ON Mode), the button lights up green.

4. USER INTERFACE

4.2 Setting and Visualisation of the Set Point



In Mode "OFF" or Mode "ON"

Press the button to display the set point, then press or to set the set point you wish.

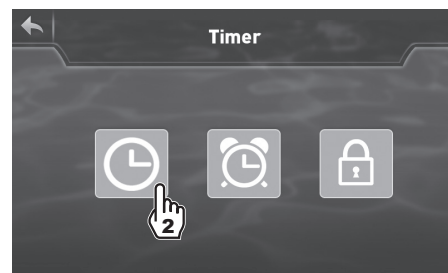
Confirm by pressing and you will return to the main screen automatically.

The setting is made with a precision of 0.5 °C.

4.3 Setting the Date and Time



Select the 'Clock' icon on the home screen to enter the time settings page.



Select the 'Clock' icon again to edit the date and time settings adjustment screen.

Back to the previous screen



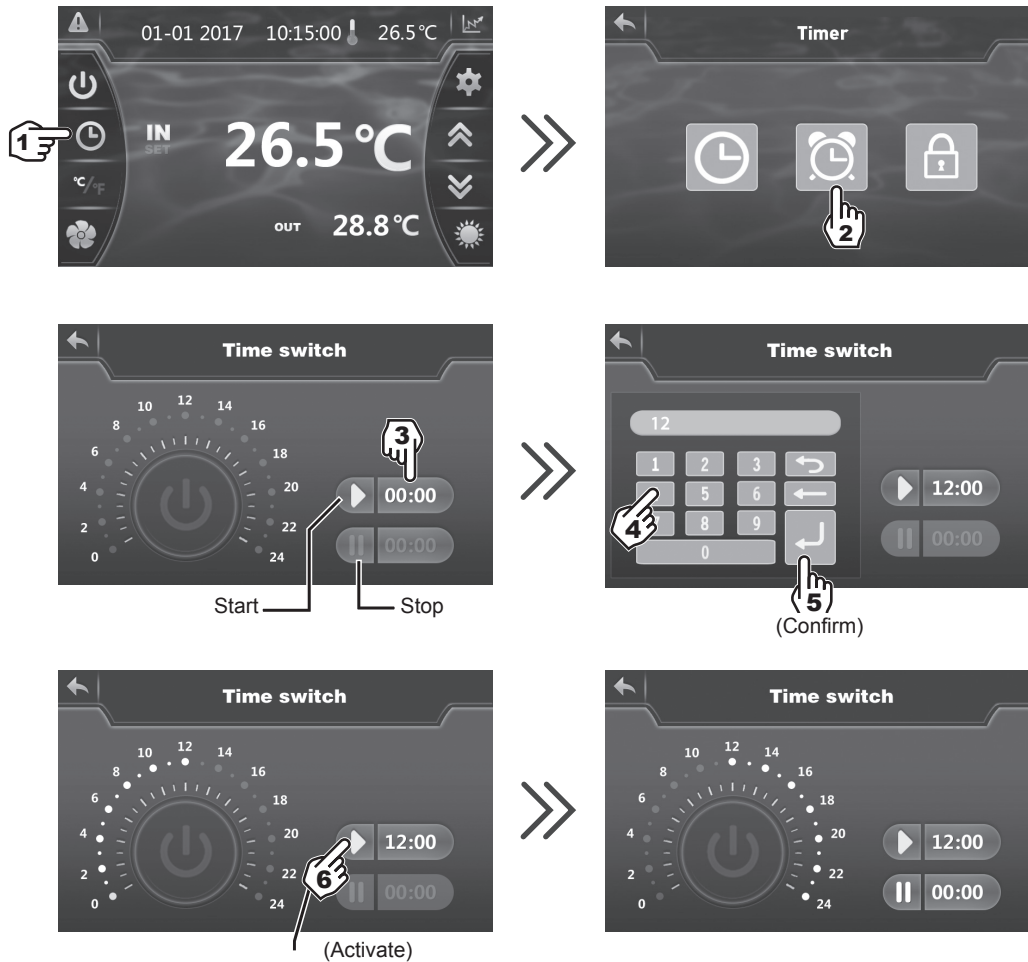
Quit without saving
Back
Confirm

Enter all the fields (Day/Month/Year, Hour/Minute/Second) before confirming, otherwise the changes will not be saved.

4. USER INTERFACE

4.4 Timer Function Settings

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 deferred 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.



Highlighting:
Blue = Activated Grey = Deactivated

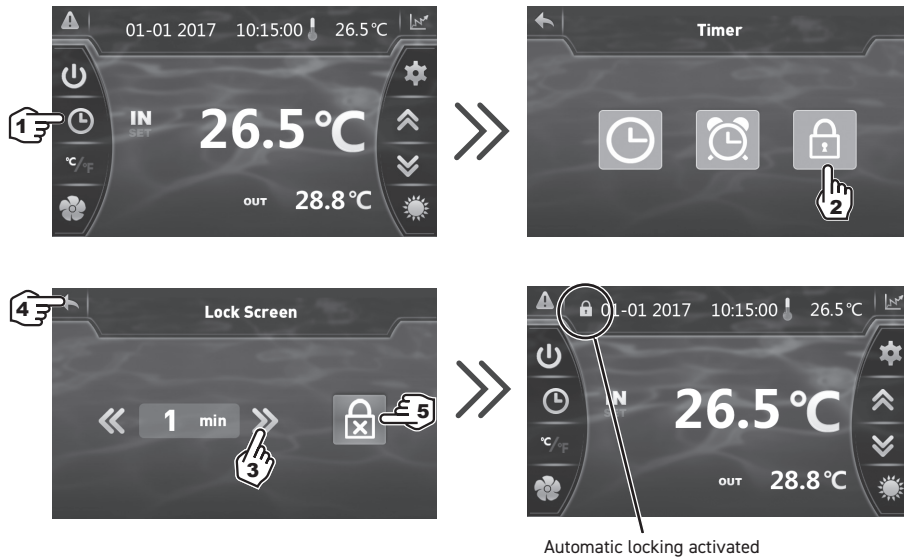
The timer switch is governed by hour intervals.



- » Once the start time has been set, press (step 6) to activate the Timer. The symbol and time now have blue highlighting.
- » Repeat steps 3 to 6 to set and activate the stop time (00:00)
- » When the settings are complete, the operating range of the heat pump is highlighted in green and the highlight range is yellow.
- » Press twice on to return to the main screen.

4. USER INTERFACE


4.5 Locking and Unlocking the Touch Screen

The control screen locks automatically after one minute (default setting). It is possible to adjust the time before the screen locks automatically to between 1 and 10 minutes, or simply to cancel this function.



3. Set the time to between 1 and 10 minutes. Saving is automatic.
4. Press  twice to return to the main screen.
5. To deactivate automatic locking press .



To unlock the screen, press (anywhere) on the screen for 2 seconds.
Enter the code "22" and confirm by pressing .

4. USER INTERFACE

4.6 SILENT Function Settings

Silence mode enables the heat pump to be used in economic and very silent mode when the heating needs are low (maintaining the pool temperature or need for ultra-silent operation). This function can be Activated/Deactivated manually or using a Timer.

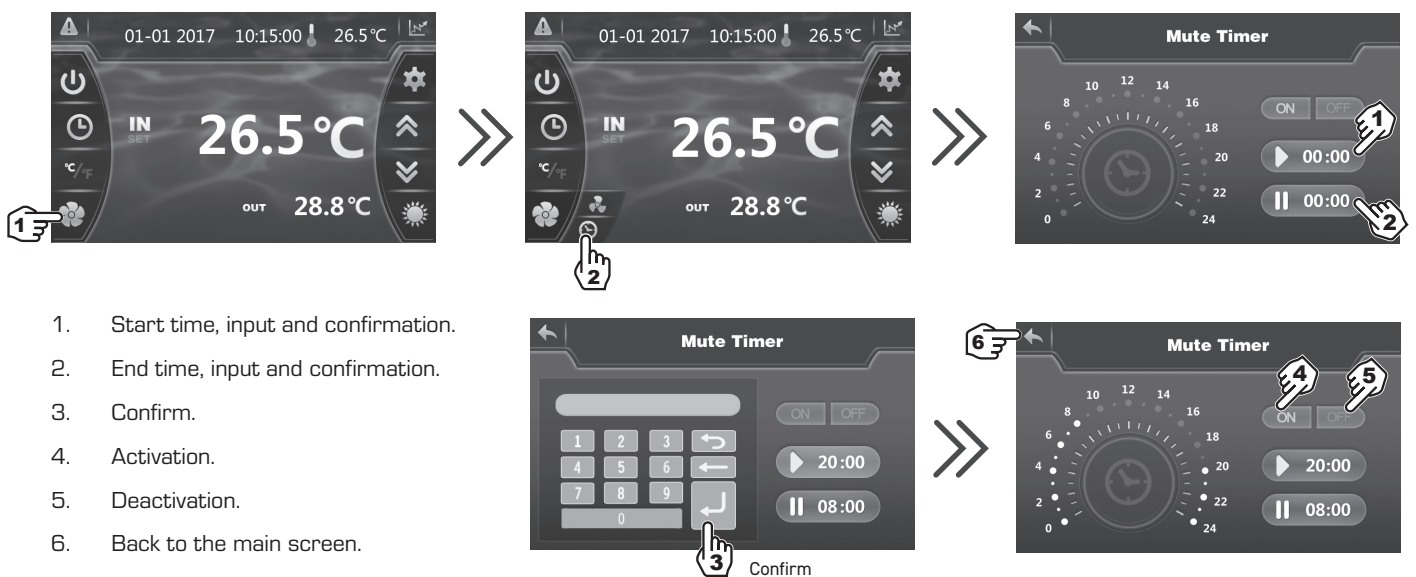
MANUAL ACTIVATION



MANUAL DEACTIVATION



SETTING THE TIMER



1. Start time, input and confirmation.
2. End time, input and confirmation.
3. Confirm.
4. Activation.
5. Deactivation.
6. Back to the main screen.

The timer switch is governed by hour intervals.
Once the Timer is activated, it is active 7 days a week

5. MAINTENANCE AND WINTERISING

5.1 Maintenance

These maintenance operations must be carried out by a professional once per year in order to guarantee the longevity and the good working condition of the heat pump.

- » Clean the coil with the help of a soft brush or jet of air or water (**Warning, never use a high pressure cleaner**).
- » Verify that the drains flow well.
- » Verify the tightening of the hydraulic and electrical connections.
- » Verify there are no leaks from the condenser.
- » Have the unit checked for refrigeration leaks by an **accredited professional**.

⚠ WARNING – Before any maintenance operation, the heat pump must be isolated from all electrical supplies. The maintenance operations must only be carried out by an accredited qualified professional that is authorised to handle liquid refrigerants.

