

AIR TO WATER HEAT PUMP

EVI Technology

MODEL SERIES :

EH-8DR

EH-11DR

EH-15DR

EH-18DR

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User Manual



Contents

1. General -----	2
2. System description -----	2
3. Dimension -----	3
4. Installation -----	4-6
5. Controller manual-----	6-9
6. Failure show -----	9
7. Specified performance curve -----	10-12
8. Wiring Diagram -----	13

1. General

ATW-HTP-X model is a base heat pump for heating small houses , apartment blocks and small industrial premises . Outdoor air is used as heat source , which is quality products and offering long life span and safe operation .

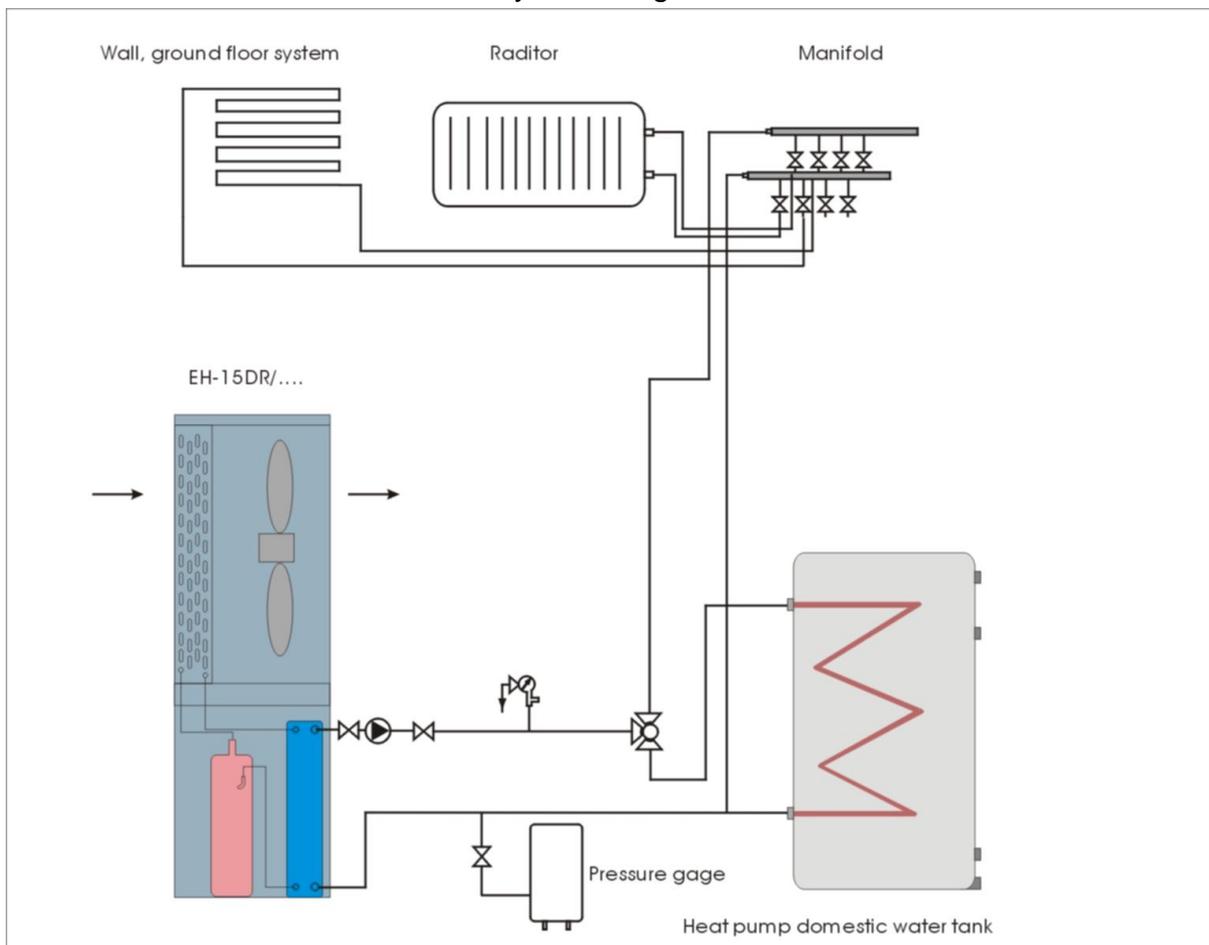
2. System description

ATW-HTP-X is a air/water heat pump ,specially designed for Nordic climate , utilized the outside air so there is no need for bore holes or coils in the ground ,

