

Troubleshooting - Heatseeker Nova⁺

Error Code Displayed on LED Controller

MALFUNCTIONS	ERROR	REASONS	SOLUTIONS
Inlet water temperature sensor failure	PP01	The sensor has an open or short circuit	Check or change the sensor
Outlet water temperature sensor failure	PP02	The sensor has an open or short circuit	Check or change the sensor
Condenser sensor failure	PP03	The sensor has an open or short circuit	Check or change the sensor
Gas return sensor failure	PP04	The sensor has an open or short circuit	Check or change the sensor
Ambient temperature sensor failure	PP05	The sensor has an open or short circuit	Check or change the sensor
Gas exhaust sensor failure	PP06	The sensor has an open or short circuit	Check or change the sensor
Antifreeze protection in winter	PP07	Ambient temperature or water inlet temperature is too low	<p>1. The first grade antifreeze protection condition: when $6^{\circ}\text{C} < \text{T1}$ water in temperature $< 10^{\circ}\text{C}$ and T5 ambient temperature $\leq 3^{\circ}\text{C}$, water pump should operate 30 minutes, then stop 30 minutes in this cycle.</p> <p>When ambient temperature $\text{T5} > 5^{\circ}\text{C}$ or T1 water in temperature $\geq 15^{\circ}\text{C}$, water pump stop operating will activate the antifreeze protection.</p> <p>2. The second grade antifreeze protection condition; T1 water in temperature $\leq 6^{\circ}\text{C}$ and $\text{T5} \leq 2^{\circ}\text{C}$, it goes into the second antifreeze protection, the heat pump should go into Smart mode for water heating will to $\text{T1} > 15^{\circ}\text{C}$ or $\text{T5} > 7^{\circ}\text{C}$.</p> <p>Remarks: The water pump and heat pump must be turned ON or in standby status.</p>

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Low ambient temperature protection	PP08	Ambient temperature or water inlet temperature is too low	
Cooling pipe temperature too high protection	PP10		Check the system
High pressure failure	EE01	<ol style="list-style-type: none"> 1. Too much refrigerant 2. Ambient temperature or water temperature is too high 3. Operating frequency is too high 4. Fan motor failure 5. High pressure valve failure 	<ol style="list-style-type: none"> 1. Discharge redundant refrigerant 2. Clean the air exchanger 3. Check and re-fix the wiring connection of high pressure switch 4. Replace the new high pressure switch
Low pressure failure	EE02	<ol style="list-style-type: none"> 1. Not enough refrigerant 2. Not enough water flow 3. Filter or capillary jammed 4. EEV failure 5. Fan motor failure 6. Low pressure switch failure 	<ol style="list-style-type: none"> 1. Check if there is any gas leakage, re-fill the refrigerant 2. Clean the air exchanger 3. Replace the filter or capillary 4. Check and re-fix the wiring connection of low pressure switch 5. Replace the low pressure switch
Water flow failure	EE03	Low water flow, wrong flow direction, or flow switch failure.	<ol style="list-style-type: none"> 1. Check if the water flow is high enough 2. Check if the water flow switch was installed in correct direction 3. Check the wiring of water flow switch 4. Replace the new water flow switch
T2 Water temperature overheating under heating mode	EE04	Water flow low or no water	<ol style="list-style-type: none"> 1. Check and repair the water pump 2. Clean the water pipe system 3. Check the water flow switch
T6 Gas exhaust too high protection	EE05	<ol style="list-style-type: none"> 1. Defrosting is inadequate 2. Insufficient gas 3. The throttling device is jammed 4. Low water flow 	<ol style="list-style-type: none"> 1. Manual defrosting 2. Add the gas 3. Change the throttling device 4. Check the water pump
Controller failure	EE06	<ol style="list-style-type: none"> 1. Wire connection faulty 2. Controller failure 	<ol style="list-style-type: none"> 1. Check or change the signal wire 2. Restart the power supply 3. Change the controller
Compressor current protection	EE07	The compressor current is too large instantaneously	