5.2 Winterising

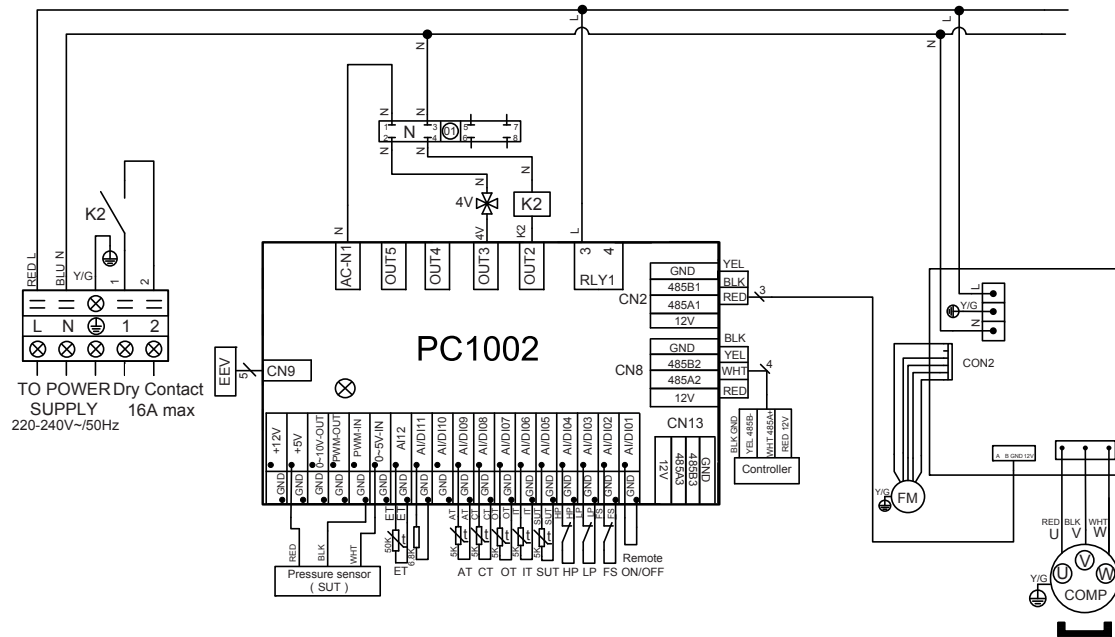
- » Put the heat pump in "OFF" mode.
- » Turn off the power supply to the heat pump.
- » Empty the condenser with the help of the drain to avoid any risk of deterioration (high risk of freezing then cracking).
- » Close the by-pass valve and unscrew the entry/exit connection unions.
- » Eliminate the maximum amount of residual stagnant water from the condenser with the help of an air gun.
- » Close the water entry and exit areas of the heating pump to avoid introducing foreign bodies.
- » Cover the heating pump with a dedicated winterising cover.

⚠ WARNING – Any damage caused by poor winterising maintenance will void the warranty.

6. TECHNICAL DRAWINGS

6.1 Electrical Diagrams

ELPI - 9



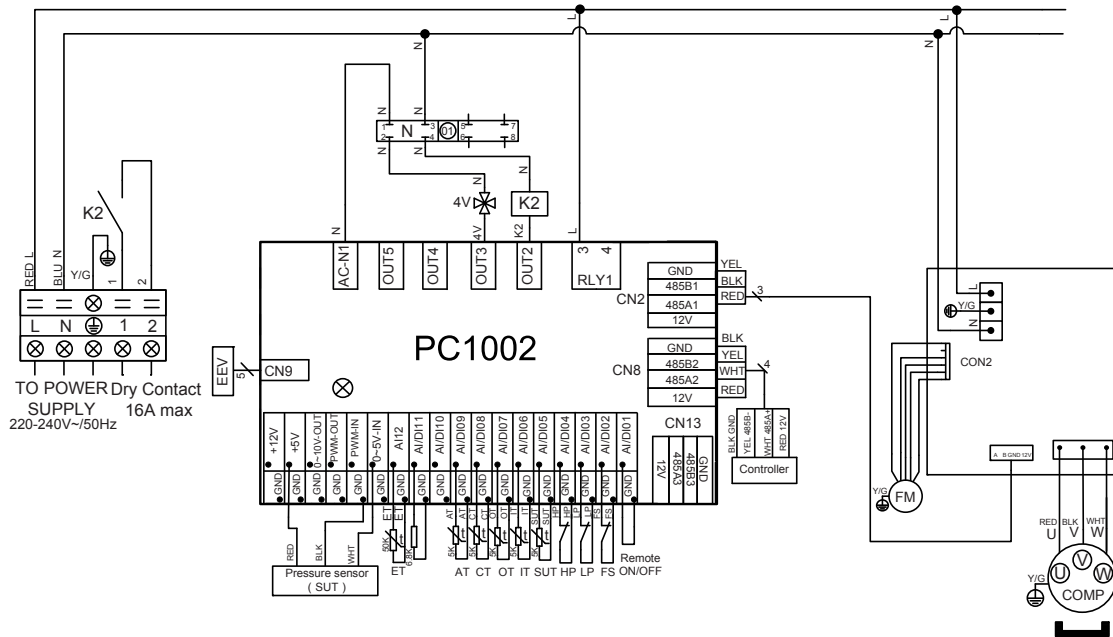
REMARKS:

- | | |
|--------------------------------|-------------------------------------|
| AT: AMBIENT TEMPERATURE SENSOR | IT: WATER INLET TEMPERATURE SENSOR |
| COMP: COMPRESSOR | LP: LOW PRESSURE PROTECTION |
| CT: COIL TEMPERATURE SENSOR | OT: OUTLET WATER TEMPERATURE SENSOR |
| EEV: ELECTRONIC EXPAND VALVE | SUT: SUCTION TEMPERATURE SENSOR |
| ET: EXHAUST TEMPERATURE | 4V: 4 WAYS VALVE |
| FM: FAN MOTOR | OUT2: DRY CONTACT 16 A MAX |
| FS: WATER FLOW SWITCH | REMOTE ON/OFF: REMOTE ON/OFF SWITCH |
| HP: HIGH PRESSURE PROTECTION | |

6. TECHNICAL DRAWINGS

6.1 Electrical Diagrams

ELPI - 12



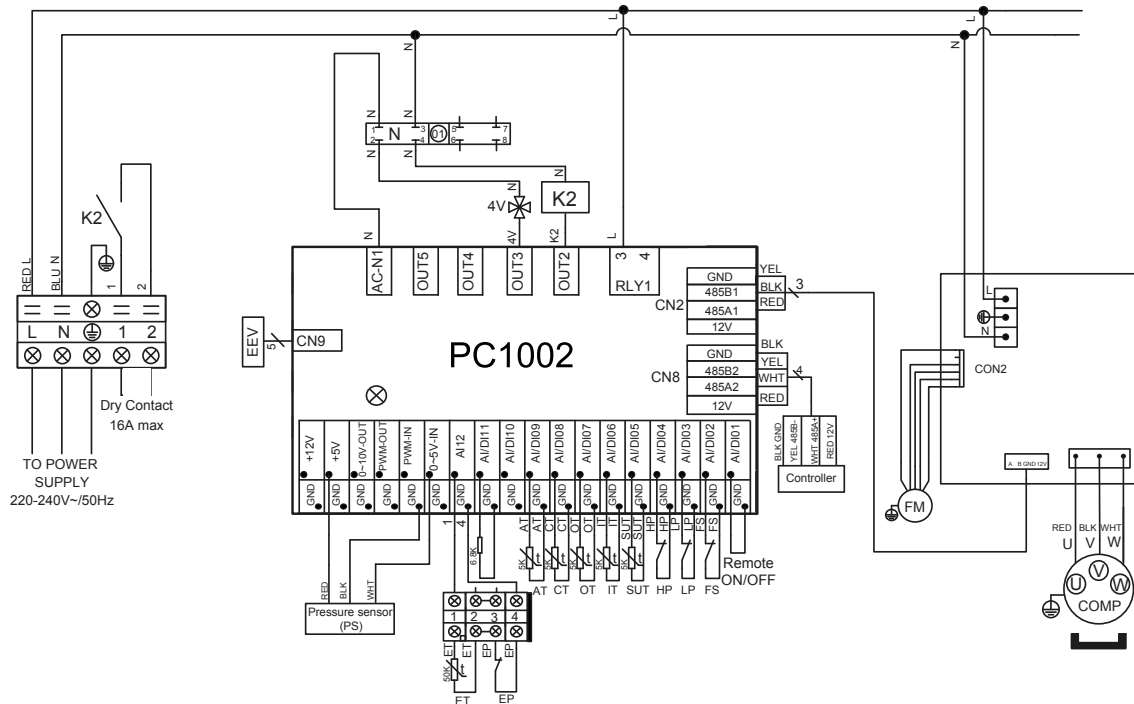
REMARKS:

- | | |
|--------------------------------|-------------------------------------|
| AT: AMBIENT TEMPERATURE SENSOR | IT: WATER INLET TEMPERATURE SENSOR |
| COMP: COMPRESSOR | K2: RELAY OF PUMP |
| CT: COIL TEMPERATURE SENSOR | LP: LOW PRESSURE PROTECTION |
| EEV: ELECTRONIC EXPAND VALVE | OT: OUTLET WATER TEMPERATURE SENSOR |
| ET: EXHAUST TEMPERATURE | SUT: SUCTION TEMPERATURE SENSOR |
| FM: FAN MOTOR | 4V: 4 WAYS VALVE |
| FS: WATER FLOW SWITCH | OUT2: DRY CONTACT 16 A MAX |
| HP: HIGH PRESSURE PROTECTION | REMOTE ON/OFF: REMOTE ON/OFF SWITCH |

6. TECHNICAL DRAWINGS

6.1 Electrical Diagrams

ELPI - 17



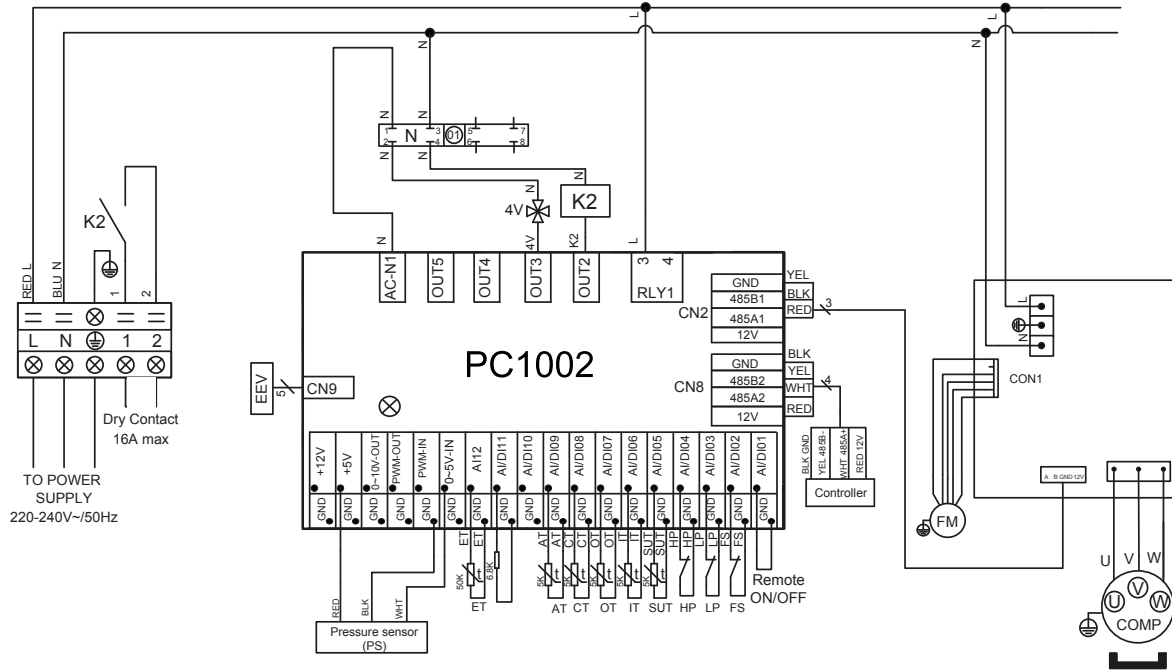
REMARKS:

