

HOUSE OF

# DURATECH

innovative pool products

## Manual

DURA-V10  
DURA-V15  
DURA-V20

DURA-V11i  
DURA-V15i  
DURA-V20i



HEAT Dura V / Vi

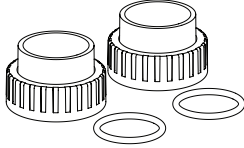
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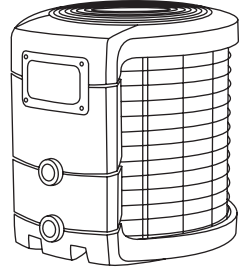
# DURAHEAT

# Box content

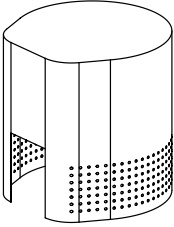
Connection clamps



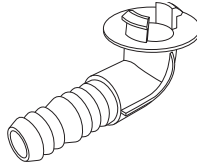
Heat pump Dura V or Vi



Wintercover



Drain pipe(Condens Flux)

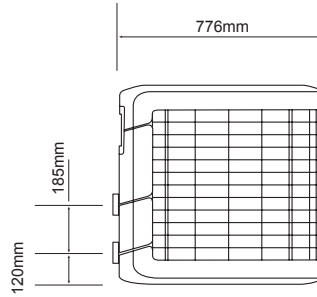
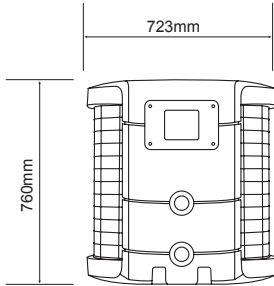


Manual

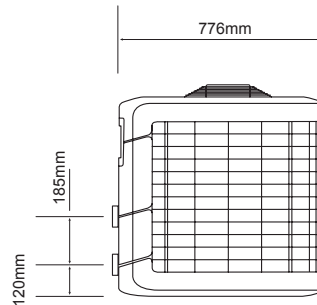
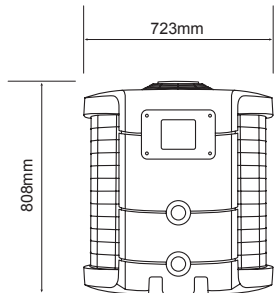


# Dimensions

DURA-V10 / DURA-V15 / Dura-V20

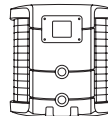
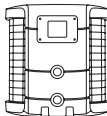


DURA-V11i / DURA-V15i / Dura-V20i



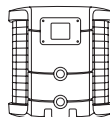
# 1. Specifications

## 1.1 Performance data Dura V



UNIT		DURA-V10	DURA-V15
Advised Pool volume*	m <sup>3</sup>	40	60
Operating air temperature	°C	-10 ~ 40	
<i>Air 27°C / Water 26°C / Humidity 80%</i>			
Heating Capacity	kW	10,93	16,26
	Btu	37295	55481
Consumed power	kW	1,17	2,17
COP		9,38	7,48
<i>Air 15°C / Water 26°C / Humidity 70%</i>			
Heating Capacity	kW	8,12	12,79
	Btu	27707	43641
Consumed power	kW	1,3	2,52
COP		6,26	5,07
Power supply		230V / 50Hz / 1 Phase	
Electronic Controller		Duralink ready with colour LCD	
Nominal Running current	A	6	11
Max Current	A	12	18
Condensor		Titanium Heat Exchanger / NoFrost	
Compressor quantity		1	1
Compressor type		Rotary	Rotary
Refrigerant		R32	
Refrigerant weight	kg	1,110	1,410
Pressure gauge		Display	
Fan quantity		1	1
Fan power input	W	120	120
Fan rotary speed	RPM	700 - 900	700 - 900
Fan direction		Vertical	
Noise at 10m	dB(A)	23 - 43	24 - 43
Water connection	mm	63	63
Water flow range	m <sup>3</sup> /h	3 - 20	5 - 20
Unit net dimensions (L*W*H)	mm	See the drawing of the units	
Unit shipping dimensions (L*W*H)	mm	See package label	
Net weight	kg	See nameplate	
Shipping weight	kg	See package label	

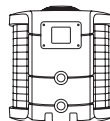
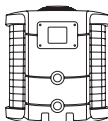
\* Advised pool volume for an entirely insulated pool, with cover, free from wind and exposed to the sun.



UNIT		DURA-V20
Advised Pool volume*	m <sup>3</sup>	80
Operating air temperature	°C	-10 ~ 40
<i>Air 27°C / Water 26°C / Humidity 80%</i>		
Heating Capacity	kW	19,74
	Btu	67356
Consumed power	kW	2,325
COP		8,49
<i>Air 15°C / Water 26°C / Humidity 70%</i>		
Heating Capacity	kW	14,8
	Btu	50500
Consumed power	kW	2,52
COP		5,87
Power supply		230V / 50Hz / 1 Phase
Electronic Controller		Duralink ready with colour LCD
Nominal Running current	A	12
Max Current	A	22
Condensor		Titanium Heat Exchanger / NoFrost
Compressor quantity		1
Compressor type		Rotary
Refrigerant		R32
Refrigerant weight	kg	1,645
Pressure gauge		Display
Fan quantity		1
Fan power input	W	120
Fan rotary speed	RPM	700 - 900
Fan direction		Vertical
Noise at 10m	dB(A)	24 - 43
Water connection	mm	63
Water flow range	m <sup>3</sup> /h	7 - 20
Unit net dimensions (L*W*H)	mm	See the drawing of the units
Unit shipping dimensions (L*W*H)	mm	See package label
Net weight	kg	See nameplate
Shipping weight	kg	See package label

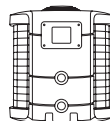
\* Advised pool volume for an entirely insulated pool, with cover, free from wind and exposed to the sun.

## 1.2 Performance data Dura Vi



UNIT		DURA-V11i	DURA-V15i
Advised Pool volume**	m <sup>3</sup>	30 - 60	40 - 75
Operating air temperature	°C	-10 ~ 40	
<i>Air 27°C / Water 26°C / Humidity 80%</i>			
Heating Capacity	kW	3,0 - 11,4	4,0 - 16,0
	Btu	11601 - 38898	13990 - 51523
Consumed power	kW	0,185 - 1,1	0,2 - 2,6
COP		14,2 - 9,0	13,7 - 7,1
<i>Air 15°C / Water 26°C / Humidity 70%</i>			
Heating Capacity	kW	2,1 - 8,8	11,8
	Btu	30027	40263
Consumed power	kW	0,275 - 1,5	0,2 - 2,9
COP		7,3 - 5,7	7,7 - 4,9
Power supply		230V / 50Hz / 1 Phase	
Electronic Controller		Duralink ready with colour LCD	
Nominal Running current	A	1,2 - 13,0	2,0 - 13,0
Max Current	A	16	16
Condensor		Titanium Heat Exchanger / NoFrost	
Compressor quantity		1	1
Compressor type		Rotary	Rotary
Refrigerant		R32	
Refrigerant weight	kg	0,880	1,050
Pressure gauge		Display	
Fan quantity		1	1
Fan power input	W	120	120
Fan rotary speed	RPM	700 - 900	700 - 900
Fan direction		Vertical	
Noise at 10m	dB(A)	25 - 49	27 - 47
Water connection	mm	63	63
Water flow range	m <sup>3</sup> /h	3 - 20	4 - 20
Unit net dimensions (L*W*H)	mm	See the drawing of the units	
Unit shipping dimensions (L*W*H)	mm	See package label	
Net weight	kg	See nameplate	
Shipping weight	kg	See package label	

\*\* Advised pool volume for an entirely insulated pool, with cover, free from wind and exposed to the sun. In case the pool volume is close to the maximum value, the inverter heatpump will nearly always run at full power



UNIT		DURA-V20i
Advised Pool volume**	m <sup>3</sup>	50 - 95
Operating air temperature	°C	-10 ~ 40
<i>Air 27°C / Water 26°C / Humidity 80%</i>		
Heating Capacity	kW	4,5 - 20,0
	Btu	19108 - 68243
Consumed power	kW	0,32 - 3,6
COP		13,7 - 6,2
<i>Air 15°C / Water 26°C / Humidity 70%</i>		
Heating Capacity	kW	4 - 17,5
	Btu	53912
Consumed power	kW	0,7 - 3,6
COP		7,3 - 4,6
Power supply		230V / 50Hz / 1Phase
Electronic Controller		Duralink ready with colour LCD
Nominal Running current	A	1,8 - 17
Max Current	A	20
Condensor		Titanium Heat Exchanger / NoFrost
Compressor quantity		1
Compressor type		Rotary
Refrigerant		R32
Refrigerant weight	kg	1,510
Pressure gauge		Display
Fan quantity		1
Fan power input	W	120
Fan rotary speed	RPM	700 - 900
Fan direction		Vertical
Noise at 10m	dB(A)	23 - 46
Water connection	mm	63
Water flow range	m <sup>3</sup> /h	5 - 20
Unit net dimensions (L*W*H)	mm	See the drawing of the units
Unit shipping dimensions (L*W*H)	mm	See package label
Net weight	kg	See nameplate
Shipping weight	kg	See package label

\*\* Advised pool volume for an entirely insulated pool, with cover, free from wind and exposed to the sun. In case the pool volume is close to the maximum value, the inverter heatpump will nearly always run at full power

## 2. Preface

In order to provide our customers with a high quality and reliability, 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 can not be held responsible if someone is injured or the unit is damaged, as a result of improper installation or maintenance. It is vital that the instructions within this manual are adhered to at all times. The unit must be installed by qualified person.

