
# Smart-Vue® Wireless Monitoring Solution

## Software User Manual

326825H01 Rev. B December 2015

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**www.thermoscientific.com/labwarranty**

**IMPORTANT** Read this instruction manual. Failure to follow the instructions in this manual can result in damage to the unit, injury to operating personnel, and poor equipment performance.

**CAUTION** All internal adjustments and maintenance must be performed by qualified service personnel.

# Table of Content

# Notices

## Safety Instructions

**IMPORTANT NOTE:** Do not use this product for protection or as part of an automated emergency system or for any other application that involves protecting people and/or property. Customers and users of Thermo Scientific products are responsible for making sure that the product is fit for the intended usage. Do not open the product casing and do not disassemble or modify internal components in any manner. Thermo Scientific products do not contain any internal components that require user intervention or repair. If the device shows signs of improper operation, disconnect it immediately from its power source and contact Thermo Scientific technical services.

## Electrical Warning (for Devices with AC Adapter)

When using a Smart-Vue™ product with an AC adapter (100-240V AC – 12V, 6V or 5V DC), always use the specific adapter provided by your supplier (same brand, same product reference). Do not open the adapter yourself and do not dismantle internal components or modify them in any manner. The adapter does not contain any user-reparable parts. If the adapter shows any sign of malfunction, unplug it immediately and contact Thermo Scientific for repair or replacement. Do not connect the adapter to a device or peripheral other than the Smart-Vue product for which it was intended. Unplug the power cable from the electrical outlet when the adapter is not in use. Do not cause a short circuit with the electrical plug. Do not force either the AC or DC plug. Before removing the connector from any Smart-Vue hardware devices or unplugging power cables, first unplug the cable from the power outlet. Do not subject the adapter to physical shock, which could cause serious malfunction or damage. Do not use or place the adapter in a wet or humid location. This adapter is not waterproof.

## Battery Warning

Some Smart-Vue products contain a lithium battery. Make sure you observe polarity (+/-) when inserting batteries into Smart-Vue devices. Reversing polarity by inserting the batteries incorrectly can cause the product to heat up and may lead to a battery liquid leak. Use only batteries recommended by Thermo Scientific. Do not change battery types, such as alkaline and magnesium, or use batteries of different brands or even different types of batteries of the same brand. Incorrect batteries may cause the device to heat up, and may result in a fire or battery liquid leakage. Never dispose of batteries in a fire. Do not charge regular batteries that are not specifically rechargeable. When batteries are low, or if the battery-operated device in question remains unused for a long period of time, remove the batteries from the device to avoid any risk of battery liquid leakage.

Never leave batteries within reach of children. In case of a battery leak, avoid all contact with the liquid present on the batteries. Rinse with clear water immediately if the battery liquid comes into contact with the eyes, mouth or skin. Contact a doctor or emergency service immediately. Battery liquid is corrosive and can damage vision, or cause blindness or chemical burns.

## TCP/IP Network Receivers

- Do not disconnect the TCP/IP receiver from its connection to your intranet system. Disconnection will prevent the transmission of data (including alarms) from the modules.
- Loss of power to the receiver will also prevent the transmission of data (including alarms) from the modules. Ensure the receiver is plugged into an Uninterruptable Power Supply (UPS) at all times.

## USB Receivers

All Smart-Vue USB products and drivers are tested thoroughly. However, it is not possible to test and qualify all computers and configurations. Our experience has shown there are some variations in USB implementations by computer manufacturers. It is therefore important for users to avoid unnecessary risk by testing the products and validating processes internally to ensure stability and reliability of USB communications in their environment.

## User Precautions

Here is a non-exhaustive list of known issues that may affect the Smart-Vue USB receiver. Please consider these and other risks when qualifying your system.

- USB plugs cannot be physically secured to USB ports. Ensure that your USB cable is fastened and routed so it will not be accidentally unplugged.
- If your USB receiver is physically disconnected from the USB port on your computer after configuration, it is imperative to plug it back into the same port. Otherwise, the system may not recognize the receiver and communication with the receiver could be lost.
- Do not unplug the USB receiver, even temporarily, to attach another peripheral USB device such as a camera, printer, MP3 player, etc. The new device may update the USB drivers on your computer and cause the system to not recognize the receiver when it is returned to the previously configured port.

- Deactivate energy saving settings (USB installation only). Power management settings on your computer may shut down power to the USB port and disrupt communication to the USB receiver after a period of non-use to conserve energy. Speak to your local IT department about reconfiguring your system's power management settings so your computer will not "sleep" and disrupt communication during installation.

## FCC Statement

**This paragraph pertains to 915 MHz Smart-Vue wireless modules**. This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation: FCC Part 15 §107 - §109 - §207 - §247 (Ed 2008).

## Canada — Industry Canada (IC)

**This paragraph pertains to 915 MHz Smart-Vue wireless modules**. This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

## Conformity with European Regulations

**This paragraph pertains to 868 MHz Smart-Vue wireless modules**. The CE mark on this the product indicates that Thermo Scientific declares that this product is compliant with Radio equipment and Telecommunications Terminal equipment (R&TTE) directive 1999/5/EC and the Low Voltage Directive (LVD) 2006/95/EC. The following standards were utilized to meet the essential requirements of these directives: EN 301 489-3 v1.4.1 (02), EN 300 220-2 V2.1.2 (R&TTE) & EN 60950- 1:2006/A11:2009 (LVD).

**CAUTION:** Any changes or modifications not expressly approved by Thermo Scientific could void the user's authority to operate the equipment.

## WEEE Compliance

This wireless device complies with the essential requirements and other relevant provisions of the Waste Electrical and Electronic Equipment Directive 2002/96/EC (WEEE Directive).

## Environmental Protection

Please respect local regulations concerning disposal of packaging, unused wireless devices and their accessories, and promote their recycling.

## RoHS Compliance

The wireless device is in compliance with the restriction of the use of certain hazardous substances in electrical and electronic equipment Directive 2002/95/EC. (RoHS Directive). Do not dispose of this product with household trash. Thermo Scientific recycles this product under certain conditions. Please contact us for more information.

## Disclaimer and Limitation of Liability

Thermo Scientific assumes no responsibility for any loss or claims by third parties which may arise through the use of this product. This document is non-contractual and subject to change without notice.

Thermo Scientific and its distributors shall not be held responsible either directly or indirectly for cost, damage, expenses and legal fees, or personal injury related to the use of Thermo Scientific products, even in the case of faulty design or manufacturing of said products. Other than the warranty on the products' original mounting brackets, Thermo Scientific products are provided as-is without any additional warranty, explicit or implied, with respect to files, their suitability for a particular application, their quality, their commercialization or any other related aspect.

The seller's and creator's liability with respect to the product warranty is strictly limited the amount paid by the client for said product. Under no circumstances shall the seller or creator assume responsibility for any damage or prejudice whatsoever, direct or indirect, specific or consequential, particularly with respect to any down-time, loss of data, or any other financial loss resulting from the use or impossibility to use the products, even if Thermo Scientific is aware of the potential occurrence of said prejudice. The product seller and creator advise each product user to verify the results of using these files, and neither the seller nor the creator shall be held liable for any damage related to using the delivered product. Thermo Scientific informs all future buyers and user of its products that without the above limitations, Thermo Scientific products would not be able to exist.

Do not open the product casing and do not disassemble or modify internal components in any manner whatsoever. Thermo Scientific products do not contain any internal components that require user intervention or repair. If the product or device shows signs of improper operation, disconnect it immediately from its power source and contact Thermo Scientific technical services so that the device can be examined under proper conditions.

## Notes

Our calibrations can be performed in compliance with ISO 17025 (COFRAC), traceable to COFRAC, or traceable to NIST (for temperature only).

## General Requirements and Recommendations

- The personal computer (PC) hosting Smart-Vue Server software runs continuously, 24/7/365, and should be connected to an Uninterruptible Power Supply (UPS) that protects against power surges and provides power to back up the PC and components.
- All Smart-Vue products using an AC adapter should also be plugged into the UPS.
- The UPS is also recommended as a power backup for your communication/network systems.
- Weekly manual system testing (e.g., disconnect a sensor from its module, verify the communications system is working) performed as defined in your Standard Operating Procedure (SOP).
- Recommended maintenance and calibration procedures should be followed.
- If you are storing cold products, Thermo Scientific recommends use of a back-up cooling system (e.g., $CO_2$ or $LN_2$) to maintain freezer chamber temperature below the critical level should a power failure occur. Contact your local sales representative for more information.
- Thermo Scientific recommends Installation and Operational Qualifications (IQ/OQ) be performed before initial use.
- For timely notification of an emergency/alarm, it is critical to establish primary, secondary and tertiary call-out procedures with escalation so contact is not dependent on reaching one individual. Ideally, ultimate contact is with a security department or company with 24/7 monitoring.

**CAUTION:** Modules shall not be placed in environmental conditions beyond recommended specifications.

# 1 Getting Started

## 1.1 Smart-Vue Monitoring Solution Overview

The Smart-Vue solution is comprised of wireless modules and software tools that enable you to monitor temperature and/or other physical parameters using remote sensor. The following diagram shows a basic Smart-Vue installation:

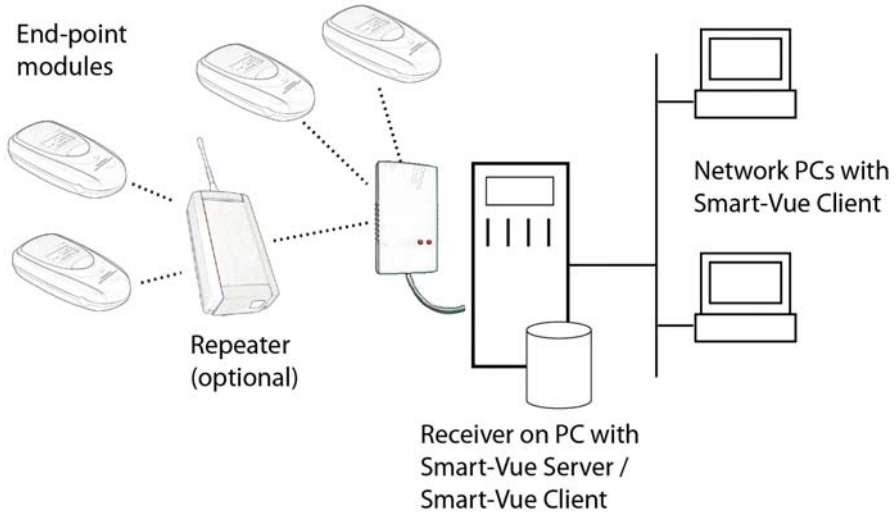



**Figure 1.** Sample Smart-Vue solution

Smart-Vue wireless modules are equipped with internal or external sensors. They collect data (readings) on a regular basis and transmit the information wirelessly to a receiver that, in turn, transmits it to the central database managed by Smart-Vue Server. Wireless repeaters may be used, if necessary, to extend the range between sensors and the receiver.

The Smart-Vue Client application enables you to manage system configuration and all actions related to sensors, data, and users. Installed on PCs in your network, this application accesses a server with the central database containing sensor readings and all other system information. The server's role is to collect the readings from the wireless Smart-Vue modules.

At any time, your Smart-Vue monitoring system may alert you in case of an anomaly, such as a temperature reading that has gone outside an acceptable range, or another type of technical problem, such as a low module battery or disconnected sensor. Smart-Vue Client offers many different options to handle alerts, including a highly visible screen display to show problems prominently. Color coding enables you to identify the severity of an alert on-screen quickly. Other alert features include the use of wireless sirens, dry contact devices, voice and text messages on your telephone, e-mail, fax, and more.

Main software features include:

- User management, access rights, sensor viewing
- Sensor, repeater, receiver, and alert equipment setup
- Fast alarm emission
- Management of various types of alarms: upper and lower limits, technical alarms in case of a sensor problem or wireless communication problem, software issues, alert media problems, and more.
- Personalized alarm handling for days, nights, and weekends, according to user level and desired contact method.
- Alerts on several types of media, including telephone, e-mail, fax, wireless sires, and dry contact devices
- Graph displayed for individual or multiple sensors
- Printable reports for all key parameters, including configuration, status, and alarms
- Customizable presentation of information
- Client-server architecture
- Sensor calibration management and reminders
- Communication and alarm test tools
- Compatibility with FDA 21 CFR Part 11 requirements
    - Readings and settings stored in secure database
    - Password protection
    - Audit Trail

## 1.2 About this Manual

This user manual describes how to use the many features offered by the Smart-Vue Client application. It does not cover installation. Software installation and initial receiver setup are completed simultaneously. Refer to your latest *Install Guide - Smart-Vue-Client Software 2.0 + USB Receiver* or system requirements and installation instructions. Separate installation guides for receivers, repeaters, modules and wireless alert sirens are provided on the CD-ROM included with your purchase.

