

# **Automatic Humidistat**

Doberman Security & Automation

Version 4.0

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Experts agree. As the outside air temperature gets colder, the humidity inside should decrease. Decreasing the humidity inside prevents frost, ice and eventually mildew from growing on your windows. But for health and maximum comfort, you want as much moisture as possible. How often do you adjust your humidistat?

Doberman can check the outside temperature and adjust the humidistat 10 times an hour.

## ***What is needed to run an Automatic Humidistat***

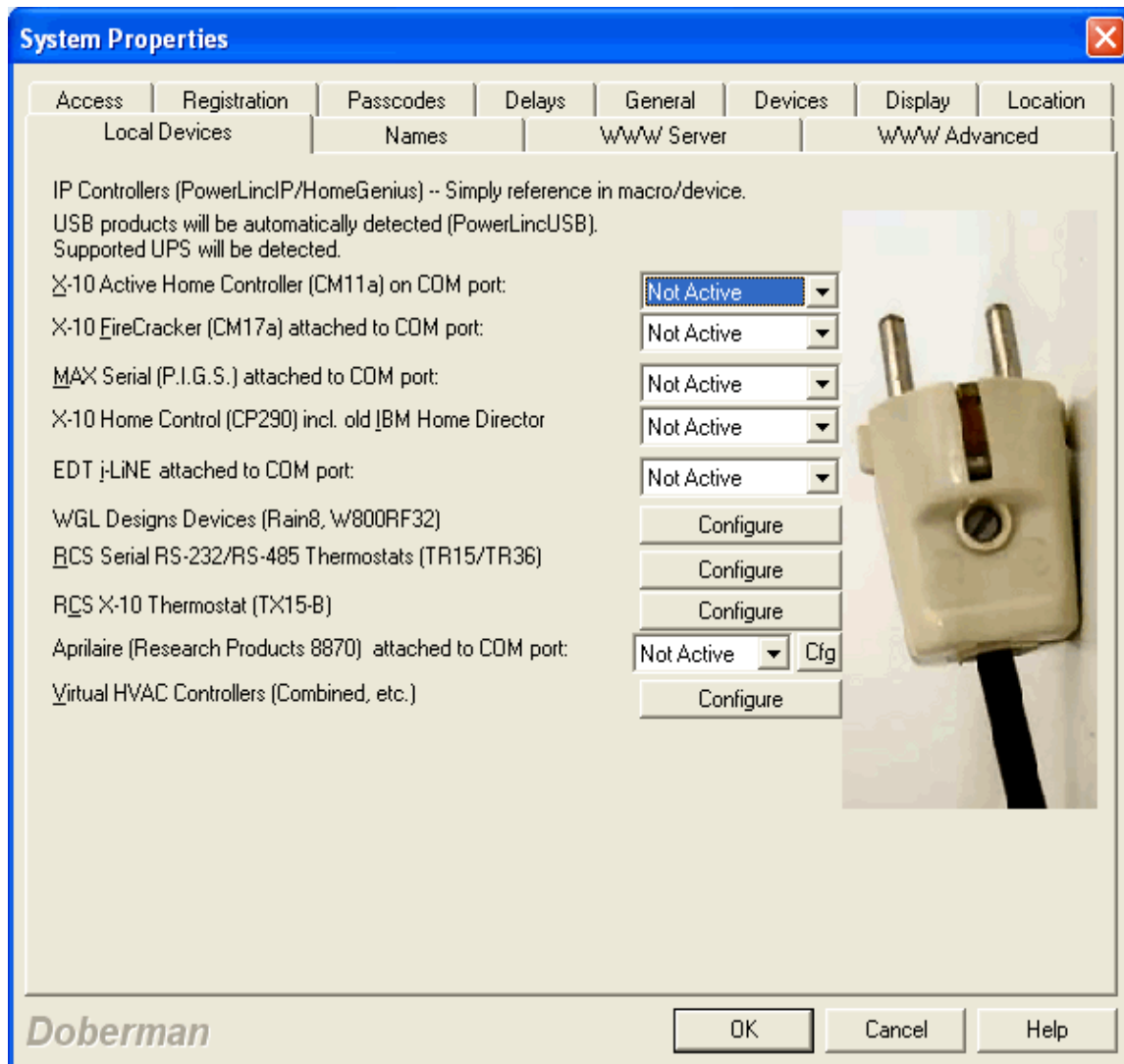
Doberman requires a controllable humidistat and an outside temperature sensor.

A complete hardware solution is provided by Aprilaire as an 8870 in humidifier mode, and an Outdoor temperature sensor.