The heat pump will always perform very well, provided the following elements are present

1. Fresh air



2. Electricity



3. Swimming pool water



## 3. Safety information

Please read these instructions carefully before using the heat pump and keep them for future reference:

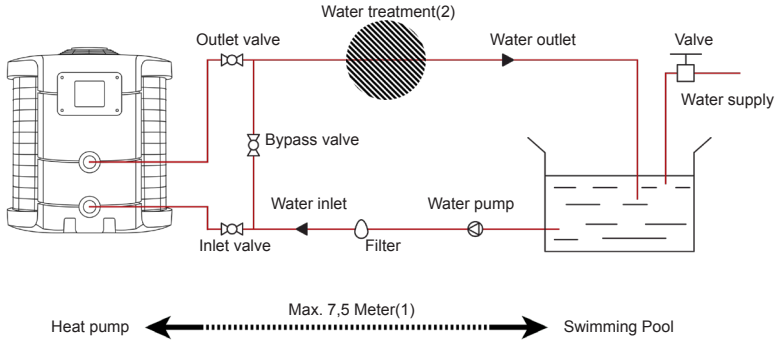
1. Always keep the unit upright. If the unit has been tilted or put on its side, wait 24h before starting the heat pump.
2. Put the unit on a flat, solid base. Tilting the heat pump for max 3° is accepted.
3. Do not drop the heat pump.
4. The heat pump must always be installed outdoors.
5. Check if the voltage indicated on the heat pump corresponds to the local mains voltage before you connect the unit. Please find more information about the electrical connection in section 4.4
6. Do not pull any electrical cable, sensor or tubing with unnecessary force.
7. Do not wrap any cable around the heat pump.
8. Do not use the heat pump in combination with a transformer.
9. If the heat pump is damaged during transportation, it must be replaced, please contact your service centre or similarly qualified persons in order to avoid a hazard.
10. Always make sure the water connections of the heat pump are properly locked before you start using the machine.
11. Make sure the flow sensor is installed properly after maintenance.
12. Never insert objects directly into the fan, as this will cause it to become blocked and damaged.
13. The evaporator fins must not be damaged.
14. This heat pump is not intended for use by persons 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 heat pump by a person responsible for their safety.
15. Children should always be supervised to ensure that they do not play with the heat pump.
16. Disconnect electricity when the heat pump is not in use and before cleaning.
17. The heat pump should be serviced only by qualified service person. Contact your nearest authorized service facility for examination, repair or adjustment.
18. If the supply cord is damaged, it must be replaced by the manufacturer or your service agent or similarly qualified person in order to avoid a hazard.
19. Please contact your dealer if your swimming pool heat pump is not working properly. There might be a leakage when the heat pump does not heat the swimming pool water. The R32 refrigerant gas is safe when there is a leakage although fire can occur when a flame, heating device or stove gets in contact with the gas. Stop using your swimming pool heat pump until a qualified service technician has confirmed that the leak has been repaired.
20. Make sure that there is a circuit breaker for the unit, lack of a circuit breaker can lead to electrical shock or fire.
21. 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.
22. The condens water is not suitable for a potable water connection.



## 4. Preparing the heat pump for use

### 4.1 Typical set-up

The factory provides the heat pump, Condens flux, connection kit and winter cover. Other parts, including a contingent by-pass must be provided by the user or installer. The heat pump should be located maximum 7,5m(1) away from the swimming pool. The longer the distance from the pool, the greater the heat loss from the piping.



Put the heat pump on a flat, solid base. Tilting the heat pump for max 3° is allowed. Install silent blocks in order to avoid vibrations and noise.



All feeding of water treatment to the pool water has to be done downstream of the heat pump(2).



It is normal for condens water to come out of the heat pump. This is not a leak or fault with the unit. If the humidity is very high, the condens water could be a number of liters a day. Please find more information about condensation in section 5.2.



Always keep the heat pump in upright position. If the unit has been tilted, then wait 24h before starting the heat pump.



It is recommended to install a by-pass for easy maintenance.

### 4.2 Installation of a check valve

When using automatic chlorine and pH dosage systems, it is of uttermost importance to protect the heat pump from high concentrations of these chemicals that could corrode the heat exchanger after long term use. Therefore, such systems should add the chemicals in the conduits located **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 any of these recommendations will invalidate the warranty.

### 4.3 Installation of the tubing

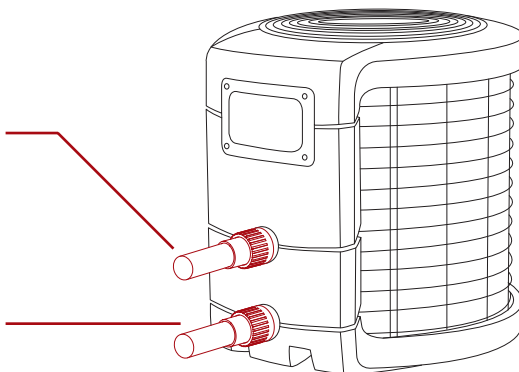
The factory provides the water connecting kit. Other parts, including a contingent by-pass are to be provided by the user or installer. The heat pump should be located maximum 7,5m away from the swimming pool. The longer the distance from the pool, the greater the heat loss from the piping.


#### Water connection from heat pump:

Typical water pipe from heat pump to water treatment system.

#### Water connection to heat pump:

Typical water pipe from filter system to heat pump.





 Please note the outlet flow is equipped with a flow sensor. Therefore the heat pump will only start when the water flow is running in correct direction.

### 4.4 Electrical wiring

Check if the electrical mains voltage corresponds with the operating voltage of the heat pump prior to hooking up the unit. It is recommended to use a separate fuse as well as adequate wiring.

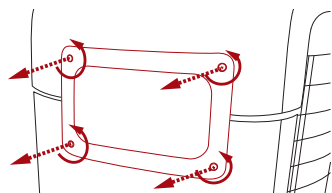
Model	Voltage (V)	Fuse (C-curve)	Max current (A)	Cable section	Max Cable length
DURA-V10	230V / 50Hz	20A(D-class)	8	2,5 mm <sup>2</sup>	15 meter
DURA-V15	230V / 50Hz	20A(D-class)	11	2,5 mm <sup>2</sup>	15 meter
DURA-V20	230V / 50Hz	20A(D-class)	15	2,5 mm <sup>2</sup>	15 meter
DURA-V11i	230V / 50Hz	20A(C-class)	9,5	2,5 mm <sup>2</sup>	15 meter
DURA-V15i	230V / 50Hz	20A(C-class)	12,5	2,5 mm <sup>2</sup>	15 meter
DURA-V20i	230V / 50Hz	20A(C-class)	15,5	2,5 mm <sup>2</sup>	15 meter

 Although the heat pump is electrically isolated from the rest of the pool equipment, 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. Provide an adequate ground connection.

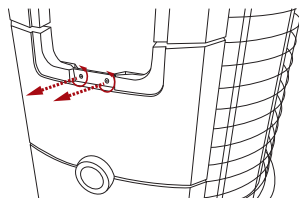
 Use electrical cables suitable for 75°C.

Connect the electrical wires using the following steps

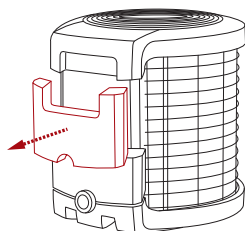
Step 1: Remove display.



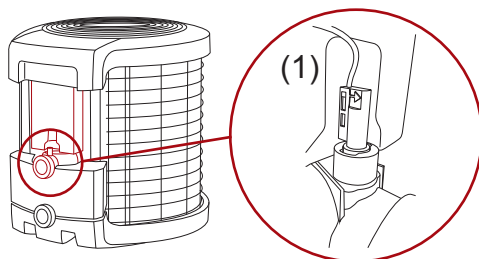
Step 2: Unscrew blue front housing.



Step 3: Snap off blue front housing



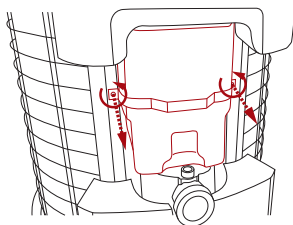
Step 4: Remove flow sensor



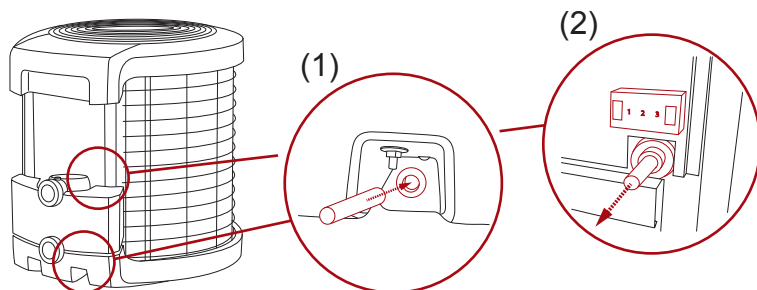
 Please turn off filter pump. Flow must be stopped before disconnecting flow sensor. Drain the water out of the condensor to prevent water loss.

