

The AUTOMATIONtec IP Monitoring System

AT100



AT200



The AUTOMATIONtec IP monitoring system is designed to provide a web enabled solution to monitoring various environmental conditions around your home, shop, office, etc. Various AT 200 sensors are available to monitor values like temperature, humidity, contact closure, light level, etc. Using wireless sensor modules that require no wiring for signals or power, makes their installation easy and fast. The AT100 gateway can be installed in a central, easy to access location and requires a 10/100 Ethernet network connection for configuration and monitoring. Data can be viewed with a web browser, by sending emails, or by accessing an external web server. Optionally, the AT100 can be connected to an Applied Digital Inc. ADICON controller (Ocelot or Leopard) and monitored with that system.

Specifications

| | AT100 | AT200 |
|-------------|------------------|-------------------------------------|
| Temperature | -40° C to +70° C | -40° C to +70° C |
| Voltage | 9V AC or DC | 3VDC (2 AA batteries, not included) |
| Current | 200 mA | |
| Network | 10Mb Ethernet | 433MHz ISM |

The batteries in the AT200 should last over one year, and it is recommended to use lithium batteries if the operating temperatures will below 0° C.

Up to thirty AT 200 sensors can be configured and monitored with a single AT 100. Because the AT 100 does not transmit any wireless signals itself, you can have more then one AT 100 in an area without risking interference issues.

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Setting up the AT 100

1. Connect the AT100 to a 10/100 Ethernet network drop, switch, or router.
2. Connect the 9VAC power supply to the AT100.
3. The following LEDs should be lit: Power, Heartbeat (flashing), and DHCP. ***If the DHCP LED is not lit, please see the section "AT100 Configuration(page 5)".***
4. Open a web browser such as Internet Explore or Firefox.
5. Type "http://at100" in the address bar at the top of the screen(make sure you're not typing in the search bar) and press ENTER on the keyboard. A page similar to Fig 1 should be displayed.

Manually setting up the AT 100

1. Connect the AT100 to a 10/100 Ethernet network drop, switch, or router.
2. Connect the 9VAC power supply to the AT100.
3. The following LEDs should be lit: Power, Heartbeat (flashing).
4. Open a web browser such as Internet Explore or Firefox.
5. Type "192.168.1.250" in the address bar at the top of the screen and press ENTER on the keyboard. A page similar to Fig 1 should be displayed.

If the "Welcome" homepage does not display, or the browser fails to connect, please verify your routers settings for LAN IP, Subnet, and Gateway.