- | | |
|---|--|
| AT: AIR TEMPERATURE SENSOR | LP: LOW PRESSURE SWITCH |
| COMP: COMPRESSOR | OT: OUTLET WATER TEMPERATURE SENSOR |
| CT: EVAPORATOR TEMPERATURE SENSOR | SUT: SUCTION TEMPERATURE SENSOR |
| EEV: ELECTRONIC EXPANSION VALVE | 4V: 4 WAYS VALVE |
| FM: FAN MOTOR | OUT2: DRY CONTACT 16 A MAX |
| FS: WATER FLOW SWITCH | ET: DISCHARGE TEMPERATURE SENSOR |
| HP: HIGH PRESSURE SWITCH | K2: OUT 2 RELAY |
| IT: WATER INLET TEMPERATURE SENSOR | PS: PRESSURE SENSOR |
| EP: DISCHARGE PROTECTION | REMOTE ON/OFF: REMOTE ON/OFF SWITCH |

6. TECHNICAL DRAWINGS

6.1 Electrical Diagrams

ELPI - 19.5



REMARKS:

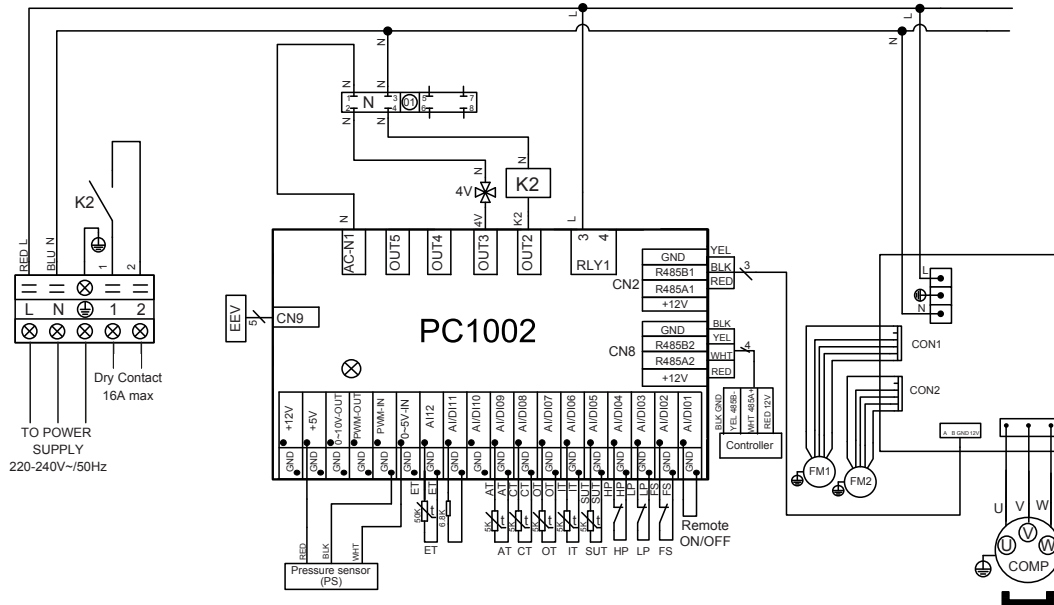
- AT:** AIR TEMPERATURE SENSOR
- COMP:** COMPRESSOR
- CT:** EVAPORATOR TEMPERATURE SENSOR
- EEV:** ELECTRONIC EXPANSION VALVE
- FM:** FAN MOTOR
- FS:** WATER FLOW SWITCH
- HP:** HIGH PRESSURE SWITCH
- IT:** WATER INLET TEMPERATURE SENSOR

- LP:** LOW PRESSURE SWITCH
- OT:** OUTLET WATER TEMPERATURE SENSOR
- SUT:** SUCTION TEMPERATURE SENSOR
- 4V:** 4 WAYS VALVE
- OUT2:** DRY CONTACT 16 A MAX
- ET:** DISCHARGE TEMPERATURE SENSOR
- K2:** OUT 2 RELAY
- PS:** PRESSURE SENSOR
- REMOTE ON/OFF:** REMOTE ON/OFF SWITCH

6. TECHNICAL DRAWINGS

6.1 Electrical Diagrams

ELPI - 24.5



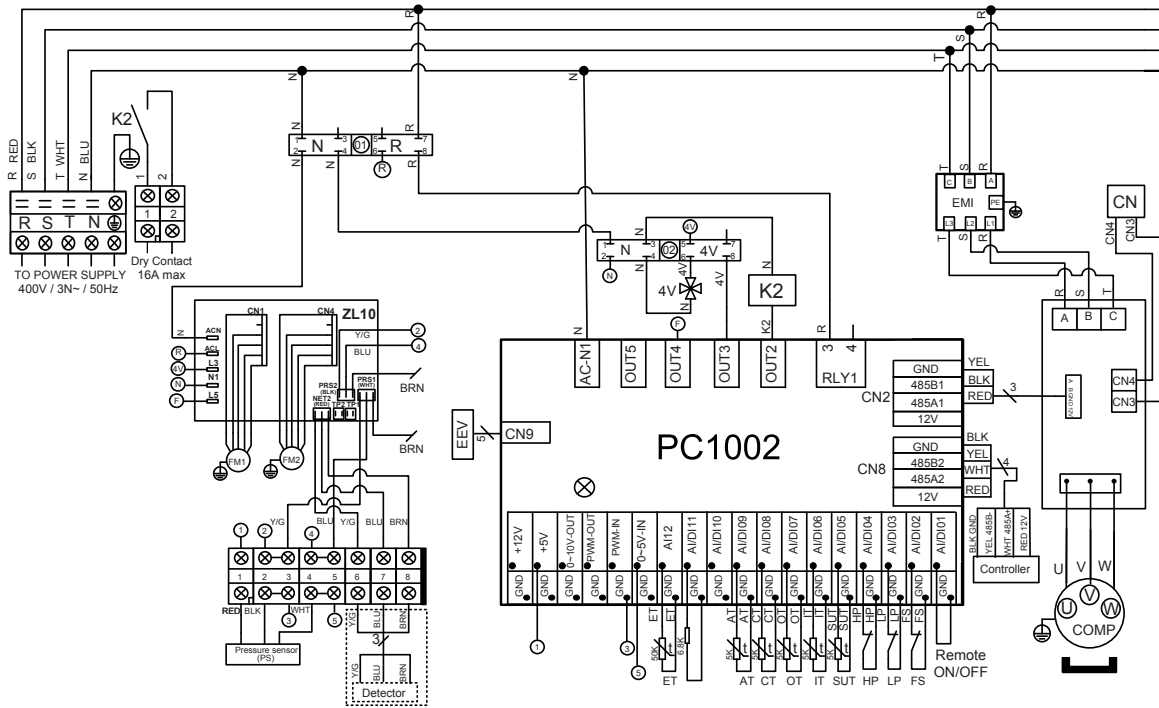
REMARKS:

- | | |
|---|--|
| AT: AIR TEMPERATURE SENSOR | LP: LOW PRESSURE SWITCH |
| COMP: COMPRESSOR | OT: OUTLET WATER TEMPERATURE SENSOR |
| CT: EVAPORATOR TEMPERATURE SENSOR | SUT: SUCTION TEMPERATURE SENSOR |
| EEV: ELECTRONIC EXPANSION VALVE | 4V: 4 WAYS VALVE |
| FM: FAN MOTOR | OUT2: DRY CONTACT 16 A MAX |
| FS: WATER FLOW SWITCH | ET: DISCHARGE TEMPERATURE SENSOR |
| HP: HIGH PRESSURE SWITCH | K2: OUT 2 RELAY |
| IT: WATER INLET TEMPERATURE SENSOR | PS: PRESSURE SENSOR |
| | REMOTE ON/OFF: REMOTE ON/OFF SWITCH |

6. TECHNICAL DRAWINGS

6.1 Electrical Diagrams

ELPI - 29



REMARKS:

- | | |
|---|--|
| AT: AIR TEMPERATURE SENSOR | OT: OUTLET WATER TEMPERATURE SENSOR |
| COMP: COMPRESSOR | SUT: SUCTION TEMPERATURE SENSOR |
| CT: EVAPORATOR TEMPERATURE SENSOR | 4V: 4 WAYS VALVE |
| EEV: ELECTRONIC EXPANSION VALVE | OUT2: DRY CONTACT 16 A MAX |
| FM1-2: FAN MOTOR | ET: DISCHARGE TEMPERATURE SENSOR |
| FS: WATER FLOW SWITCH | K2: OUT 2 RELAY |
| HP: HIGH PRESSURE SWITCH | PS: PRESSURE SENSOR |
| IT: WATER INLET TEMPERATURE SENSOR | ZL10: INVERTER DC FAN BOARD |
| LP: LOW PRESSURE SWITCH | CN: CURRENT REACTOR |
| EMI: PHASE CONTROLLER | REMOTE ON/OFF: REMOTE ON/OFF SWITCH |

6. TECHNICAL DRAWINGS

6.2 Heating Priority Wiring for a Single Phase Pump

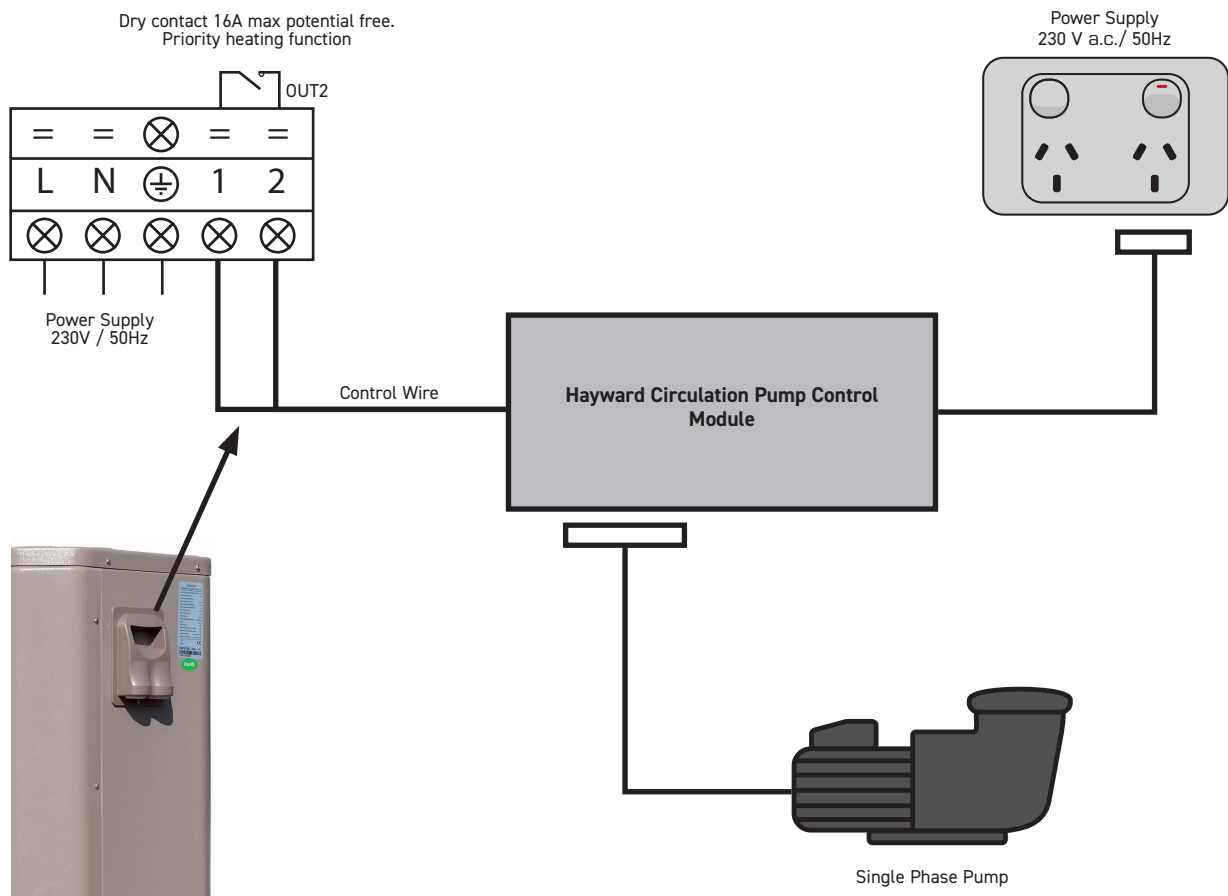
Terminals 1 and 2 deliver a potential-free dry contact, no polarity, rated to 230V 16A max.