 Make sure the arrow upon the flow sensor is pointing towards the water connection(1).

Step 5: Remove transparent cover.



Step 6: Insert the electrical cable at the bottom of the heat pump(1). Make electrical connection with heat pump's terminal block(2).




# 5. Be aware of

## 5.1 Heat loss

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 tubing. Therefore, the heat loss is minimal for runs of up to 7,5 meters(7,5 meters to and from the pump = 15 meters total), unless the ground is wet or the water table is high. A very rough estimate of heat loss per 15 meters is 0.3 kW-hour,(1000BTU) for every 5°C difference in temperature between the pool water and the ground surrounding the pipe, which translates to about 3% to 5% increase in run time.

 Several days will be needed to bring the temperature of the swimming pool water to its desired water temperature, depending the initial water temperature, ambient and pool volume.

 A good pool cover and insulation of the tubing to and from the swimming pool and heat pump can reduce the warming up time considerably.

## 5.2 Condensation

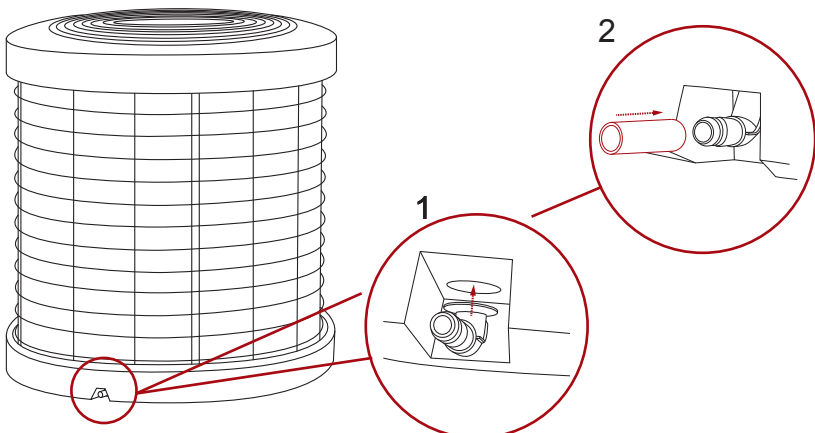
As the heat pump cools down the air about 10°C, water may condense on the fins of the evaporator. If the relative humidity is very high, this could be as much as several liters an hour. The water will run down the fins into the base pan and drain out through the hole at the bottom of the heat pump. An extra fitting, Condens Flux, is attached and can be mounted upon the bottom housing. 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 off the unit and keep the pool pump running. If the water stops running out of the base pan, it is condensation. AN EVEN QUICKER WAY IS TO TEST THE DRAIN WATER FOR CHLORINE - if there is no chlorine present, then it's condensation.

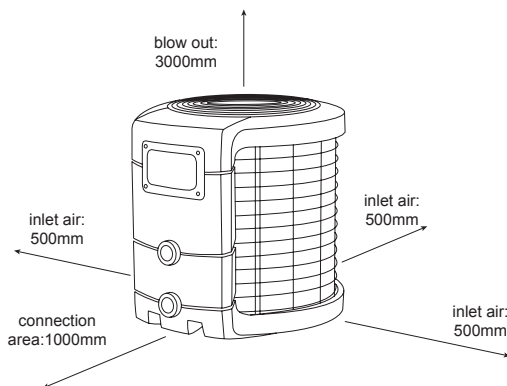
Step 1: Connect Condens flux upon bottom housing

Step 2: Connect 20mm clear vinyl tube



### 5.3 Unobstructed space

A free area around the heat pump has to be kept clear from **any object** to get fresh air across the evaporator. Do not obstruct the fan.



### 5.4 Time delay of compressor

The heat pump is equipped with a 3 minute built-in solid state restart delay once the compressor is turned off and a 1 minute built-in solid state compressor running time. Both to protect control circuit components, to eliminate restart cycling and contactor chatter. This time delay will automatically restart the unit approximately 3 minutes after each control circuit interruption or after a compressor running period of 1 minute. 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. Alarms or errors during time delay have no influence. Power interruptions during the delay period will cause a restart of time delay.


## 6. Operation and Use

### 6.1 Before operation

The heat pump is set in °C. Change °C in °F using the following steps:

- Press the ON/OFF button to start the heat pump.
- Press the SET button to enter the parameter mode
- Select  $\text{Li2}$  using the upwards and downwards button.
- Press the ON/OFF button to select  $\text{Li2}$ .
- Select  $\text{00}$  for °C or select  $\text{01}$  for Fahrenheit using the upwards and downwards button. Any change will be saved automatically.
- Press the SET button to exit the parameter mode.

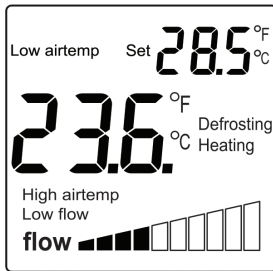
Your heat pump is now set in °C or °F.

 **Display lock:** The display shows  $\text{Loc}$  when there's no interaction for 5min. Press any button for 3 seconds to unlock the display.

## 6.2 Types of display interfaces in the heat pump

4 types of interfaces can be found in the heat pump.

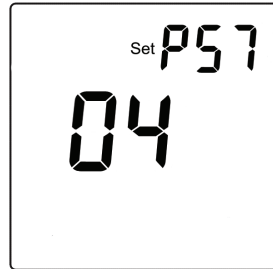
1: General interface.



example



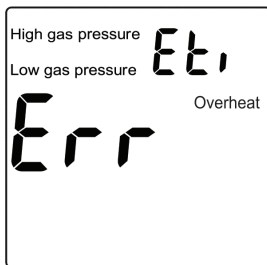
2: Enter Parameter interface.



example



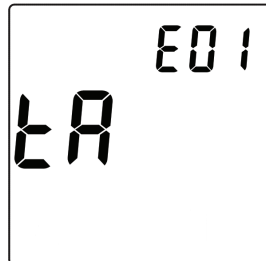
3: Error interface



example



4: Enter Error parameter interface.



example



## 6.3 General interface

### Set:

Highlights when the heat pump is unlocked. Meaning the heat pump desired temperature or parameters can be changed.

### Low air temperature:

The heat pump stops working and will restart automatically when the ambient temperature is above  $-10^{\circ}\text{C}$ .

### Set temperature:

Shows the desired temperature of the swimming pool. Your heat pump will stop heating when desired temperature is reached. The heat pump will start automatically when the water temperature drops below set point.

### High air temperature:

The ambient temperature is above  $40^{\circ}\text{C}$ . The heat pump keeps on working at low fan speed. As soon as the temperature drops below  $40^{\circ}\text{C}$  the fan restarts.

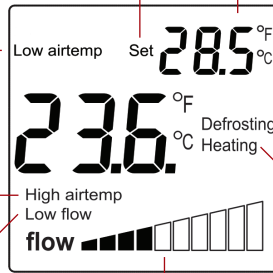
### UP:

Press to increase desired temperature. Any changes will be saved automatically.

The ambient temperature is above  $50^{\circ}\text{C}$ . The heat pump will not use the compressor and fan to protect control components. As soon as the temperature drops below  $50^{\circ}\text{C}$  the compressor restarts.

### Down:

Press to reduce desired temperature. Any changes will be saved automatically.



### Flow bar:

Indicates the amount of water flow going through the heat pump.



### Set:

Press to enter parameter interface. Please find more information about the parameter interface in section 6.7.

### Low flow:

The heat pumps stops working. The amount of water flow going through the heat pump is too low. The heat pump will restart automatically when the water flow is restored.

### ON/OFF:

Press the ON/OFF button to start the heat pump. The current water temperature will appear and the heat pump will start automatically. The heat pump won't start when the desired water temperature is reached. Meanwhile the current water temperature is shown on the display.

Press the ON/OFF button to stop the heat pump. OFF will appear on the display.

### Heating:

Highlights when the heat pump is heating.

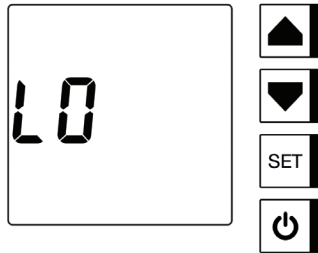
### Defrosting:

Highlights when a special ice-melting program is active in the heat pump. Heating mode will continue when the amount of ice upon the evaporator is reduced.



**Display lock:** The display shows **Loc** when there's no interaction for 5min. Press any button for 3 seconds to unlock the display.

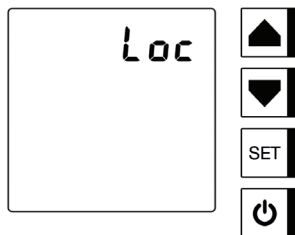
Following general interface is shown when the water temperature is below 0°C(min water temperature to start the heat pump).