ATW-HTP-X can both heat hot water effectively at high outdoor temperatures and give a high output to the heating system at low outdoor temperatures . If the outdoor temperature drop to a level under the stop temperature the auxiliary heating (compressor electric heater ; plate electric heater) must then occur with external additional heating to guarantee the unit work normally . ATW-HTP-X running is controlled by a intelligent wiring controller .

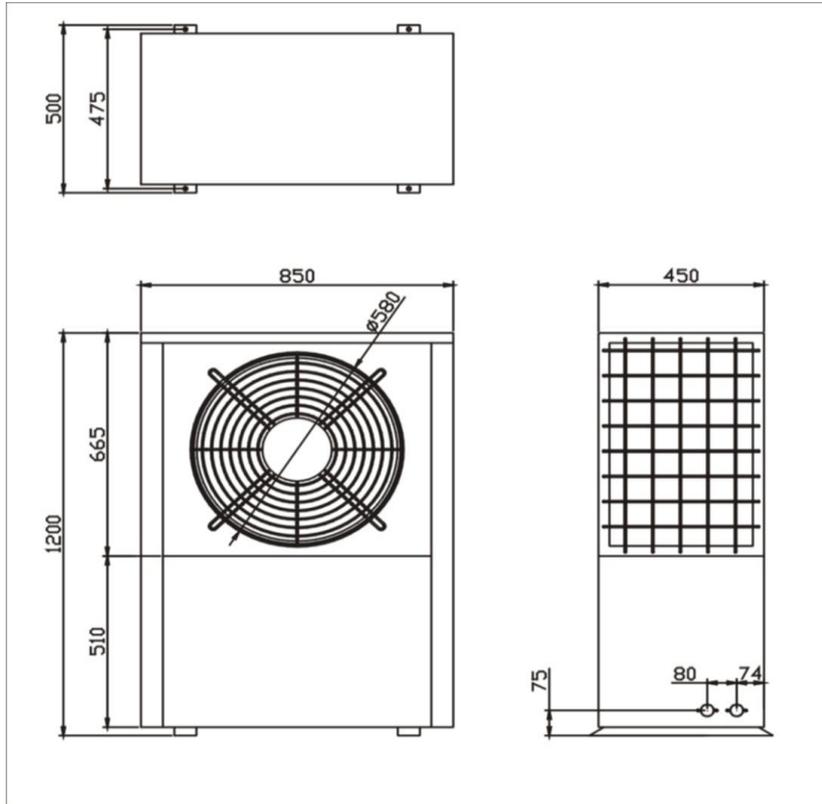
ATW-HTP-X is manufactured in sizes range from 6kw to 18kw . Material is chosen to provide a long service life and to fully withstand harsh outdoor conditions .

