



MEDI WAVES INC.



INFANT INCUBATOR

**MODEL
P-002**

STABLE

AMBIENT TEMPERATURE MONITORING

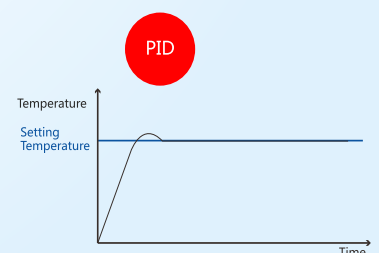
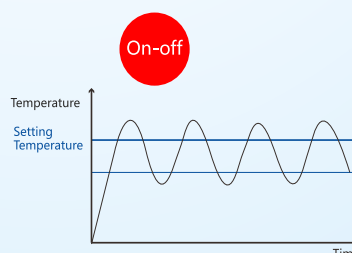
The incubator compares the difference between the ambient temperature and the set temperature and adjusts the heating power output accordingly to maintain a more stable air temperature inside the hood.

PID FUZZY ALGORITHM

With advanced PID control technology, temperature variability is minimized to as little as 0.2°C , while temperature overshoot is significantly reduced.

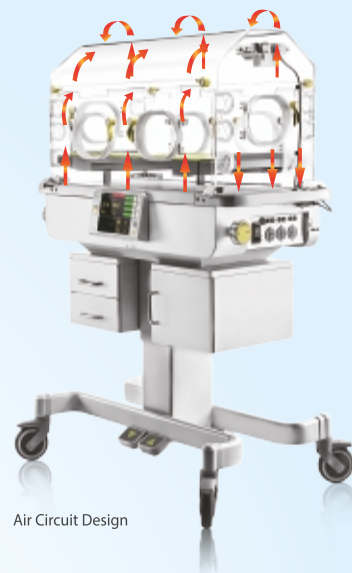
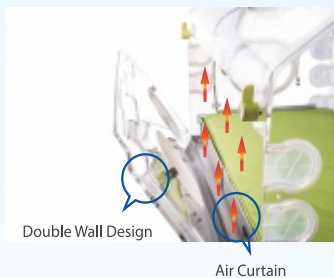
HEATING SYSTEM MONITORING

Monitors not only the hood air temperature but also the radiator and circuit air temperatures. By collecting temperature information from each component, the temperature control system provides more accurate and reliable temperature management.



TEMPERATURE UNIFORMITY

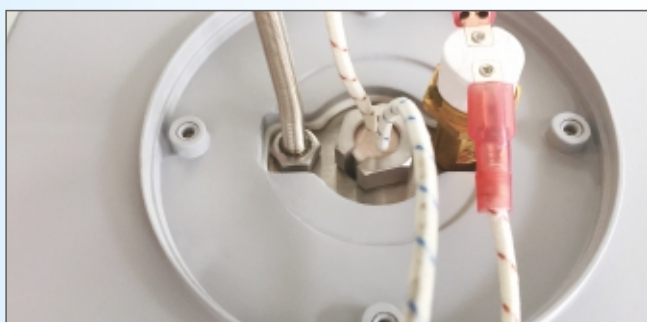
The incubator's air circulation system is designed based on extensive experimentation and aerodynamic principles. Temperature uniformity is optimized as much as possible to provide infants with a safe and stable micro-environment.



RELIABLE

HEATING SOURCE DOUBLE PROTECTION

The system is equipped with both a thermocouple and a mechanical temperature switch to protect the heating source of the heating system and evaporator. The thermocouple reads the real-time temperature and maintains it within a safe range by feeding the temperature value back to the control module. The mechanical temperature switch is connected in series with the circuit; if the heating source temperature reaches an abnormal level, the temperature switch physically cuts off the circuit.



THREE CHANNEL TEMPERATURE SENSORS

There are three temperature sensor channels in the module box. One channel is used to measure the hood temperature and maintain it at the set value.

Another temperature sensor is connected to an independent circuit and is used solely for protection. The third sensor is used to compare its reading with those of the other two sensors. If the readings of the three sensors differ by more than 0.8°C, an alarm is triggered.



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Office: B-68, G.T. Karnal Road Industrial Area, Delhi-110033, India
Works: 92, Sec-57, Phase-IV, HSIIDC Kundli, Sonapat, Haryana - 131028

info@medi-waves.com
+91-11-4238-4227

ALARM LIST



MEDI WAVES INC.

