



Inspired Wireless M2M Technology



ES11 Flood Sensor

Websensor Add-on, used with EM01b-STN

User Manual

Rev 2.1

Table of Contents

	Page
Warranty	3
Warranty	3
Limitations	3
Introduction	4
Esbus Extension Cable	6
How the ES11 Works	7
Mounting the ES11	8
The ES11 Unique Device ID	8
Commands for ES11	9
Calibrating the ES11 with the "ED" Command	9
Calibrating the ES11	10
Reading the ES11	11
Familiarization with the ES11	12
Latching onto Wet Conditions	13
Troubleshooting the ES11	16
Disclaimer	17
Definitions	18



EM01b-FLD

Warranty

Warranty

Siretta warrants the products to be substantially free of manufacturing defects for a period of 2 years after purchase during which time the product will be replaced without charge if defective.

Limitations

Siretta provides no warranty, expressed or implied, as to the fitness of the products for any particular purpose. Siretta will not be liable for incidental or consequential damages arising from the use of its products.

Introduction

The Websensor ES11 Flood Sensor is a device which will detect moisture when exposed to water such as in a flood situation. It communicates with the EM01B HVAC Websensor via the Edbus cable which connects the ES11 and EM01B.

Figure 1. Functional block diagram of ES11 & EM01B

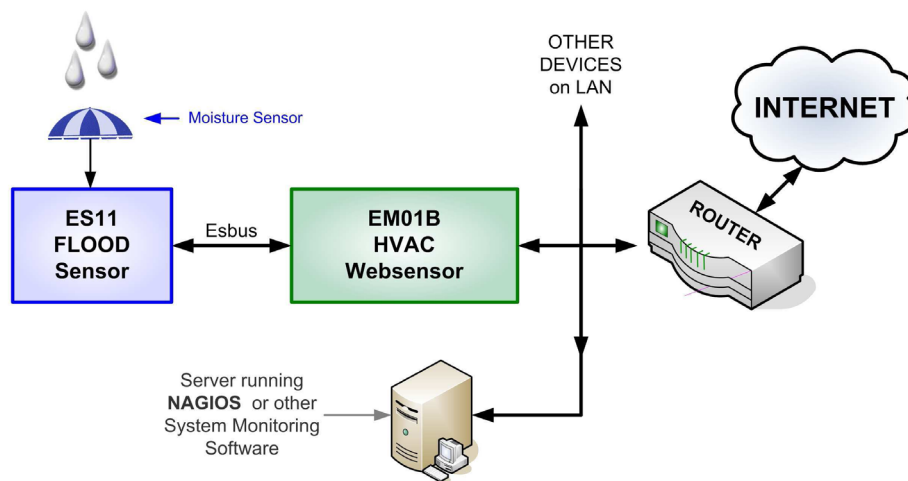


Figure 2 (below) depicts the top View of the ES11. Shown are two LEDs (green & yellow).

Figure 2. Top view of ES11

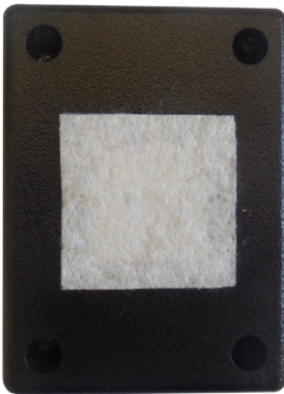


ES11 Flood Sensor

Websensor Add-on

Figure 3 depicts the bottom view. The bottom of the felt side (blue square in this picture – color could vary) is positioned down such that it touches the floor – ready to absorb moisture should it appear.

Figure 3. Bottom view of the ES11 Flood Sensor



The ES11 requires a Websensor EM01B HVAC Monitor to operate. The EM01B provides the IP stack and required communications via the Esbus in order to provide User access to the ES11 Flood Sensor. By itself, the ES11 does not generate any alerts. The ES11 is sent with a CD which contains the required Nagios plug-ins.