System diagram

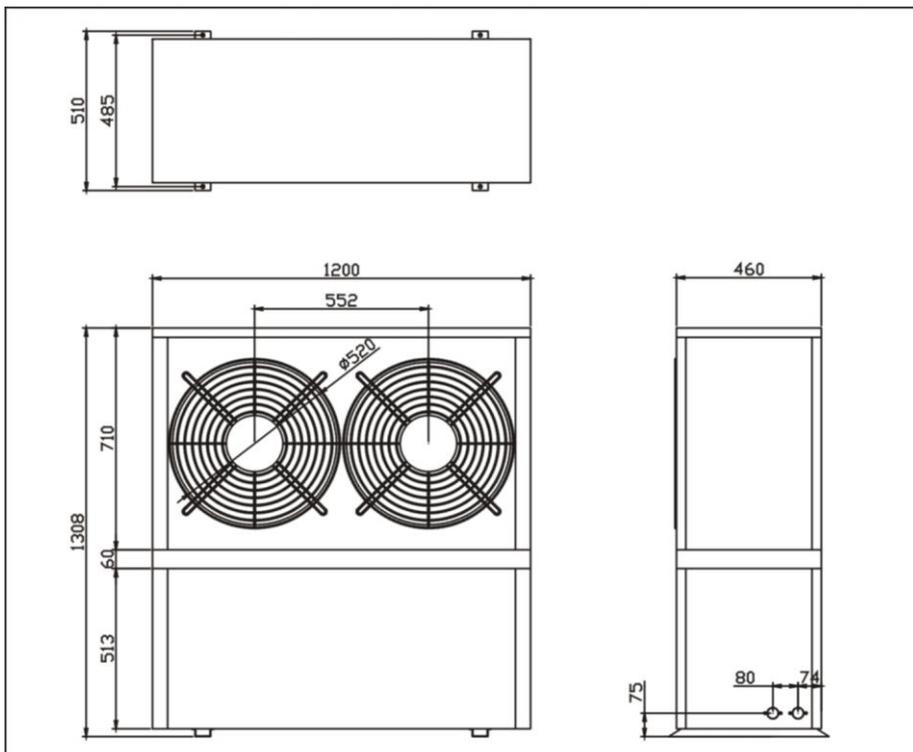


3.Dimension

6-16KW (Unit : mm)



18KW (Unit : mm)



4. Installation

4.1 Transport

EHXDR should be transported and stored vertically .