The Priority Heat Timer is an integral part of the Heat Pump software and will close the potential Free Dry Contact across terminals 1 and 2 when the unit requires the circulation pump to run. After the Heat Pump has reached set-point temperature, it will stop the circulation pump. It will then start the pump every 1 hour and run it for 2 minutes to check the water temperature.

If the Heat Pump needs to heat the pool, it will automatically keep the pump running until set point is reached and then go back to automatically sampling the water temperature once every hour. If the Heat Pump run time schedule program is in an off cycle, the Heat Pump will not start the circulation pump to check the water temperature.

The Hayward Circulation Pump Control Module can be installed by a Pool Professional before the unit is hard-wired and installed by a qualified electrician. Isolate ALL power feeds to the Heat Pump and then connect the Control Wires to terminals 1 and 2 as shown in the diagram below. The polarity of the connection is not important. Alternatively a qualified electrical contractor can connect the control circuit wires for a pump control contactor to terminals 1 and 2 in accordance with AS/NZS 3000 Wiring Rules Latest Edition.

⚠ WARNING – Never connect the power supply of the filtration pump directly to terminals 1 and 2.



6. TECHNICAL DRAWINGS

6.3 Heating Priority Wiring for a Three Phase Pump

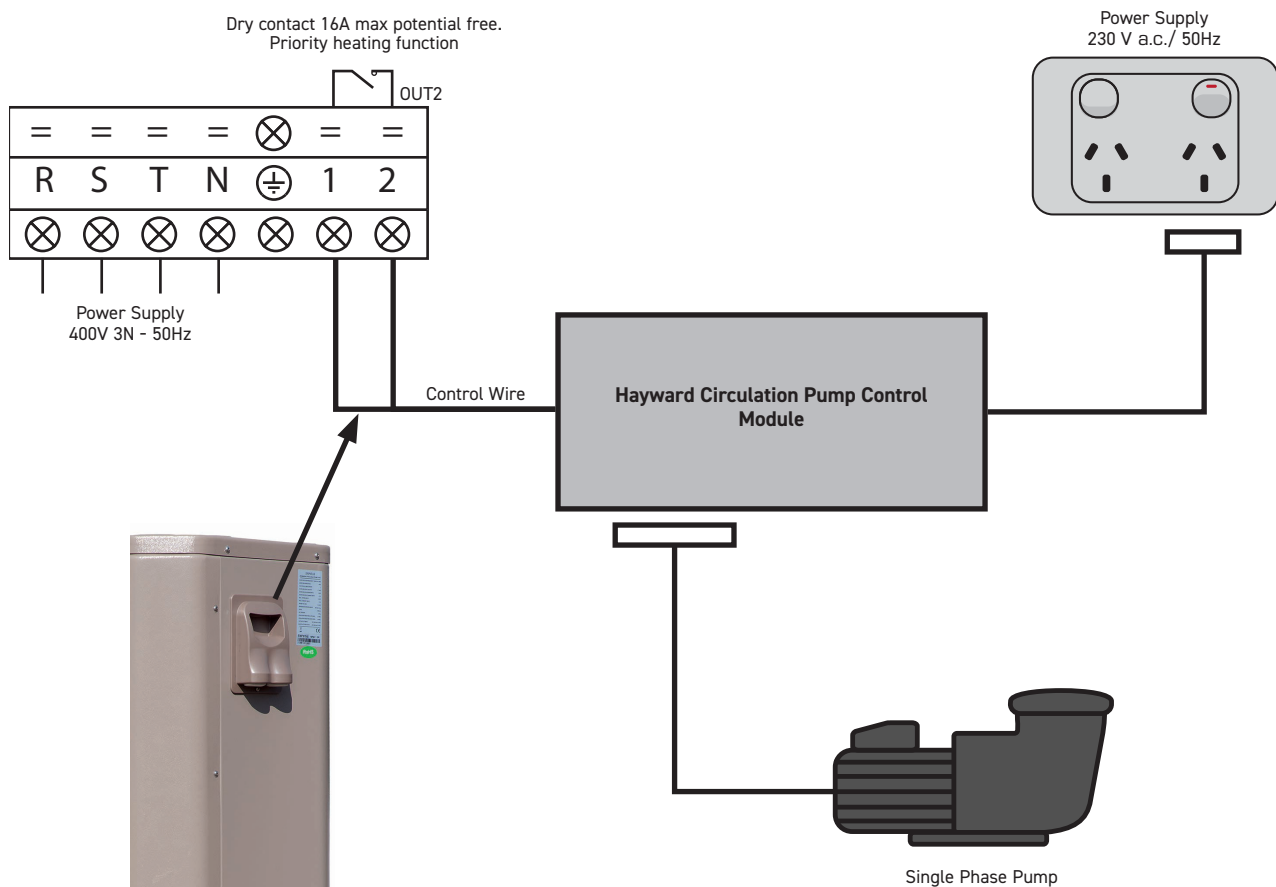
Terminals 1 and 2 deliver a potential-free dry contact, no polarity, rated to 230V 16A max.

The Priority Heat Timer is an integral part of the Heat Pump software and will close the potential Free Dry Contact across terminals 1 and 2 when the unit requires the circulation pump to run. After the Heat Pump has reached set-point temperature, it will stop the circulation pump. It will then start the pump every 1 hour and run it for 2 minutes to check the water temperature.

If the Heat Pump needs to heat the pool, it will automatically keep the pump running until set point is reached and then go back to automatically sampling the water temperature once every hour. If the Heat Pump run time schedule program is in an off cycle, the Heat Pump will not start the circulation pump to check the water temperature.

The Hayward Circulation Pump Control Module can be installed by a Pool Professional before the unit is hard-wired and installed by a qualified electrician. Isolate ALL power feeds to the Heat Pump and then connect the Control Wires to terminals 1 and 2 as shown in the diagram below. The polarity of the connection is not important. Alternatively a qualified electrical contractor can connect the control circuit wires for a pump control contactor to terminals 1 and 2 in accordance with AS/NZS 3000 Wiring Rules Latest Edition.

⚠ WARNING – Never connect the power supply of the filtration pump directly to terminals 1 and 2.



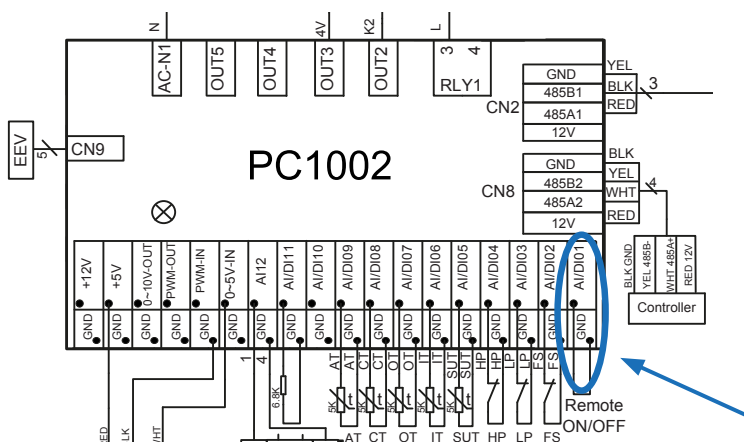
6. TECHNICAL DRAWINGS

6.4 Wiring the Heat Pump to a Control Unit

The information below are instructions on how to connect the Hayward EnergyLine Pro Heat Pumps to the Hayward OmniLogic Swimming Pool Control System and the Hayward AquaRite+ AU Chlorinator:

⚠ WARNING – Electrical installation and wiring for this equipment must be in conformity with Local/State/Federal wiring regulations and must be in accordance with AS/NZS 3000 Latest Edition.

⚠ WARNING – Always isolate all power supplies before opening the electrical control box.



The OmniLogic has the ability, when it is configured and installed correctly, to control pool/spa water heaters by utilising one or more (if controlling multiple heaters) of its Low Voltage Relays (LV1 to LV4 which are Dry Contacts) to maintain the desired water temperature.

The AquaRite+ AU with the Temperature Upgrade Kit installed, has the ability to (when it is configured and installed correctly) control a pool/spa water heater by utilising the AUX 4 Dry Contact to maintain the desired water temperature.

This drawing to the right is of the main PCB that is in all models of the EnergyLine Pro Heat Pumps and is located under the top panel of the unit and inside the main electrical box.

This oval is highlighting the DIO1 and GND terminals on the digital input terminal block. As standard it has a jumper wire between the two terminals.

To Connect the Heat Pump to the OmniLogic or AquaRite+:

1. Acquire a length of two core x 0.75mm² cable that has double insulation, rated for 250V and for outdoor use as per the Australian Wiring Rules AS/NZS 3000 latest edition. Ensure that it is long enough to reach between the Controller and EnergyLine Pro Heat Pump. Do not use speaker wire or telephone cable even though this is an SELV circuit.
2. Run one end of the cable in through the side access panel on the heat pump and up into the main electrical box.
3. Remove the jumper wire connecting the two terminals DIO1 & GND, and with the ends of the two core cable stripped back, insert one into the terminal DIO1 and the other into terminal GND.
4. It does not matter which colour wire goes into which terminal because when the other end of the cable is connected to the LV relay terminal on the Control System, and it wants the Heat Pump to start, the relay contact is closed which creates the same circuit between the terminals as the jumper wire which was just removed.
5. Refer to the OmniLogic/AquaRite+ Installation and Operation Manuals for how to connect to the LV relay and how to configure the unit to control a heater.
6. Once the OmniLogic/AquaRite+ has been configured correctly, turn on the power isolator to the heat pump and set the temperature to the maximum set point (38 °C) in heating mode.