This manual focuses on the fields and windows you will encounter in the software. It does not necessarily indicate each time you may be prompted to enter your password (e.g., when you choose a secured function, such as **Sensor Settings**) or if you need to click on **OK** or **Yes** to accept your entries or changes.

## 1.3 Connecting Smart-Vue Client to the Server

As with most client-server applications, you must log in before you can use the software. An authentication window opens when you double-click the Smart-Vue Client icon on your PC's desktop. Enter your **Login** and **Password**, which should already be configured in the system (for information on creating user accounts, *refer* Section 2 "Managing Users and Departments" ).

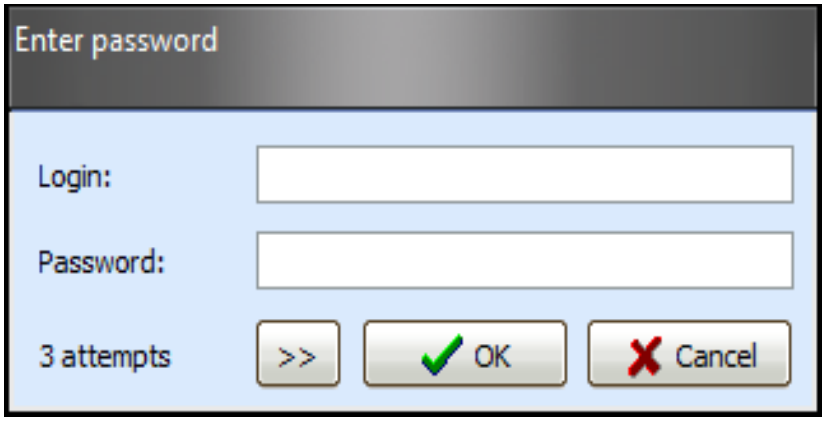



**Figure 2.** Login window

Passwords are case sensitive and encrypted. As a security measure, your account will be locked if you enter an incorrect password into the login/password window three consecutive times. If this occurs, please contact your system administrator.

Smart-Vue Client connects to the Smart-Vue Server application running on a local or remote server. By clicking on **>>** you may enter the server name or IP address, as well as the port to use (if other than the default value).

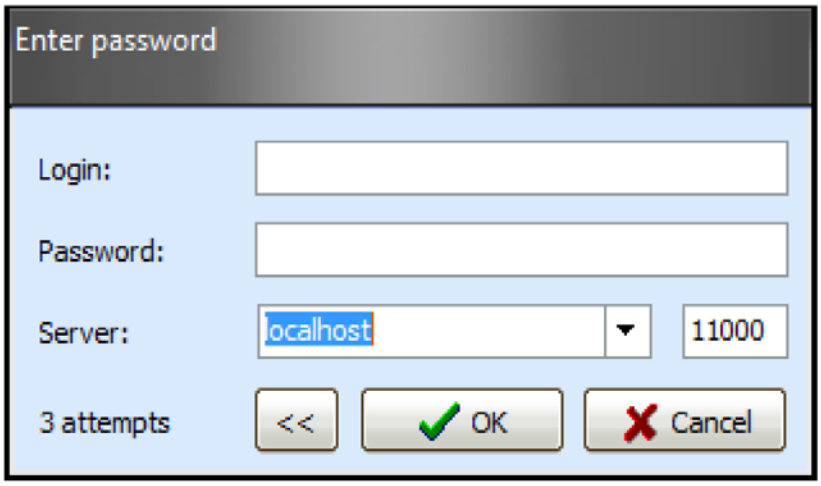



**Figure 3.** Authentication (login) window with server connection options

**CAUTION:** When you first run Smart-Vue Client, the application's default values are set to connect to the Smart-Vue Server database by running on your computer directly (localhost) using the communication port 11000.

Click on **OK** to login to the application. You will receive an error if Smart-Vue Client is unable to communicate with Smart-Vue Server with the name and/or port number you provided.

During normal operation Smart-Vue Client reconnects automatically to the server every 10 minutes.

The Smart-Vue Client welcome page is displayed if connection is successful and your login information is accepted by the system. The time it takes to load the application depends on the number of measurement points to display, as well as the technical quality of the network and the processing power of the computer being used.


**Figure 4.** Smart-Vue Client welcome window

Before any modules are configured, the main Smart-Vue screen looks like this:

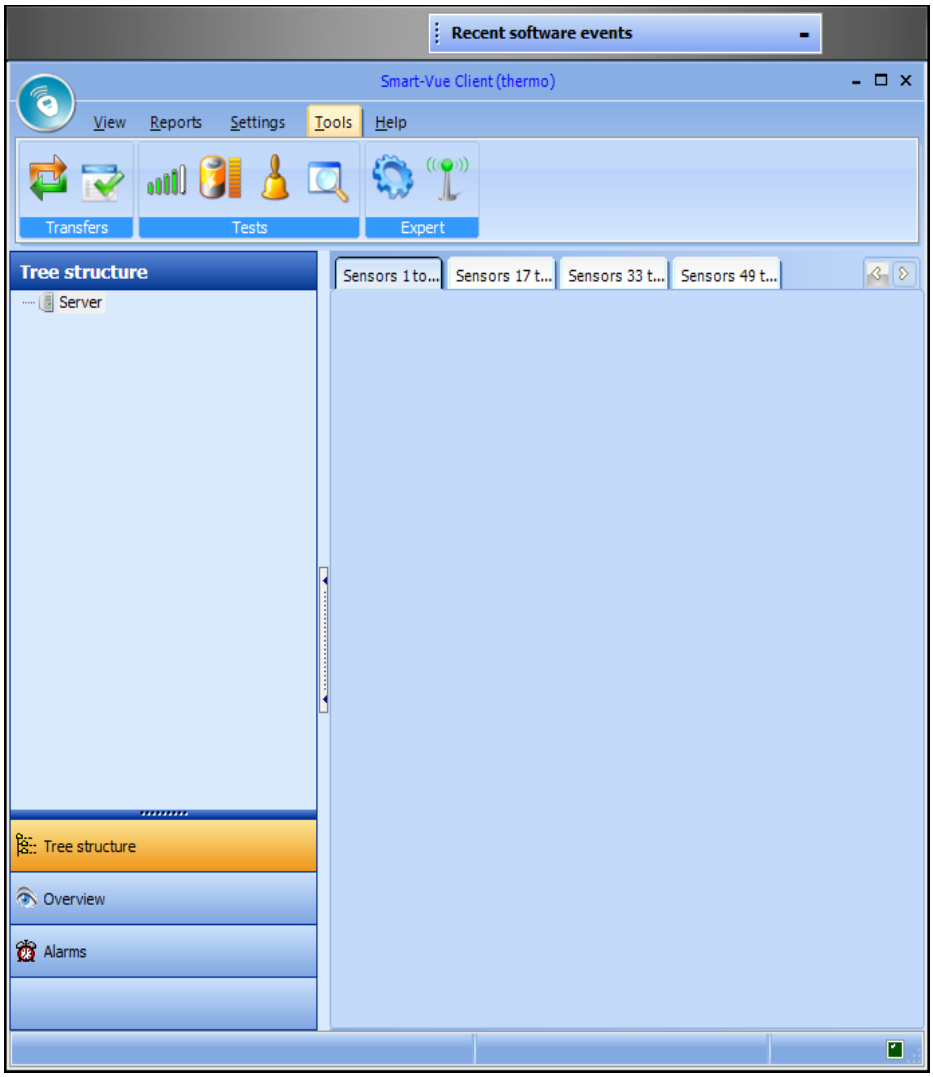



**Figure 5.** Main application window before any configuration

Here is the main Smart-Vue Client window, with some sample sensors configured. The tree structure on the left shows your system's sensors and receivers. Sensor readings are shown on the right. These topics are covered in detail throughout this manual.

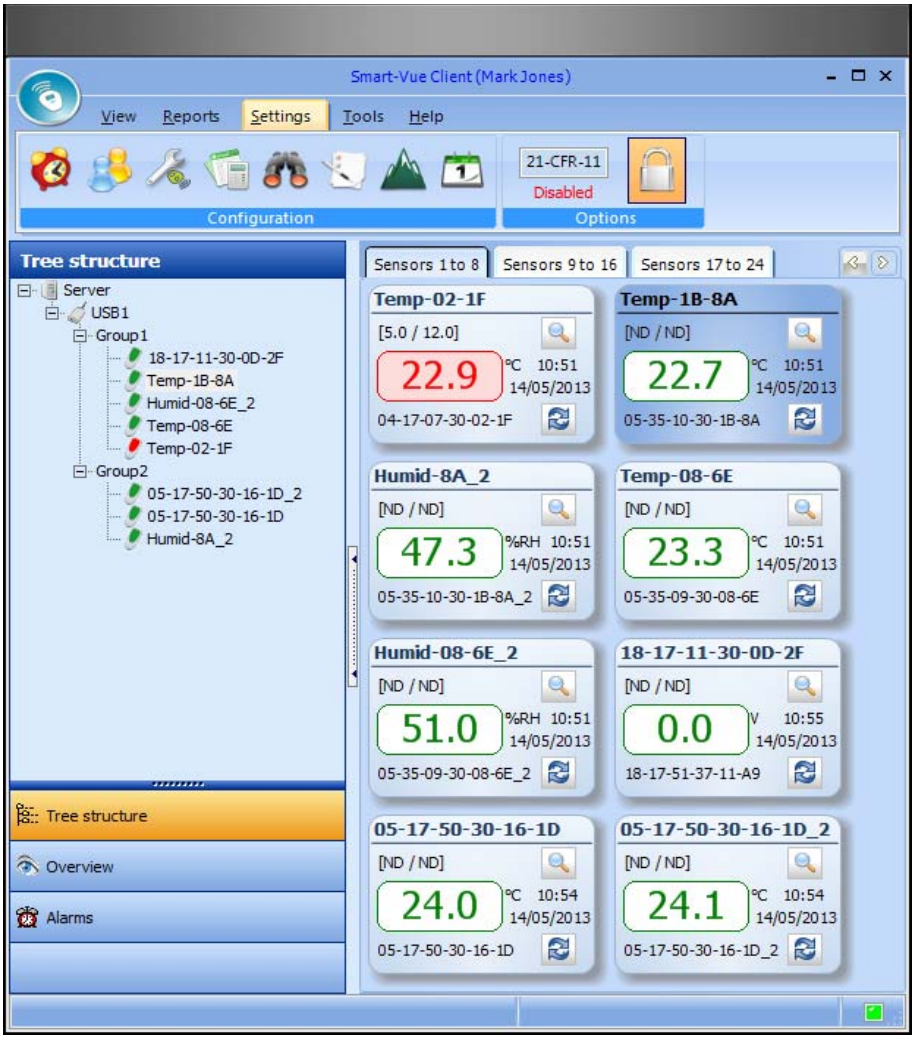



**Figure 6.** Main dashboard window with sensor dashboard display

### 1.3.1 First Time Connection (Users other than Admin)

If the system administrator has not yet assigned sensors and modules to your user name, your Smart-Vue Client session will be limited to viewing. You will actually see all the sensors and modules in the system, but you may not access any configuration options or view sensor alarms. If that is the case, the following message is displayed:

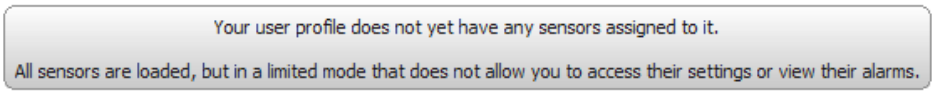



**Figure 7.** Read-only access by default for unconfigured users

Assigning sensors to user profiles is described in detail refer to Section 4.1 – Viewing sensor settings.

# 2 Managing Users and Departments

Smart-Vue Client offers a complete user management interface. Users with Super Administrator or Administrator rights can use this interface to create and maintain individual profiles for each person who uses the application or handles alerts.