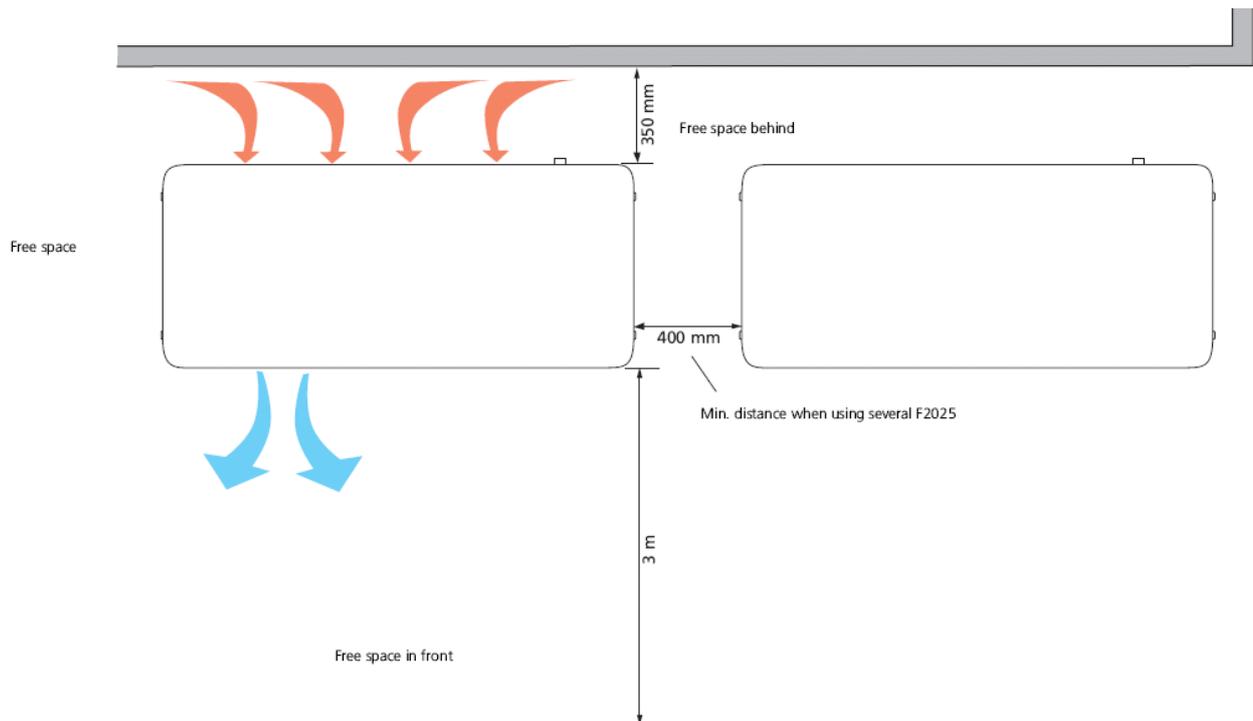
4.2 Inspection of the installation

Currently regulations require the heating installation to be inspected before it is commissioned .The inspection must be carried out by a suitably qualified person and should be documented . The above applies to closed heating systems . If the heat pump is replaced , the installation must be inspected again .

4.3 Assembly

The unit is placed outdoors on a firm base ,preferably a concrete of foundation .The unit should not be positioned next to sensitive walls ,for example ,next to bedroom . Also ensure that the placement does not inconvenience the neighbours . *Care must be exercised so that the heat pump is not scratched during installation .*

Location space of the unit installation



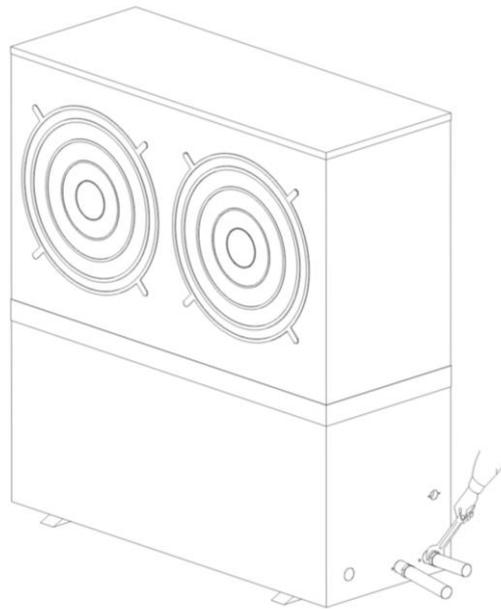
4.4 Piping connection

The piping connector size :

Water inlet / outlet pipe connector : 1 inch , outer thread screw pipe

Condensation water drain connector : 3/4 inch , outer thread screw pipe

P4



 **NOTE**

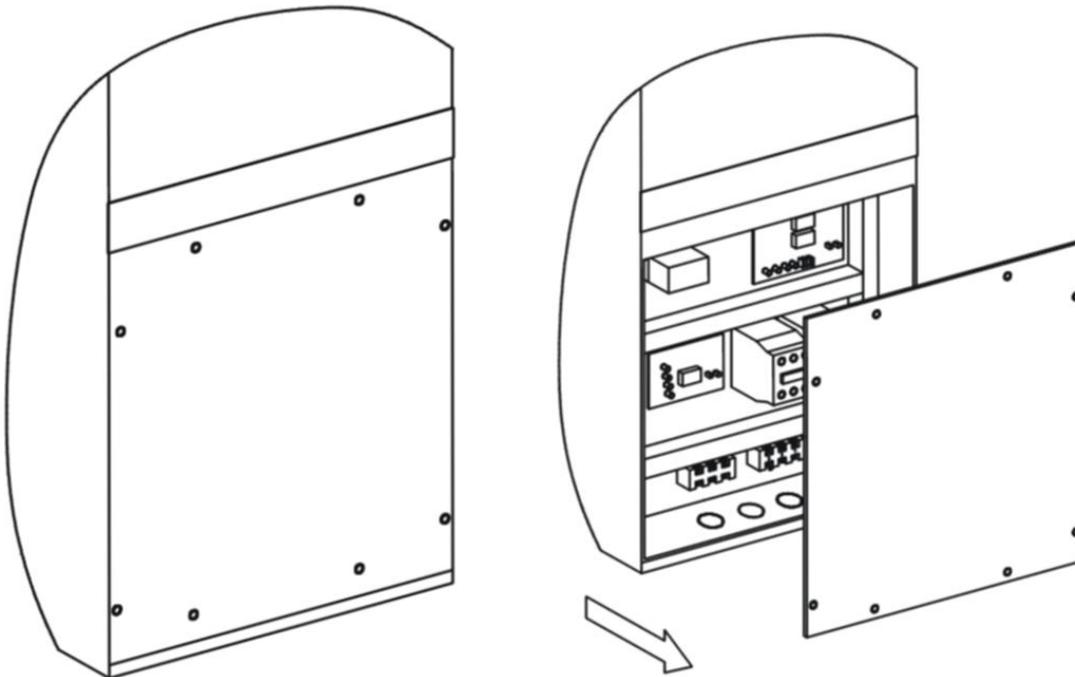
All the outdoor pipes must be thermally insulated with at least 19mm thick pipe insulation !