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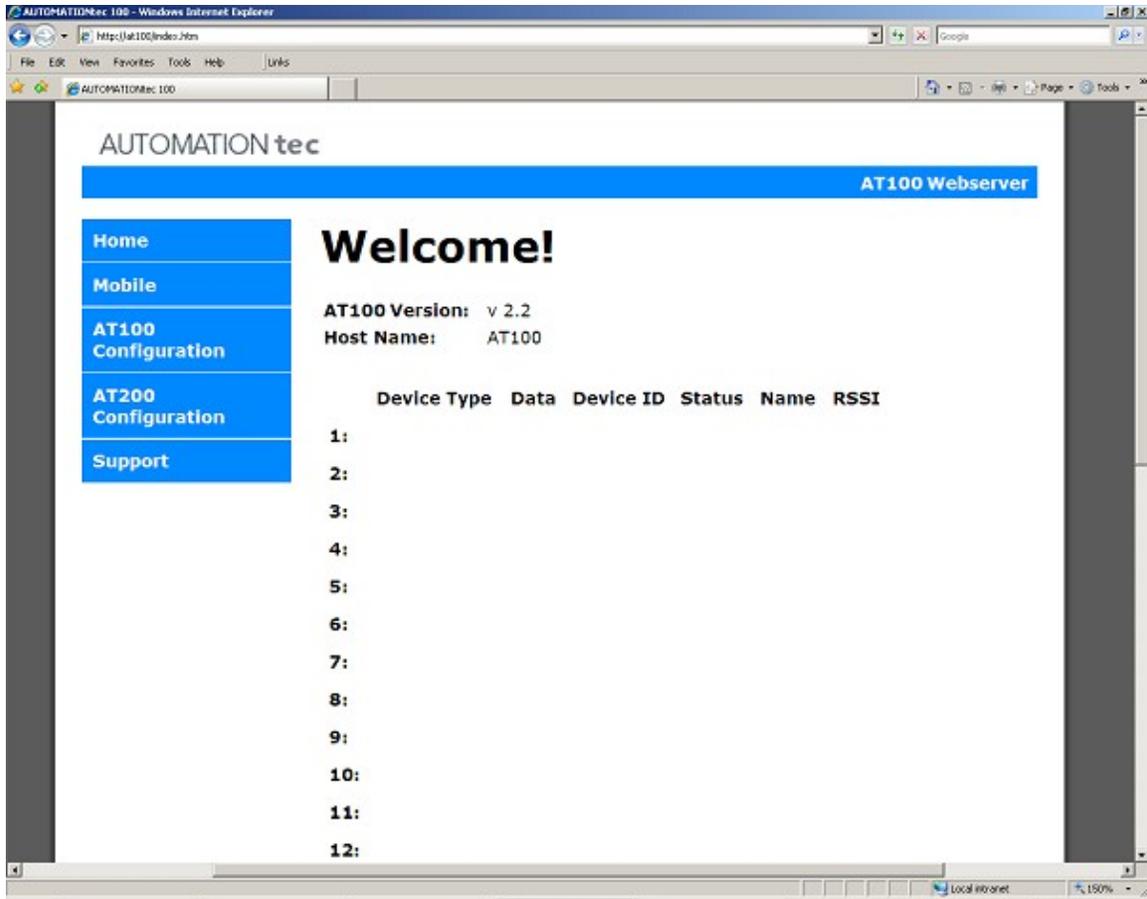


Fig 1

The version number might vary and device list may be blank as shown in Fig 1. This home page will show the data and status from each AT200 sensor module once they are configured.

Description of the AT100 Menu Bar

- **Home** – Return to the homepage.
- **Mobile** – Connects to the basic status page for mobile users. This page was designed for easy viewing on mobile devices.
- **AT100 Configuration** – Configuration page for the AT100 operation.
- **AT200 Configuration** – Configuration page to add/delete and name AT200 sensors.
- **Support** – Web access to User Guides, Application Notes, and other useful documents.

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Accessing Password Protected Pages

The “AT100 Configuration” and “AT200 Configuration” pages are password protected. Once either of these pages is selected (clicked) you will be prompted for a login name and password. The default login **User Name** is **ATEC** and the **Password** is also **ATEC**. These values are both **case sensitive**. Enter the User Name and Password as shown (Fig 2):



Fig 2

You will now see the configuration screen:

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AT 100 Configuration

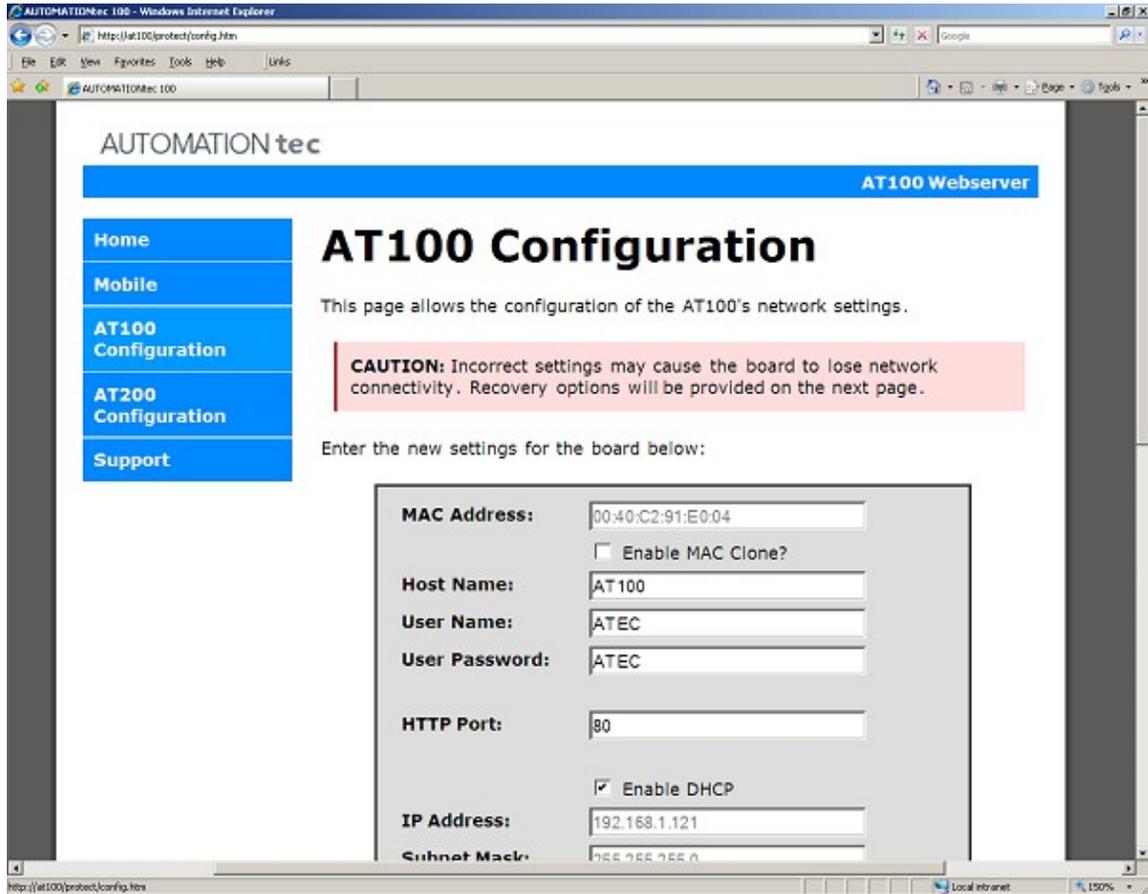


Fig 3

Once on the AT100 configuration page (Fig 3) you may change the default user name and password from ATEC to a new user name and/or password keeping in mind that they are case sensitive.

The configuration page contains the following:

- **MAC Address** – The Ethernet address that is set at the factory. This may be changed by selecting “Enable MAC Clone”. This is highly discouraged and may disable use of your AT100.
- **Host Name** – This is the Net Bios name of the AT100. This will be the URL of the AT100 if DHCP is enabled and the subject of any emails sent from the AT100. This is limited to 16 characters.
- **User Name** – The user name used to access the configuration of the AT100 and AT200. This is case sensitive and limited to 10 characters.
- **Password** – The password used to access the configuration of the AT100 and AT200. This is case sensitive and limited to 10 characters.

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- **HTTP Port** – Port address for the AT100. This only needs to be changed if accessing the AT100 through port forwarding via your router settings.
- **Enable DHCP** – Selecting this will allow the AT100 to automatically request an IP address from your router or DHCP server. When this option is selected, changes to the IP Address, Subnet Mask, Gateway Address, and DNS servers are not allowed.
- **IP Address** – The current IP Address of the AT100. Enable DHCP must be disabled to edit this field.
- **Subnet Mask** – The current Subnet Mask of the AT100. Enable DHCP must be disabled to edit this field.
- **Gateway** – The current Gateway Address of the AT100. This is typically the IP address of your router. Enable DHCP must be disabled to edit this field.
- **DNS Address** – The current Primary and Secondary DNS Address of the AT100. Enable DHCP must be disabled to edit this field.
- **Email Address TO** – The email address of the recipient of the emails sent via the AT100. This is case sensitive and limited to 32 characters.
- **Email Address FROM** – The email address of the sender of the emails sent via the AT100. This address should be added to your spam filter “approved sender list” to prevent messages being captured by your spam filter. This is case sensitive and limited to 32 characters.
- **Email Username** – If your email SMTP server requires authentication, enter your username needed to send an email. If your SMTP does not require authentication, leave this field blank. This is case sensitive and limited to 32 characters.
- **Email Password** – If your email SMTP server requires authentication, enter your password needed to send an email. If your SMTP does not require authentication, leave this field blank. This is case sensitive and limited to 22 characters.
- **Email SMTP** – This is the URL or IP address of your SMTP. Please see you Internet Service Provider (ISP) for this URL or IP address. This is case sensitive and limited to 32 characters.
- **Web Data URL** – This is the URL or IP address of your web data server or collection application. Please see the Web Data section for more information. This is case sensitive and limited to 32 characters.
- **Web Data Port** – This is the Port address of your web data server or collection application. Please see the Web Data section for more information.
- **Web Data URI** – This is the index to the folder that contains the application of your web data server or collection application. Please see the Web Data section for more information. This is case sensitive and limited to 32 characters.