Following general interface is shown when the type of heat pump is not selected in the parameter interface. Please contact your service centre or similarly qualified persons for the selection of heat pump in parameter: P57.



Following general interface is shown when the heat pump is Locked. Press any button for 3 seconds to unlock the display.





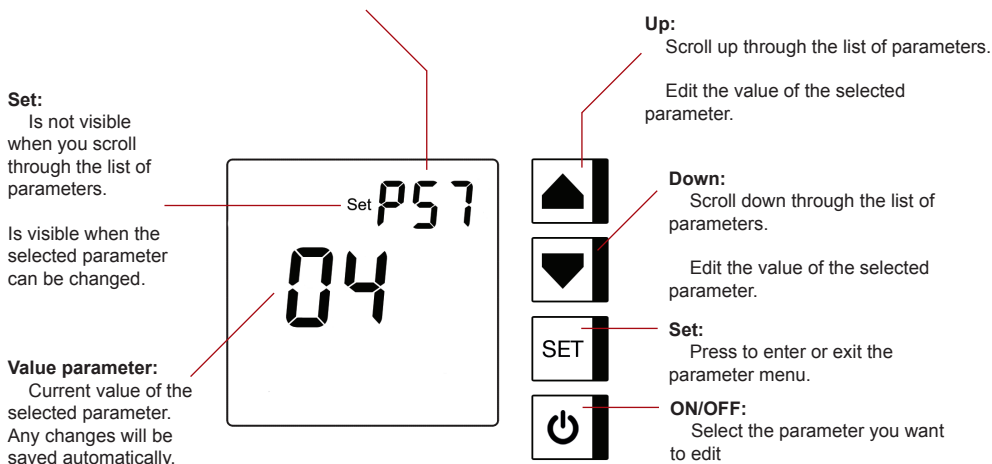
## 6.4 Parameter interface

Parameters can be set by a qualified person in order to make the heat pump more efficient depending on the specific conditions of the swimming pool.

### Parameter name:

Name of parameter. The following can be found:


<b>c01 to 618</b>	Constant parameter
<b>u09 to u17</b>	User editable settings/parameter
<b>518 to 542</b>	Sensor settings/parameter
<b>,43 to ,55</b>	Installer editable settings/parameter
<b>P56 to P90</b>	Factory editable settings/parameter



User editable parameter may be changed by the end user.

Installer editable parameters and factory settings may only be changed in a service center or by similar qualified persons in order to avoid a hazard.

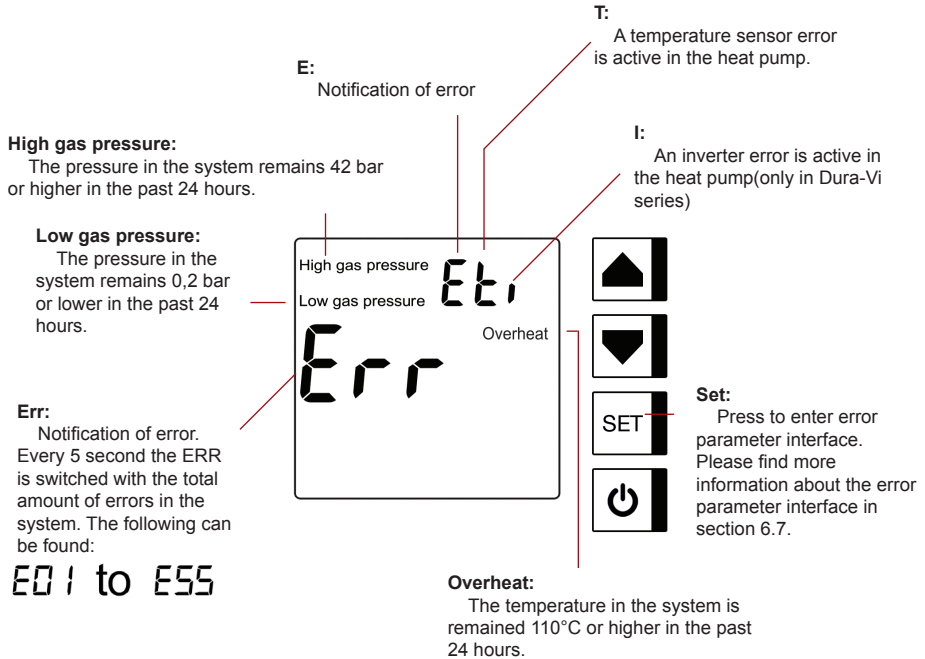
Please find a complete list and more information about each error in section 6.8.

 **Display lock:** The display shows **Loc** when there's no interaction for 5min. Press any button for 3 seconds to unlock the display.


## 6.5 Error interface

When an issue is detected the heat pump will try to solve it by analyzing several parameters, restarting components and bypassing electronics. An error is shown on the display when the program can not solve the issue.

Please contact your service centre or similarly qualified persons when an error occurs.



Please find a complete list and more information about each error in section 6.8.

 **Display lock:** The display shows **Loc** when there's no interaction for 5min. Press any button for 3 seconds to unlock the display.

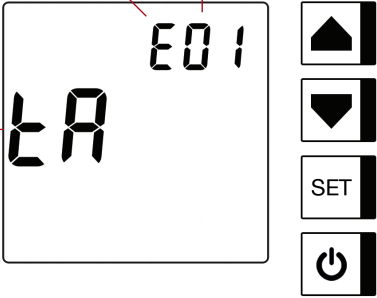
## 6.6 Error parameter interface

A complete list of errors can be found in the error parameter interface.

**Number of error in the heat pump:**  
Number of error. The following can be found:  
**E01 to E55**


**E:**  
Noticifaction of Error.

**Error notification name:**  
Name of error in the heat pump.  
the following can be found:



<b>EA</b>	Ambient temperature sensor error
<b>EE</b>	Evaporator temperature sensor error
<b>E0u</b>	Water outlet temperature sensor error
<b>Ein</b>	Water inlet temperature sensor error
<b>Edl</b>	Discharge line temperature sensor error
<b>ELl</b>	Liquid line temperature sensor error
<b>ESu</b>	Suction line temperature sensor error
<b>ESH</b>	Super heat line temperature sensor error
<b>, 01 to , 44</b>	Inverter error

Please find a complete list and more information about each error in section 6.8.

 **Display lock:** The display shows **Loc** when there's no interaction for 5min. Press any button for 3 seconds to unlock the display.

## 6.7 Parameter code list

Parameter	Name	Minimum	Maximum	Description	PWD
C1	SW_VERSINO_DIS	/	/	Software version display	/
C2	SW_VERSION_CNTRL	/	/	Software version controller	/
C3	MEM_STAT	0	1	Memory status: 0=OK, 1=NOT OK	/
C4	BOARD_DSP_PFC_SW_V	/	/	Cvte board version number	/
C5	BOARD_COMMUNICATION_SW_V_UNIT_TYPE	/	/	Cvte board version number	/
C6	BOARD_DSP_SW_PRJCT_NBR	/	/	Cvte board version number	/
C7	BOARD_PFC_SW_PRJCT_NBR	/	/	Cvte board version number	/
C8	BOARD_COM_SW_PRJCT_NBR	/	/	Cvte board version number	/
U9	ON_OFF	0	1	Heat pump status: 0= OFF, 1= ON	***
U10	SET_TEMP	8,0 °C 46,4 F	40,0 °C 104,0 F	Desired water temperature of the swimming pool water	***
U11	SILENT_MODE	0	1	Inverter compressor frequency reduced to 75% of maximum allowed frequency:	***
U12	FAHRENHEIT	0	1	Set heat pump in desired reading value: 0= °C, 1= Fahrenheit	***
U13	NO_FROST_MODE	0	1	Inverter compressor frequency reduced to low speed. Defrost mode is hereby delayed as long as possible: 0= OFF, 1= ON	***
U14	FAN_MODE	0	2	Fan speed mode: 0= Always full speed, 1= Always low speed, 2= Speed based on ambient temperature/High fan speed if ambient temperature is below 15°C. Low fan speed if ambient is above 17°C. Between 15°C and 17°C low fan speed or high fan speed depending upon a depending or rising ambient temperature.	***
U15	PSWD_1	0	999	Password number 1	***
U16	PSWD_2	0	999	Password number 2	***
U17	PSWD_3	0	999	Password number 3	***
S18	TAMB	-34,0 °C -29,2 F	125,0 °C 257,0 F	Current value of the ambient temperature sensor	***
S19	TEVAP	-34,0 °C -29,2 F	125,0 °C 257,0 F	Current value of the evaporator temperature sensor	***