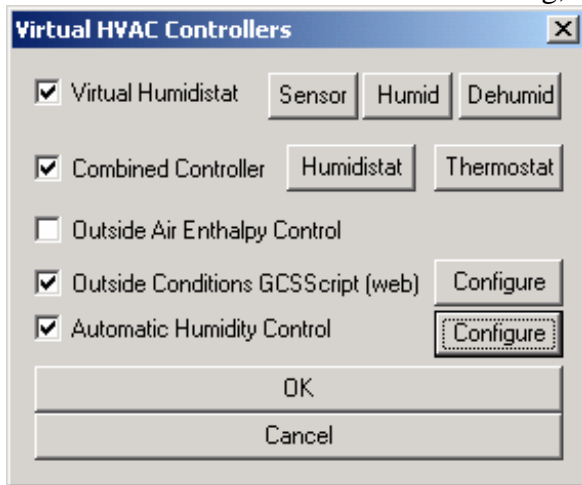
Other configurations can include a RCS thermostat with outdoor sensor, or even using a GCSScript virtual sensor (web based) and the Virtual Humidistat.

## Configuring the Automatic Humidistat

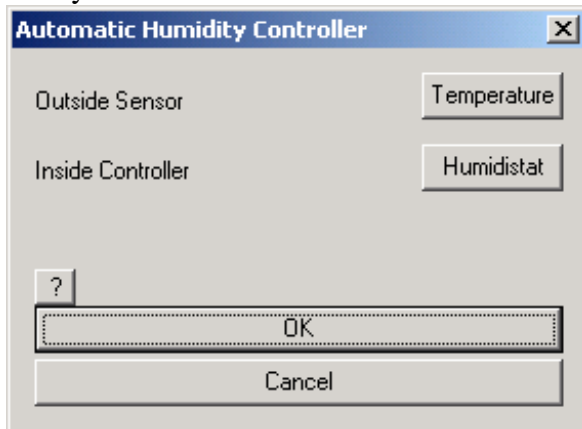
In order to utilize the Automatic Humidistat, choose the Virtual HVAC Controllers from the device tab:



From the Virtual HVAC Controllers dialog, choose Automatic Humidity Control.



And configure the outside humidity sensor (this setting is shared by the Outside Air Enthalpy Control configuration. If you have previously configured the Enthalpy control, you need not reconfigure this sensor.) Finally, configure the inside Humidistat you wish this system to control.



As an advanced option, you may wish to optimize the humidity scale to suit your comfort level or offset calibration of the sensor. This is done via XML file.

In the installed directory (default: c:\program files\Doberman\ or c:\program files\epAssist) you can create or edit a file called AutoHumidifier.xml

The format is, for Fahrenheit:

```
<humidity>
  <setpoints>
    <tempf = 40>40</tempf>
    <tempf = -30>10</tempf>
  </setpoints>
</humidity>
```

For Celsius:

```
<humidity>
  <setpoints>
    <tempc = 4>40</tempc>
    <tempc = -34>10</tempc>
  </setpoints>
</humidity>
```

Where tempf or tempc is the temperature, and the value is the indoor Relative Humidity (RH%) Above is the default settings, should the XML file be missing or unreadable. These are the industry suggested norms.

You may set whatever setpoints you require between these temperatures in the same matter. Any missing points will be set in a linear fashion, between the next lower and greater setpoints.

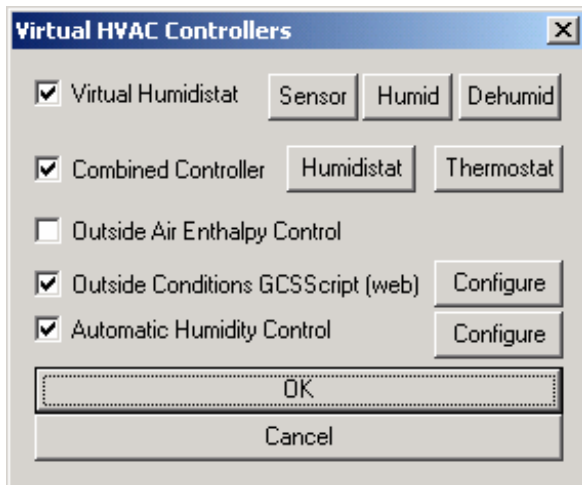
Sample contents of AutoHumidifier.xml

```
<humidity>
  <setpoints>
    <tempc = 40>40</tempc>
    <tempc = 30>40</tempc>
    <tempc = 20>40</tempc>
    <tempc = 10>37</tempc>
    <tempc = 0>32</tempc>
    <tempc = -10>25</tempc>
    <tempc = -20>20</tempc>
    <tempc = -30>10</tempc>
  </setpoints>
</humidity>
```