NOTE: You MUST SAVE any changes to the AT100 configuration page before testing email. You may test the email settings by clicking on the “Test Email” button at the bottom of the screen. If successful, you will receive an email with the host name of the AT100 on the subject line. There are no diagnostic messages shown if emailing is not working so enter the settings carefully. If you are using the same ISP for your regular emails, look at the settings in your email client program (Outlook, Microsoft Mail, etc) if needed.

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Resetting the AT 100 Configuration to Factory Defaults

1. Remove power from the AT100.
2. Press and HOLD the reset button through all steps.
3. Apply power to the AT100.
4. Wait for all LEDs to flash.
5. Cycle power and the AT100 is now reset to factory default.

NOTE: Resetting the AT100 to factory default only resets the AT100 configurations. The AT200 configurations will not be changed.

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AT200 Sensors

Once your AT100 is set up, you can now add your AT200 sensor modules. Open up your AT200 sensor by removing the 4 screws and insert the required AA size batteries. When accessing the interior of the module, be careful not to contact any part of the circuit board other than the battery contacts. Some models of the AT200 have a jack for an external sensor probe. Connecting a power source to this jack could severely damage the unit!

With the batteries inserted, access the AT100 with your web browser and click on “AT200 Configuration” from the home page. You will need to enter the user name and password that you set earlier (or the defaults). You should see a web page similar to this:

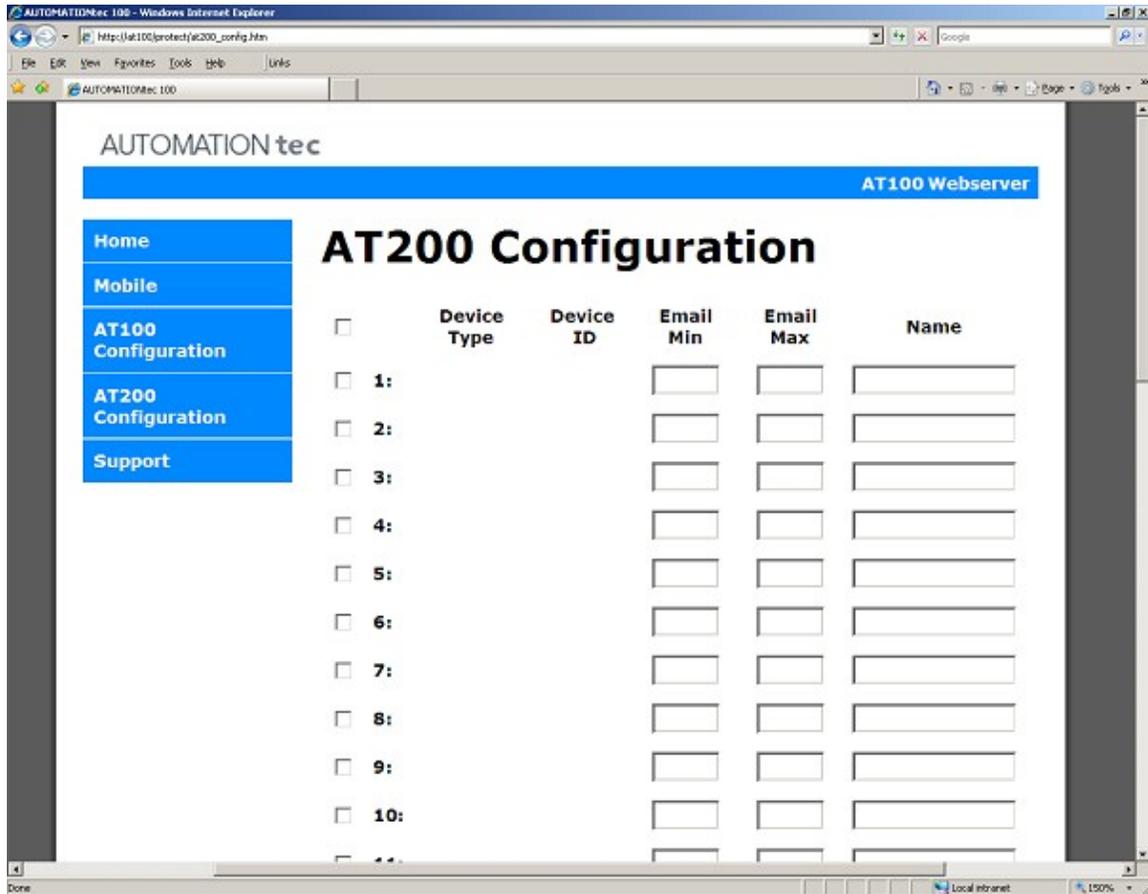


Fig 4

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Add AT200 Sensors

1. Click the checkbox next to the sensor number you wish to learn.
2. Click the “Add AT200” button at the bottom of the page.
3. The page will refresh and the page will indicate the AT100 is ready to learn a new AT200. (Fig 5)