S20	TCOND	-34,0 °C -29,2 F	125,0 °C 257,0 F	Current value of the water outlet temperature sensor (condensor OUT temperature)	***
S21	TWIN	-34,0 °C -29,2 F	125,0 °C 257,0 F	Current value of the water inlet temperature sensor (condensor IN temperature)	***
S22	TSUDI	-34,0 °C -29,2 F	125,0 °C 257,0 F	Current value of the compressor exhaust temperature (compressor discharged temperature)	***
S23	TLIQ	-34,0 °C -29,2 F	125,0 °C 257,0 F	Current value of the liquid line temperature	***
S24	TSUC	-34,0 °C -29,2 F	125,0 °C 257,0 F	Current value of the suction line temperature	***
S25	TSH	-34,0 °C -29,2 F	125,0 °C 257,0 F	Super heat	***
S26	TOV	/	/	Super heat at last EEV regulation moment	
S27	EEV_POS	0	500	Current position of the electronic expansion valve	***
S28	EEV_CUR_MODE	/	/	Current electronic expansion valve mode.	***
S29	BOARD_COMP_FREQ	/	/	Running frequency of the compressor	***
S30	COMP_REQUEST_FREQ	/	/	Requested compressor frequency	***
S31	BOARD_MAX_FREQ	/	/	Compressor running frequency	***
S32	BOARD_INPUT_VOLTAGE	/	/	Input voltage	***
S33	BOARD_INPUT_CURRENT	/	/	Input current	***
S34	BOARD_COMPRESSOR_PHASE_CURRENT	/	/	Compressor phase current (DC)	***
S35	BOARD_BUS_VOLTAGE_VALUE	/	/	Compressor voltage	***
S36	BOARD_DRIVER_INPUT_VOLTAGE	/	/	DC driver voltage	***
S37	BOARD_IPM_TEMP	/	/	Inverter temperature	***
S38	BOARD_IPM_OVER_TEMP_SHUTDOWN_PROT	/	/	Max inverter temperature	***
S39	BOARD_COMPRESSOR_RUNNING_TIME	/	/	Time compressor has been running	***
S40	EXHAUST_THEO	/	/	Max theoretical exhaust	***
S41	MINUTE_AVERAGE	/	/	Average temperature of evaporator over a couple minutes	***
S42	1 SECOND AVERAGE	/	/	Average temperature of evaporator over one second	***
I43	EEV_MODE	0	4	0 = manual mode when in heating, 1-4 P EEV steering	pswd: 333 & 777

I44	EEV_MANUAL_POS	0	500	Used to set EEV position when in manual mode	pswd: 333 & 777
I45	SUPER_HEAT	-2,0 °C 10,4 F	12,0 °C 53,6 F	set the desired super heat temperature	pswd: 333 & 777
I46	DEFR_DELAY	5	255	Set the minimal time delay between 2 defrost cycles	pswd: 333 & 777
I47	DEFR_STR_TEMP_DIF	3,0 °C 37,4 F	25,0 °C 77,0 F	Set temperature difference between the ambient temperature(TAMB) and evaporator temperature(TEVAP) to start defrost mode.	pswd: 333 & 777
I48	DEFR_MAX_TIME	30	255	Maximum duration of a defrost cycle	pswd: 333 & 777
I49	DEFR_TEVAP_EXIT	1,0 °C 33,8 F	10,0 °C 50,0 F	Temperature of evaporator(TEVAP) in order to start last defrost block	pswd: 333 & 777
I50	DEFR_TEVAP_EXIT_HOLD_TIME	1	15	Countdown in which the temperature of the evaporator is equal or higher than DEFR_TEVAP_EXIT in order to end defrost cycle successfully	pswd: 333 & 777
I51	DEFR_TEVAP_ICE	-5,0 °C 23,0 F	0,0 °C 32,0 F	Evaporator temperature to start DEFR_TEVAP_ICE_TIME when the ambient temperature(TAMB) is above 0°C(32F)	pswd: 333 & 777
I52	DEFR_TEVAP_ICE_TIME	5	30	Countdown in which the temperature of the evaporator is equal or lower than DEFR_TEVAP_ICE in order to start defrost mode	pswd: 333 & 777
I53	DEFR_TFAN_OFF	0,5 °C 32,9 F	5 °C 41,0 F	Ambient temperature(TAMB) at which the fan need to stop when defrost mode is active	pswd: 333 & 777
I54	EEV_DELAY_P_CALC	0,5	10	Time between electronic expansion position calculation when in heating mode	pswd: 333 & 777
I55	RESET_TO_FACTORY_SETTINGS	0	1	Reset all settings to factory and restart controller	pswd: 333 & 777
P56	DEFR_EEV_POS	0	500	Position of electronic expansion valve when in defrost mode	pswd: 777

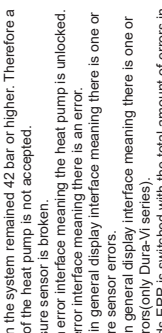
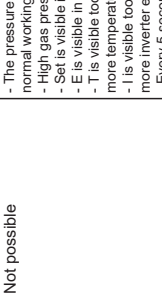
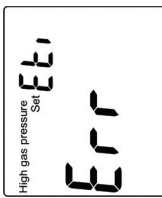

P57	PUMP_TYPE	0	7	Define pump type: 0 = no pump selected 1=DuraV10 2=DuraV15 3=DuraV20 4=DuraV11i (108) 5=DuraV15i (151) 6=DuraV20i (238) 7=DuraV24i (238) 8=DuraV11i (102) 9=DuraV11i (132) 10=DuraV15i (198)	pswd: 777
P58	MIN WATER TEMP	0	1	define type of refrigerant: 0= R32, 1=R410A	pswd: 777
P59	TOV_AVERAGE_TIME	0,1	0,5	Average time to calculate the super heat	pswd: 777
P60	T_SUDI_HIGH	40,0 104,0 F	127,0 °C 260,0 F	Max value of Tsudi, when this is attained for more than 5 min. an overheating error is triggered	pswd: 777
P61	KP	0	5	Unused	***
P62	KD	0	5	Unused	***
P63	KI	0	5	Unused	***
P64	EEV_POS_MAX	1	500	Set the max position of the electronic expansion valve(LP protection)	pswd: 777
P65	EEV_POS_MIN	1	500	Set the minimum position of the electronic expansion valve(HP protection)	pswd: 777
P66	NBR_STEPS_COLDWATER	2	250	Used in electronic expansion valve start position function	pswd: 777
P67	ERROR_REPEAT_TIME	6	48	Set the time when an alarms becomes an error	pswd: 777
P68	ERROR_RECOVER_RUN_TIME	1	5	Set the time in which the heat pump need to run alarm free to discard previous alarm	pswd: 777
P69	FIXED_EEV_POS	10	500	Electronic expansion valve position used in EEV mode 7. Mode is active when certain temperature sensors fail	pswd: 777
P70	T_SUDI_MAX	40,0 °C 104,0 F	127 °C 260 F	Used in Tsudi protection when super heat based function is failing	pswd: 777
P71	T_SUDI_MIN	20,0 °C 68,0 F	70,0 °C 158,0 F	Used in Tsudi protection when super heat based function is failing	pswd: 777





P72	T_SUDI_SET	0,0 °C 32,0 F	99,9 °C 211,8 F	Used in Tsudi protection when super heat based function is falling	pswd: 777
P73	COMP_MODE	0	1	Compressor mode: 0 = Automatic 1 = Set compressor frequency manual	pswd: 777
P74	COMP_SPEED_MAN_MODE	15	120	Set the speed of the compressor	pswd: 777
P75	COMP_FMAX	15	120	Maximum compressor frequency	pswd: 777
P76	COMP_FMIN	15	120	Minimum compressor frequency	pswd: 777
P77	COMP_FN	15	120	Nominal compressor frequency	pswd: 777
P78	COMP_F_DEFROST	15	120	Defrost frequency	
P79	COMP_F_MAINTAIN_FACT	1	100	Maintain recalculate frequency factor in % of COMP_FN	pswd: 777
P80	COMP_FRET_FH_FACT	1	100	Full heat recalculate frequency factor in % of COMP_FN	pswd: 777
P81	COMP_T_DIFF_FULL_SPEED	0,5 °C 32,9 F	5,0 °C 41,0 F	Difference between water in temperature and set temperature to trigger full heating when in maintain	pswd: 777
P82	COMP_STOP_MAX_CURR	0	40	Stop compressor current	pswd: 777
P83	COMP_SLOW_CURR	0	40	Slow compressor current limit	pswd: 777
P84	COMP_HOLD_CURR	0	40	Hold compressor frequency current limit	pswd: 777
P85	COMP_RESPEED_CURR	0	40	Speed up of compressor is ok current limit	pswd: 777
P86	COMP_OIL_RESET	1	24	Time between oil runs at 60Hz when pump is running below 60Hz	pswd: 777
P87	COMP_OIL_KEEP	1	10	Duration of an oil run at 60Hz	pswd: 777
P88	TSET_OVERSHOOT	0,0 °C 32,0 F	5,0 °C 41,0 F	Max overshoot	pswd: 777
P89	EEV_STEPS_CLOSE	0	400	Steps eev should be closed when going to maintain	pswd: 777
P90	EEV_STEPS_OPEN	0	500	Steps eev should open when going to full heat.	pswd: 777



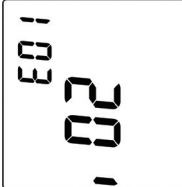
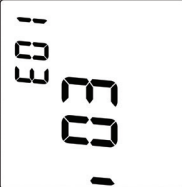