Figure 4. ES11 connects to EM01 via Esbus port

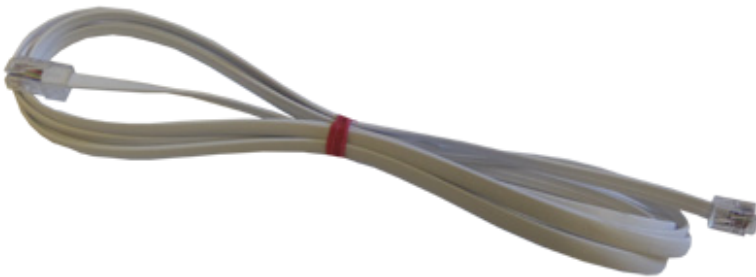


Esbus Extension Cable

The ES11 Flood Sensor receives power and communicates via a six conductor type cable that is about 12 inches in length and terminates in a RJ12 connector.

This type of cable and plug are very common and often sold as telephone extension accessories.

Figure 5. Esbus Extension Cable - 6 conductor flat cable terminated in RJ12 connectors



NOTE: An incorrect cable configuration could damage the ES11. Please contact Siretta for Technical Support.

How the ES11 Works

Upon detecting moisture (water/wet conditions) the ES11 will store the status and report the information via the EM01B the next time it is POLLED by Nagios. Once moisture is detected, the information can be latched/stored in the ES11. Thus, if a moisture condition should trip the ES11 and then retract, the ES11 retains the fact that moisture was sufficient to be detected. This is important in marginal situations where moisture may just begin to appear and may be sufficient at one point to trigger the ES11 but not sustain the trigger. Should the moisture fall below the trigger point – it would be important to know that the event occurred and should be investigated prior to a significant and undesired accumulation of water/moisture.

Mounting the ES11

The ES11 should be oriented such that the component side is “up”. It is very important that the ES11 Flood Sensor be positioned so that the bottom of the ES11 is flat against the floor surface. The Flood Sensor can be secured to the floor in its proper position using a piece of shipping or duct tape. The six conductor Esbus flat cable can be oriented to minimize the stress applied to the ES11.

Figure 6. ES11 Proper placement



ES11 Should be placed FLAT against detection surface.

The ES11 Unique Device ID

The EM01B HVAC Websensor is capable of supporting multiple Esbus devices. The Unique Device ID is necessary to know so that it can be included in the HTTP request to the Websensor when information is desired.

Commands for the ES11

NOTE: Assume 192.168.254.102 as the Websensors IP address and a DEVICE ID of 300198 for these examples. (Be sure to use a CROSS-OVER cable if you wish to connect the EM01B/ES11 directly to your laptop/desktop.)

Table 1. Commands for the ES11

READ the ES11	http://192.168.254.102/index.html?em300198
CALIBRATE DRY	http://192.168.254.102/index.html?em300198ED
LATCHING 'ENABLED'	http://192.168.254.102/index.html?em300198EL
LATCHING 'DISABLED'	http://192.168.254.102/index.html?em300198EU
RESET LATCH	http://192.168.254.102/index.html?em300198ER

Calibrating the ES11 with the “ED” Command

Before the ES11 can be set into service, it is necessary to calibrate the device. This is a very simple one command activity establishing what constitutes a DRY CONDITION. The ES11 must be secured in its operating position prior to calibrating the device (See Figure 5). The reason behind this is that a wood floor has a different dielectric constant than concrete.