4.5 Electrical connections

 **NOTE**

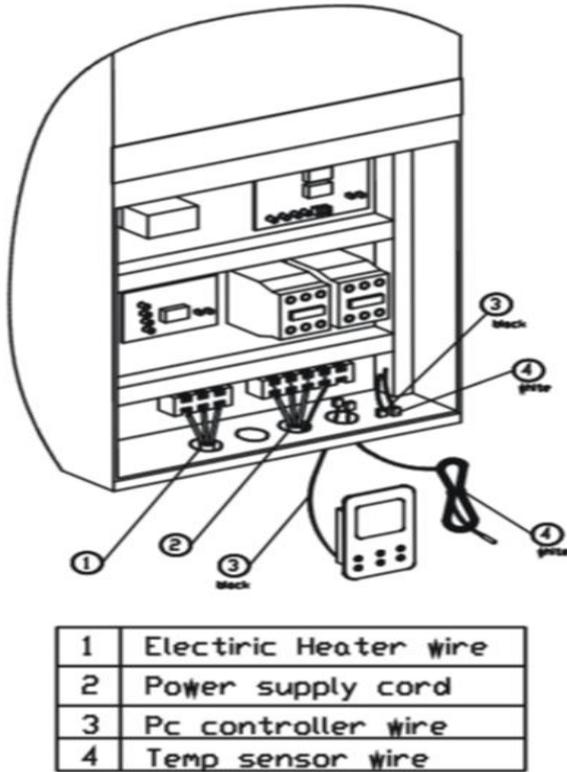
Electrical installation and service must be carried out under the supervision of a qualified electrician .

Electrical installation and wiring must be carried out in accordance with the stipulation in force .