1. Click on **Settings** ➔ (*User and call group management*).

2. If you are connecting to the system with **View and acknowledge or View** rights, your own user form opens directly. **Super Administrators** and Administrators access the complete list of system users as shown here:

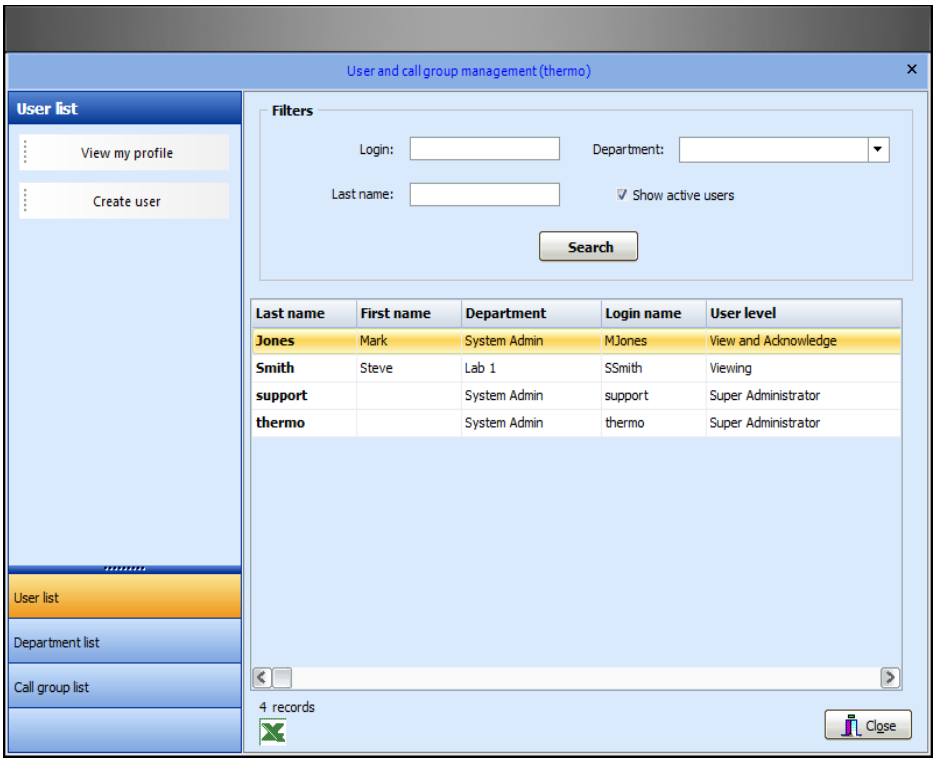



**Figure 8.** User and call group management window

3. Double-click on a line in the table to view or edit that user's profile.

**CAUTION:** When logged in with Administrator or Super Administrator rights, you may access your profile by clicking on **View my profile** in the left-hand menu of the above window. Neither this button nor the option to create a user are available with other profiles.

## 2.1 Adding a User

1. In the *User and call group management* window, click on **Create user** to open a new user identification form.

2. On the **Identity** tab, enter the user's **Last name** and **First name**, choose a **Department** from the pull-down menu, and enter a **Login** name to use when connecting to the software.

If this is a new installation, you must create one or more departments to reflect your organizational structure.

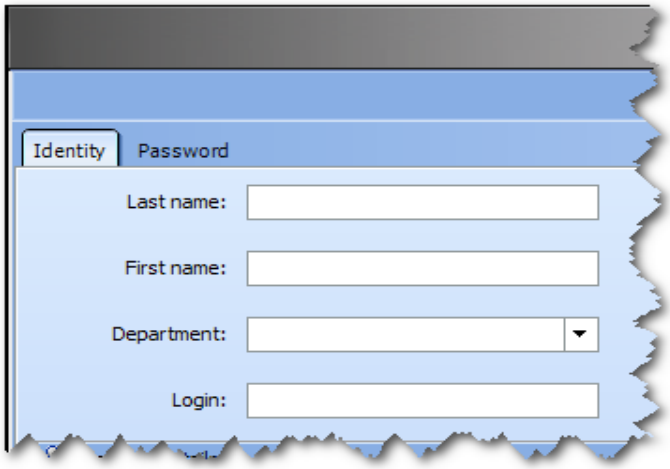



**Figure 9.** User detail fields

**CAUTION:** You may not change the login name for an existing user, but all other existing user information may be edited at any time.

3. Assign the user's role by choosing one of the following options:

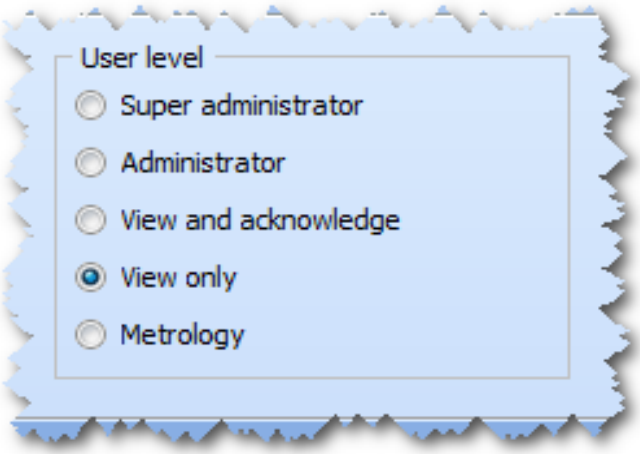



**Figure 10.** Assigning user roles

- **Super Administrator** has access to all application features.
- **Administrator** has access to all application features, except those used to assign sensor viewing (Refer Section 3 – Configuring and managing modules / sensors). Administrators are not authorized to archive data.
- Users with **Metrology** rights have similar privileges as Super Administrator, but do not have access to the user and call group management windows.
- Users with **View and acknowledge** rights can handle alarms issued by the system for the sensors they monitor but do not have access to any setup/configuration windows.
- Users with **View only** rights are not allowed to handle alarms issued by the system for the sensors they monitor and do not have access to any setup windows.

**CAUTION:** Only Super Administrators can assign Super Administrator rights for other users.

4. Define the alert types that are sent to the user in question.

**Alarm limit alerts** represent high and low limits values that you may configure for sensor readings.

**Technical alerts** are related to technical issues concerning your sensors and receivers, such as low battery and communication errors, as well as errors related to alert devices and software modules. Here you may choose to receive either type of alert or all alerts:

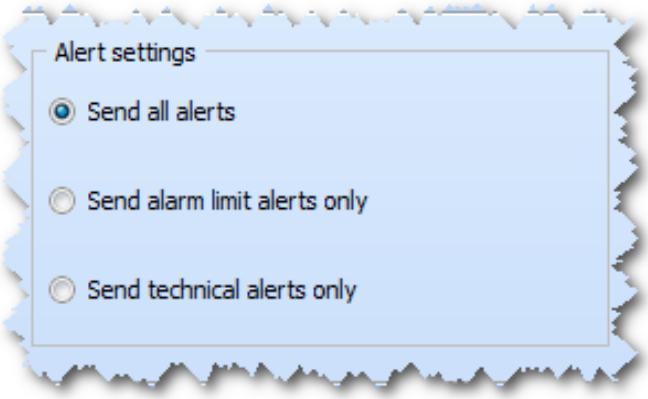



**Figure 11.** Determining which alerts the user will receive

5. Fill in complete **Contact details** as required. The **Contact details** section shown below in Figure 12:

   - Provides a space to store various contact information.

   - Defines how that person may be contacted to handle relevant alerts.

### 2.1.1 Enable/Disable Alert Types

Use the checkboxes at the top of the *Contact details* window to enable or disable the use of telephone, fax and e-mail alerts for the user.

**CAUTION:** For telephone alerts, you may enter a number in each of the two fields per time slot. These numbers will be called one after the other.
If you wish to have e-mail alerts sent to multiple e-mail addresses, enter the addresses into the e-mail address fields separated by a semi-colon ( ; ).
Many cell phone service providers allow you to send e-mail to a cell phone as a text message. Check with your provider for details.

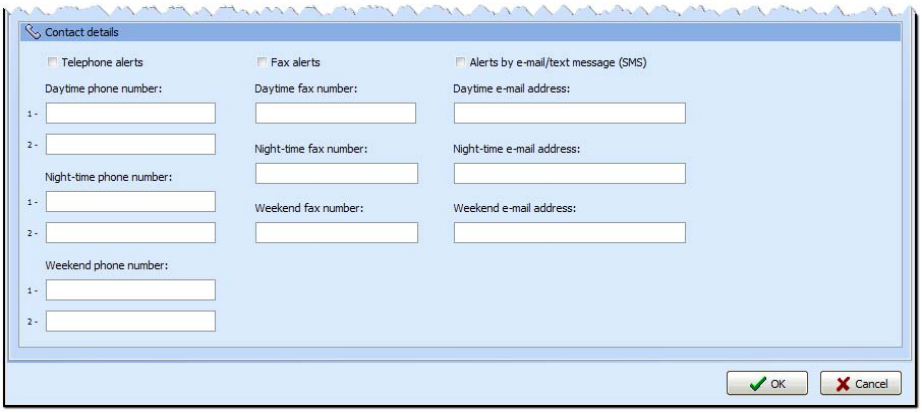



**Figure 12.** User contact details

Use this window to enter details for the various alert types: telephone (up to 2 numbers for each time-slot) and fax numbers, and e-mail addresses. Fields are available for daytime, night-time and weekend time-slots for each option.

**CAUTION: Regular users:** If you must dial a prefix to reach an outside line, don't forget to include it when entering the user's telephone and fax numbers.

6. Click on the **Password** tab to enter and confirm an initial password for the user. Passwords are case-sensitive and must contain at least six characters. These passwords are encrypted in the system database. The

user must change this password when connecting to the application for the first time. This window may also be used to change a password at any time.

By default, accounts are set to expire after one year. You may change this value to meet your needs. Click on the **Expiration date** drop-down menu and choose a month, day and year from the date selection calendar.

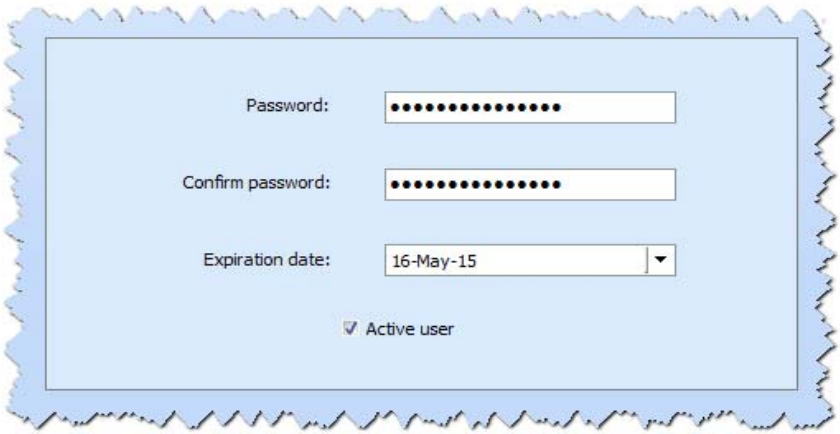



**Figure 13.** Setting user password

The **Active user** check-box is enabled when you create a new user. If you deselect this check-box, the user becomes inactive and cannot access the application. Subsequently, if you click to select this check box, the user's account is reactivated.

## 2.2 First Time Connecting to the Application

The first time you connect to the application with your account, you are prompted to change the initial password:

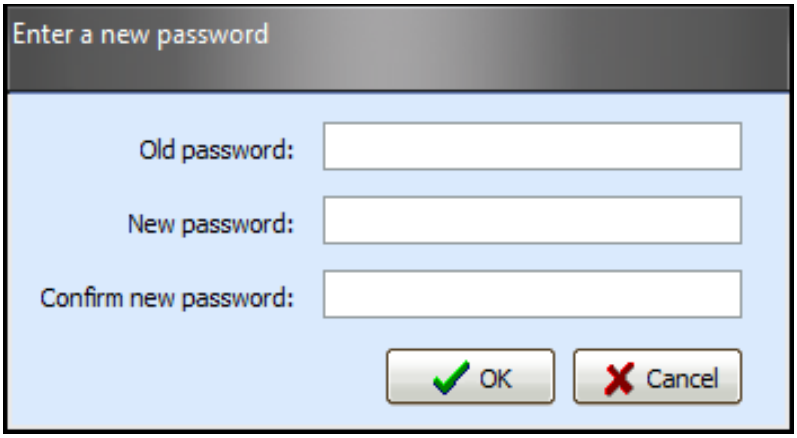



**Figure 14.** Changing a password upon first connection

1. Enter your initial password.
2. Enter a new password.
3. Confirm the new password by re-typing it in the bottom field
4. Click on **OK** when done.

**CAUTION:** If your password is due to expire within the next thirty days, the first time you log in during this period the software will prompt you to change your password. This will reset the expiration counter for one year.

Passwords in Smart-Vue Client are encrypted.

### 2.2.1 Super Administrators and Administrators

When a Super Administrator or Administrator opens the *User and call group Management* window, all current user accounts are automatically displayed in a table on the window.