The command:

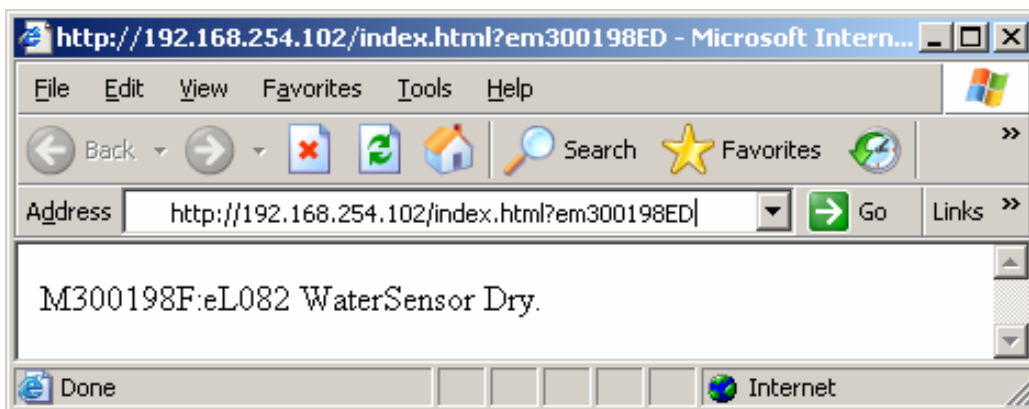
<http://192.168.254.102/index.html?em300198ED> will set the DRY point and only needs to be performed at the time the ES11 is installed.

Calibrating the ES11

When installing the ES11, make sure it is positioned flat against the floor/surface. The cable we provided may present a bit of a challenge. We would encourage that initially you stage the ES11 Flood Sensor on your desktop/table top so that you can simulate a flood/highmoisture condition in order to become familiar with the operation and response.

The ES11 connects to the EM01 via the Ebus connector located on the top side of the Websensor - use the Ebus cable provided. Kindly reference Figure 4 for connection information.

Figure 7. Dry calibration command in a Web browser



Reading the ES11

To read the ES11, Wet-Dry status, issue the following command:

<http://192.168.254.102/index.html?em300198>

This should provide a DRY indication. The ES11 tests conditions about every six (6) seconds. If you look at the LEDs on top of the ES11 you should notice the GREEN LED flashes occasionally - this indicates that the ES11 is communicating with the Websensor.

A WET condition is indicated by the YELLOW LED. For DRY conditions, the YELLOW LED should be OFF.

Figure 8. Retrieve ES11 Status command in a Web browser

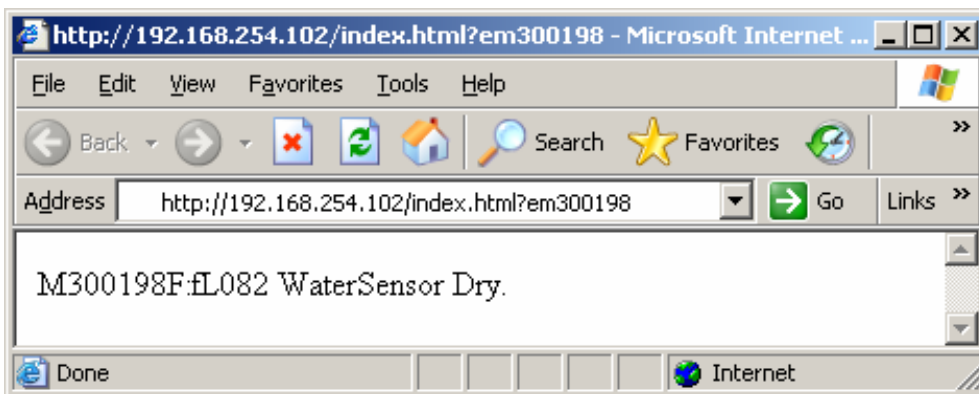


Figure 9. ES11 LED positions



Familiarization with the ES11

TEST the ES11 by simulating a WET condition. Place the ES11 on a paper plate or something else (nonmetallic) where you can add a few tablespoons of water to the ES11 moisture sensor area. Initially the ES11 should be calibrated as described on Page 6. Add a small amount of water to the FELT on the moisture sensor end of the ES11; that would be the area located beneath the printed circuit board foil as shown on the left side of Figure 3.