How It Works

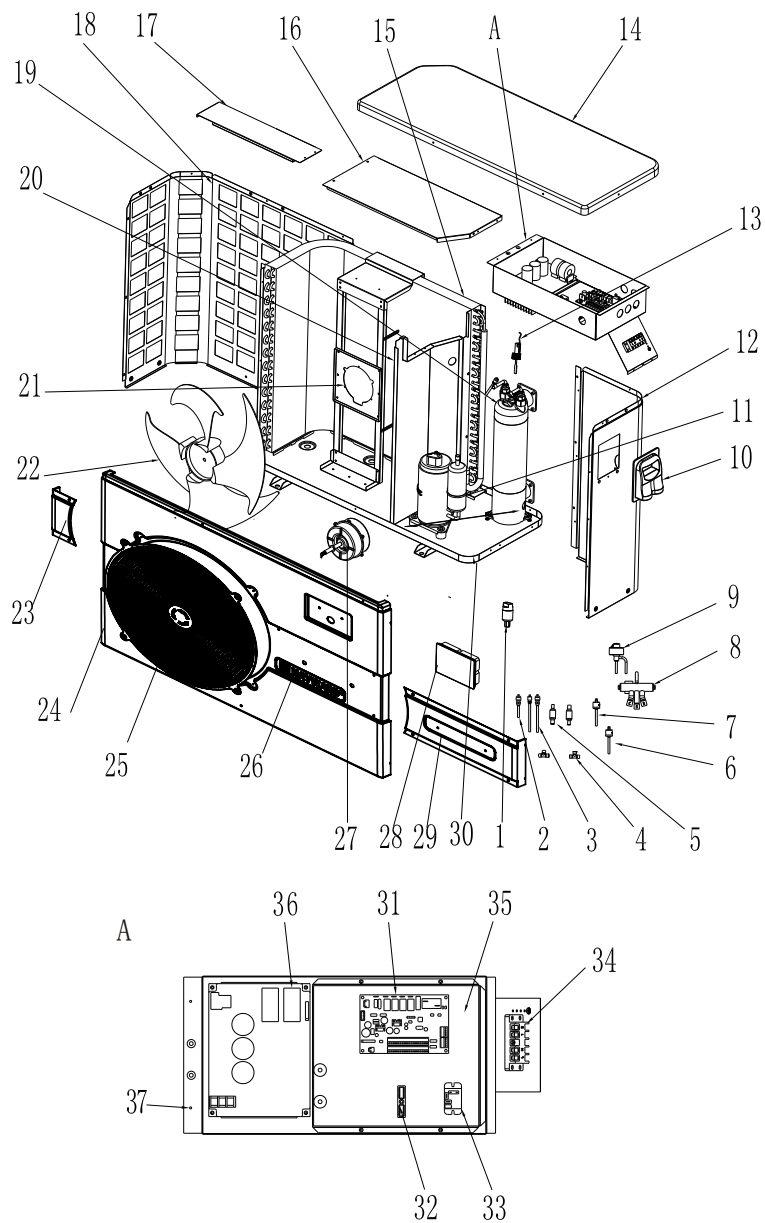
When the System Controller calls for heat, it will close its assigned LV relay which in turn closes the circuit between DIO1 & GND on the Heat Pump main PCB PC1002. When the System Controller senses that the water temperature has reached the set point temperature it will open its assigned LV relay which opens the circuit between DIO1 & GND on the Heat Pump main PCB PC1002. The heat pump will then go through its shutdown sequence and wait for the circuit to be closed again to start.

If you should have any questions or need help, please call your local Hayward Technical Support on 1300POOLS1.

6. TECHNICAL DRAWINGS

6.5 Exploded View and Spare Parts

ELPI - 9



6. TECHNICAL DRAWINGS

6.5 Exploded View and Spare Parts

ELPI - 9

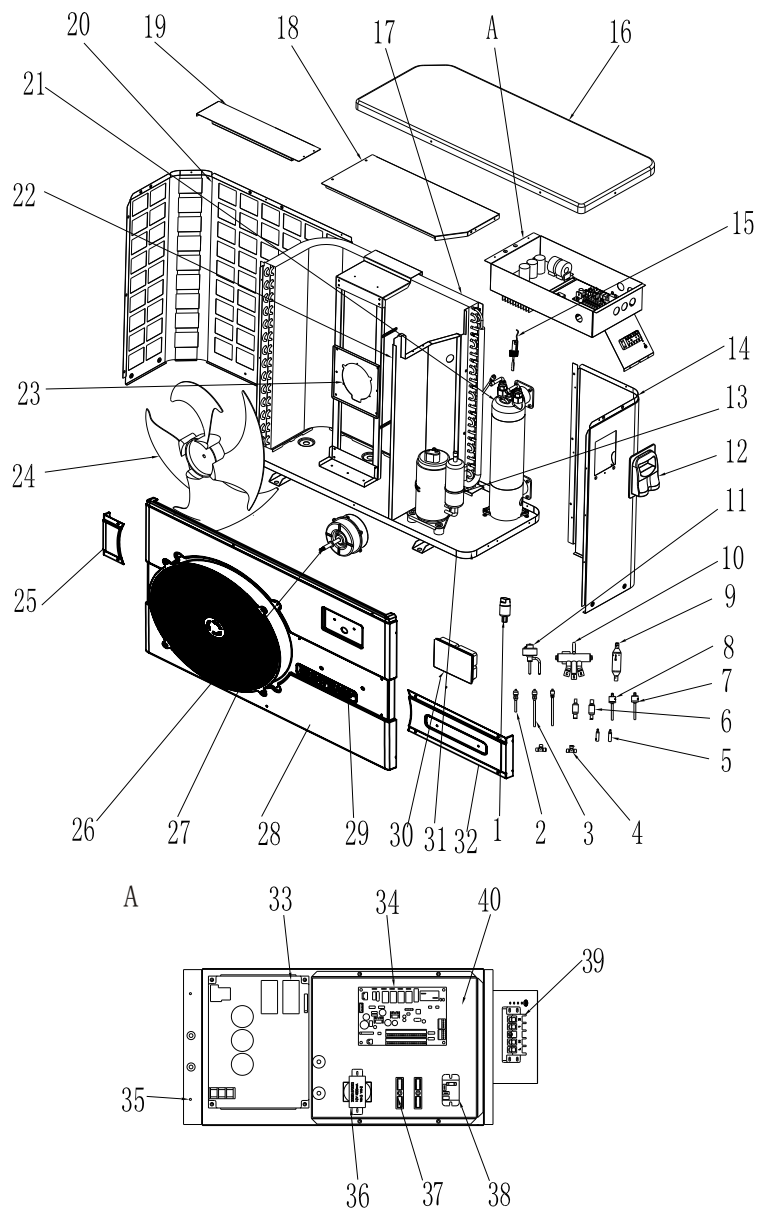
Mark	Ref.	Description	Mark	Ref.	Description
1	HWX20000360123	Pressure Sensor	26	HWX20000230596	Hayward Logo
2	HWX20000140512	Pressure Tap 95mm 7/16"	27	HWX20000330132	DC Fan Motor
3	HWX20000140150	Pressure Tap 40mm 1/2"	28	HWX95005310612	Colour Touchscreen
4	HWX20001460	Tee	29	HWX30109020120011	Right Decorative Panel
5	HWX20041444	Filter $\phi 9.7 - \phi 9.7$	30	HWX30107020120016	Chassis
6	HWX20013605	High Pressure Switch	31	HWX95053156905	PC1002
7	HWX20000360157	Low Pressure Switch	32	HWX20003909	Terminal Board (2 bit)
8	HWX20011418	4-Way Valve and Fittings	33	HWX20000360203	Relay
9	HWX20000140456	Electronic Expansion Valve	34	HWX40003901	Terminal Board (5 bit)
10	HWX32009220029	Black Electrical Access Cover	35	HWX32012210497	Scale Board
11	HWX20000110332	Inverter DC Compressor	36	HWX20000310178	Inverter DC Board
12	HWX30107020120018	Right Panel	37	HWX32012210496	Electrical Box
13	HWX200036005	Flow Switch	*38*	HWX20003242	Finned Coil/Air/Water Temp Sensor
14	HWX32012210489	Top Cover	*39*	HWX20003223	Compressor Sensor 50k Ω
15	HWX32008120076	Finned Coil			
16	HWX32012210494	Electrical Box Cover			
17	HWX32012210493	Supporting Panel			
18	HWX30107020120017	Left Panel			
19	HWX32008120076	Titanium/PVC Condenser			
20	HWX30107020120019	Centre Wall			
21	HWX32012210570	Motor Bracket			
22	HWX20000270004	Fan Blade			
23	HWX30109020120010	Left Decorative Panel			
24	HWX30109020120009	Front Panel			
25	HWX20000220169	Fan Protection Grille			

Note: The *xx* markers are not indicated on the corresponding exploded view.

6. TECHNICAL DRAWINGS

6.5 Exploded View and Spare Parts

ELPI - 12



6. TECHNICAL DRAWINGS

6.5 Exploded View and Spare Parts

ELPI - 12

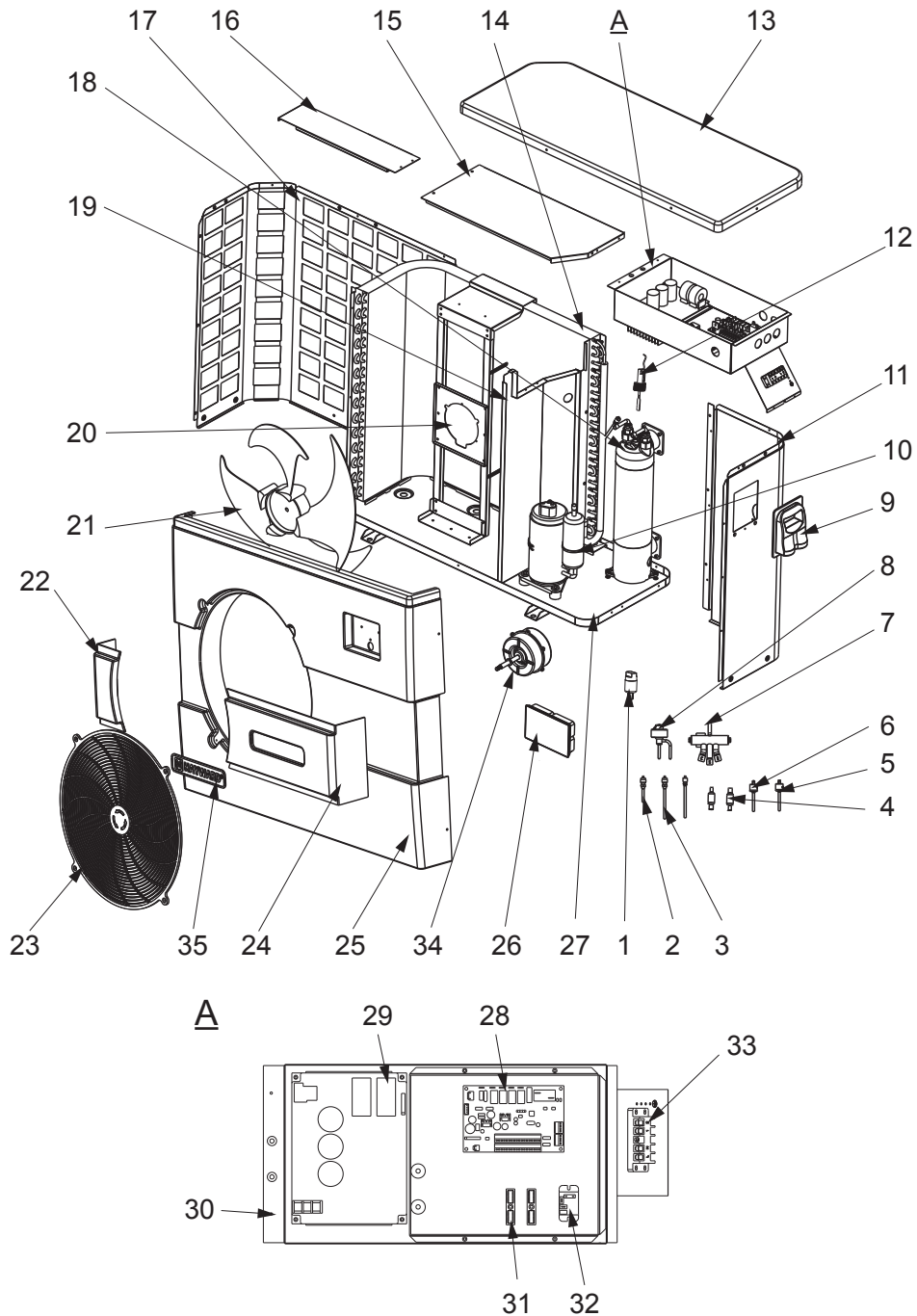
Mark	Ref.	Description	Mark	Ref.	Description
1	HWX20000360123	Pressure Sensor	25	HWX30109020120010	Left Decorative Panel
2	HWX20000140153	Pressure Tap 90mm 1/2"	26	HWX20000330132	DC Fan Motor
3	HWX20000140512	Pressure Tap 95mm 7/16"	27	HWX20000220169	Fan Protection Grille
4	HWX20001453	Tee	28	HWX30109020120009	Front Panel
5	HWX20000140066	Reducer - Straight	29	HWX20000230596	Hayward Logo
6	HWX20041444	Filter $\phi 9.7 - \phi 9.7$	30	HWX95005310612	Colour Touchscreen
7	HWX20013605	High Pressure Switch	31	HWX30107020120016	Chassis
8	HWX20000360157	Low Pressure Switch	32	HWX30109020120011	Right Decorative Panel
9	HWX20011499	Check Valve	33	HWX20000310170	Inverter DC Board
10	HWX20041437	4 Way Valve and Fittings	34	HWX95053156906	PC1002
11	HWX20000140449	Electronic Expansion Valve	35	HWX32012210496	Electrical Box
12	HWX32009220032	Black Electrical Access Cover	36	HWX20000370044	Power Transformer
13	HWX20000110227	Inverter DC Compressor	37	HWX20003909	Terminal Board (2 Bit)
14	HWX30107020120018	Right Panel	38	HWX20003619	Relay
15	HWX200036005	Flow Switch	39	HWX40003901	Terminal Board (5 Bit)
16	HWX32012210489	Top Cover	40	HWX32012210497	Scale Board
17	HWX32012120109	Finned Coil	*41*	HWX20003242	Finned Coil/Air/Water Temp Sensor
18	HWX32012210494	Electrical Box Cover	*42*	HWX20003223	Compressor Sensor 50k Ω
19	HWX32012210493	Support Panel			
20	HWX30107020120017	Left Panel			
21	HWX32012120114	Titanium/PVC Condensor			
22	HWX30107020120019	Centre Wall			
23	HWX32012210570	Motor Bracket			
24	HWX20000270004	Fan Blade			