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Communication failure between wire controller and main control board	EE08	1. Wire connection faulty 2. Controller failure	1. Check or change the wire connection 2. Restart the power supply or change the controller
Communication failure between main control board and driving board	EE09	Wrong wire connection	Rewiring Restart the power supply or change the Main control board
VDC voltage too high protection	EE10	BUS voltage is too high, higher than 680V	Check the power supply
IPM module protection	EE11	The data is wrong or broken	Restart the power supply or change the PC board
VDC voltage too low protection	EE12	BUS voltage is too low, lower than 370V	Check the power supply
Over current protection	EE13	The voltage is too low, the heat pump is overloaded	1. Check the power supply 2. Check the water temperature whether it is too high
IPM module temperature sensing circuit output failure	EE14	IPM module temperature sensor output is abnormal	Check the PC board or replace with new one
IPM module temperature too high protection	EE15		Check the PC board or replace with new one
PFC module protection	EE16		Check the PC board or replace with new one
DC fan failure	EE17		Check the PC board or replace with new one
PFC module temperature sensing internal circuit failure	EE18		Check the PC board or replace with new one
PFC module high temperature protection	EE19		Check the PC board or replace with new one
Input power failure	EE20	The supply voltage fluctuates too much	Check the PC board or replace with new one
Software control failure	EE21	Compressor runs out of step	Check the PC board or replace with new one
Current detection circuit failure	EE22	The amplifier output voltage signal is abnormal	Check the PC board or replace with new one
Compressor start failure	EE23		Check the PC board or replace with new one
Driving board ambient temperature bulb failure	EE24		
Compressor phase failure	EE25	1. Wiring wrong 2. Connection of 1 phase or 2 phases	Monitoring the controller

Other Malfunctions and Solutions - No LED Display

OBSERVING	MALFUNCTIONS	REASONS	SOLUTIONS
No display on LED	Heat pump is not running	No power supply	Check cable that circuit breaker is connected
LED controller displays real time	Heat pump is not running	Heat pump on standby	Start heat pump to run
LED controller displays the actual water temperature	Heat pump is not running	<ol style="list-style-type: none"> 1. Water temperature is reaching setting value, heat pump is under constant temperature status 2. Currently defrosting 	<ol style="list-style-type: none"> 1. Verify water temperature setting 2. Start up heat pump after a few minutes 3. LED controller should display "Defrosting" 
LED controller displays actual water temperature and no error codes	Water temperature is cooling when heat pump runs in heating mode	<ol style="list-style-type: none"> 1. The incorrect mode has been chosen 2. Figure show defects 3. Controller defect 	<ol style="list-style-type: none"> 1. Adjust the Mode 2. Replace the LED wire controller, and then check the status, verifying the water inlet and outlet temperature 3. Replace or repair the heat pump unit
LED displays actual water temperature, no error code displays	Short running	<ol style="list-style-type: none"> 1. Fan not running 2. Air ventilation is insufficient 3. Refrigerant is insufficient 	<ol style="list-style-type: none"> 1. Check the cable connections between the motor and the fan- replace if necessary 2. Check the location of the heat pump unit and eliminate all obstacles to increase ventilation 3. Replace or repair the heat pump unit
Water stains on heat pump unit	Water Stains	<ol style="list-style-type: none"> 1. Concreting 2. Water leakage 	<ol style="list-style-type: none"> 1. No action required 2. Check the titanium heat exchanger carefully to observe any defects 3. LED controller should display "Defrosting"
Ice on evaporator	Too Much Ice On Evaporator		<ol style="list-style-type: none"> 1. Check the location of heat pump unit and eliminate any obstacles to increase ventilation 2. Replace or repair the heat pump unit

Maintenance

1. You should check the water supply system regularly to ensure correct water flow and that air is entering the system. This may result in a reduction in the performance and reliability of heat pump unit.
2. Clean your pool and filtration system regularly to avoid damage to the heat pump.
3. In areas subject to sub zero temperatures, the heat pump must be de-commissioned during the winter months. To do this, the drainage plug must be removed from the heat pump to allow water to drain from the heat exchanger. Once the water has been drained from the unit, the drainage plug can be re-installed for use of the heat pump.
4. For optimum performance the flow rate must match specifications provided by the manufacturer.
5. Place the winter cover on the heat pump while the unit is unused during Winter.
6. The air drawn into the heat pump is cooled by the operation of the heat pump for heating the pool water, which may cause condensation on the fins of the evaporator. The amount of condensation may be as much as several liters per hour at high relative humidity.