Medi-waves Provides a wide range of physiological and technical alarms to improve the treatment effect and eliminate residual risk from the device.

A. System Fault Alarm

Stuck Key	This alarm occurs when a stuck key is detected.
Sensor Disconnect	This alarm occurs when communication with the sensor module fails.
Sensor Module Failure3	This alarm occurs when the controller detects a sensor module fan is not rotating.
Sensor Module Failure6	This alarm occurs when the controller detects the ambient temperature sensor is open or shorted.
Sensor Module Failure8	This alarm occurs when the controller detects that the sensor module watchdog reset.
Low Air Flow	This alarm occurs when an air circulation failure is detected.
Air Flow Probe Failed	This alarm occurs if the air flow probe connection is open or short circuited.
Motor Failed	This alarm is activated when the fan motor speed falls outside specified tolerances.
Power Failure	This alarm occurs when the AC power supply is off.(within 30s)
Battery Disconnect	This Alarm occurs when battery is disconnected.
Sensor Out of Position	This alarm occurs when the sensor module is not in the hood.
Access Panel Open	This alarm occurs when access panel is open.
Heater Failed1	This alarm occurs when the heater is over temperature.
Heater Failed2	This alarm occurs when the heater is damaged.
Air Probe Failed	This alarm occurs when one of the two thermistors in the sensor module differ from the other by 0.8°C or both two thermistors have a measurement error exceeding acceptable limits.
Skin1 Probe Fail Alarm	This alarm occurs in the Skin mode if the Skin1 probe is electrically open or shorted.
Watchdog Failed	This alarm occurs when a failure is detected with the watchdog.

B. Temperature Alarm

High Skin Temperature	This alarm occurs when the indicated displayed temperature differs from the set temperature by > 0.5°C or >1.0°C (user selectable, default 1.0°C).
Low Skin Temperature	This alarm occurs when the indicated displayed temperature differs from the set temperature by < 0.5°C or <1.0°C (user selectable, default 1.0°C).
Remove Skin2 Probe	This alarm occurs when two skin probes are installed and the Skin mode is selected.
Skin Probe Disconnect	This alarm is activated when the Skin1 temperature probe (only in the Skin mode) is removed from the sensor module. The associated monitoring display is blanked. (within 30s)
High Temp CutOut	Under air control, this alarm is activated if the displayed incubator temperature reaches 38°C for set temperatures <37°C, or 40°C for set temperatures >37°C. Under skin control, this alarm is activated if the incubator temperature reaches 40°C for any set temperature.
High Air Temperature	This alarm occurs when the indicated displayed temperature differs from the set temperature by >1.5°C.
Low Air Temperature	This alarm occurs when the indicated displayed temperature differs from the set temperature by <2.5°C.
High Skin1 Temperature	This alarm occurs when the Air mode is enabled and the infant skin temperature (from the Skin1 probe) is >38.0°C when the Override mode is not active, or >39.0°C when the >37°C mode of operation is active.
High Skin 2 Temperature	This alarm occurs when the Air mode is enabled and the infant skin temperature (from the Skin2 probe) is >38.0°C when the Override mode is not active, or >39.0°C when the >37°C mode of operation is active.

C. Humidity Alarm

Humidity Heater Failed 1	This alarm occurs when the humidity heater temperature is over heat.
Add Water	No enough water in water reservoir.
Low Humidity	This alarm occurs when the humidity is 10% lower than setting humidity. Note: The alarm is blocked for 30 minutes everytime turn on the machine, or 15 minutes everytime the humidity setting value is changed.
Reservoir Out of Position	This alarm occurs when the water reservoir not in position.
Humidity Heater Failed 2	This alarm occurs when the heater thermocouple wires are open or shorted.

D. Oxygen Alarm

Oxygen Cell Difference	This alarm occurs when the oxygen cell readings differ by more than 3%. As a result, the oxygen flow into the system is interrupted.
Low Oxygen	This alarm occurs when the displayed oxygen value is >3% below the oxygen set point.
High Oxygen	This alarm occurs when the displayed oxygen value is >3% above the oxygen set point.
Change Oxygen Cells	This Alarm occurs when the oxygen cells are out of date.
Check O2 Supply	This Alarm occurs when the O2 source pressure is low or high.
Servo O2 System Fail	This Alarm occurs when proportional value is failed.
O2 Cell Disconnect	This Alarm occurs when the oxygen cell is disconnected with module box.