Note: The *xx* markers are not indicated on the corresponding exploded view.

6. TECHNICAL DRAWINGS

6.5 Exploded View and Spare Parts

ELPI - 17



6. TECHNICAL DRAWINGS

6.5 Exploded View and Spare Parts

ELPI - 17

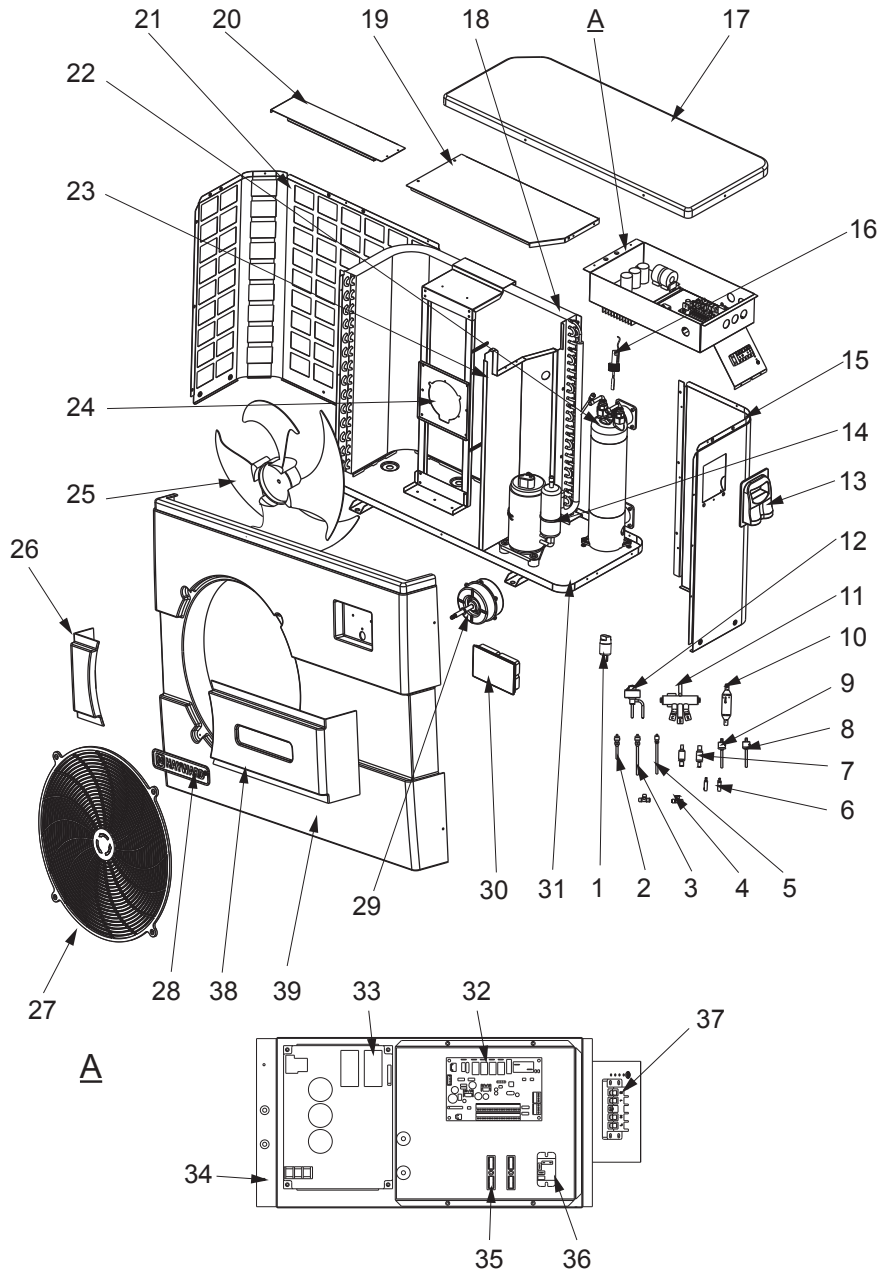
Mark	Ref.	Description	Mark	Ref.	Description
1	HWX20000360123	Pressure Sensor	28	HWX95053156901	PCB Board
2	HWX20000140512	Pressure Tap 95mm 7/16"	29	HWX20000310170	Inverter DC Board
3	HWX20000140150	Pressure Tap 40mm 1/2"	30	HWX32009210392	Electrical Box
4	HWX20041444	Filter $\varnothing 9.7 - \varnothing 9.7$	31	HWX20003909	2-Point Terminal Block
5	HWX20000360157	Low Pressure Switch	32	HWX20000360203	Relay
6	HWX20013605	High Pressure Switch	33	HWX40003901	Terminal Block 5 Connections
7	HWX20041437	4 Ways Valve	34	HWX20000330132	DC Fan Motor
8	HWX20000140346	Electronic Expansion Valve	35	HWX20000230596	HAYWARD Logo
9	HWX32008220008	Black Electric Access Cover	*36*	HWX20003242	Finned Coil/Air/Water Temp Sensor
10	HWX20000110217	Inverter DC Compressor	*37*	HWX20003223	Compressor Sensor 50 k Ω
11	HWX32009210389	Right Panel	*38*	HWX20000240216	Wintering Cover
12	HWX200036005	Flow Switch			
13	HWX32018210127	Top Cover			
14	HWX32009120046	Finned Coil			
15	HWX32018210115	Electrical Box Cover			
16	HWX32018210114	Support Panel			
17	HWX32009210391	Left Panel			
18	HWX32009120045	Titanium/PVC Condenser			
19	HWX32009210390	Centre Wall			
20	HWX32018210113	Motor Bracket			
21	HWX20000270004	Fan Blade			
22	HWX32009220084	Left Decorative Panel			
23	HWX20000220169	Fan Protection Grille			
24	HWX32009220085	Right Decorative Panel			
25	HWX32009220083	Front Panel			
26	HWX95005310612	Colour Touchscreen			
27	HWX32009210394	Chassis			

Note: The *xx* markers are not indicated on the corresponding exploded view.

6. TECHNICAL DRAWINGS

6.5 Exploded View and Spare Parts

ELPI - 19.5



6. TECHNICAL DRAWINGS

6.5 Exploded View and Spare Parts

ELPI - 19.5

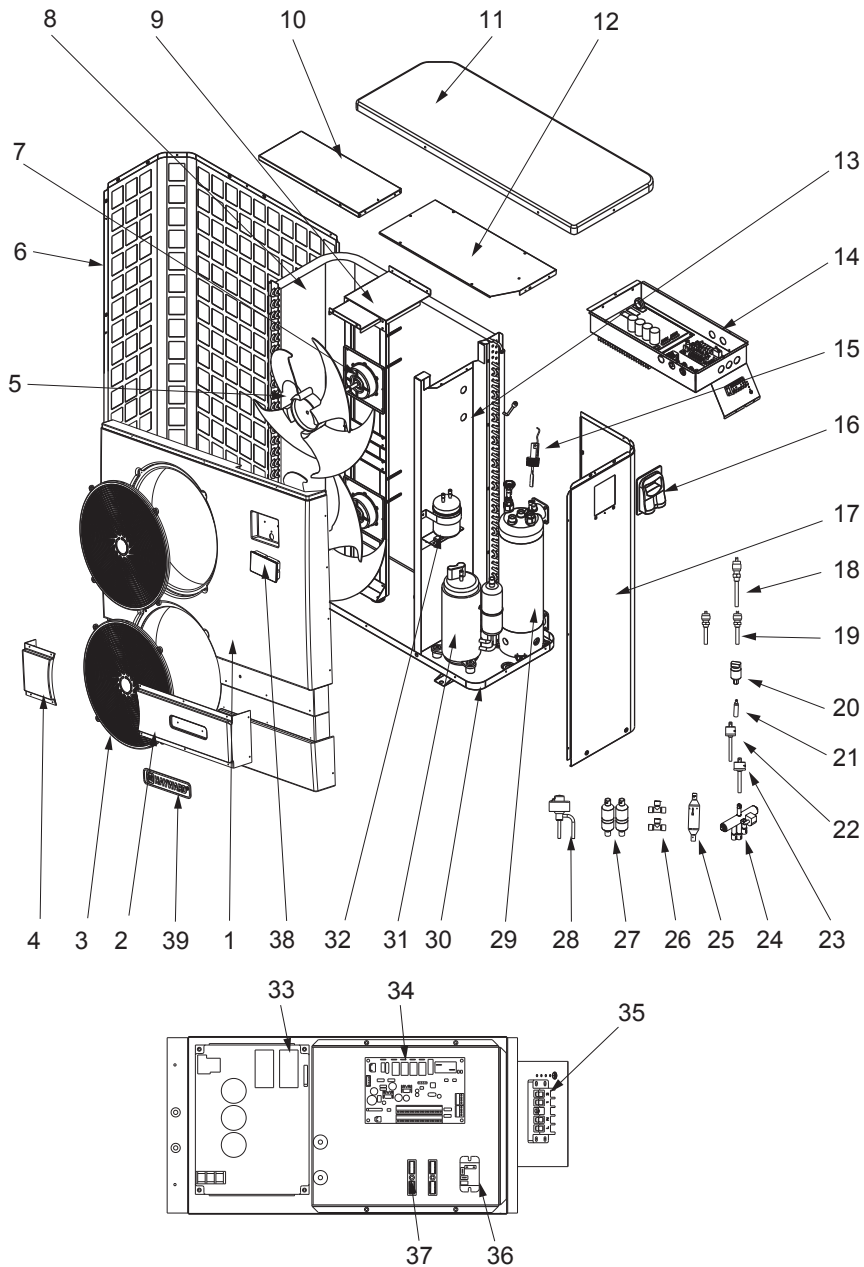
Mark	Ref.	Description	Mark	Ref.	Description
1	HWX20000360123	Pressure Sensor	26	HWX32009220084	Left Decorative Panel
2	HWX20000140512	Pressure Tap 95mm 7/16"	27	HWX20000220169	Fan Protection Grille
3	HWX20000140150	Pressure Tap 40mm 1/2"	28	HWX20000230596	HAYWARD Logo
4	HWX20001435	Connector Tee \varnothing 9.7mm x 3	29	HWX20000330132	DC Fan Motor
5	HWX20000140150	Pressure Tap 40mm 1/2"	30	HWX95005310612	Colour Touchscreen
6	HWX20000140143	Reducer \varnothing 9.52 - \varnothing 2.9	31	HWX32018210157	Chassis
7	HWX200041444	Filter \varnothing 9.7 - \varnothing 9.7	32	HWX95053156902	PCB Board
8	HWX20000360157	Low Pressure Switch	33	HWX20000310165	Inverter DC Board
9	HWX20013605	High Pressure Switch	34	HWX32018210108	Electrical Box
10	HWX20011499	Check Valve	35	HWX20003909	2-Point Terminal Block
11	HWX20011491	4 Ways Valve	36	HWX20000360203	Relay
12	HWX20000140450	Electronic Expansion Valve	37	HWX40003901	Terminal Block 5 Connections
13	HWX32008220008	Black Electric Access Cover	38	HWX32009220085	Right Decorative Panel
14	HWX20000110289	Inverter DC Compressor	39	HWX32009220083	Front Panel
15	HWX32018210121	Right Panel	*40*	HWX20003242	Finned Coil/Air/Water Temp Sensor
16	HWX200036005	Flow Switch	*41*	HWX20003223	Compressor Sensor 50 k Ω
17	HWX32018210127	Top Cover	*42*	HWX20000240216	Wintering Cover
18	HWX32018120021	Finned Coil			
19	HWX32018210115	Electrical Box Cover			
20	HWX32018210114	Support Panel			
21	HWX32018210122	Left Panel			
22	HWX32019120013	Titanium/PVC Condenser			
23	HWX32018210158	Centre Wall			
24	HWX32018210113	Motor Bracket			
25	HWX20000270004	Fan Blade			