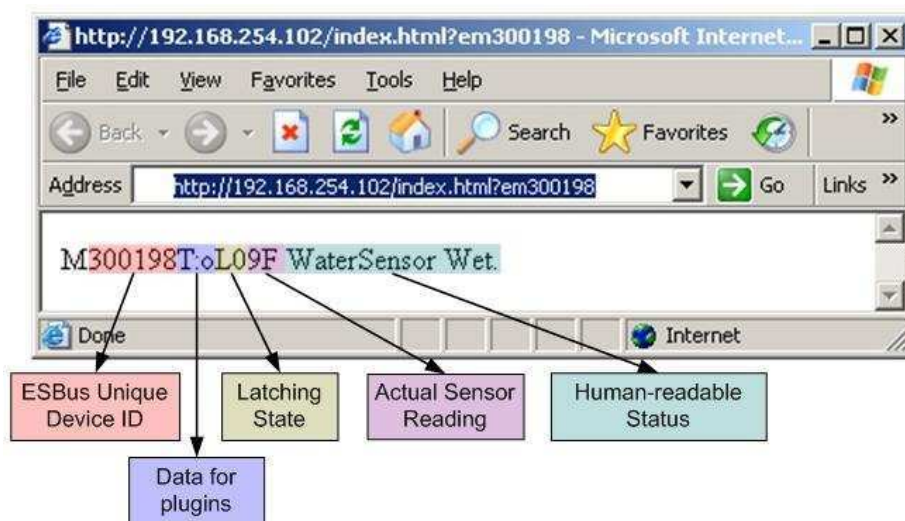
NOTE: It may take a few seconds for the FELT to absorb enough water to trip the ES11. Once the WET condition is sensed (indicated by the YELLOW LED), you can issue the following command from a browser:

<http://192.168.254.102/index.html?em300198>

You should get a response which indicates WET conditions. A paper towel can be used to extract the water from the FELT to return the ES11 to DRY conditions - again it may take a moment or two for the water to evaporate so that the ES11 can return to a DRY status.

A typical ES11 web browser response is shown in Figure 10 (in this case, it is showing WET status).

Figure 10. ES11 response fields



You should take note of the Latching State, which shows you whether the ES11 is currently using its latching feature or not. The following table shows the codes and its meaning.

Table 2. Latching states code

L0	Latching is turned OFF
L1	Latching is turned ON and currently DRY status
L2	Latching is turned ON and WET status is latched

To simply check for temperature/RH/illumination, use the regular command:

<http://192.168.254.102/index.html?em>

Latching onto Wet Conditions

We have incorporated a LATCHING feature into the ES11, so that once it detects WET conditions; it will hold that reading even if the ES11 is removed from the moisture. The idea behind the LATCH command is to latch onto seemingly marginal wet/moist conditions which could revert back to DRY between polls.

Commands pertaining to latching:

EL – Enable Latching

This command will enable the latching function on the ES11. Whenever a WET status is detected, it will remain in WET status until a LATCH RESET command is issued to the ES11. The “L1” readout (Figure 11 – below) indicates that latching is enabled.

Figure 11. ES11 showing the Latching function is activated



EU – Disable Latching

The EU command will disable the latching function on the ES11. The ES11 default configuration is already in the Latching state DISABLED. If a WET status is shown, it is the current condition currently being detected by the ES11. It will not be latched when it returns to a DRY state. When the latch is disabled, you will observe “L0” in the latch state position (indicated by the red circle in Figure 12 depicted below).