8" LCD display, user friendly interactive operation interface



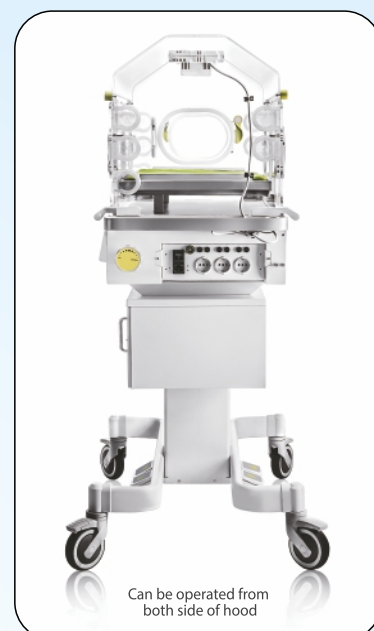
Big storage drawers



Ergonomic designed handle with perfect height



Detachable water reservoir, easy to clean and sterilize



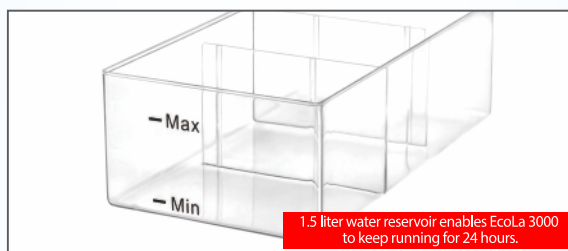
Can be operated from both side of hood

COMFORTABLE

- EcoLa provides newborn a super quiet environment. With the help of aerodynamics, EcoLa's hood sound is reduced to 45dB.
- With great detail design, EcoLa is also devoted to provide medical personnel pleasure operation experience.



Three auxiliary power output



1.5 liter water reservoir enables EcoLa 3000 to keep running for 24 hours.



Tente castor with lock

SPECIFICATION

Give every newborn the best start in life

Physical Attributes	Height 126.1cm to 146.1cm	Width 99.7cm	Depth 57.7cm	Weight 80kg
Hood Specifications	Tubing access ports 10	Access door size 18 x 13cm	Mattress to hood height 4.8cm	
	Soft bed mattress size 73.6 x 38.6 x 1.8cm	Mattress tilt ±12°	Drawer depth 36cm	
	Drawer size 28.0 x 24.7cm 28.0 x 11.3cm(x2)			
Temperature Control Modes	Temperature control modes Skin and air temperature control mode	Air mode control temperature range 20° C-37° C	Air mode control override temperature range 37° C-39° C	
	Air mode control accuracy ≤±1.0° C	Skin mode control temperature range 34° C-37° C	Skin mode control override temperature range 37° C-38° C	
	Skin temperature accuracy ±0.3° C	Dual-skin temperature monitoring Yes		
Servo Humidity Option	Humidity control range 30%-95% RH	Humidity control operating time without refilling 24 hours	Humidity control reservoir capacity 1500ml	
	Humidity display accuracy ±5% RH	Humidity control accuracy ±5% RH		

Performance	Air flow velocity across mattress < 10 cm/sec	Temperature rise time at 22 °C (72 °F) ambient <20min (From 22 °C, 50% RH, to 35 °C) < 0.2 °C	Temperature variability < 0.2 °C
	Temperature overshoot < 0.5 °C maximum	Temperature uniformity with a level mattress < 0.8 °C	Operating noise level in hood ≤45dBa
	Carbon Dioxide (CO2) Level <0.5%		
Servo Oxygen Option	Oxygen display accuracy of full scale ± 2%	Oxygen control accuracy (100% calibration) ± 3%	Oxygen control accuracy (21% calibration) ± 5%
	Oxygen control range 21 % to 65%	Oxygen display resolution 1%	
Scale Option	Weight range 300 g to 8 kg	Weight display resolution 1 g	Weight accuracy ±10 g
Operating Environment	Temperature 20° to 30° C	Humidity 10 to 95% RH	Air Velocity Up to 0.3 m/sec
Storage/Shipping Information	Temperature -25° to 60° C	Humidity 0 to 95% RH	

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