Note: The *xx* markers are not indicated on the corresponding exploded view.

6. TECHNICAL DRAWINGS

6.5 Exploded View and Spare Parts

ELPI - 24.5



6. TECHNICAL DRAWINGS

6.5 Exploded View and Spare Parts

ELPI - 24.5

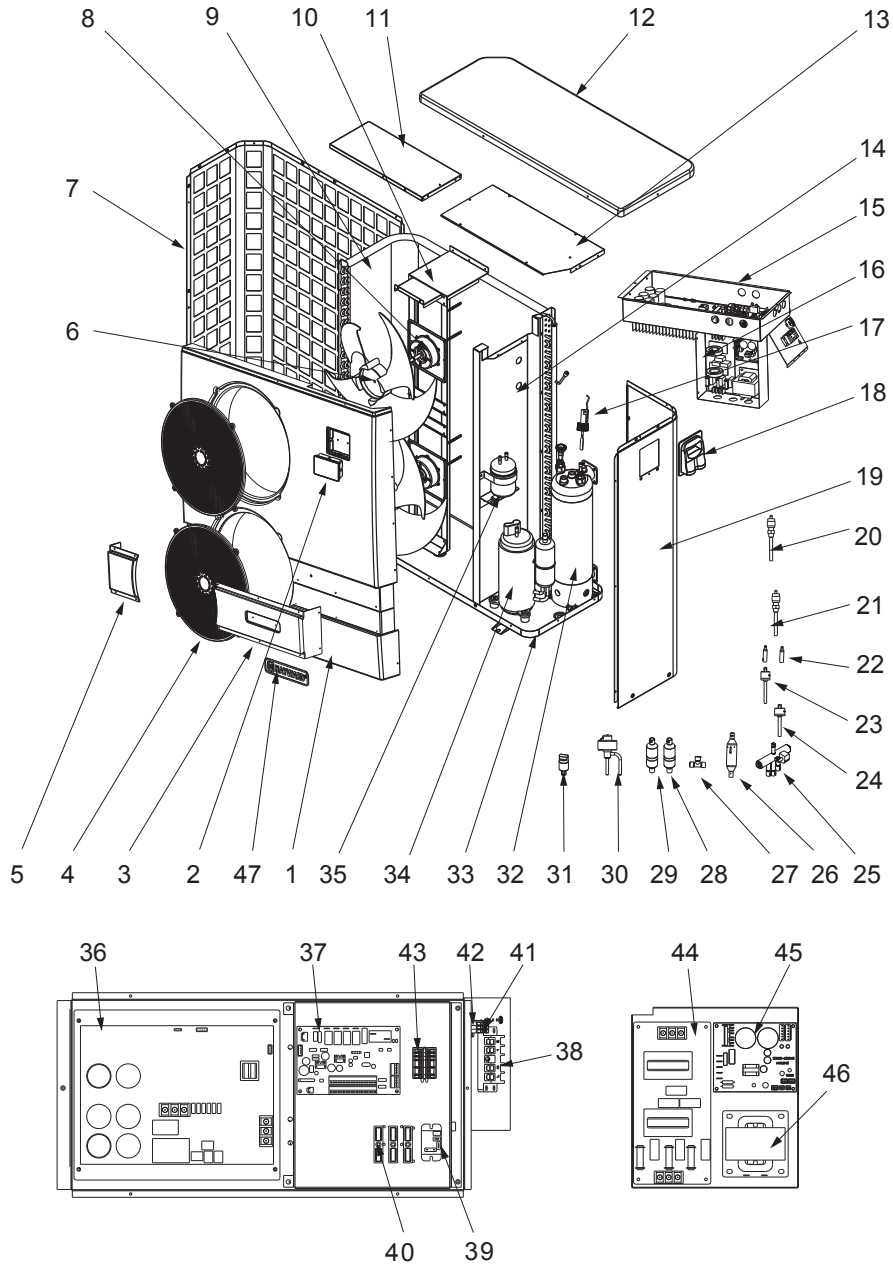
Mark	Ref.	Description	Mark	Ref.	Description
1	HWX32019220093	Front Panel	26	HWX20001435	Connector Tee $\varnothing 9.7\text{mm} \times 3$
2	HWX32019220095	Right Decorative Panel	27	HWX20041444	Filter $\varnothing 9.7 - \varnothing 9.7$
3	HWX20000220169	Fan Protection Grille	28	HWX20000140401	Electronic Expansion Valve
4	HWX32019220094	Left Decorative Panel	29	HWX32019120014	Titanium/PVC Condenser
5	HWX20000270004	Fan Blade	30	HWX32019210124	Chassis
6	HWX32019210110	Left Panel	31	HWX20000110296	Inverter DC Compressor
7	HWX20000330132	DC Fan Motor	32	HWX20000140579	Liquid Tank
8	HWX32019120008	Finned Coil	33	HWX20000310165	Inverter DC Board
9	HWX32019210063	Motor Bracket	34	HWX95053156903	PCB Board
10	HWX32019210070	Support Panel	35	HWX40003901	Terminal Block 5 Connections
11	HWX32018210127	Black ABS Upper Panel	36	HWX20000360203	Relay
12	HWX32019210071	Electrical Box Cover	37	HWX20003909	2-Point Terminal Block
13	HWX32019210123	Centre Wall	38	HWX95005310612	Colour Touchscreen
14	HWX32019210072	Electrical Box	39	HWX20000230596	HAYWARD Logo
15	HWX200036005	Flow Switch	*40*	HWX20003242	Finned Coil/Air/Water Temp Sensor
16	HWX32009220029	Black Electric Access Cover	*41*	HWX20003223	Compressor Sensor 50 k Ω
17	HWX32019210125	Right Panel	*42*	HWX20000240216	Wintering Cover
18	HWX20000140512	Pressure Tap 95mm 7/16"			
19	HWX20000140150	Pressure Tap 40mm 1/2"			
20	HWX20000360123	Pressure Sensor			
21	HWX20000140143	Reducer $\varnothing 9.52 - \varnothing 2.9$			
22	HWX20013605	High Pressure Switch			
23	HWX20000360157	Low Pressure Switch			
24	HWX20011491	4 Ways Valve			
25	HWX20011499	Check Valve			

Note: The *xx* markers are not indicated on the corresponding exploded view.

6. TECHNICAL DRAWINGS

6.5 Exploded View and Spare Parts

ELPI - 29



6. TECHNICAL DRAWINGS

6.5 Exploded View and Spare Parts



ELPI - 29

Mark	Ref.	Description	Mark	Ref.	Description
1	HWX32019220093	Front Panel	26	HWX20011499	Check Valve
2	HWX95005310612	Colour Touchscreen	27	HWX20001435	Connector Tee $\varnothing 9.7\text{mm} \times 3$
3	HWX32019220095	Right Decorative Panel	28	HWX20041444	Filter $\varnothing 9.7 - \varnothing 9.7$
4	HWX32018220169	Fan Protection Grille	29	HWX20000140027	Filter
5	HWX32019220094	Left Decorative Panel	30	HWX20000140401	Electronic Expansion valve
6	HWX20000270004	Fan Blade	31	HWX20000360123	Pressure Sensor
7	HWX32019210126	Left Panel	32	HWX32015120015	Titanium/PVC Condenser
8	HWX20000330132	DC Fan Motor	33	HWX32019210124	Chassis
9	HWX32019120012	Finned Coil	34	HWX20000110341	Inverter DC Compressor
10	HWX32019210063	Motor Bracket	35	HWX20000140579	Liquid Tank
11	HWX32019210070	Support Panel	36	HWX20000310179	Inverter DC Board
12	HWX32018210127	Top Cover	37	HWX95053156904	PCB Board
13	HWX32019210071	Electrical Box Cover	38	HWX20000390180	Terminal Block 5 Connections
14	HWX32015210026	Centre Wall	39	HWX20000360203	Relay
15	HWX32019210105	Horizontal Electrical Box	40	HWX20003909	2-point Terminal Block
16	HWX32019210098	Vertical Electrical Box	41	HWX20000390049	MSB Terminal 2.5 F
17	HWX200036005	Flow Switch	42	HWX20000390048	MSDB Terminal 2.5 M
18	HWX32009220029	Black Electric Access Hatch	43	HWX20000390046	MSB Terminal 2.5 M
19	HWX32015210025	Right Panel	44	HWX20000310180	EMC Filter
20	HWX20000140512	Pressure Tap 95mm 7/16"	45	HWX95005310377	Ventilator Inverter card
21	HWX20000140150	Pressure Tap 40mm 1/2"	46	HWX20000310200	Inductance
22	HWX20000140143	Reducer $\varnothing 9.52 - \varnothing 2.9$	47	HWX20000230596	HAYWARD Logo
23	HWX20013605	High Pressure Switch	*48*	HWX20003242	Finned Coil/Air/Water Temp Sensor
24	HWX20000360157	Low Pressure Switch	*49*	HWX20003223	Compressor Sensor 50 k Ω
25	HWX20011491	4 Ways Valve	*50*	HWX20000240216	Wintering Cover


Note: The *xx* markers are not indicated on the corresponding exploded view.

