Spyder Robotics

Herpstat ND User's Manual

www.spyderrobotics.com

Thank you for choosing the Herpstat ND digital proportional thermostat. This product offers the following features:

- Proportional heating constantly monitors and adjusts amount of heat necessary to maintain a target temperature (Usable range from 50˚F to 110˚F or 10˚C to 45˚C). Can also be used in non-proportional (on / off) mode .
- Sensor Matching allows the user to digitally calibrate the sensor output to match other equipment.
- Power Matching allows the user to increase / decrease the proportional power output curve to match the enclosures efficiency.
- Coil Warming feature for enclosures using heating coils to increase accuracy.
- Night Drop feature built in with real time clock.
- Cooling function allows control of basic cooling devices.
- High / Low temperature tracking helps monitor heating system and enclosure efficiency.
- Individually selectable High / Low temperature threshold alarms.
- Precision sensor with internal resolution of .1125 ˚F and is accurate to ± .9 ˚F
- Display and setting in tenths of a degree.
- Alarm Clock feature great for daily reminders.
- All settings are retained in memory even if power is lost.
- Power Outage detection / tracking.
- Temperature can be set / displayed in Fahrenheit or Celsius.
- Easy to read backlit LCD display.
- Removable sensor for easy replacement if necessary.
- Resettable fuse never requires replacement.
- Audible alarm system
- Internal error detection shuts off heat if sensor fails or is disconnected.
- 600 Watt rating sufficient for most incubators, rack systems, enclosures, and vivariums.
- 1 year limited warranty

Hardware Installation

WARNING – FIRE OR ELECTRICAL SHOCK MAY RESULT FROM MISUSE. For INDOOR USE ONLY!

1. Insert the connector on the temperature probe into the jack on the top left side of the Herpstat ND.
2. Attach the Herpstat ND power plug to a standard wall outlet.
3. Attach heating device to any of the three outlets on the Herpstat ND. These devices may include heat tape, heat coils, mats or other resistive load heating devices. Not recommended for use with rock heating devices or other devices that come in direct contact with the animal. In cooling mode the outlets can be used for emergency fans. **Do not exceed 600 watts.**

Configure Menu

Adjustments: Display Type, Mode, Coil Warmer, Power Matching, Sensor Matching, NiteDrop Start Time, NightDrop End Time, SetClock, Alarm Clock

When first powered on the Herpstat ND will display the temperature probe status. To enter the Configure Menu press the + Menu button (this menu only is available from the probe status screen. Use the – Display button to navigate to it if necessary). The display will show two options:

+ Setup
- Config

Press the - button to enter the Configure Menu. While in the Configure Menu the Herpstat ND will toggle to the next option after 5 seconds of inactivity and will return to normal operation once all options have been displayed. While in the Configure Menu the output is disabled.

Display Type
Options: Celsius/Fahrenheit
The default setting is to display temperature in Fahrenheit. After changing display modes the target temperature, night drop amount, temperature thresholds, and the sensor matching setting will be reset to the default setting.

Mode
Options: Proportional / Non-Proportional / Cooling
The default setting is for Proportional. Proportional mode varies the power output to the heating device as necessary to maintain the target temperature. Non-proportional works as a standard ON/OFF style thermostat. Cooling function allows the attachment of emergency fans and functions as a non-proportional output.

Coil Warmer
Options: ON / OFF
This option is used for incubators that have a coil heating element and is only available in proportional mode. In testing one of the biggest problems with coil heat elements is the startup time it takes to warm the coil during regulation. Turning this feature on will keep a small amount of power applied to the coil for a few tenths of a degree over the target temperature. This limited amount of power usually is not enough to raise the temperature of the environment but keeps the coil warm so that it can regulate faster once the temperature drops.

Power Matching
Options: Normal / High1 / High 2 / High 3 / Low1 / Low2 / Low 3
The default setting is Normal. This option is only available if the output is set to Proportional Mode. This mode allows you to adjust the power curve of the Herpstat ND to match the enclosures efficiency and better maintain the target temperature.

Sensor Matching
This option allows users to match the Herpstat ND to other temperature sensing equipment. Use the + and – buttons to adjust the offset.

Note: The Herpstat ND sensor is very accurate in its default setting. Modifications in this menu are not typically necessary.

NiteDrop Start Time
This is the time the day cycle will end and the night time cycle will begin.

NiteDrop End Time
This is the time the night cycle will end and the day cycle will begin.

SetClock
Adjusts the internal clock's time.

Alarm Clock
The alarm clock feature allows the Herpstat ND to give an audible beep sequence just like a standard alarm clock. Pushing either button will stop the alarm.

Setup Menu

Adjustments: Temperature, Night Drop Temp, High / Low Threshold Alarms

When first powered on the Herpstat ND will display the temperature probe status. To enter the Setup Menu press the + button (this menu only is available from the probe status screen. Use the – Display button to navigate to it if necessary). The display will show two options:

+ Setup
- Config

Press the + button again to enter the Setup Menu. While in the Setup Menu the Herpstat ND will toggle to the next setting after 5 seconds of inactivity and will return to normal operation. While in the Setup Menu the output is disabled.

Day Temp
This is the desired temperature during daytime hours. Default setting is 85˚F or 30˚C.