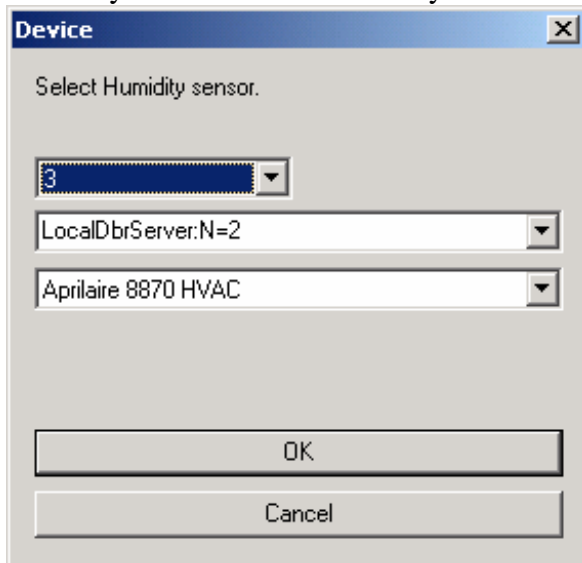
## Sample Configuration

Using a single Aprilaire 8870 thermostat with TrH Support Module (for indoor Humidity sensing) and a forced-air in-duct humidifier connected to an X10 controlled relay.

- Humidifier installed as per instructions
- Humidifier set to MAXIMUM humidity allowable in the house (this is a safety, should the X10 device miss the 'off' command.)
- Splice an X10 Universal Module (UM506-HA) to interrupt power to Humidifier
- Configure your Aprilaire 8870 to run with Doberman
- Enable Virtual Humidistat



- 
- Choose your 8870 as the humidity sensor



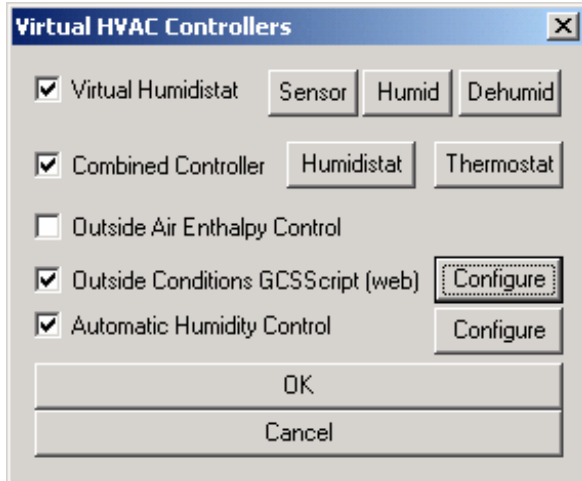
- 
- Choose your UM506-HA as your humidifier

The screenshot shows a dialog box titled "Device" with a close button (X) in the top right corner. The text inside reads "Select Humifier controller device." Below this text are four input fields: a dropdown menu with "B" selected, a text box containing "1", a dropdown menu with "LocalDbrServer" selected, and a dropdown menu with "CM11a" selected. At the bottom of the dialog are two buttons: "OK" and "Cancel".

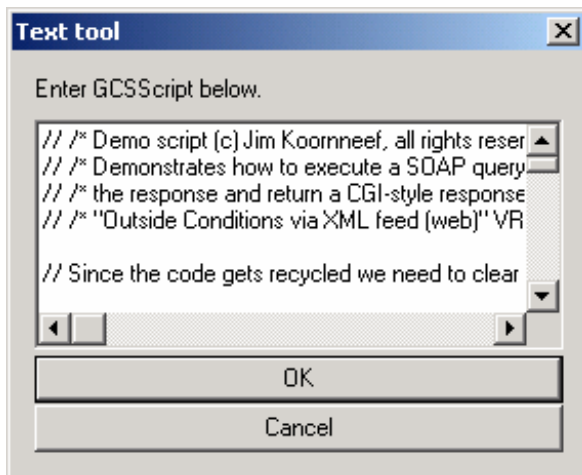
- 
- If you have a dehumidifier, select that also

The screenshot shows a dialog box titled "Device" with a close button (X) in the top right corner. The text inside reads "Select Dehumifier controller device." Below this text are four input fields: a dropdown menu with "B" selected, a text box containing "2", a dropdown menu with "LocalDbrServer" selected, and a dropdown menu with "CM11a" selected. At the bottom of the dialog are two buttons: "OK" and "Cancel".