### 2.2.2 Searching for a User

You may use the fields and the **Search** button in the Filters section to refine the user list according to specific criteria:

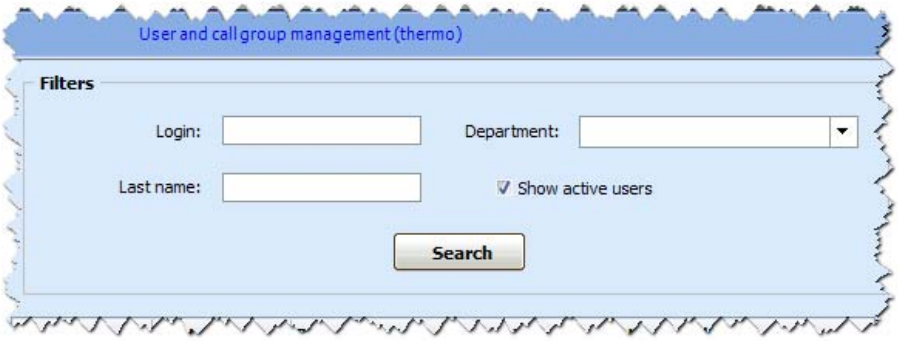



**Figure 15.** User search filter options

The fields in the **Filters** zone may contain special characters, such as accents, to make it easier to find people.

| | |
|---|---|
| Special letters | [ à ] / [ â ] / [ ä ] / [ À ] / [ Á ] / [ Ä ]<br>[ é ] / [ è ] / [ ê ] / [ ë ] / [ É ] / [ È ] / [ Ê ] / [ Ë ]<br>[ î ] / [ ï ] / [ Ï ] / [ Î ]<br>[ ò ] / [ ô ] / [ ö ] / [ Ò ] / [ Ô ] / [ Ö ]<br>[ ù ] / [ û ] / [ ü ] / [ Ù ] / [ Û ] / [ Ü ]<br>[ ç ] / [ Ç ]<br>[ OE ] / [ oe ] / [æ] / [ Æ ] |

| | |
|---|---|
| Special characters | [ ' ] / [ . ] / [ , ] / [ : ] / [ / ] / [ - ] / [ _ ] / [ ] / [ # ] |
| Not supported | [ \ ] |

Double-click on a user name in the table to open that person's profile.

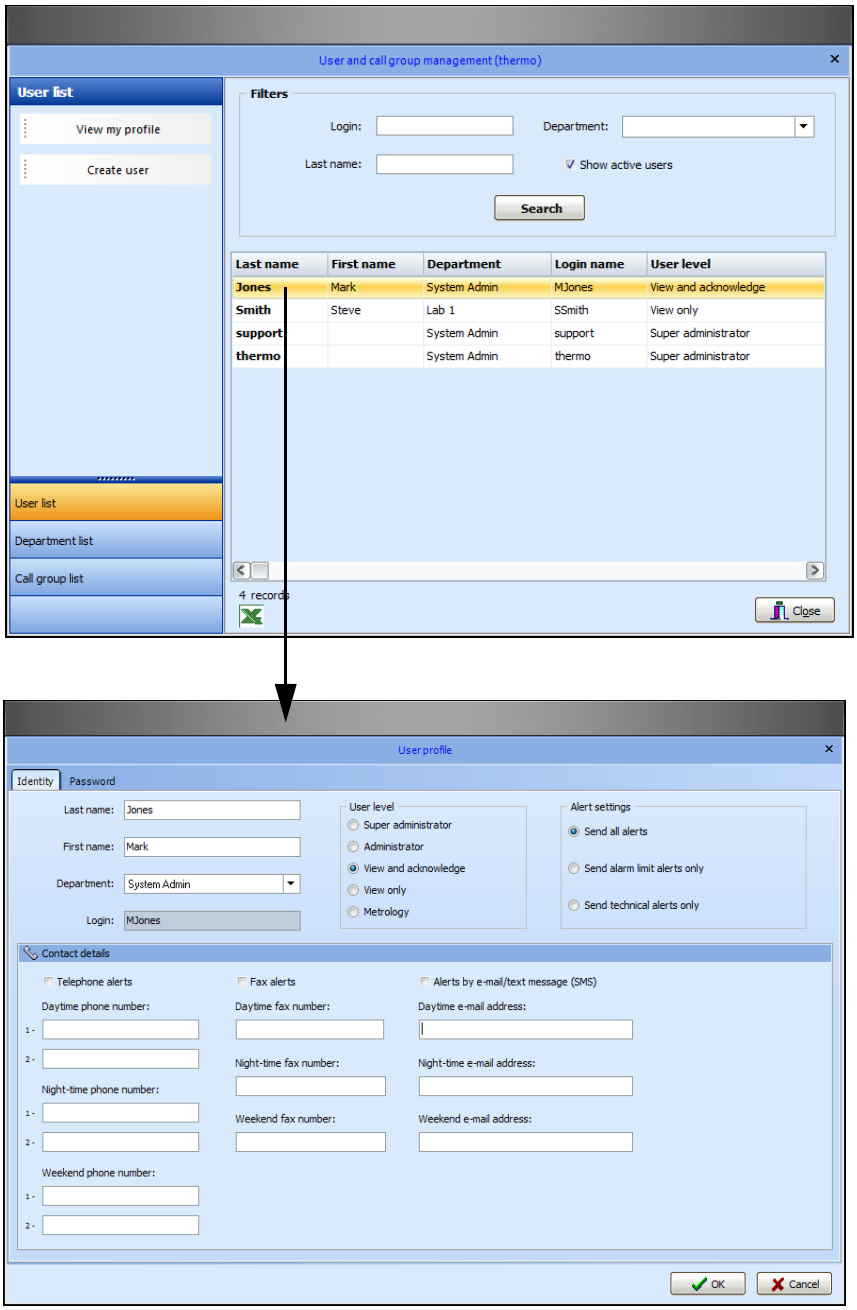



**Figure 16.** Editing a user profile

You may not change the login name for an existing user, but all other information in this window may be edited. Click on the MS Excel icon ( ) in the main window to export a list of all configured users.

## 2.3 Viewing and Changing an Existing User

**For users with "View and acknowledge", "Metrology", and "View only" levels.**

Remember, if you connect to the application with the **View and acknowledge, Metrology,** or **View** only user level, clicking on the **Call Group and User Management icon** ( ) on the main window opens your user profile settings directly.

As a user without sufficient administrator rights, you may only change your own contact information (phone, mobile and fax numbers and e-mail address) and your password:

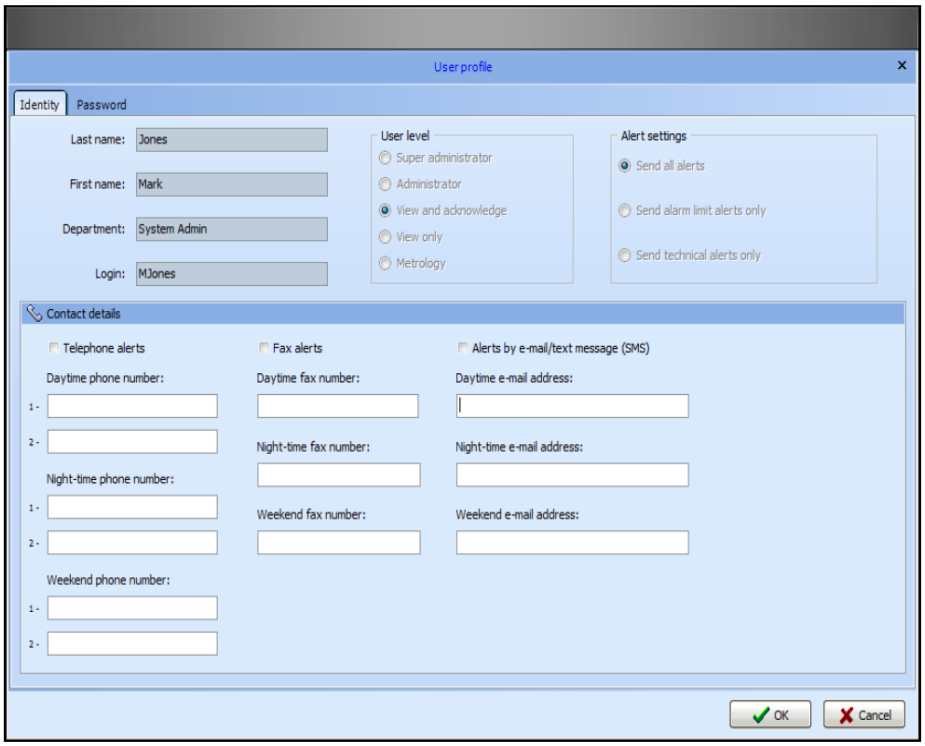



**Figure 17.** User profile opened by a user with "View and acknowledge" rights

Areas that you do not have the right to change are grayed out.

**CAUTION:** SMS alerts are currently only supported in France. Elsewhere, we recommend using Web-to-SMS type solutions to send alerts via SMS to a mobile phone.

## 2.4 Disabling a User

While it is not technically possible to delete users from the system (for traceability purposes), a user with Super Administrator or Administrator rights can disable existing accounts.

If you open a user profile while connected with these rights, go to the **Password** tab and un-check the **Active user** check box to disable a user account:99

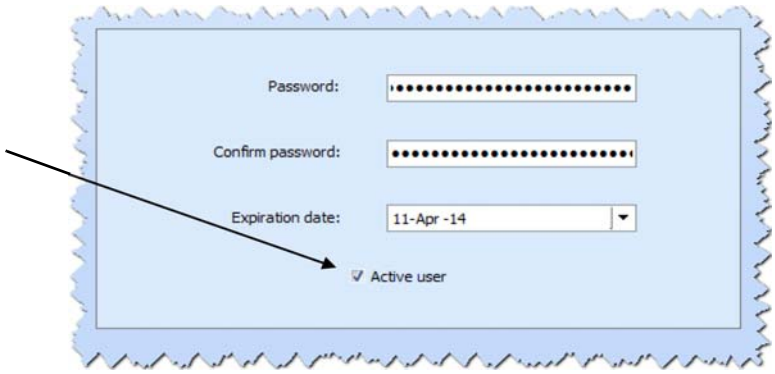



**Figure 18.** Disabling a user by changing the "Active user" status

## 2.5 Managing Departments

Departments may be used to organize system users. Among other things, this makes it easier to select members when creating Call Groups (refer to Section 6 – *Alerts and call groups*). Follow these steps to add a new department:

1. Logged in as Super Administrator or Administrator, click on **Settings** ➔ (*User and call group management*) in the main window.

2. Click on **Department list** in the lower left-hand panel.

3. Click on **Create department** in the upper left-hand panel. Enter the department name in the dialog box and click on **OK**. The new department is automatically added to the list.

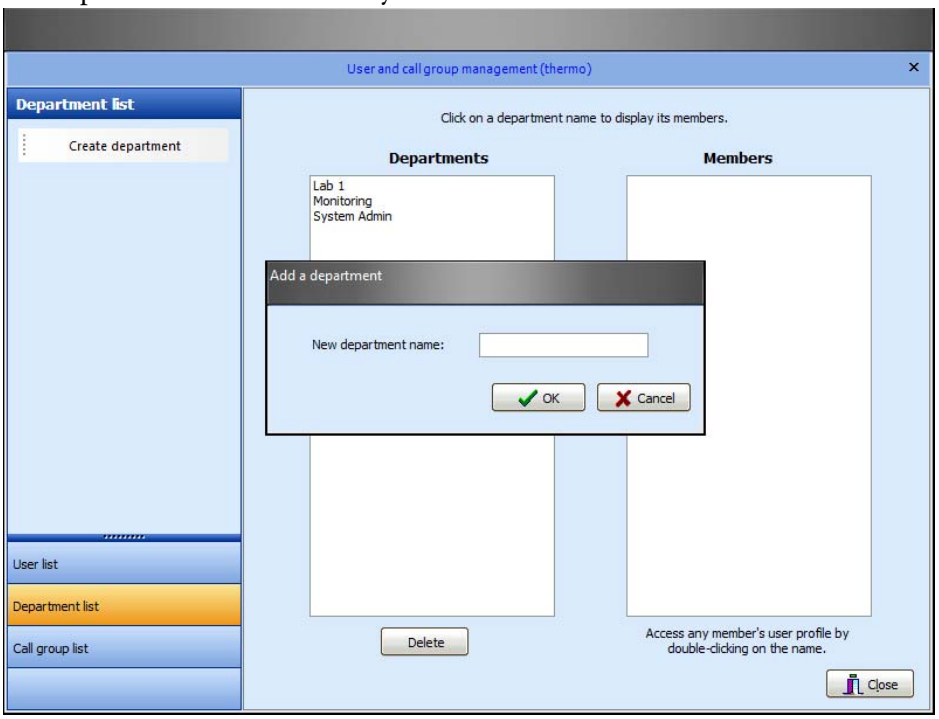



**Figure 19.** Creating a new department

**CAUTION:** A default department called **System Admin** is automatically created in the database when you install the solution. You may decide to keep this entry or delete it (in which case the department must not contain any users). In any case, at least one department must exist in the system for you to be able to create users.