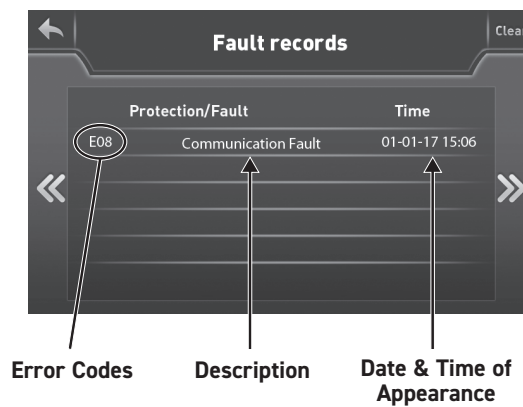
7. TROUBLESHOOTING

7.1 Error Codes

If there is a fault on the heat pump, the symbol  appears blinking red in the left hand corner of the screen. Press the symbol  to access the list of errors. Refer to the Error Code Table on page 41 to associate the error code given to the problem and its solution

Once the problem has been resolved the error is cancelled automatically and the triangle changes to solid grey.

To delete the error list, press on **Clean** then return to the previous screen by pressing on .



7. TROUBLESHOOTING

7.1 Error Codes

Problem	Error codes	Description	Solution
Water inlet sensor fault	P01	The sensor is open or has short-circuited.	Check the AI/DI06 connections on the PCB or replace the sensor
Water outlet sensor fault	P02		Check the AI/DI07 connections on the PCB or replace the sensor
Outside temperature sensor fault	P04		Check the AI/DI09 connections on the PCB or replace the sensor
De-icing sensor fault	P05		Check the AI/DI08 connections on the PCB or replace the sensor
Compressor aspiration sensor defect	P07		Check the AI/DI05 connections on the PCB or replace the sensor
6.8 kΩ resistance fault	P09		Check the AI/DI11 connections on the PCB or replace the sensor
Compressor discharge sensor fault	P081		Check the AI/DI12 connections on the PCB or replace the sensor
High pressure protection	E01	The sensor is open or has short-circuited.	Check the AI/DI04 connections on the PCB or replace the sensor
			Check the water flow
			Check the water flow switch
			Check the valve opening
			Check the by-pass
			Check the finned coil is not clogged
			Water temperature too hot
			Incondensable problem after maintenance, empty and evacuate the cooling circuit
Refrigerant load too high, remove fluid into a liquid bottle			
Low pressure protection	E02	The sensor is open or has short-circuited.	Check the AI/DI03 connections on the card or replace the sensor
			Large gas leak, search for the leak with the detector
			Air flow too low, check the ventilator rotation speed
			Check the Finned Coil is not clogged, clean its surface
Flow sensor fault	E03	The sensor is open or has short-circuited.	Check the AI/DI02 connections on the card or replace the sensor
			Lack of water, check the filtration pump operation
			Check the stop valve opening
			Check the by-pass adjustment
Input/Output temperature difference > 13°C	E06	Applicable in Cooling mode only	Lack of water, check the filtration pump operation
			Check the stop valve opening
			Check the by-pass adjustment
Antifreeze protection Cooling mode	E07	Water output temperature < 4°C	Stop the heat pump, empty the condenser risk of freezing
Communication problem	E08	No communication between the parent electronic card and the Inverter card	Check the connections (see electrical diagram)
Level 1 antifreeze protection	E19	2° < Water temperature < 4° and Air temperature < 0°	Stop heat pump operation, empty the condenser to avoid freezing, by default the heat pump starts the filtration pump to avoid icing over
Level 2 antifreeze protection	E29	Water temperature < 2° and Air temperature < 0°	Stop heat pump operation, empty the condenser to avoid freezing, by default the heat pump starts the filtration pump and the heat pump to avoid icing over.
Pressure sensor fault	PP	The sensor is open or short-circuiting	Check the connections see electrical diagram

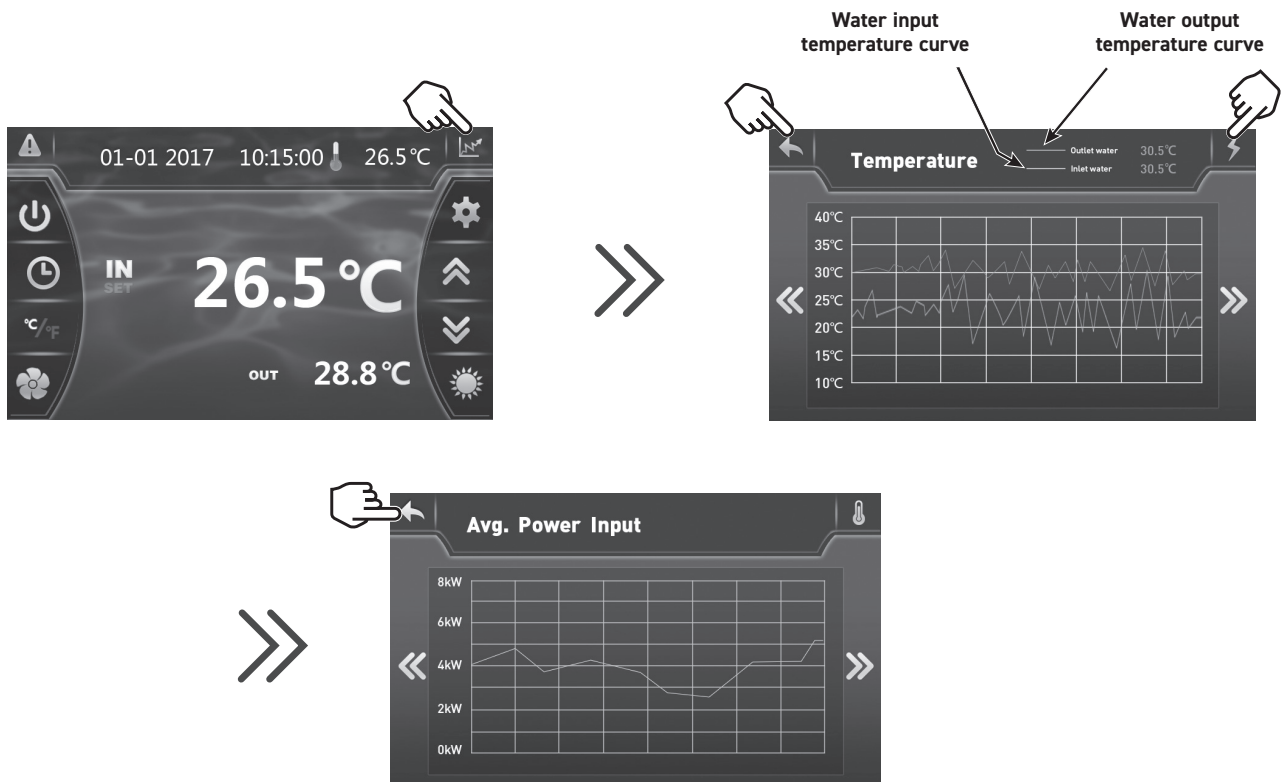
7. TROUBLESHOOTING

7.2 Recording Base

From the main screen, press on  to access the history of water input and output temperature recordings.

This data is available for 60 days.

Press on  to access the average electric power consumed and press on  to return to the main screen.



7.3 Warranty

STANDARD CONDITIONS - Australia and New Zealand Hayward Pool Products (Australia) Pty Ltd (ABN 083 413 414) ("Hayward Pool Products (Australia)") distributes Hayward Pool Products in Australia and New Zealand and provides the following warranties:

STATUTORY RIGHTS

1. The benefits to the consumer under this warranty are in addition to other rights and remedies of the consumer under the laws in relation to the goods and services to which the warranty relates; and
2. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You may be entitled to a replacement or refund for a major failure and for compensation for any other loss or damage. You are also entitled to have the goods repaired if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

LIMITED WARRANTY

Hayward Pool Products (Australia) warrants that its products are free from defects in materials and manufacture for 12 months from date of supply by Hayward Pool Products (Australia) plus 90 days to allow for installation and supply (unless otherwise specified). Hayward Pool Products (Australia) will at its discretion, except in the circumstances described below, either repair or replace any product proven to be defective during the warranty period for either materials of manufacture or alternatively pay the cost of repair or replacement within 90 days of the receipt of the defective product, barring unforeseen delays.

7. TROUBLESHOOTING

7.3 Warranty

This warranty is for domestic installation only, is personal to the original purchaser and does not pass to any subsequent purchaser(s).

- To the extent permitted by law, Hayward Pool Products (Australia) will not be liable for products which fail or become defective during the warranty period as a result of freezing, accident, negligence, improper installation, water chemistry, misuse, tampering or lack of care.
- To the extent permitted by law, except as set out in this Warranty, Hayward Pool Products (Australia) excludes all statutory or implied conditions and warranties and any other liability it may have to the Customer (including liability for indirect consequential loss) that may arise under statute or at law including without limitation for breach of contract, in tort (including negligence) or under any other cause of action.
- To the extent permitted by law, except as set out in this Warranty, Hayward Pool Products (Australia) limits its liability under any condition or warranty which cannot be legally excluded in relation to the supply of Goods and Services to:
 1. Repairing the Goods;
 2. Replacing the Goods or supplying equivalent Goods or Services again;
 3. Paying the cost of replacing the Goods or of supplying equivalent Goods or Services again; or
 4. Paying the costs of repairing the Goods.

Claims made for warranty, labour or infield support will not be accepted by Hayward Pool Products unless evidence is provided that installation has been completed in accordance with standard warranty conditions. Please refer to specific program document for details.

WHAT TO DO IF YOU HAVE A WARRANTY CLAIM

The faulty product is to be returned to the place of purchase, or where installed by an approved agent to an authorised warranty agent. No returns will be received directly from end consumers by Hayward Pool Products (Australia). You are responsible for arranging removal of the defective product and arranging installation of the repaired or replacement product, all transportation (and any applicable insurance costs) of transporting the product to the supplier and transporting the replaced or repaired product from the supplier. All returns are subject to Hayward Pool Products (Australia)'s written approval and must be accompanied by either:

1. A Field Inspection Report authorised by the Local Customer Service Manager or Authorised Agent; or
2. A "Return Goods Authorisation" form obtained from Hayward Pool Products (Australia) prior to shipment.

UNAUTHORISED RETURNS WILL NOT BE ACCEPTED

- All Hayward Pool Products (Australia) warranty parts taken as an across the counter warranty exchange must be held for inspection authorisation has been given by the Local Branch Customer Service Manager to dispose of them. Hayward Pool Products (Australia) reserves the right to provide replacement or credit for any items authorised under this warranty program.
- All claims must be accompanied by a copy of original purchase receipt, clearly stating date of purchase. All serial numbers must place the product within the warranty period or a proof of purchase is required. No claims in respect of the product can be made after the expiration of the warranty period.

Warranty service requests can be faxed to:
Hayward Pool Products (Australia) Pty Ltd.
Fax: 1300 POOLS2 (1300 766571)
Or submitted to your local Hayward Pool Products (Australia)
Branch Office.

A standard form is available to request warranty service. We will require:

- Installation contact information including address, daytime telephone numbers, home phone number, email etc.
- Complete model and serial number.
- Proof of purchase (if the serial number was manufactured > 1 year ago).
- Evidence that purchase and Installation was completed in one transaction, by the one business or organisation.
- Nature of problem including specific faults and error codes.

**To determine if you are eligible for an extended warranty register your Hayward pool products
online today at:**

www.hayward-pool.com.au



Hayward Pool Products (Australia) Pty Ltd.
Melbourne-Sydney-Brisbane-Perth

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