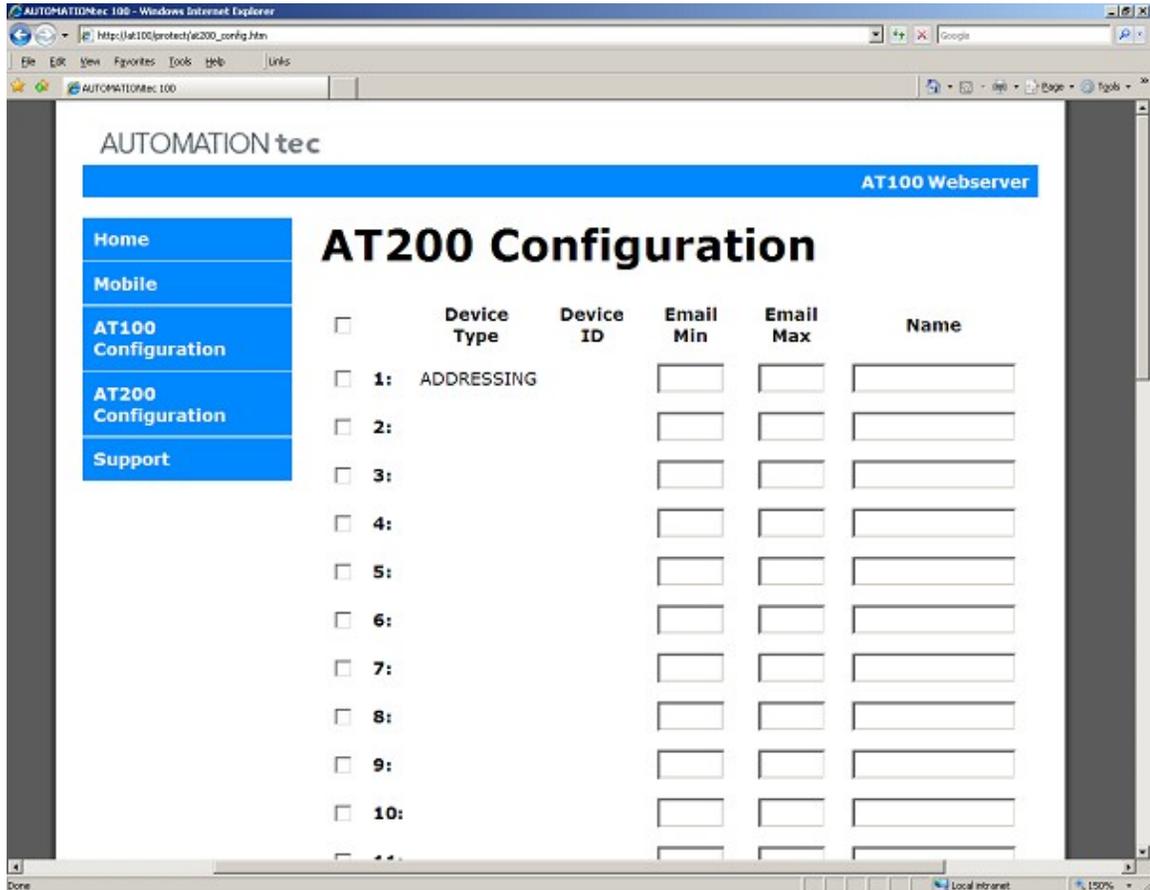


Fig 5

4. Press and hold the “ADR” button on the AT200 until the “RF-TX” LED flashes.
5. Refresh the AT200 Configuration page to see the learned AT200. The Device ID should match the serial number on the back of the AT200. (Fig 6)

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Delete AT200 Sensors

1. Click the checkbox next to the AT200 that you wish to delete.
2. Click the “Delete AT200” at the bottom of the page.
3. Click “OK” on the warning message.
4. The page will refresh with the AT200 removed.

NOTE: To delete all the AT200 sensors at once, click the uppermost checkbox next to “Device Type”, click “Delete AT200” and then click “OK”