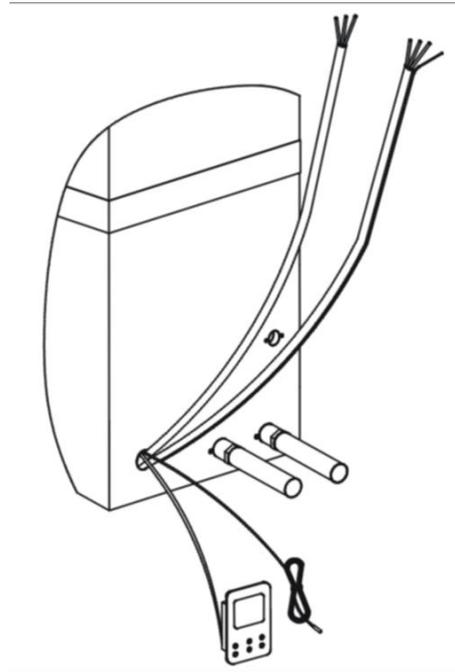


I

II



III

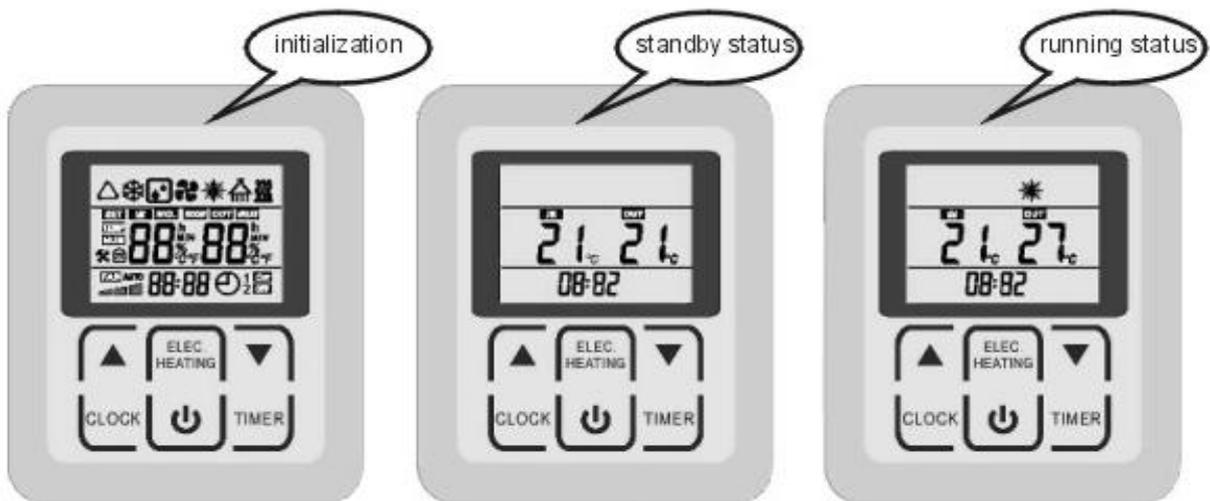


IV

NOTE

The live external control must be taken into consideration when connecting .

5. Controller manual



5.1 Overview

5.1-1 The controller is applied to air source heat pump systems, the temperature display range is -30 °C to 80 °C.

5.1-2 Mode: Heat pump heating and Electric heating mode

5.1-3 A query function for the water temperature and the setting temperature display .

5.1-4 Brownout automatic memory various parameters (optional);

P6

5.1-5 Timer function , time setting for ON-OFF , with battery (which can be automatically charging);

5.1-6 Temperature setting range is 25 °C ~ 65 °C;

5.1-7 Liquid crystal display screen .

5.2 Button

5.2-1. Power on (connect / plug in the electric wire or turn on the power switch) .

The screen display the versions No. for 2 seconds, and after 2 seconds again , the full-screen display, Then enter into the normal working status .

5.2-2. ON -OFF 

In the running state, push this button to TURN OFF the unit , and it show the water temperature, timer state and the clock. In OFF status, push this button to TURN ON the unit, and show the heat pump heating mode, setting temperature, water temperature, timer status and clock.

5.2-3. "▲", "▼"

Push the button for parameter settings, parameters enquiries, clock and timer adjustment, and so on.

In the clock settings status, Push the button to adjust clock hours and minutes;

In the timer on / off status , Push the button to adjust timer ON / OFF hours and minutes setting ;

In the normal status (not clock, timer set state), Push the button for temperature settings.

Push the both button "▲", "▼" at the same time for five seconds to enter into the keyboard lock, Push it time again for 5 seconds to quit the keyboard lock status .

5.2-4. "CLOCK"

Click here to enter clock settings, when it display flashing hours, according to "▲", "▼" button to adjust hours, and then push "CLOCK" to confirm hours setting and enter into minutes setting status , flashing minutes displayed, click "▲", "▼ " to adjust minutes, and then click "CLOCK " to confirm minutes setting and then quit from clock setting status .

In the ON / OFF timer status, push the key to cancel the timer setting .

5.2-5. "TIMER"

Push the button to enter into ON / OFF timer settings.

In the Non-clock settings state, push this button to enter into the ON/OFF timer settings status, push "▲", "▼" to select ON or OFF timer , and push the "TIMER" button tp confirm the mode of choiced , Flashing of hours at this moment , according to "▲", "▼" button to adjust hours, and then click "TIMER" button to confirm timer hour setting . And then the flashing minutes, according to "▲", "▼" adjustable minutes, Click "TIMER" button to confirm the setting and quit from the TIMER setting status .

5.2-6. "ELEC.HEATING" button

Push the button for 5 seconds to have the electric heating start , push it again to stop the electrical heating.

5.3 . Parameters query and setting

5.3-1 Parameters query .