P72	T_SUDI_SET	0,0 °C 32,0 F	99,9 °C 211,8 F	Used in Tsudi protection when super heat based function is falling	pswd: 777
P73	COMP_MODE	0	1	Compressor mode: 0 = Automatic 1 = Set compressor frequency manual	pswd: 777
P74	COMP_SPEED_MAN_MODE	15	120	Set the speed of the compressor	pswd: 777
P75	COMP_FMAX	15	120	Maximum compressor frequency	pswd: 777
P76	COMP_FMIN	15	120	Minimum compressor frequency	pswd: 777
P77	COMP_FN	15	120	Nominal compressor frequency	pswd: 777
P78	COMP_F_DEFROST	15	120	Defrost frequency	
P79	COMP_F_MAINTAIN_FACT	1	100	Maintain recalculate frequency factor in % of COMP_FN	pswd: 777
P80	COMP_FRET_FH_FACT	1	100	Full heat recalculate frequency factor in % of COMP_FN	pswd: 777
P81	COMP_T_DIFF_FULL_SPEED	0,5 °C 32,9 F	5,0 °C 41,0 F	Difference between water in temperature and set temperature to trigger full heating when in maintain	pswd: 777
P82	COMP_STOP_MAX_CURR	0	40	Stop compressor current	pswd: 777
P83	COMP_SLOW_CURR	0	40	Slow compressor current limit	pswd: 777
P84	COMP_HOLD_CURR	0	40	Hold compressor frequency current limit	pswd: 777
P85	COMP_RESPEED_CURR	0	40	Speed up of compressor is ok current limit	pswd: 777
P86	COMP_OIL_RESET	1	24	Time between oil runs at 60Hz when pump is running below 60Hz	pswd: 777
P87	COMP_OIL_KEEP	1	10	Duration of an oil run at 60Hz	pswd: 777
P88	TSET_OVERSHOOT	0,0 °C 32,0 F	5,0 °C 41,0 F	Max overshoot	pswd: 777
P89	EEV_STEPS_CLOSE	0	400	Steps eev should be closed when going to maintain	pswd: 777
P90	EEV_STEPS_OPEN	0	500	Steps eev should open when going to full heat.	pswd: 777

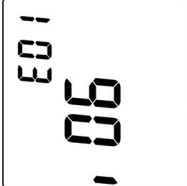
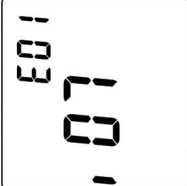
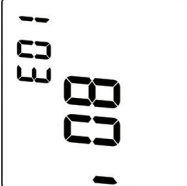

## 6.8 Error code list

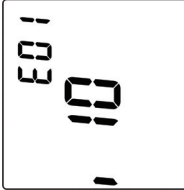

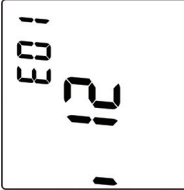
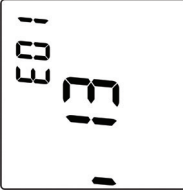
Error name	Error interface	Error parameter interface	Description	Effect / action
High gas pressure error		Not possible	<ul style="list-style-type: none"> <li>- The pressure in the system remained 42 bar or higher. Therefore a normal working of the heat pump is not accepted.</li> <li>- High gas pressure sensor is broken.</li> <li>- Set is visible in error interface meaning the heat pump is unlocked.</li> <li>- E is visible in error interface meaning there is an error.</li> <li>- T is visible too in general display interface meaning there is one or more temperature sensor errors.</li> <li>- I is visible too in general display interface meaning there is one or more inverter errors (only Dura-Vi series).</li> <li>- Every 5 seconds ERR is switched with the total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Low gas pressure error		Not possible	<ul style="list-style-type: none"> <li>- The pressure in the system remained 0,2 bar or lower. Therefore a normal working of the heat pump is not accepted.</li> <li>- Low gas pressure sensor is broken.</li> <li>- Set is visible in general display interface meaning the heat pump is unlocked.</li> <li>- E is visible in error interface meaning there is an error.</li> <li>- T is visible too in general display interface meaning there is one or more temperature sensor errors.</li> <li>- I is visible too in general display interface meaning there is one or more inverter errors (only Dura-Vi series).</li> <li>- Every 5 seconds ERR is switched with the total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Overheating error		Not possible	<ul style="list-style-type: none"> <li>- The gas in the systems raised above 110°C. Therefore a normal working of the heat pump is not accepted.</li> <li>- Set is visible in general display interface meaning the heat pump is unlocked.</li> <li>- E is visible in error interface meaning there is an error.</li> <li>- T is visible too in general display interface meaning there is one or more temperature sensor errors.</li> <li>- I is visible too in general display interface meaning there is one or more inverter errors (only Dura-Vi series).</li> <li>- Every 5 seconds ERR is switched with the total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Ambient temperature error	Not possible		<ul style="list-style-type: none"> <li>- The ambient sensor value is either too high, too low or unreal.</li> <li>- Therefore a normal working of the heat pump is not accepted.</li> <li>- This error is combined with evaporator temperature error, suction temperature error and super heat temperature error.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.

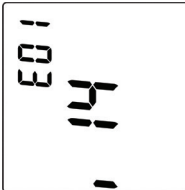

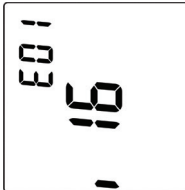

Evaporator temperature error	Not possible		<ul style="list-style-type: none"> <li>- The evaporator sensor value is either too high, too low or unequal. Therefore a normal working of the heat pump is not accepted</li> <li>- This error is combined with suction temperature error and super heat temperature error.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Condensor water outlet temperature error	Not possible		<ul style="list-style-type: none"> <li>- The water outlet temperature sensor value is either too high, too low or unequal. Meaning the intelligent program switched the value to continue working but the replaced value is also too high, too low or unequal. Therefore a normal working of the heat pump is not accepted</li> <li>- This error is combined with water inlet temperature error.</li> <li>- E02 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Condensor water inlet temperature error	Not possible		<ul style="list-style-type: none"> <li>- The water inlet temperature sensor value is either too high, too low or unequal. Meaning the intelligent program switched the value to continue working but the replaced value is also too high, too low or unequal. Therefore a normal working of the heat pump is not accepted</li> <li>- This error is combined with water outlet temperature error.</li> <li>- E02 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Discharged temperature error	Not possible		<ul style="list-style-type: none"> <li>- The discharge temperature sensor value is either too high, too low or unequal. Therefore a normal working of the heat pump is not accepted</li> <li>- This error can exist as stand alone error.</li> <li>- E02 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.

Liquid line temperature error	Not possible		<ul style="list-style-type: none"> <li>- The liquid line temperature sensor value is either too high, too low or unreal. Meaning the intelligent program switched the value to continue working but the replaced value is also too high, too low or unreal. Therefore a normal working of the heat pump is not accepted</li> <li>- This error is combined with water outlet temperature error and water inlet temperature error.</li> <li>- E02 Total amount of errors in the system(Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Suction temperature error	Not possible		<ul style="list-style-type: none"> <li>- The suction line temperature sensor value is either too high, too low or unreal. Meaning the intelligent program switched the value to continue working but the replaced value is also too high, too low or unreal. Therefore a normal working of the heat pump is not accepted</li> <li>- This error is combined with evaporator temperature error and super heat temperature error.</li> <li>- E02 Total amount of errors in the system(Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Super heat temperature error	Not possible		<ul style="list-style-type: none"> <li>- The super heat temperature sensor value is either too high, too low or unreal. Meaning the intelligent program switched the value to continue working but the replaced value is also too high, too low or unreal. Therefore a normal working of the heat pump is not accepted</li> <li>- This error is combined with evaporator temperature error and suction line temperature error.</li> <li>- E02 Total amount of errors in the system(Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
IPM fault Only for Dura-VI series	Not possible		<ul style="list-style-type: none"> <li>- Inverter board IPM failure.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system(Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.

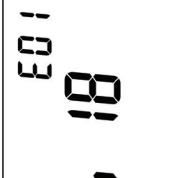
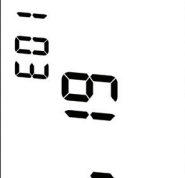

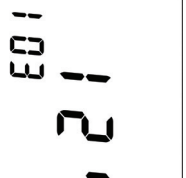
Compressor driver fault Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Inverter board compressor driver failure.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system(Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Compressor over current Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Compressor overcurrent alarm: current to the compressor was too high.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system(Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Input voltage missing phase Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Phase detection failed on the input voltage.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system(Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
IPM current sample fault Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Sampling of the ism current failed.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system(Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.

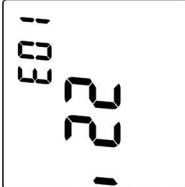



<p>Power components shutdown by overheat</p> <p>Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- The temperature of the board was too high.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>PFC fault</p> <p>Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- Inverter board power factor correction failure.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>DC bus overvoltage</p> <p>Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- Inverter board DC voltage was too high.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>DC bus under voltage</p> <p>Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- Inverter board DC voltage was too low.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>





AC input under voltage Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Inverter board input voltage was too low.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
AC input over current Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Inverter board input current was too high.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Input voltage sampling fault Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Inverter board input voltage sampling failure.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
DSP and PFC communication fault Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Inverterboard failure to communicate with DSP and PFC components.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.