4. Click on a department name ① to display its members in the right-hand pane.

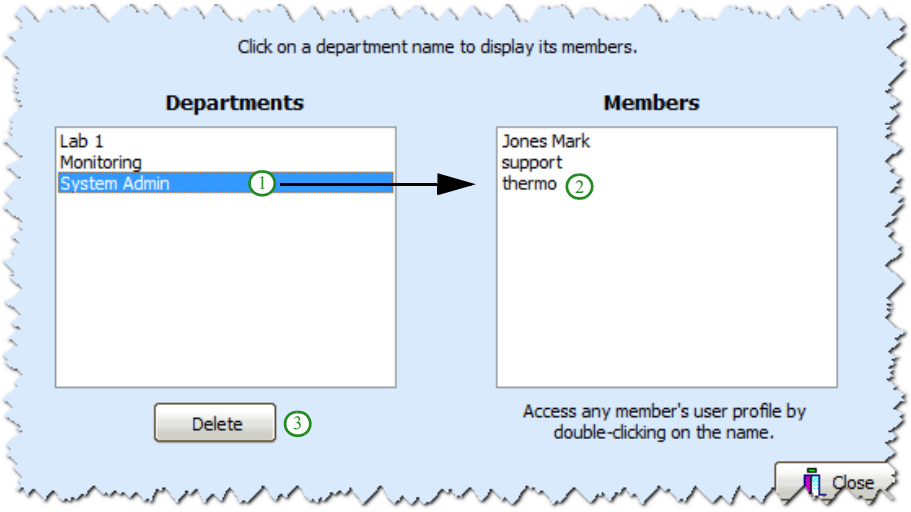



**Figure 20.** Displaying departments and their members

5. You may double-click on a user's name under **Members** ② to open his or her current profile.

6. You may delete a department by clicking on **Delete** ③ as long as that department does not contain any members.

7. Click on **Close** when you are done with this window.

Call group lists are described in detail refer to Section 6.1 – *Managing call groups*.

# 3 Configuring and Managing Modules / Sensors

The features described in this section are reserved for Super Administrators, Administrators, and Metrology profiles.

**CAUTION:** Smart-Vue Client supports automatic module configuration using a Service Discovery Protocol (SDP). This feature automates the installation of Smart-Vue modules into the system. We recommend using this installation method for networks with up to 15 modules. For systems larger than 15 modules, we recommend that you perform manual installation (as described in the next section, *Adding a module or repeater manually*).

## 3.1 Entering the Default Calibration Reminder Frequency

After adding new sensors to your system, you will be reminded to recalibrate them after a period of time that you may determine. This option is only available to users with Administrator, Super Administrator, and Metrology rights, using the Smart-Vue Client application running on the server computer.

To set the default reminder period:

1. Select **Settings** ➔Default calibration reminder ( )

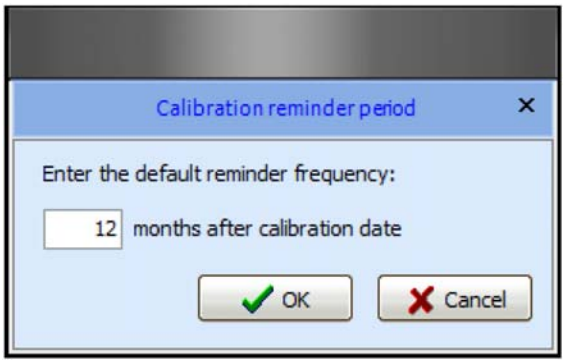



**Figure 21.** Start by entering the default calibration reminder period

2. Enter the desired default reminder period for new sensors.

3. Click on **OK** to save your changes or on **Cancel** to close this window without saving changes.

**CAUTION:** You may change the reminder period for your sensors as described in *Managing sensor calibration* refer to Section 11.

## 3.2 Adding a Module Using SDP

In Smart-Vue Client, go to the main window so you can see the dashboard display (*refer to* Section 4 - *Displaying sensors and readings*). Then, on the Smart-Vue module that you wish to install, press the button for three seconds ①. The LCD displays the message "Searching"②.

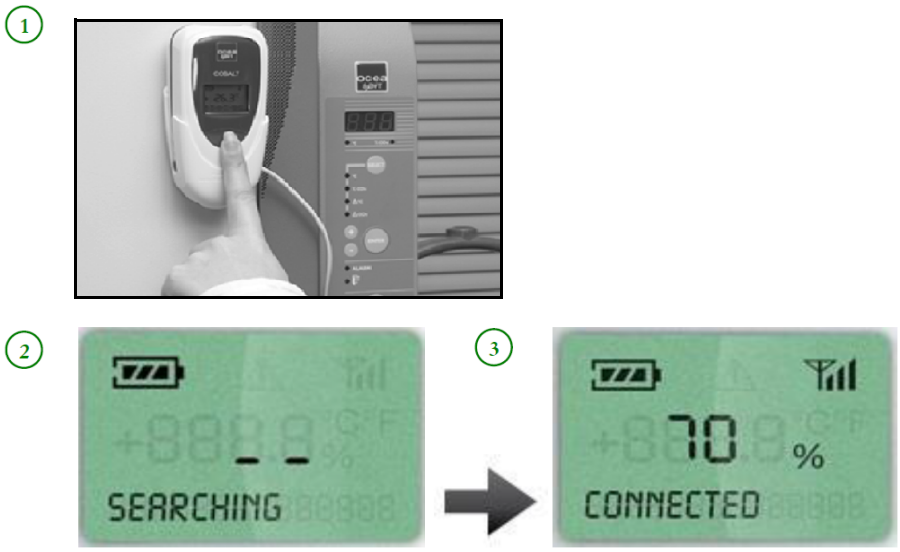



**Figure 22.** Press the button for three seconds to initiate connection process

During this process, the Smart-Vue module automatically detects your Smart-Vue Server system and adds itself as an un-configured module. When the module connects, the message "Connected" is displayed on its LCD window, along with a signal strength indicator showing the quality of the signal between the module and the "connected" receiver ③.

Modules added in this manner are added immediately to Smart-Vue Client, where you can see them in the **Tree Structure** (left-hand panel), in a default SDP group ④. From here, you may move them into a group of your own.

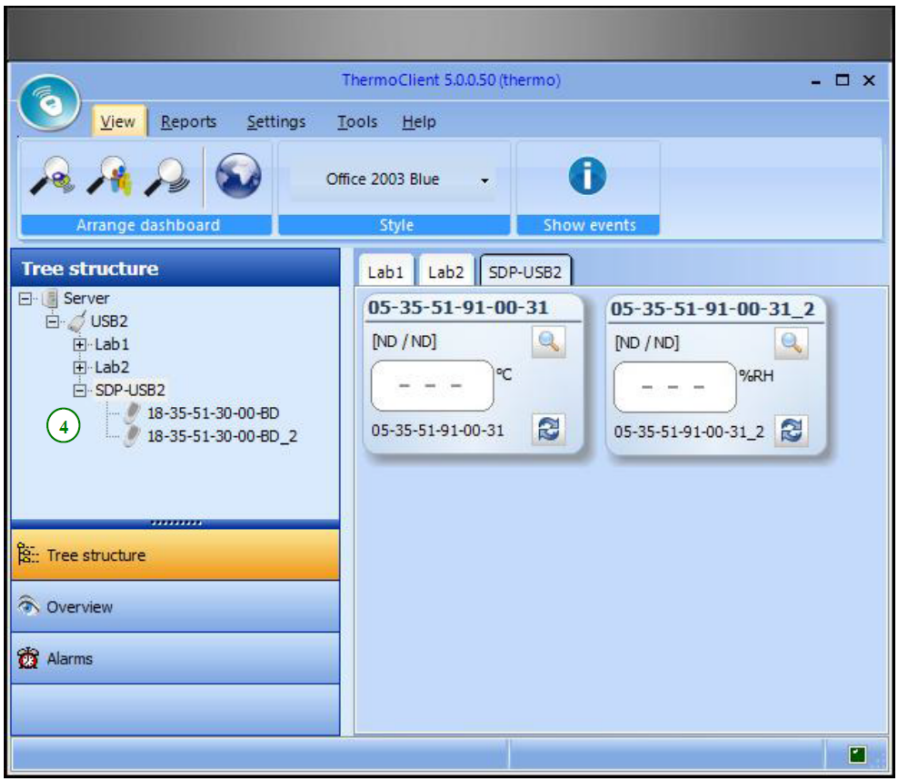



**Figure 23.** New module added to receiver's default "SDP" group

Using the SDP feature to add modules ensures that each module benefits from an optimal wireless connection to the receiver, using already-configured modules as repeaters to relay the wireless signal if necessary.

Modules added to the system via SDP are automatically visible to all Super Administrator, Administrator, and Metrology profiles. The clocks in these modules are synchronized with the Smart-Vue Server clock.

**CAUTION:** Smart-Vue Client settings windows do not refresh automatically if they are open when you add a Smart-Vue module using SDP. If one of the settings windows is open (such as F11) when you add a new module, the new module will be displayed in the tree structure and dashboard when you close that window. Press F11 again to adjust the settings for the new sensor.

## 3.3 Adding a Module or Repeater Manually

Follow these steps to add a Smart-Vue module to the system manually:

1. Click on **Settings** ➔ (Sensor settings) or press **F11**, to open the Sensor settings window.

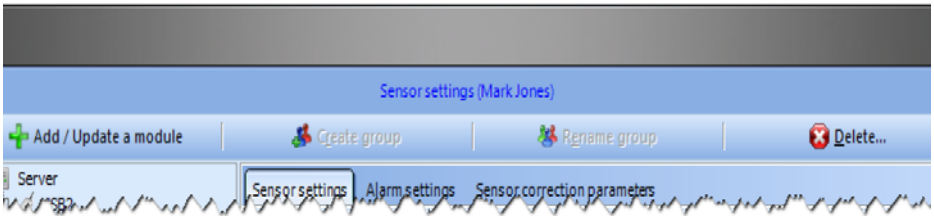



**Figure 24.** Sensor settings window (F11 from dashboard window)

2. Click on **Add / update a module** in the main menu bar above or press **F11** again to open this **Add / update wireless modules** window:

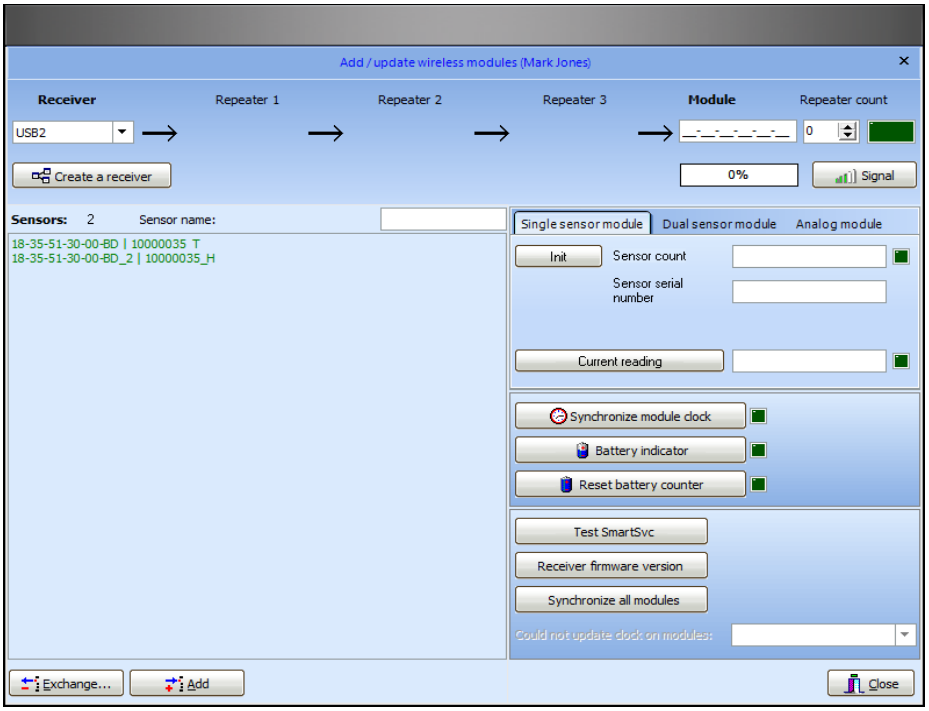



**Figure 25.** Adding and updating a module

Adding a new module involves the following seven steps:

1. Test wireless communication with module

- If the module you wish to add is not shown in the list on the left, choose a receiver from the drop-down menu ① shown here:

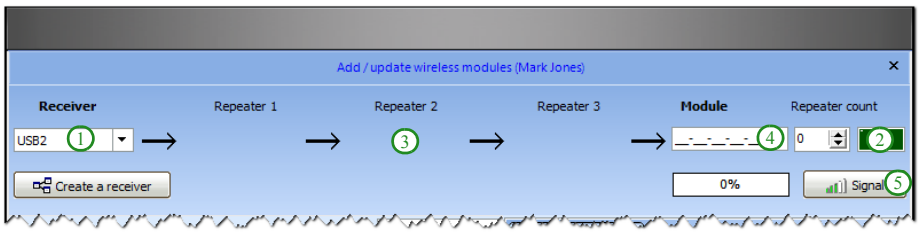



**Figure 26.** Adding a module manually

- Add one or more repeaters, if necessary:

  a. Use the up/down arrows ② to specify the number of repeaters (if any) you are using to reach the module in question.

  b. Enter repeater addresses (if any) in the repeater fields ③.