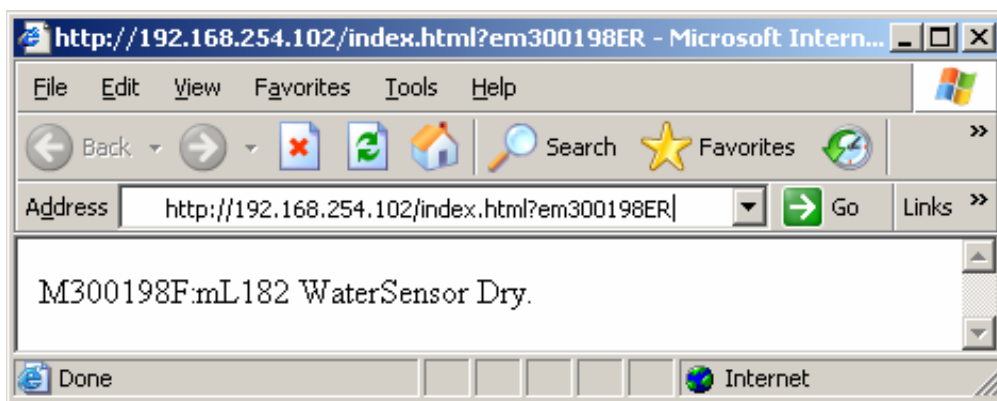
Figure 12. ES11 showing the Latching function is deactivated (factory default)



ER - Reset Latch after ES-11 has detected WET condition. (Latching only)

The ER command will reset the Latch to DRY if the ES11 was previously in a latched WET state. If the ES11 is DRY and this command is sent, it will do nothing.

Figure 13. ES11 showing a reset of the latch



Troubleshooting the ES11

1. The ES11 returns garbage data and does not show a readout similar to the screenshots in the manual.

Try resetting the ES11 by unplugging the Ebus cable and then re-plugging it back in. Wait for about 30 seconds; then send the command to obtain the ES11 status again.

2. ES11 always shows WET condition on the web browser, even after I hit refresh.

Remove your browser's cache and cookies. Then retry the command to obtain the ES11 status.

3. ES11 still shows WET condition on the web browser.

Let the ES11 dry out and then run through the steps to calibrate the ES11 again (refer to the "Calibrating the ES11" section in this manual).

4. I have re-calibrated but ES11 still shows WET condition on the web browser.

You may have turned on the Latching Function on the ES11. Try giving it a Latch Reset command (refer to the "Commands for the ES11" section in this manual).

5. The YELLOW LED never turns on.

In DRY conditions, the ES11 turns off the YELLOW LED. All you should see is the GREEN LED blinking occasionally; about every 5 seconds.

6. ES11 shows WET but the YELLOW LED is still not turned on.

If Latching is enabled and a WET condition was detected, the ES11 will return WET in the browser even though it is now detecting DRY. The YELLOW LED indicates the current condition so the YELLOW LED should be off since it is now detecting DRY.

Disclaimer

The information contained in this document is proprietary to Siretta. Siretta has made every effort to ensure that the accuracy of the information contained within this document is accurate. Siretta does not make any warranty as to the information contained within this document and does not accept any liability for any injury, loss or damage of any kind incurred by the use of this information.

Siretta does not take responsibility for any application developed using the modem characterized in this document and notes that any application of this modem must comply with the safety standards of the applicable country and comply with the relevant wiring rules. Siretta reserves the right to make modifications, additions and deletions to this document due to typographical errors, inaccurate information, or improvements to equipment at any time and without notice. Such changes will be incorporated into new editions of this document.

All rights reserved.

© 2016 Siretta Ltd

Definitions

Term	Definition
HTTP	Hypertext Transfer Protocol
ID	Identification
IP	Internet Protocol
LED	Light-emitting Diode



sales +44 (0)118 976 9014
fax +44 (0)118 976 9020
accounts +44 (0)118 976 9069
email sales@siretta.co.uk

www.siretta.co.uk

Siretta Ltd
Basingstoke Road
Spencers Wood
Reading
Berkshire
RG7 1PW
United Kingdom

Company No. 08405712
VAT Registration No. GB163 04 0349

A member of the Olanca Group Ltd



Rev 2.1 - Nov 2016