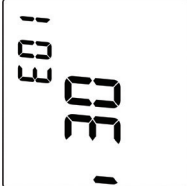
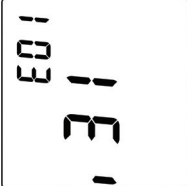
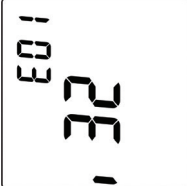
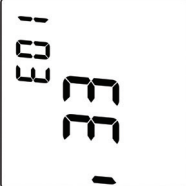
Temperature sensor fault Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Inverter board temperature sensor error. The value out of scope or the sensor is broken.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Communicating fault by DSP and communication board Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Inverterboard failure to communicate with DSP.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Abnormal communication with main board Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Inverterboard failure to communicate duravi controller board.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Compressor over current error Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Current to the compressor was too high.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.



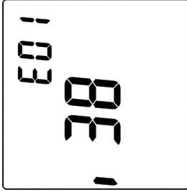
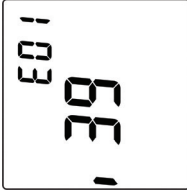
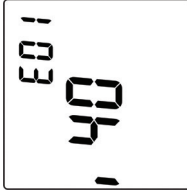
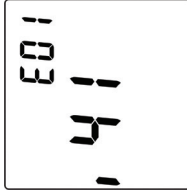
<p>Alarm for weak magnetic protection of compressor Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- Compressors magnetic field can't be sensed.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system(Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>Power components overheat error Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- The temperature of the board was too high.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system(Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>High press error Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- Pressure at compressor exit was too high.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system(Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>AC input overcurrent error Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- Input current was too high.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system(Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>




<p>EEPROM fault error Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- Inverter board EEPROM could not be read.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>COMP   phase peak Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- The compressor phase current peak was too high.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>Parameters setting error Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- Wrong inverter board parameters are set.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>IPM module overheat stop Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- Inverter board IPM module's temperature was too high.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>

<p>DC fan 1 fault Only for Dura-Vi series</p>	<p>Not possible</p>		<p>- Inverter board DC fan 1 driver error. DC fan driver is not used in DuraVi heat pumps. - 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted. - E01 Total amount of errors in the system (Min E01 max E55).</p>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>DC fan 2 fault Only for Dura-Vi series</p>	<p>Not possible</p>		<p>- Inverter board DC fan 2 driver error. DC fan driver is not used in DuraVi heat pumps. - 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted. - E01 Total amount of errors in the system (Min E01 max E55).</p>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>V15V over under voltage fault/AC circuit down/ power down Only for Dura-Vi series</p>	<p>Not possible</p>		<p>- The inverter board's DC controller power circuit is down. Entering protection state. - 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted. - E01 Total amount of errors in the system (Min E01 max E55).</p>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>Power temperature down Only for Dura-Vi series</p>	<p>Not possible</p>		<p>- Power component temperature is getting too high. Entering protection state. - 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted. - E01 Total amount of errors in the system (Min E01 max E55).</p>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>

<p>Comp phase circuit down Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- The inverter board's compressor phase circuit is down. Entering protection state.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>IPM temperature down Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- IPM temperature is getting too high. Entering protection state.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>PFC temperature down Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- PFC temperature is getting too high. Entering protection state.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>Accelerate over current Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- During acceleration of the compressor, the compressor current was too high.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>

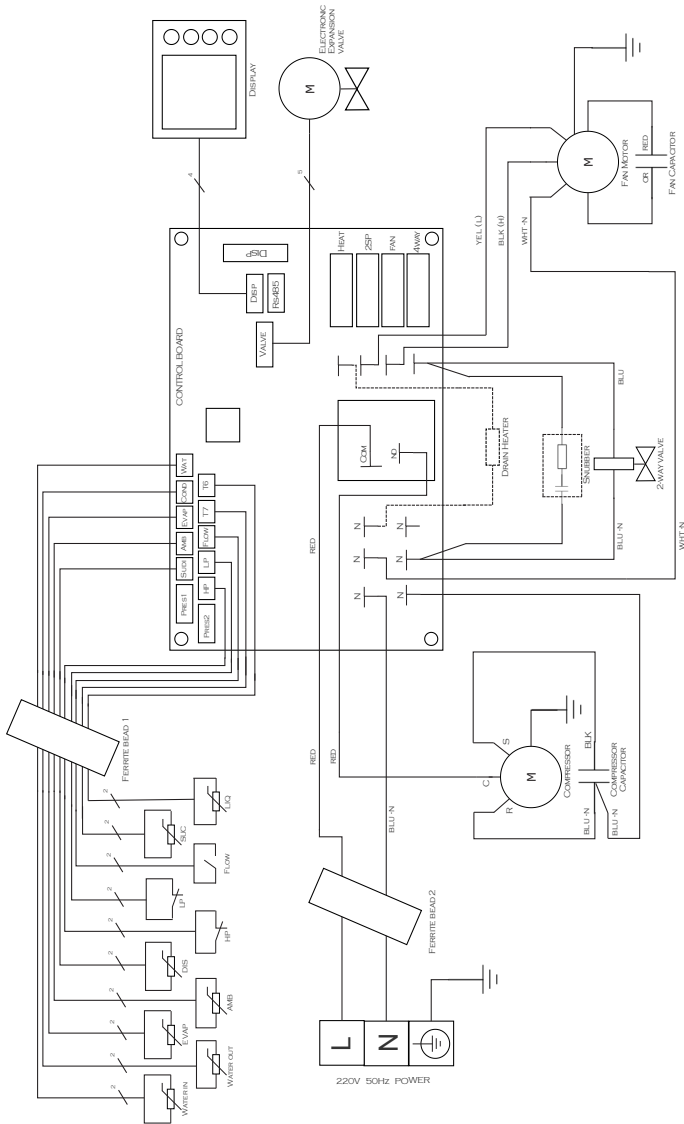
<p>Decelerate over current Only for Dura-Vi series</p>	<p>Not possible</p>		<p>- During deceleration of the compressor, the compressor current was too high. - 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted. - E01 Total amount of errors in the system (Min E01 max E55)</p>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>Constant speed over current Only for Dura-Vi series</p>	<p>Not possible</p>		<p>- During normal run of the compressor, the compressor current was too high. - 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted. - E01 Total amount of errors in the system (Min E01 max E55)</p>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>Accelerate over voltage Only for Dura-Vi series</p>	<p>Not possible</p>		<p>- During acceleration of the compressor, the compressor voltage was too high. - 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted. - E01 Total amount of errors in the system (Min E01 max E55)</p>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>Decelerate over voltage Only for Dura-Vi series</p>	<p>Not possible</p>		<p>- During deceleration of the compressor, the compressor voltage was too high. - 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted. - E01 Total amount of errors in the system (Min E01 max E55)</p>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>

Contant speed over voltage Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- During normal run of the compressor, the compressor voltage was too high.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Out of step failure Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Magnetic positioning of the compressor head failed, the inverter board cannot drive the compressor until the position of the compressor head is recovered.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
Lack of phase failure Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- Inverter board phase detection failure.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.
IPM module hardware protection failure Only for Dura-Vi series	Not possible		<ul style="list-style-type: none"> <li>- The inverter board's IPM module has a hardware failure.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	Please contact your service centre or similarly qualified persons in order to avoid a hazard.

<p>Current detected abnormal circuit</p> <p>Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- Short circuit detected</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>AC voltage loss zero cross</p> <p>Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- The inverter board's input voltage zero crossing points can not be detected.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>
<p>General error state</p> <p>Only for Dura-Vi series</p>	<p>Not possible</p>		<ul style="list-style-type: none"> <li>- The inverter board is in alarm.</li> <li>- 5 hard resets did not solve the problem. Therefore a normal working of the heat pump is not accepted.</li> <li>- E01 Total amount of errors in the system (Min E01 max E55).</li> </ul>	<p>Please contact your service centre or similarly qualified persons in order to avoid a hazard.</p>