- Enter the module address ④. To avoid confusion, addresses never contain the letter "O". If you mistakenly enter the letter "O" in this field, the software automatically converts it to a number zero "0".

- Click on **Signal** ⑤ to confirm the wireless connection.

The results of communication tests between the receiver, repeaters and the module are displayed as percentages in the blue boxes, as shown in the example below (which uses one repeater to reach the module).

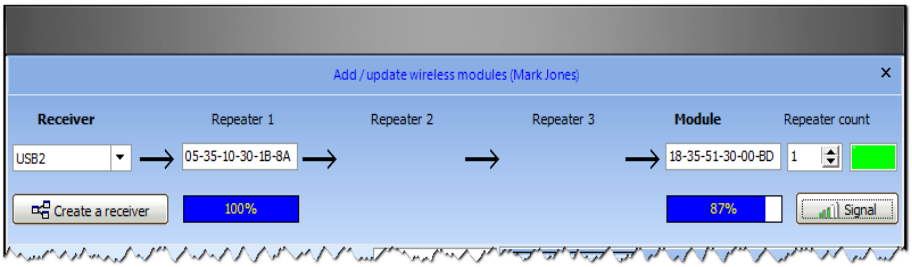



**Figure 27.** Module wireless connection test (with 1 repeater)

**Caution** A wireless performance test in the Smart-Vue application is acceptable if the displayed percentages are **50% or higher**. Below this level, communication with the module runs the risk of being altered, with serious impact on collecting stored measurements and triggering alarms; moving modules or a repeater may be required to boost signal strength.

2. Initialize the Smart-Vue module

If the wireless communication test is acceptable (i.e. recommended over 50% signal strength), click on **Init** to detect the number of sensors and their serial number(s).

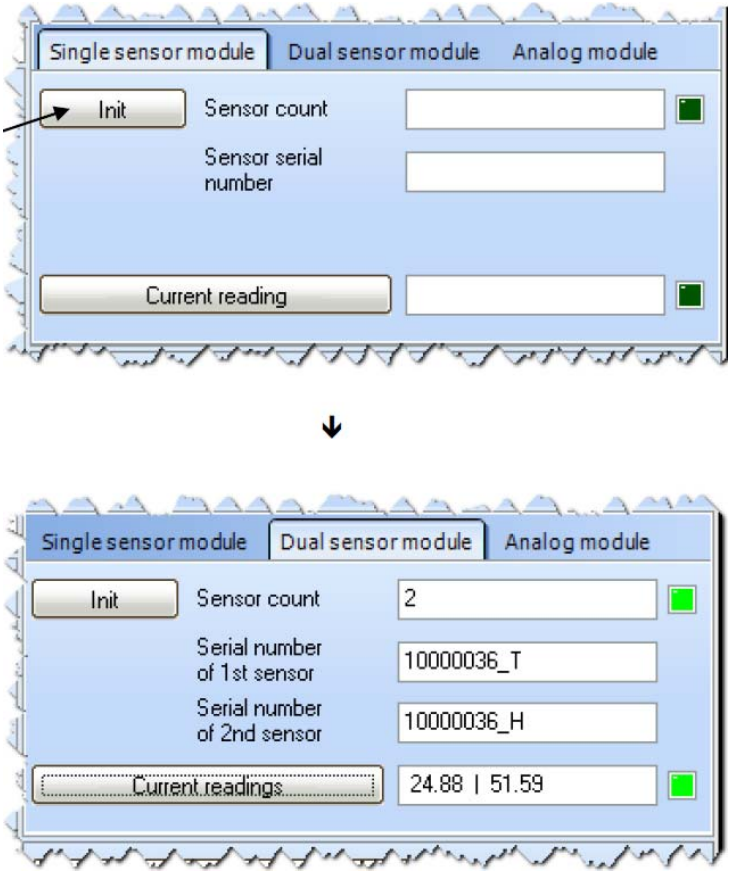



**Figure 28.** Press Init to detect sensors (dual sensor detected)

The number of sensors and their serial numbers are displayed automatically in the appropriate tab (single, dual, or analog).

When adding $CO_2$/temperature, temperature/humidity, PT100, and differential pressure modules, you will be prompted to enter the sensor's serial number when you click on **Init**. This number is provided on a sticker on your sensor.

By entering the serial number when prompted, you may subsequently download correction parameters and calibration certificates directly over the Internet. Enter the serial numbers here and click on **OK**, or click on **Cancel** to skip this step for now (you may enter the serial numbers later if you prefer).

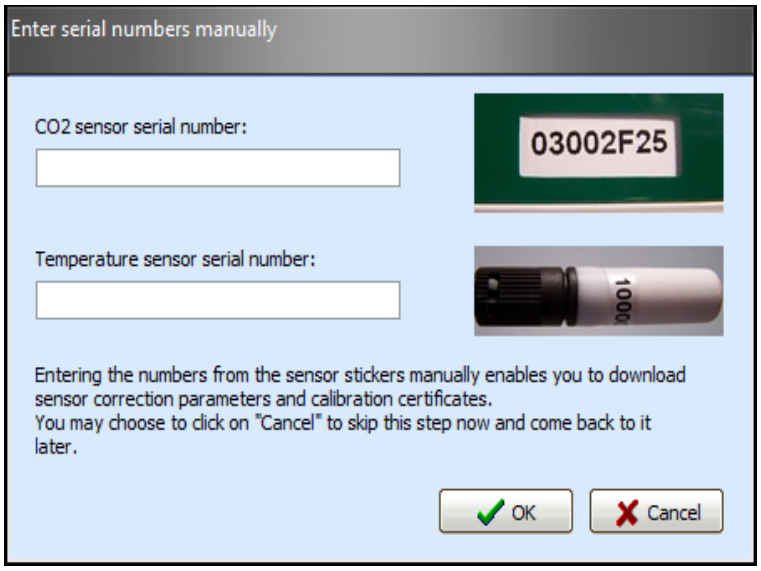



**Figure 29.** Entering sensor serial numbers

3. Read the current sensor value (optional)

Click on **Current readings** to read the latest stored readings on the remote module directly.

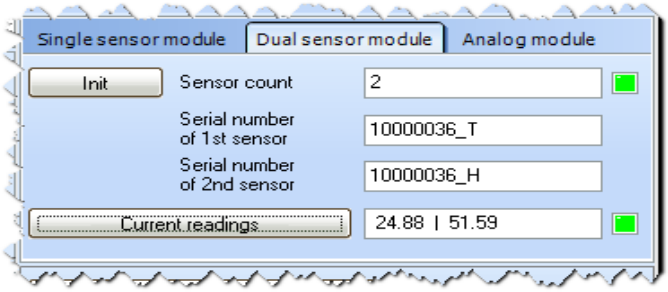



**Figure 30.** Read current values

4. Synchronize the module's clock (required)

You must click on **Synchronize module clock** to make sure that the module's internal clock is properly synchronized with the clock on the Smart-Vue Server computer.

You may click on **Battery indicator** to see the current level of battery power.

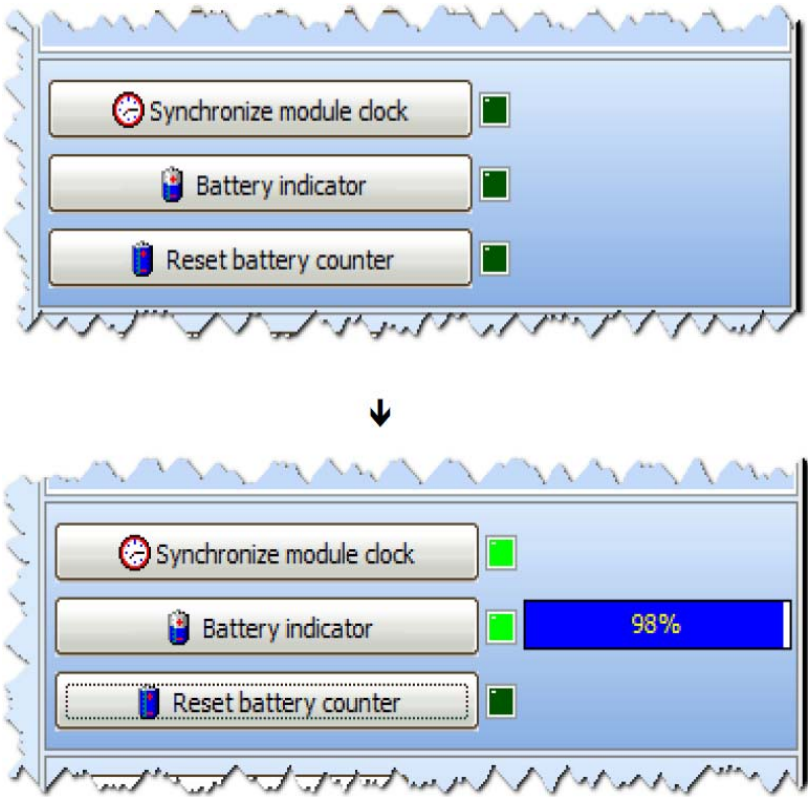



**Figure 31.** Updating internal clock and checking battery after installation

**CAUTION:** The server updates the internal clocks on all active modules every Sunday starting at 5:00 AM to maintain datalogging integrity for the overall system.

5. Reset the battery counter (optional)

**CAUTION:** Use the reset battery function only after installing a new, unused battery in a module. **Do not reset the battery counter if you did not install a new, unused battery**. The "Changing a module's battery" section can be found later in this chapter.

Only if a new battery has been installed, click on **Reset battery counter**, and then carry out a test by clicking on **Battery indicator** to confirm the counter is indeed properly reset to 100%.

6. Add the new sensor(s) to the system

Click on **Add ➔Close** to add the sensor(s) attached to the new module to the system. Spontaneous Emission of Alarms is enabled for the sensor by default (technical alarms such as low battery will be sent even if no other alarms are yet configured).

You may add a module that had previously been set up but deleted from the system. In that case, existing readings and audit trail events from that module may be displayed in the software.

7. Adding the sensor(s) to a group

**CAUTION:** If you have not configured any groups yet, click on **Create a group** in the main menu bar. For details on creating groups in the tree hierarchy, see "Managing the tree structure" later in this chapter.

Your new sensor is displayed in the *Sensor settings* window like this:

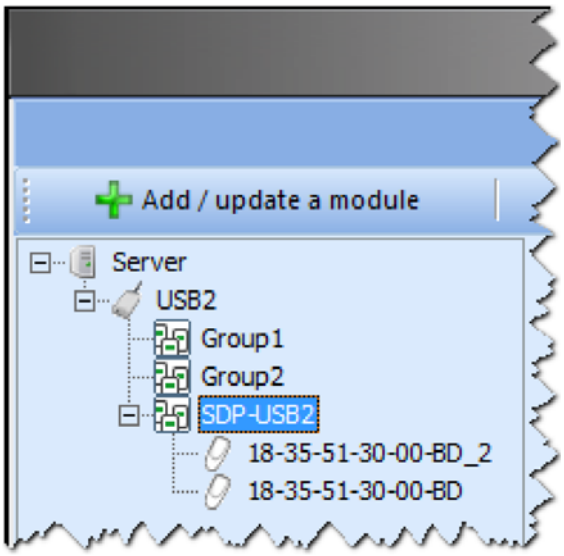



**Figure 32.** New end-point module added, but not assigned to a group

The modules are automatically placed into the SDP group. You must move each new module from the SDP group to one of your own groups in the tree structure dragging it with your mouse to the desired location (e.g. into to *Group2*).