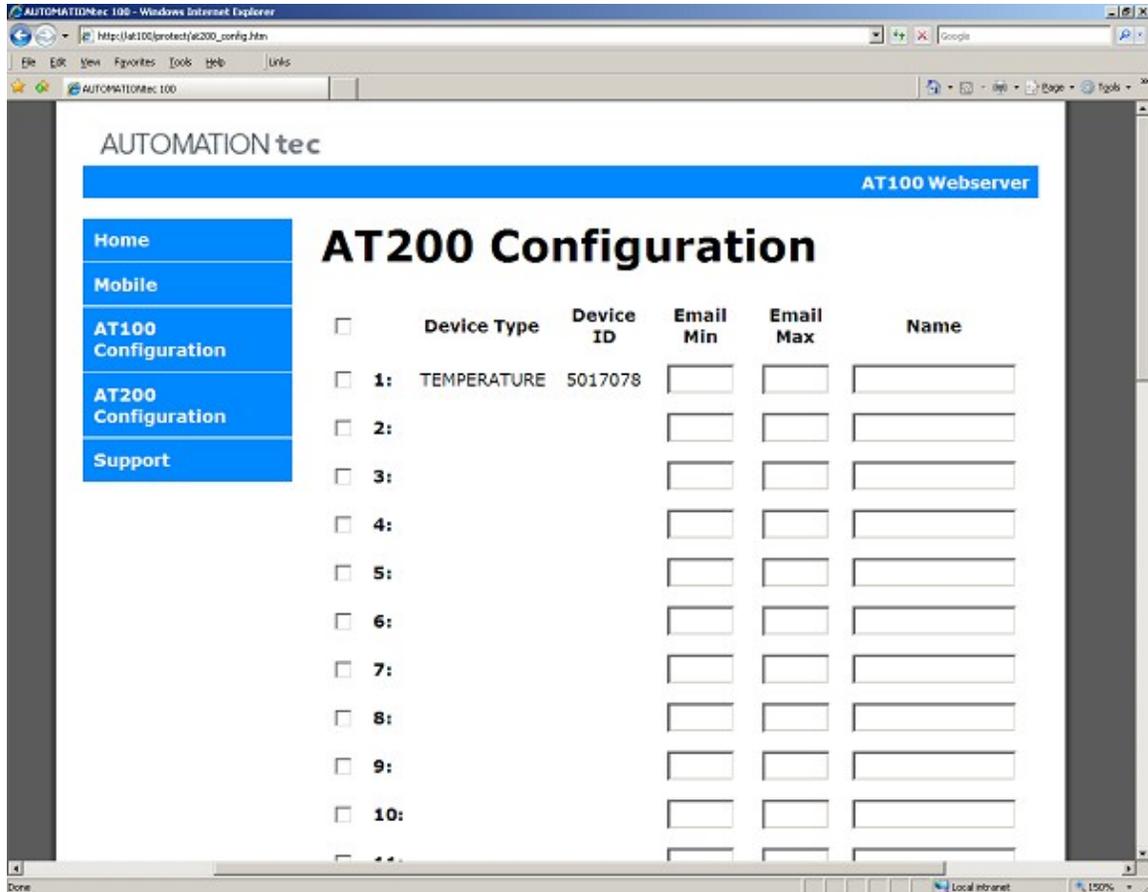


Fig 6

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Configuring AT200 Sensors

- **Email Min** – Any data received less than this value will display “Alert” on the home page. An alert email will be sent if “Alert Emails” is enabled.
- **Email Max** – Any data received greater than this value will display “Alert” on the home page. An alert email will be sent if “Alert Emails” is enabled.
- **Name** – The name given to identify this AT200. This is limited to 12 characters.
- **Unit Type** – Specifies the measured units displayed for the data received.
- **Alert Emails** – When selected and email configured, an email will be sent if data received from the AT200 is less Email Min or greater than Email Max. These emails will only be sent once a minute to reduce bandwidth if multiple AT200s transition to an Alert status at once.
- **Status Email Interval** – When selected and email configured, these emails are sent at regular time intervals, regardless of the state of any sensor.

NOTE: Once you have finished configuring sensors, click on “Save Configuration” at the bottom of the screen to save your settings!

