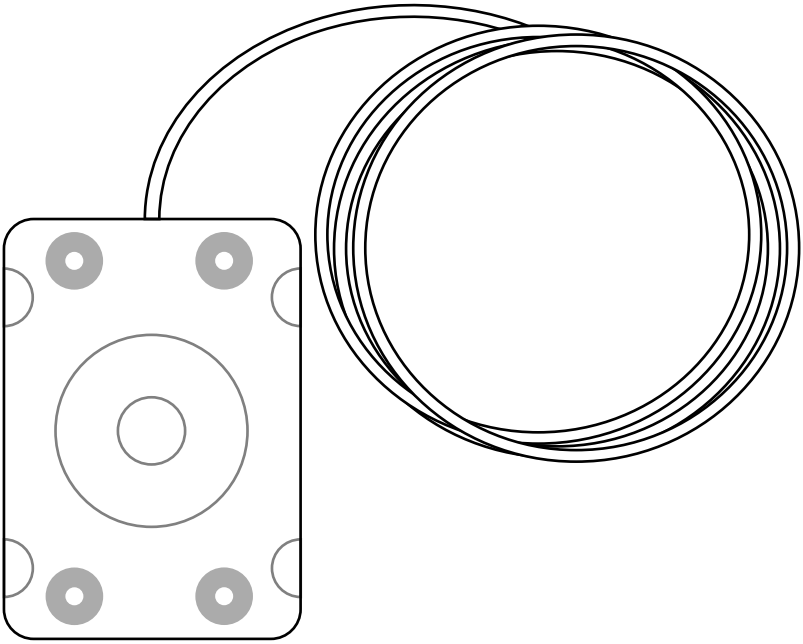
Water Sensor Kit
quick setup guide

Your Water Sensor Kit should include the following items:

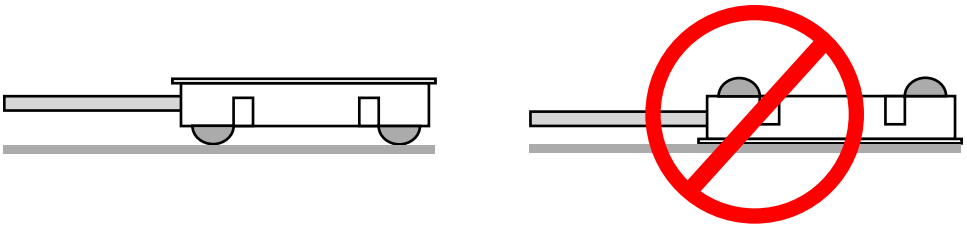


“WaterBug” Water Detection Sensor
(attached cable will either be 15ft (4.5m) or 100ft (30.5m), depending on which option was chosen at time of order.)

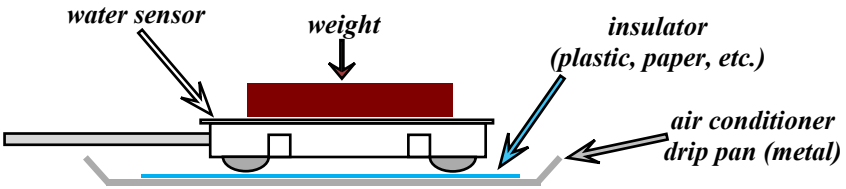
MOUNTING THE WATER SENSOR:

The sensor must be placed with the metal contact points facing downwards, in contact with the floor, as shown here. It is via these contact points that the sensor detects dampness underneath it; if it is placed with the contacts facing upwards, it won't detect water until the water rises high enough to cover the entire sensor.

If necessary, a small weight may be placed on top of the sensor to keep it from moving if the cable is disturbed. The weight should not be greater than approx. 1lb (450g), as heavier weights may damage the sensor; if that isn't sufficient to keep the sensor in place, securing the cable with clips or mounting brackets is recommended.



The sensor can also be installed inside places where water is likely to collect, such the overflow drip pan of an air-conditioning system. If the sensor is to be used for such applications, though, ***it must not be placed in direct contact with a metal surface!*** Doing so will short the contact points together through the metal, causing the device to continuously read full conductivity ("wet"). To prevent this from occurring, place a thin sheet of insulating material – such as a piece of plastic cut from a sheet protector, a piece of posterboard or other thick paper, or a thin (approx. 0.5mm or 1/32") sheet of balsa wood – in between the sensor and the surface, as shown below, to keep the contact points on the sensor from touching the metal surface underneath.



Note that the sensor depends on electrical conductivity to determine the presence of water underneath it. Therefore, distilled or deionized water may provoke little, if any response from the sensor, since such highly purified water is often only weakly conductive. Similarly, the sensor may not be suitable for detecting leaks of liquids other than water, if such liquids are not electrically conductive.