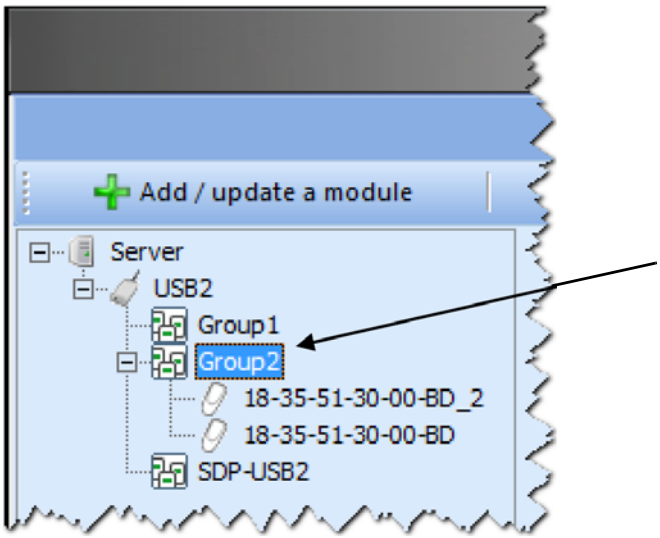
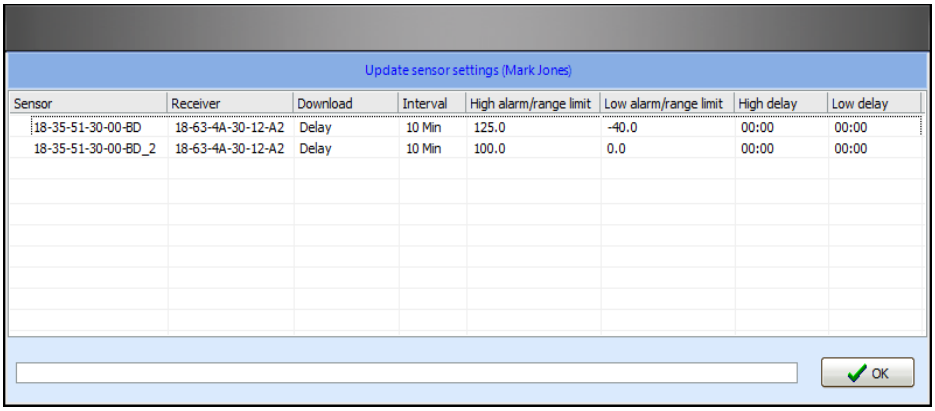



**Figure 33.** New module moved into a group

If the module contains two sensors, you must move them both to a group in the tree. The modules do not need to go into the same group, but they must be assigned to the same receiver.

To save your changes and update the module and its sensor(s), click on **Close ➔Yes ➔OK**. Choose No to discard your changes, or **Cancel** to stay on the *Sensor settings window.*

Clicking on **OK** opens a confirmation window that showing sensors to be updated.




| Sensor | Receiver | Download | Interval | High alarm/range limit | Low alarm/range limit | High delay | Low delay |
|---|---|---|---|---|---|---|---|
| 18-35-51-30-00-BD | 18-63-4A-30-12-A2 | Delay | 10 Min | 125.0 | -40.0 | 00:00 | 00:00 |
| 18-35-51-30-00-BD_2 | 18-63-4A-30-12-A2 | Delay | 10 Min | 100.0 | 0.0 | 00:00 | 00:00 |

**Figure 34.** List of sensors and parameters to update

Your new module is now displayed in the Smart-Vue main window like this (a dual-sensor module is shown here):

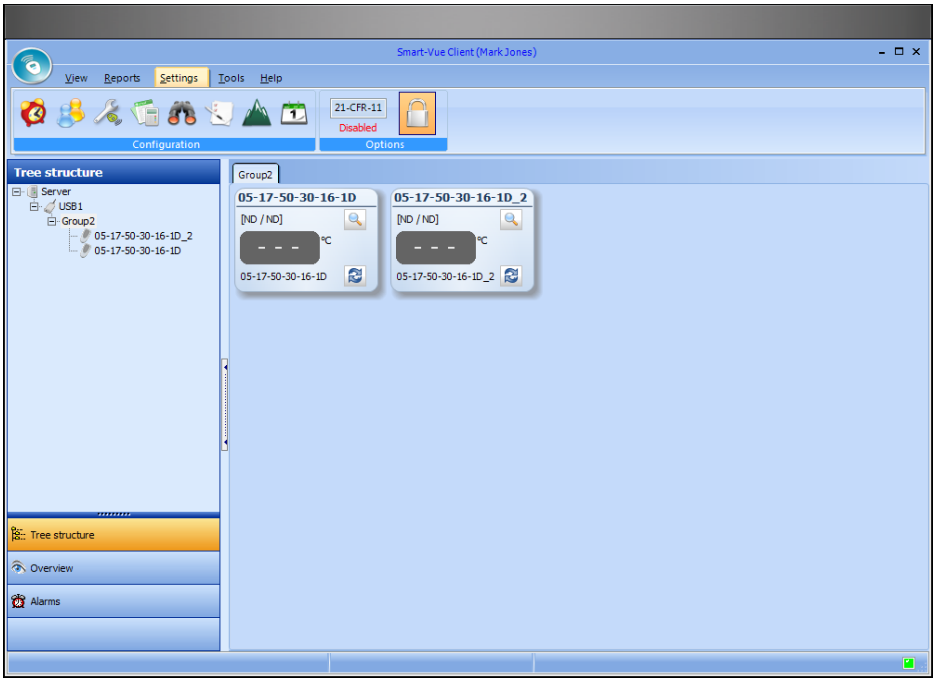



**Figure 35.** New module displayed in main window

## 3.4 Swapping a Wireless Module

Smart-Vue Client allows you to replace a given module with another identical Smart-Vue module easily. This feature is completely transparent with respect to traceability for the sensor attached to the module, as the readings made by the new module simply continue starting where the previous module stopped in the software. Data is recorded.

**CAUTION:** You may only change wireless modules if:

- The new module has not been previously installed in the system.
- The two modules are of the same type.
- The two modules have the same number of sensors.

To swap out an old module and put a new one in its place:

1. Click on **Settings** ➔ (Sensor settings) or press **F11**, to open the Sensor settings window.

2. Click on **Add / update a module** or press **F11** again to go to the **Add/update wireless modules** window.

3. Click to select the previous module from the list on the left ①, and then click on **Exchange** ②.

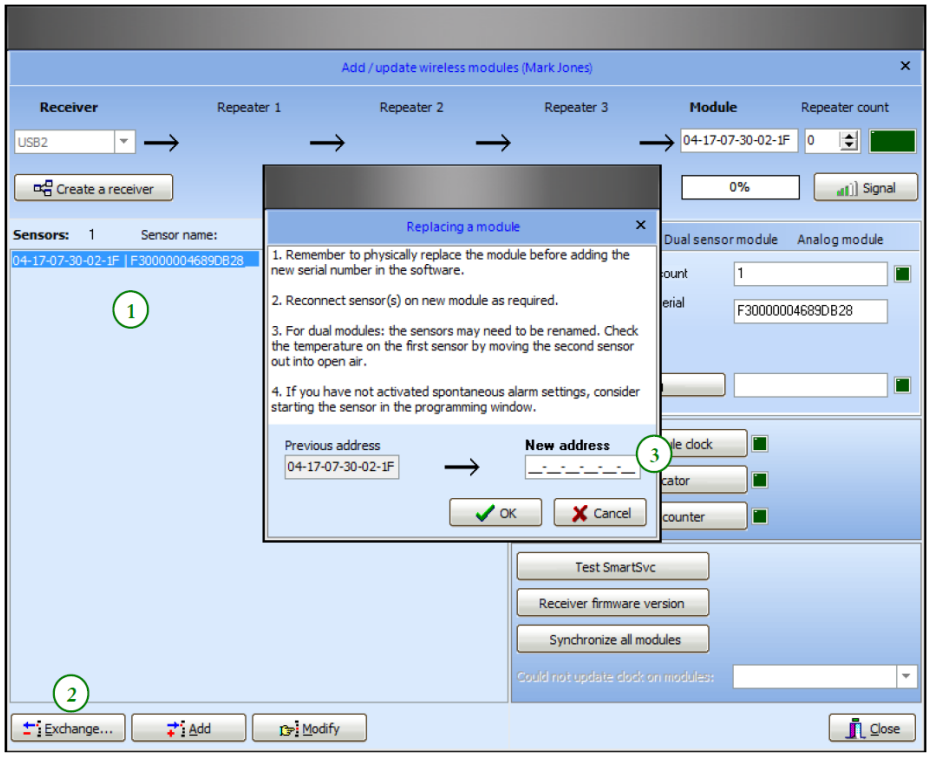



**Figure 36.** Replace module by entering the new module's address

4. Enter the new module's address in the *Replacing a module* window ③ and then click on **OK** and validate the prompts that follow. Click on Cancel if you do not wish to apply your changes.

With this procedure, your sensor or sensors (i.e., dual temperature/temperature, temperature/humidity, or $CO_2$/temperature modules) keep their original name(s). Only their address is different. This makes it possible to maintain the continuity required to ensure measurement traceability on monitored equipment.

## 3.5 Changing Sensor(s) on a Smart-Vue Module

Follow these steps to change the sensor(s) attached to a given module:

1. Replace the sensor on your module as necessary.

2. In Smart-Vue Client, click on **Settings** ➔ (Sensor settings) or press **F11**, to open the *Sensor settings window.*

3. Click on **Add / update a module** or press **F11** again to go to the **Add/update wireless modules** window.

4. In the wireless sensor list on the left-hand side of the screen, select the sensor that is physically being replaced ①.

5. Click on **Init** ② for the system to detect the new sensor.

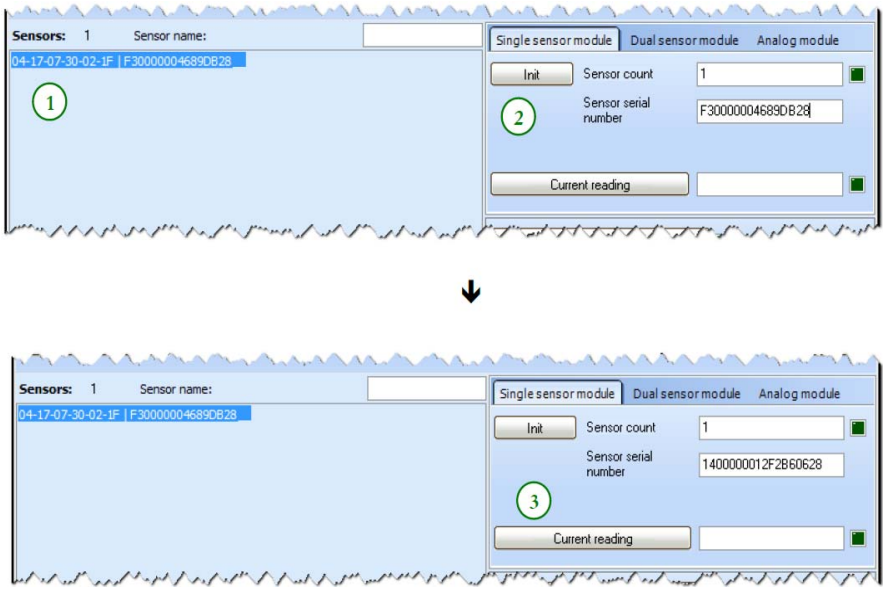



**Figure 37.** Replace sensor on module and then click on **Init**

The serial number is read automatically for digital temperature sensors. For analog sensors with serial numbers, you will be prompted to enter the sensor's serial number as shown here (*the actual window will depend on the module*):

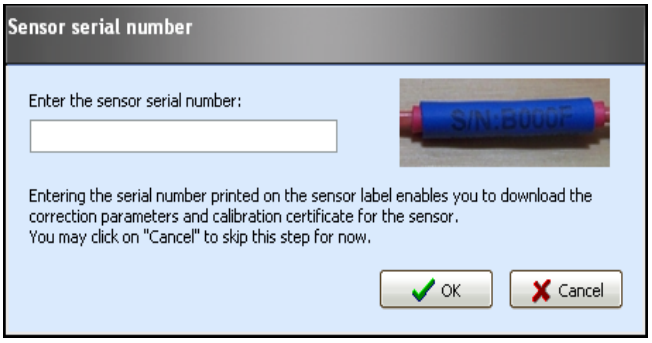



**Figure 38.** Enter sensor serial number if prompted

6. Click on **Current reading** ③ to read the sensor and test to make sure it is working correctly.

7. If the value is displayed correctly, click on **Modify** (below the sensor list) for the system to accept this change:

**CAUTION:** Don't forget to update the A and B correction parameters in the Sensor settings setup window for the sensor(s) in question (refer to Section 3.12 – *Configuring sensors* later in this chapter.

## 3.6 Changing a Smart-Vue Module's Battery

If you need to change the battery in a given module, we recommend also changing the batteries in all other modules connected to the same receiver at the same time.

**CAUTION:** Before removing the battery in any given module, make sure you download the data from the module first (*refer to* Section 4.4 – *Collecting readings with Smart-Vue Client*). Instructions for changing batteries are included in your module's installation guide.