NiteDrop
This is the amount of degrees you would like to drop during night time hours. For incubators or other environments that do not require this feature set it to OFF. This option is adjustable in tenths of a degree up to 20.0˚F or 10.0˚C.

Example: If your day time temperature is set to 88˚F and at night you would like it to drop to 82˚F then you would set the NiteDrop to 6.0 (88˚F – 6˚F = 82˚F).

H-Alarm L-Alarm
The temperature threshold alarm feature of the Herpstat ND is adjustable from .5 to 10 degrees in tenths of a degree increments. This feature should not be set until the environment has reached its standard operating temperature. Once set, if the temperature exceeds or drops below the threshold the Herpstat ND will sound an audible alarm and will display a + or – next to the temperature depending on which alarm was breached. Pressing either button will mute the alarm for 5 minutes. The alarm will still display on the screen.

Example: An incubator set with a standard temperature of 88 degrees, H-Alarm set for .5 degrees and L-Alarm set for 1 Degree. If the heating coil fails and the temperature reaches 87.5 or below an audible alarm will sound. Also, should the heat raise to 88.5 or above the audible alert will sound.

If the night drop option is activated there will be a between time when the environment is changing from the day temperature to the night temperature or night to day. From the time the NiteDrop is activated or deactivated the H-Alarm and L-Alarm will be disabled for 15 minutes to allow the environment to stabilize. At that point they will return to normal operation.

Tip: Most environments have a degree sway unless it's a well insulated incubator with a properly set Power Matching setting. Monitor your environment before using this feature to determine the most realistic setting.

The Display

Options: Temperature Probe Status & Power Output / High Low Status / Power Outage Monitor Internal Clock

Use the – button to toggle between displays. Use the + button to enter a menu or set options.

Temperature Probe Status & Power Output
Shows the current temperature from the attached probe and the amount of power being applied to the output.

High Low Status
Displays the highest and lowest temperature recorded. Pressing the + button will reset the High / Low temperatures to the current temperature.

Power Outage Monitor
Each time the Herpstat ND is powered on it increments this monitor. To reset the monitor to zero press the + button.

Internal Clock
Displays the current time and also displays the current day / night cycle determined by the Night Drop Start / End times.

Getting the most out of your Herpstat ND

When setting up a new environment allow a minimum of one hour for the temperature to stabilize. Keep in mind that all items in the enclosure are warming up including the enclosure walls. Probe placement may require experimentation to achieve proper temperature regulation.

Getting the most out of your Herpstat ND (*continued*)

Adjusting the Power Matching Mode to match an enclosure's efficiency is especially important for incubators. This setting adjusts the power output curve of the Herpstat. The settings from lowest to highest power output are Low3, Low2, Low1, Normal, High1, High2, High3. Once an enclosure has stabilized watch the tenths of a degree.

If the temperature is set for 92.5 degrees and the power output is set to Normal the following would be true:

If the temperature increases to 92.3 but never reaches the target temperature then increase the power output to High1 or High2 if necessary.

If the temperature gets to the target temperature and overshoots watch the tenths of a degree closely. When the temperature starts to drop, if it stays within that last tenth (92.4 or 92.3) and then increases and overshoots again the power needs to be decreased. Try Low1 or Low2 if necessary.

If the temperature gets to the target temperature and overshoots then drops to 92.2 or lower then the power output most likely needs to be increased. Try High1 or High2 if necessary.

Each time a change is made to the power matching mode allow another 30 minutes to regulate.

Herpstat ND Error Code Descriptions

1=Sensor not present
2=Sensor is shorted
3=Invalid Sensor reading
4=High Temp Alarm breached
5=Low Temp Alarm breached

The Herpstat ND has a built in resettable fuse. In a overload or overheat condition the fuse will trip. To reset the fuse unplug the Herpstat ND for 2 minutes and then reapply power.

Getting Help

Questions or comments can be e-mailed to:
support@herpstat.com
To purchase accessories please visit us on the web at:
http://www.spyderrobotics.com

1 Year Limited Warranty

Spyder Robotics warrants this product to be free from defects in workmanship and material for a period of one year from the date of purchase by the original purchaser. The warranty period shall not extend beyond 3 years from the date Spyder Robotics shipped the product. During this warranty period Spyder Robotics will repair or replace, at its option, any component parts that in its opinion prove to be defective. Replacement parts may be new or serviceable used parts at Spyder Robotics option, of equal or better quality to those being replaced. This warranty does not extend and shall not apply to products that have been subjected to misuse, neglect, accident, or improper installation.

THIS LIMITED WARRANTY AND REMEDY ARE EXCLUSIVE AND EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MECHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL SPYDER ROBOTICS BE LIABLE FOR LOST PROFITS, LOSS OF GOODWILL, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES.

If you return your product to Spyder Robotics for warranty service, proof of purchase may be required. A Return Material Authorization (RMA) number must be obtained prior to the return. Spyder Robotics is not responsible for material returned without the RMA number clearly printed on the outside of the shipping container. To request an RMA number, contact Spyder Robotics with the description of failure, serial number of device, and date of purchase via e-mail at **returns@spyderrobotics.com**. Products to be returned to Spyder Robotics must be returned, shipping and insurance prepaid, by the original purchaser to the address below**.**

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