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Home Page Description

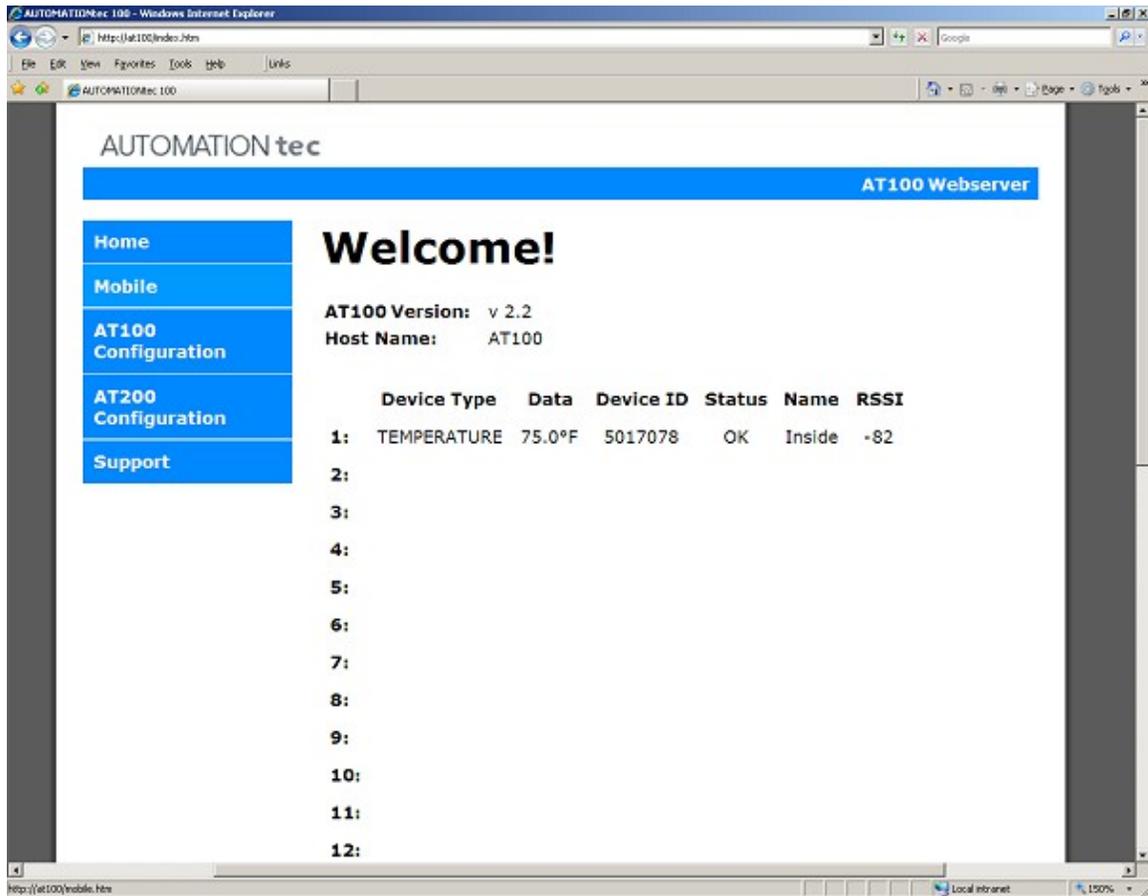


Fig 7

For each configured module you will see:

- **Device Type** – The type of sensor configured
- **Data** – The current temperature, etc value that the module last reported
- **Device ID** – Seven digit device id as indicated on the bar code label on the sensor
- **Status** – This is the status of the sensor as the AT100 evaluates it:
 - **RESET** – The AT100 has not yet received a transmission from the sensor since the AT100 was reset or powered up
 - **OK** – has been receiving transmissions recently
 - **Low Batt** – The AT200 has sent a low battery message.
 - **Alert** – The AT200 is out of the email min/max range.
 - **RF-FAIL** – has not received a transmission for the past 30 minutes. AT200 modules normally send an update about every 3 to 6 minutes
- **Name** – The name you assigned to the module in the AT200 configuration page
- **RSSI** – (Received Signal Strength Indicator) This is the strength of the radio frequency signal last received from the sensor. The strongest signal will usually be at around -40 dBm

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and the signal can be reliably received down to about -100 dBm. (If you're close to this limit, you might want to try and improve it with better AT100 or AT200 positioning).

Sending Emails

Configuring Email Alerts

A valuable feature of the AT100 is its ability to send alert emails for abnormal environmental conditions, such as a temperature reading outside of a defined acceptable range. This could be used to alert you about an abnormal situation like a heating or air conditioning breakdown, or other problem. If you look back at the AT200 configuration screen in Fig 6, you will see that each module has an "Email Min" and "Email Max" column. Use these text boxes to enter the allowable range that each sensor can return that you consider to be normal. If you set the "Alert Emails" radio button to "Yes" and then one sensor is reporting a value that is outside the defined acceptable range, you will receive an alert email for the first time the value goes out of range. The email will have the AT100's Host Name on the subject line and the body will show you the sensor's status in text, similar to this:

| Device Type | Data | Device ID | Status | Name | |
|----------------|--------|-----------|--------|----------|-----|
| 1: TEMPERATURE | 20.3°C | 5017122 | OK | basement | *** |

If the AT200's data value returns to an acceptable range, then outside the range again, a second alert email will be sent.

Remember to click on "Save Configuration" whenever you make any changes in settings.

Status Emails

You can also configure the AT100 to send Status Emails. These are emails that are sent at regular time intervals, regardless of the state of any sensor. This feature is disabled by setting the value in the "Status Email Interval" text box to 0. To enable Status Emails, set the value in the text box to a value between 60 and 2880 minutes. 2880 minutes corresponds to every 48 hours.

Remember to click on "Save Configuration" whenever you make any changes in settings.

Web Data

Web Data is a method to pass data received from AT200 sensors to a remote web database or application. The only set up required is to enter the Web Data URL of the web server that will be processing your data. There is no setup for the AT200 configuration.

Please see upcoming app notes regarding the use of the Web Data feature.

ADICON Interface

The AT100 may be connected to an Applied Digital Inc. ADICON controller via the RS485 connector. Please see app notes regarding connecting the AT100 to an ADICON controller.