P7

Press both the "ELEC.HEATING" and "▼" button for more than five seconds to enter into the parameters query status. Temperature setting region show the parameters query serial number, the clock region shows the content of parameters. Push "▲", "▼" to change the parameters serial number, Press the "ELEC.HEATING" button or no any action for more than 10 seconds , it will quit from query status .

- 1) d1, the upper water temperature [If there are not the temperature it will display "--"];
- 2) d2, Water outlet temperature ;
- 3) d3, the ambient temperature;
- 4) d4, coil temperature;
- 5) d5, suction gas temperature;
- 6) d6, compressor exhaust temperature;
- 7) d8, compressor accumulated time more than 2 grade number and input and state;
- 8) d9, compressor accumulated time lower 4 grade number (unit: hours).

5.3-2. Parameters settings

Press both the "ELEC.HEATING" and " (1) " button at the same time for more than five seconds to enter into the management of state-level parameters setting . Temperature setting parameters region show the parameters settings serial number , The clock region show the setting parameters content. Press "▲", "▼" to change the display setting parameters serial number, Press "TIMER" button to enter into the setting parameters change state , and push "▲", "▼" again can change the parameters set, then press "TIMER" button Save settings parameters, If the operation is successful there will be double-ring buzzer sound. Press "ELEC.HEATING" button or no any action for more than 10 seconds , it will quit from parameters setting status .

- 1) Show 1, enter into the temperature difference setting adjustment, range of 2 °C -15 °C, push the "▲", "▼" button to adjust, the factory setting is 4 °C;
- 2) Show 2, enter into the accuracy of temperature regulation, regulation of the range of: -5 °C -15 °C, press the "▲", "▼" button to adjust, the factory setting is 0 °C;
- 3) Show 3, enter into the defrosting temperature regulation, regulation of the range of: -9 °C -5 °C, press the "▲", "▼" button to adjust it , the factory setting is -2 °C;
- 4) show 4, enter into exit defrosting temperature regulation, regulation of the range is : 5 °C -30 °C, press the "▲", "▼" button to adjust, the factory setting is 10 °C;
- 5) show 5, enter into the defrosting time between regulation, regulation of the range of: 20 min-60min, press the "▲", "▼" button to adjust , the factory settings for 50 mins;

- 6) show **6**, enter into the defrosting run-time adjustment, adjusting the range of: 2 min-15min, press the "▲", "▼" button to adjust, the factory setting is 8 min;
- 7) show **7**, enter into the defrosting of the outdoor temperature regulation, regulation of the range of: 0 °C -30 °C, press the"▲", "▼" button to adjust, the factory setting is 12 °C;
- 8) show **8**, enter into the round of compressor run-time adjustment, adjusting the range of :3-15 hours, press the"▲", "▼" button to adjust. the factory settings is 8 hours;
- 9) show **9**, enter into the compressor downtime regulation, regulation of the range of :3-60 minutes, press the"▲", "▼" button to adjust . the factory settings is 30 minutes;
- 10) show **10**, entered the electric heating ambient temperature T regulation, regulation of the range of: -9 °C to 5 °C, press the"▲", "▼" button to adjust, the factory setting is 0°C;
- 11) show **11**, entered the electric heating temperature difference TD adjustment , adjust the range of: 2 °C -10 °C, press the"▲", "▼" button to adjust, the factory setting is 5 °C;