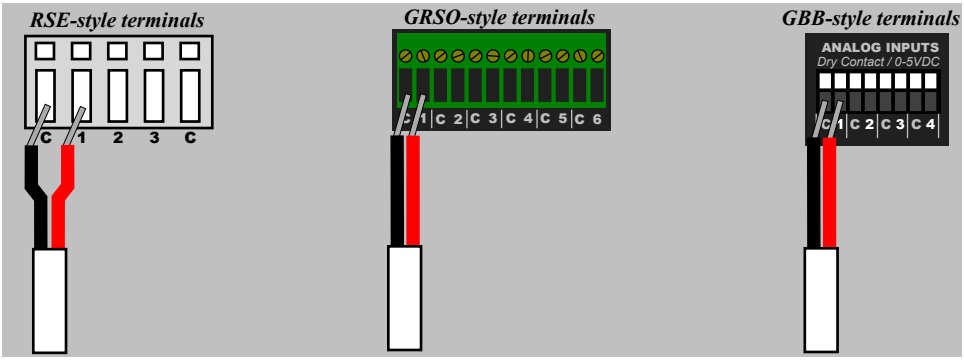
The sensor should not be left immersed in water for extended periods. Under no circumstances should the sensor be exposed to or immersed in any corrosive acid or alkaline substances; it is not designed for such applications.

If the sensor gets wet, then continues to show a "wet" (high conductivity) condition even after it's dry again, impurities in the water may have deposited themselves on the sensor. Try cleaning the sensor with rubbing alcohol, then let it dry completely before reinstalling it.

CONNECTING THE WATER SENSOR TO A GEIST ENVIRONMENTAL MONITORING UNIT:

The Water Sensor is directly compatible with any model of RSE, GRSO, or GBB-series monitoring unit which has analog-sensor inputs. Models which do ***not*** have built-in analog inputs, such as the RSMINI or GBB15, will require the use of an appropriately-programmed Analog-to-Digital converter (sold separately) to use the water sensor. (An A-to-D converter can also be used if all of your unit's analog inputs are already occupied with other sensors. Information on how to set up and use the water sensor with the analog-to-digital converters can be found in the user guide for that device.)

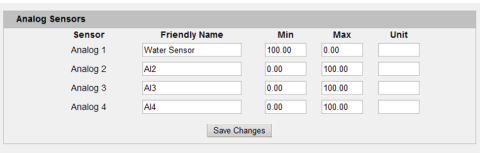
The red and black wires from the sensor are connected to the analog-input terminals as shown here. (Different models have different terminal-block styles.) Note that since the sensor is a simple conductivity (resistance-detecting) sensor, with no inherent signal voltage or polarity of its own, the actual order of the wires is not important; however, for consistency, black should be connected to the "C" terminal and red should go to the corresponding numbered terminal.



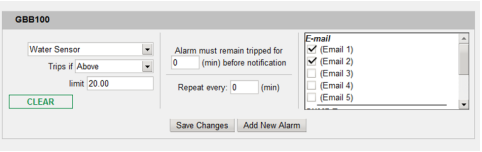
SENSOR CONFIGURATION AND ALARM-THRESHOLD SETTINGS:

Unlike digital sensors such as the GTHD Temperature/Humidity sensor, analog sensors do not automatically show up in the monitoring unit's web page when connected. Since there is no exchange of digital data between the unit and sensor, the unit has no way to know whether a sensor has been connected to the analog input or not. Therefore, sensors connected to the analog inputs need to be configured manually. (The following screenshots are taken from a GBB100, but the process for configuring other models is essentially the same.)

First, click the ***Display*** tab, then locate the ***Analog Sensors*** setting block at the bottom, similar to the one shown here. Change the ***Friendly Name*** of the analog input which corresponds to the one you connected the water sensor's wires to as above, set ***Min*** to **100** and ***Max*** to **0**, then click ***Save Changes***. (***Unit*** can be left at its default value.) This will "reverse" the usual scaling of the analog inputs, so that a dry sensor will read 0 and the reading will increase towards 100 as the surface under the sensor gets wet. (If *Min* and *Max* were left at their defaults, the sensor would start with a high number when dry and decrease towards 0 as the sensor got wet, which is the opposite of what most users would expect to see.)

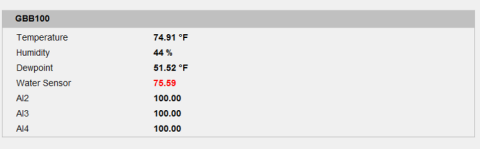


Next, click the ***Alarms*** tab. Analog sensors are considered part of the unit's own sensor package, so they will be listed along with the rest of the unit's internal sensors, not as separate devices of their own. Click the ***Add New Alarm*** button for the monitoring unit's internal sensors, then choose the analog input whose name corresponds to the one you set in the prior step ("Water Sensor", in this example) from the drop-down box.



Normally, the sensor should show a value close to 0 with the above settings. However, depending on the surface the sensor is sitting on, the "dry" value may be a little above 0 if the surface itself is slightly conductive. Setting a trip theshold of ***Trips if: Above*** and ***Limit: 20*** is a good place to start; if you notice the sensor false-triggering too often, increase the limit until the false triggers stop. (Cleaning the sensor and underlying surface may also help stop false triggering.) Select any other actions (delay, repeat, e-mail recipients, etc.) as desired, then click ***Save Changes***.

Test the configuration by clicking on the ***Sensors*** or ***Overview*** page, then put the sensor on a wet surface. The reading should turn red, indicating a tripped alarm, displaying a value well above the "20" threshold, as shown here. (If this doesn't happen within a few moments, hit [F5] to refresh the web page.)



Dry the sensor, wait a few moments, then refresh the web page. The reading should turn black ("no alarm"), with a reading close to 0 again.