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- Since we do not have an Outdoor temperature/humidity sensor, we will use the Virtual Outside Conditions sensor.
- Configure Outside Conditions



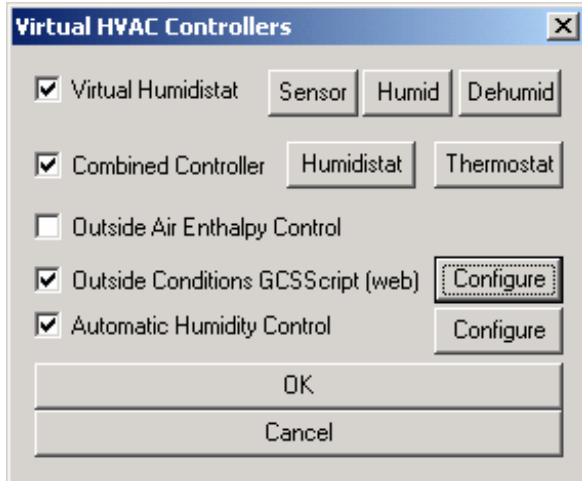
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- And write your code to visit a web site or web services to extract the required information.



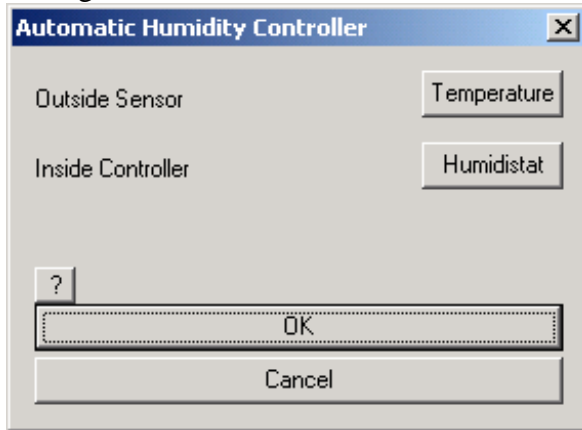
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- Looking for GCSScript or have written one? Share it at <http://groups.yahoo.com/group/DobermanBMS>
- Your script should return XML in the form of:

```
<outside>
  <temp>75</temp>
  <scale>F</scale>
  <humid>56</humid>
</outside>
```

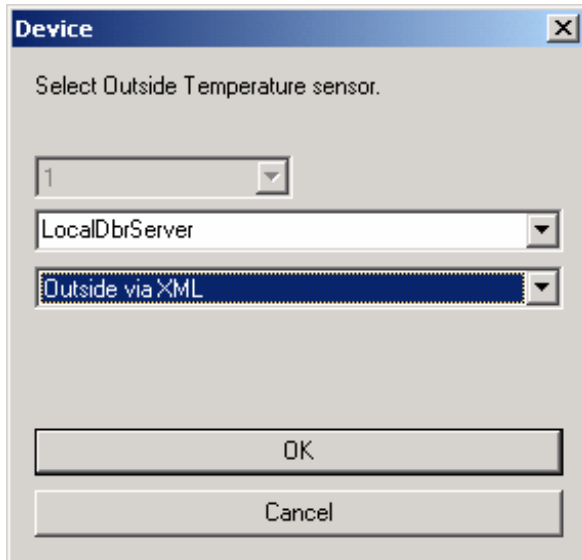
- Configure Automatic Humidity Control



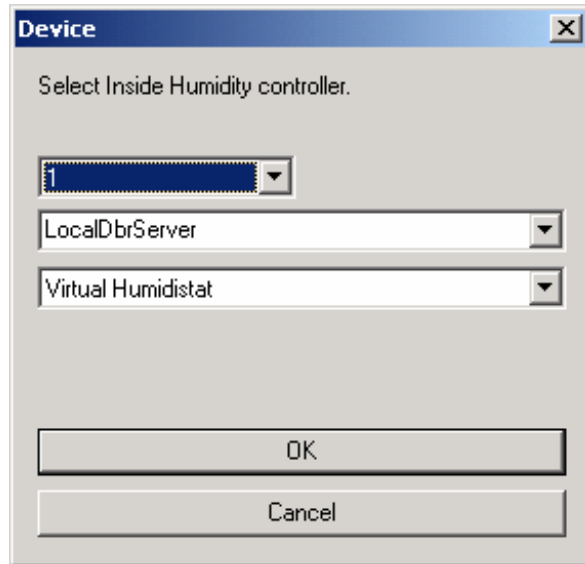
- 
- Configure the sensors



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- The Outside Sensor is Outside VIA XML



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- The Inside Controller is the Virtual Humidistat



Your system is now configured to check the web 10 times an hour, and adjust the humidifier. The virtual humidistat will check the humidity reported by the 8870 and control 2 X10 devices (B1, and B2 in this case.)