P8

- 12) Show **12** ,enter into the electronic expansion valve initial pulse data adjustment , the adjust range is 5—55 , the factory setting is 10 , the actual pulse data is 8 times of setting data .
- 13) Show **13** ,enter into the electronic expansion valve full open pulse data adjustment , the adjust range is : 60---75 , the factory setting data is 63 , and the actual pulse data is 8 times of setting data .
- 14) Show **14** , enter into electronic expansion valve over heating setting data adjustment , the adjust range is 25c to 50c , the factory setting is 25c .
- 15) Show **15** ,enter into electronic expansion valve intermission time adjustment , the adjust range is 3 to 90 seconds , the factory setting is 15 seconds .
- 16) show **16**, enter into the protection of the shutdown compressor discharge temperature regulation, regulation of the range of: 95 °C -130 °C, press the"▲", "▼" button to adjust . The factory setting is 108 °C;
- 17) show **17**, enter into the protection of shutdown fan motor exhaust temperature regulation, regulation of the range of: 90 °C -110 °C, press the"▲", "▼" button to adjust, The factory setting is 95 °C;
- 18) show **18**, enter into the adjustment of low pressure timing settings , t settings adjustment, adjusting the range of: 1 ~ 15 min, press the"▲", "▼" button to adjust, The factory setting is 5 min;
- 19) show **19**, enter the low-pressure environment temperature regulation, regulation of the range of: -10 °C -20 °C, press the"▲", "▼" button to adjust, the factory setting is 5 °C;
- 20) show **20**, enter into antifreeze water temperature settings T, the range of regulation: 2 °C -12 °C, press the"▲", "▼" button to adjust, The factory setting is 5°C;
- 21) Show **21** , enter into electronic expansion valve Min. pulse adjustment , the adjust range is 5—30 ,the factory setting is 5 ;
- 22) Show **22** , enter into electronic expansion valve Min. pulse data adjustment , the adjust range is 3—20c , the factory setting is 5c
- 23) Show **50** , enter into electronic expansion valve direction choice , The 0 means reverse , the 1 means positive , the factory setting is 1 .
- 24) Show **51** , enter into electronic expansion valve adjustment status , 0 is manual , 1 is auto , the factory setting is 1 .;

- 25) show **52**, enter into the power off restart function choice . Selection: 0 [no], 1 [yes], Press the"▲", "▼" button to adjust, The factory setting is 1 [yes];
- 26) show **53**, enter into the electric heating options, Options: 0 [no], 1 [yes], Press the"▲", "▼" button to adjust, The factory setting is 1;
- 27) show **54**, enter into the low-pressure protection option when the temperature is too low . Options: 1 [yes], 0 [no], Press the"▲", "▼" button to adjust, The factory setting is 1 ;
- 28) show **55**, enter into the high-pressure protection options, Options: 1 [yes], 0 [no], Press the"▲", "▼" button to adjust, The factory settings is 1;
- 29) show **56**, enter into the screen backlight options, Options: 1 [light for 15 seconds], 0 [Light always], Press the"▲", "▼" button to adjust, the factory setting is 1.

[Note: press both "▲" and "TIMER" for more than 5 seconds at the same time to restore factory settings .

6 . Failure show

P9

Bottom water temp. sensor	P2	
Coil temperature sensor	P3	
Suction temp. sensors	P4	
Exhaust temp. sensor	P5	
Ambient temp. sensor	P6	
High-pressure protection	E1	
Low-pressure protection	E2	
Water flow switch protection	E3	
Exhaust temp. protection	E4	
Defrosting	defrost	
Communications failures	E0	

[Note: temperature failure protection can be automatically restored, other fault protection are required press  to reboot]

7. Technical parameter

Model No.		EH-8DR	EH-10DR	EH-15DR	EH-18DR
Cooling/ Heating Capacity	KW	8	10	15	18
Electric Heating	KW	–	–	–	–
Power Supply	V /Hz	220-240/50	220-240/50	380-450/50	380-450/50
Input Power	KW	2.2	2.6	3.9	4.7
Running Current	A	10.1	11.8	10.2	12.5

Hot Water Produced Volume	M3/h	1.8	2.4	3	3.7
Water connection	Inch	1"	1"	1"	1"
Refrigerant(R417A)	Kg	2	2.3	2.8	3.3
Thermostat Maximum Setting	°C	65	65	65	65
Thermostat Factory Setting	°C	40-65	40-65	40-65	40-65
Noise	Db(A)	53	55	57	59
Unit Dimension(L/W/H)	mm	860/460/1215	860/460/1215	860/460/1215	1200/460/1308
Packing dimension(L/W/H)	mm	900/500/1255	900/500/1255	900/500/1255	1250/500/1358
Weight (Net / Gross)	Kg	128/137	130/1139	139/178	147/157

P10

8. Wiring Diagram