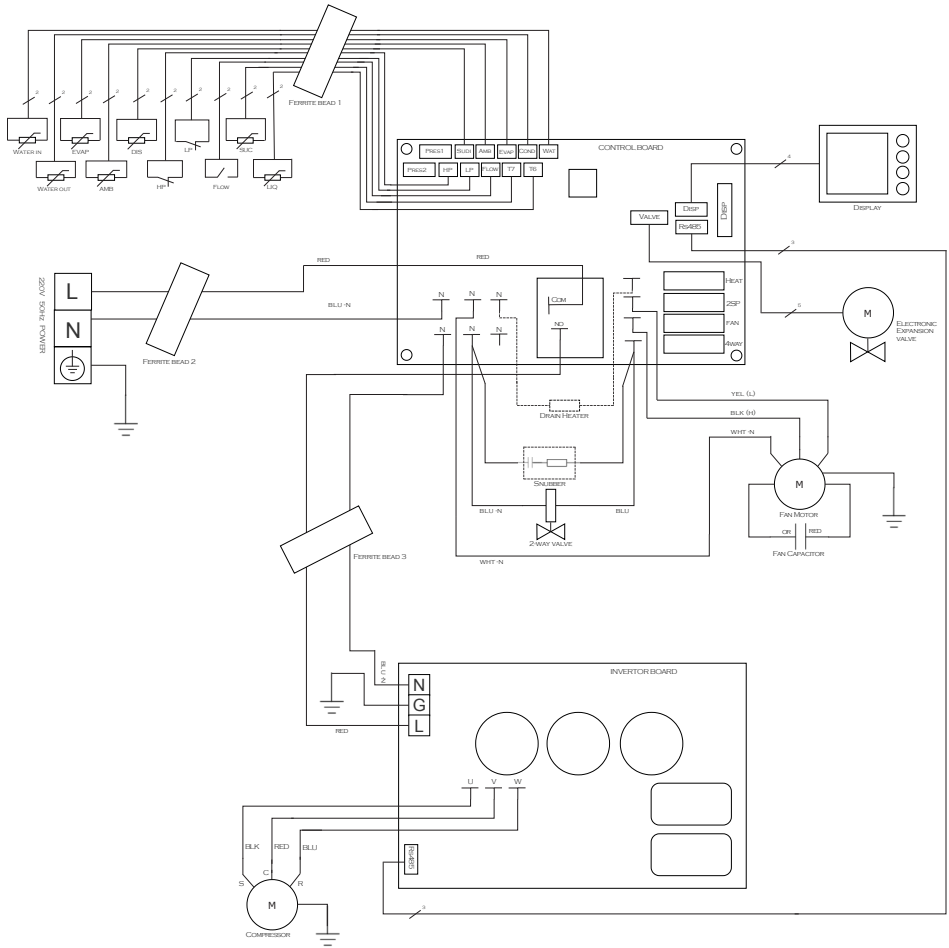
# 7. Wiring diagrams

## 7.1 Wire control interface diagram Dura V

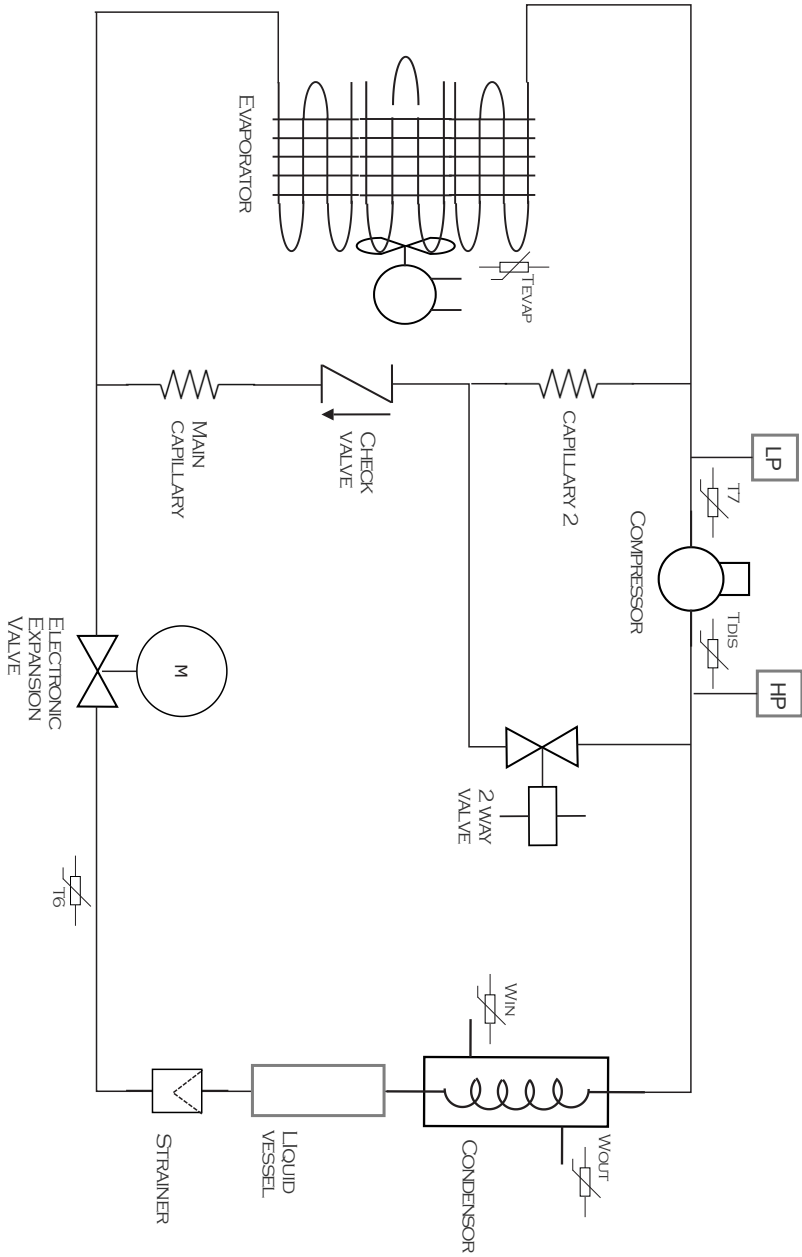




## 7.2 Wire control interface diagram Dura Vi



### 7.3 Piping diagram and definition Dura V and Dura Vi



## 8. Maintenance and Inspection

- 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 as shown in section 5.3. 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.
- 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.
- You should also purge the water if the unit will not work for an extended period of time. You should check all parts of the unit thoroughly and completely fill the system with water before turning it on again afterwards.

If your heat pump has been stored for a long time, perform the following steps when re-starting the system:

1. Inspect the system for any debris or damage to the case.
2. Clean the evaporator fins with a soft cloth if necessary. Make sure the evaporator fins are clean. Blocking the air intake will cause insufficient operation and will result in lower production of heat.
3. Check the fan for blockages.
4. Connect the water inlet and outlet.
5. Turn on the pool water circulation pump to start the water flow to the heat pump.
6. Restore electrical power to the heat pump and press the reset button on the RCD.

## 9. Winterizing

Make sure to purge all the water from the heat pump and other systems in order to prevent frost damage. You should install the winter cover when the unit will not work for an extended period of time.

## 10. Environment

This heat pump should not be put into the domestic waste at the end of its useful life, but must be disposed at a central point for recycling of electrical and electronic domestic applications. By doing this you will help to preserve the environment.



## 11. Service

If you need service or information or if you have a problem, please contact your local dealer. If needed they will contact the manufacturer to solve your problem.

They are gladly willing to assist you!

**You can find more information at [www.duratech.be](http://www.duratech.be)**

# 12. Warranty

## LIMITED WARRANTY

We warrant all parts to be free from manufacturing defects in materials and workmanship for a period of THREE years from the date of retail purchase.

This warranty is limited to the first retail purchaser, is not transferable, and does not apply to products that have been moved from their original installation sites. The liability of the manufacturer shall not exceed the repair or replacement of defective parts and does not include any costs for labour to remove and reinstall the defective part, transportation to or from the factory, and any other materials required to make the repair. This warranty does not cover failures or malfunctions resulting from the following:

1. Failure to properly install, operate or maintain the product in accordance with our published "Installation & Instruction Manual" provided with the product.
2. The workmanship of any installer of the product.
3. Not maintaining a proper chemical balance in your pool [pH level between 7,0 and 7,8. Total Alkalinity (TA) between 80 to 150 ppm. Free Chlorine between 0,5 – 1,2mg/l. Total Dissolved Solids (TDS) less than 1200 ppm. Salt maximum 8g/l]
4. Abuse, alteration, accident, fire, flood, lightning, rodents, insects, negligence or acts of Gods.
5. Scaling, freezing or other conditions causing inadequate water circulation.
6. Operating the product at water flow rates outside the published minimum and maximum specifications.
7. Use of non-factory authorized parts or accessories in conjunction with the product.
8. Chemical contamination of combustion air or improper use of sanitizing chemicals, such as introducing sanitizing chemicals upstream of the heater and cleaner hose or through the skimmer.
9. Overheating, incorrect wire runs, improper electrical supply, collateral damage caused by failure of O-rings, DE grids or cartridge elements, or damage caused by running the pump with insufficient quantities of water.

## LIMITATION OF LIABILITY

This is the only warranty given by Manufacturer. No one is authorized to make any other warranties on our behalf.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY. WE EXPRESSLY DISCLAIM AND EXCLUDE ANY LIABILITY FOR CONSEQUENTIAL, INCIDENTAL, INDIRECT OR PUNITIVE DAMAGES FOR BREACH OF ANY EXPRESSED OR IMPLIED WARRANTY.

This warranty gives you specific legal rights, which may vary, by country.

## WARRANTY CLAIMS

For prompt warranty consideration, contact your dealer and provide the following information: proof of purchase, model number, serial number and date of installation. The installer will contact the factory for instructions regarding the claim and to determine the location of the nearest service center.

All returned parts must have a Return Material Authorization number to be evaluated under the terms of this warranty.



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