Follow these steps to change the battery in a module:

1. First download the data from the module to make sure you don't lose anything.

2. Then replace the battery in your module.

3. In the software, click on **Settings** ➔ (Sensor settings) or press **F11**, to open the *Sensor settings* window.

4. Click on **Add / update a module** or press **F11** again to go to the **Add/update wireless modules** window.

5. Select the sensor ① for which you have changed the battery.

6. Click on **Init** ② and enter the sensor's serial number if prompted.

7. Click on **Current reading** ③ to read the sensor and test to make sure it is working correctly.

8. Click on **Synchronize module clock** ④ to update the module's clock.

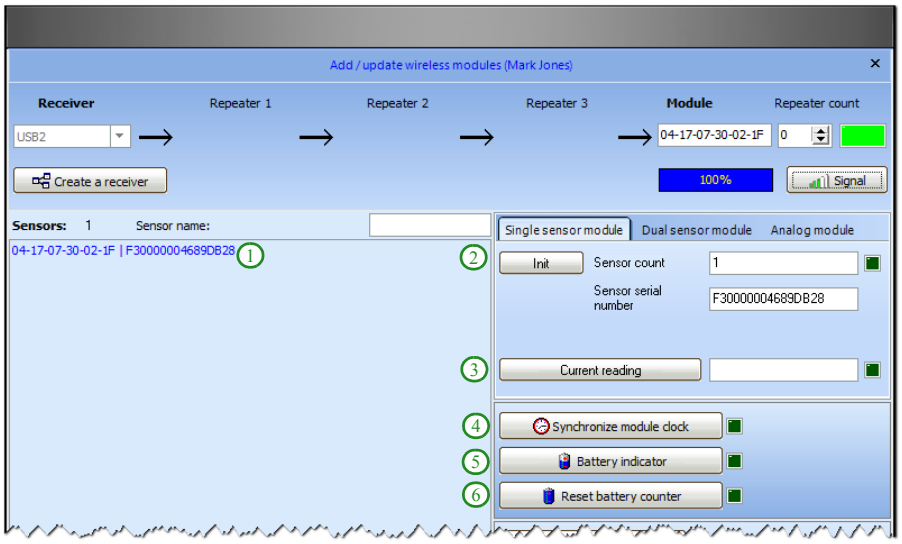



**Figure 39.** Resetting module after battery change

9. Click on **Reset battery counter** ⑥, and then perform a test by clicking on **Battery indicator** ⑤ to confirm that the counter is properly reset to 100%.

10. Click on **Modify** and then on Close at the bottom of the window

11. On the Sensor settings window **(F11)**, click on **Close ➔Yes** to save your changes and return to the main window.

## 3.7 Reinitializing a Single-Sensor Temperature Module as a Dual-Sensor Module

The instructions here apply to dual Smart-Vue digital temperature modules that were originally installed in your system with single sensor. It is possible to physically add a second sensor to these modules and then update the configuration in Smart-Vue Client.

1. Connect the second sensor to the module in question, and open the **Add / update wireless modules** window (F11/F11)

2. Select the module in the list and click on **Init**. This will detect both sensors physically connected to the module.

3. Click on **Modify** (button at the bottom of the window). Then click on **Yes** to proceed with the change, or **No** to cancel.

4. If you click **Yes**, the module and sensor information is updated. Click on **Close** to return to the Sensor settings window.

5. The second sensor is visible to all users who had access rights to view the first sensor before this change.

**CAUTION:** The data and audit trail for the first sensor are unaffected by this change, even if you physically move the first sensor to the "second" connector on the module.

## 3.8 Reinitializing a Dual-Sensor Module as a Single-Sensor Module

The instructions in this section apply to dual digital temperature modules originally installed in your system with two sensors. It is possible to physically remove one of the sensors from these modules and then update the configuration in Smart-Vue Client.

1. Remove the desired sensor from the module in question, and open the **Add / update wireless modules** window (F11/F11).

2. Select the module in the list and click on **Init**. This will detect the remaining sensor physically connected to the module.

3. Click on **Modify** (button at the bottom of the window). Then click on Yes to proceed with the change, or **No** to cancel.

4. If you click **Yes**, the module and sensor information is updated. Click on Close to return to the Sensor settings window.

5. The remaining sensor is visible to all users with access rights to view the first sensor.

**CAUTION:** The audit trail for the remaining sensor is unaffected by this change, even if you physically move that sensor to the other connector on the module.

## 3.9 Adding a Receiver

Follow these steps to add a new receiver to your Smart-Vue system:

1. In the software, click on **Settings** ➔ (Sensor settings) or press F11, to open the Sensor settings window.

2. Click on **Add / update a module** or press **F11** again to go to the **Add/update wireless modules** window.

3. Click on **Create a receiver** to open the *Add a new receiver window.*

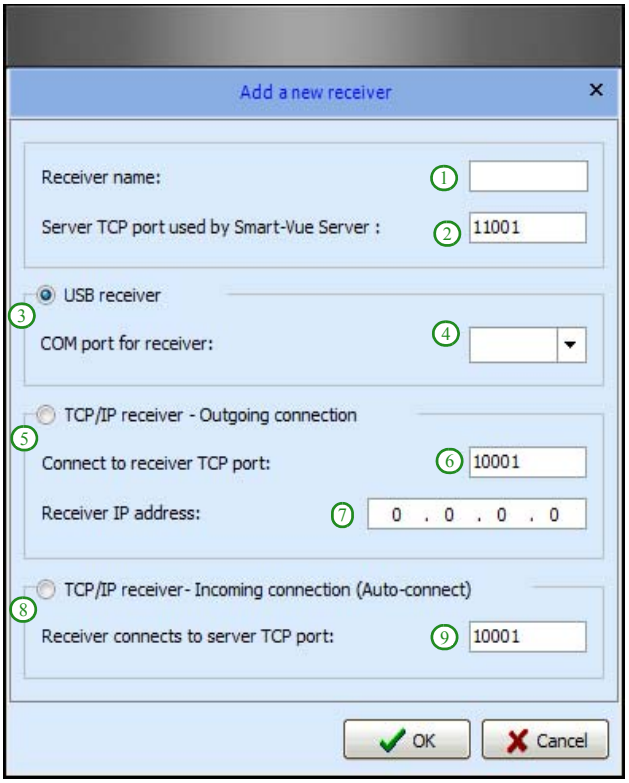



**Figure 40.** New receiver configuration

4. Enter a name (up to 8 characters) for the new receiver ① in the **Receiver name** field. The receiver name must have at least one character, and the name must not already be in use by another receiver, sensor group, or sensor.

**CAUTION:** The following characters may be used in receiver names:
**Numbers:** 0 to 9
**Letters:** A to Z (capital or lower case)
**Special characters:** "_" (underscore)

5. In the **Server TCP port used by Smart-Vue Server** field ②, enter the TCP -port used by the receiver to communicate with Smart-Vue Server (the port on which Smart-Vue Server is listening). Generally you can leave this at the default setting of 11001, unless you have changed the configuration.

6. For USB connections, select the **USB receiver** ③ section and use the drop-down menu to select the COM port number ④ to communicate with the receiver.

**CAUTION:** Only users connected with Smart-Vue Client actually running on the Smart-Vue Server computer can add a USB receiver.

**Note** *Some IP receiver models use Lantronix port redirection software to simulate a COM port (even though communication actually takes place over TCP/IP). Those receivers are added here just like USB receivers.*

7. For receivers connected via a TCP/IP (Ethernet) network, select the **TCP/IP** receiver - Outgoing connection checkbox ⑤. *In this case, the server's SmartSvc service establishes the connection with the receiver.*

   - Enter the TCP-port on ⑥ which the TCP/IP receiver is listening (port used by Smart-Vue Server's SmartSvc to reach the IP receiver).
   - Enter the TCP/IP receiver's IP address. ⑦

8. For receivers equipped with auto-connect functionality, connected via a TCP/IP (Ethernet) network, select the **TCP/IP receiver - Incoming connection** checkbox ⑧. *In this case, the receiver automatically connects to the appropriate SmartSvc to communicate with the server.*

   - Enter the TCP port used by the receiver to connect to its associated SmartSvc ⑨ (the port on which the SmartSvc will listen for incoming communications).

**CAUTION:** You must increment the TCP port number for each receiver you add (② and ⑨)Two receivers cannot function on the same port. The software will inform you if you choose a port that is already being used.

9. Click on **OK** to confirm receiver creation, or **Cancel** not to create the receiver. If you click on **OK**, the new receiver will now be available in the **Receiver** drop-down menu in the *Add / update wireless modules* window. Configure sensors and alarms as necessary for each receiver.

## 3.10 Synchronizing all Modules

Smart-Vue Client enables you to synchronize the clocks in all the modules in the system in a single click.

Follow these steps to synchronize all of your modules:

1. In the software, click on **Settings** ➔ (Sensor settings) or press **F11**, to open the *Sensor settings* window.

2. Click on **Add / update a module** or press **F11** again to go to the **Add/update wireless modules** window.

3. Click on Synchronize all Modules.

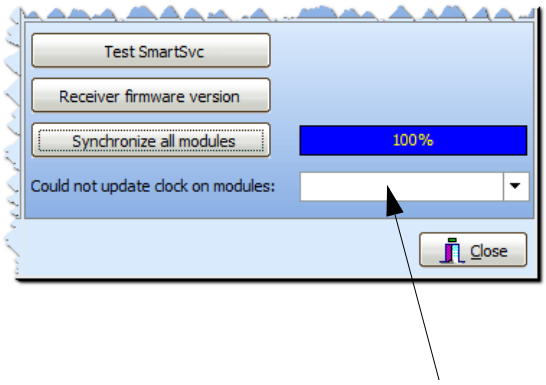



**Figure 41.** Synchronizing the system's Smart-Vue modules

If any modules fail to synchronize correctly, they will be displayed in the drop-down menu shown above. You should then select them individually to retry synchronizing the clocks on these modules.

4. Click on **Close➔Close** to return to the main dashboard window.

**CAUTION:** Two other options are available in the section shown above in Figure 41:

**Test SmartSvc availability** – click this button to make sure that the Smart-Vue background service is running properly on this computer.

**Receiver firmware version** – click this button if you need to see the version number of the firmware currently running on the selected receiver.

## 3.11 Managing the Tree Structure

You may use the *Sensor settings* window (accessible directly from the Smart-Vue Client main window by pressing **F11**) to manage the tree structure that represents the sensors, groups and receivers in your system.

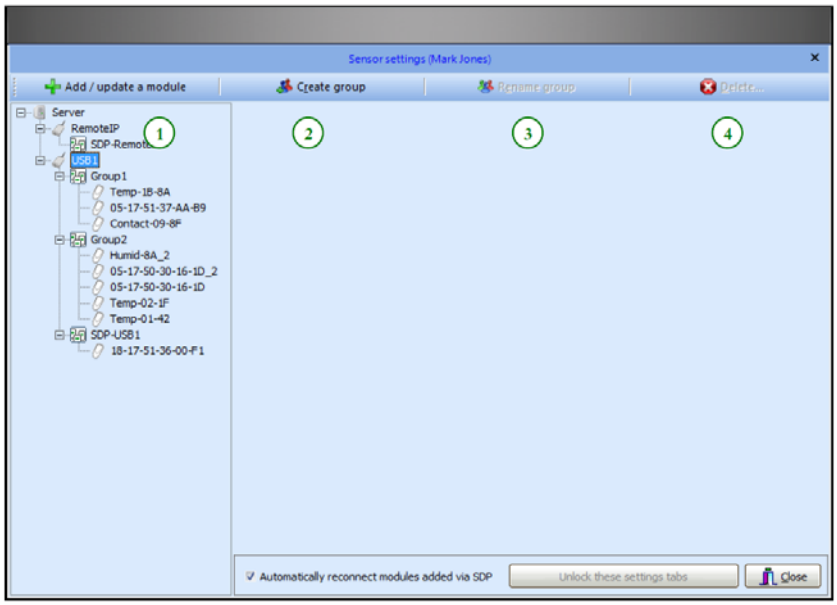



**Figure 42.** Sensor settings window (click on a sensor for details)

### 3.11.1 Moving Sensors

- You may move a sensor from one group to another by dragging it to the desired location using your mouse in the tree hierarchy ①.
- You may also delete a sensor directly from the system by selecting the desired sensor and clicking on **Delete** ④.

### 3.11.2 Working with Sensor Groups

- To add a new sensor group, select a receiver in the tree structure ("USB1" in the above example), and click on **Create group** ②. Enter a name for the group and click on **OK** when done. With up to 50 characters, the sensor group name must be unique and must also not be the same as a receiver or sensor.
- You may rename a group in the list by selecting it with your mouse and clicking on **Rename group** ③. With up to 50 characters, the group name must be unique and must also not be the same as a receiver or sensor.
- To delete a group that does not contain any sensors, select the desired group and click on **Delete** ④. You may not delete or rename an SDP type group (the default group into which modules are installed automatically via SDP – long button press).

## 3.12 Configuring Sensors

Use the *Sensor settings* window to select sensors and configure them. This window is accessible from the Smart-Vue Client main window by pressing **F11**.

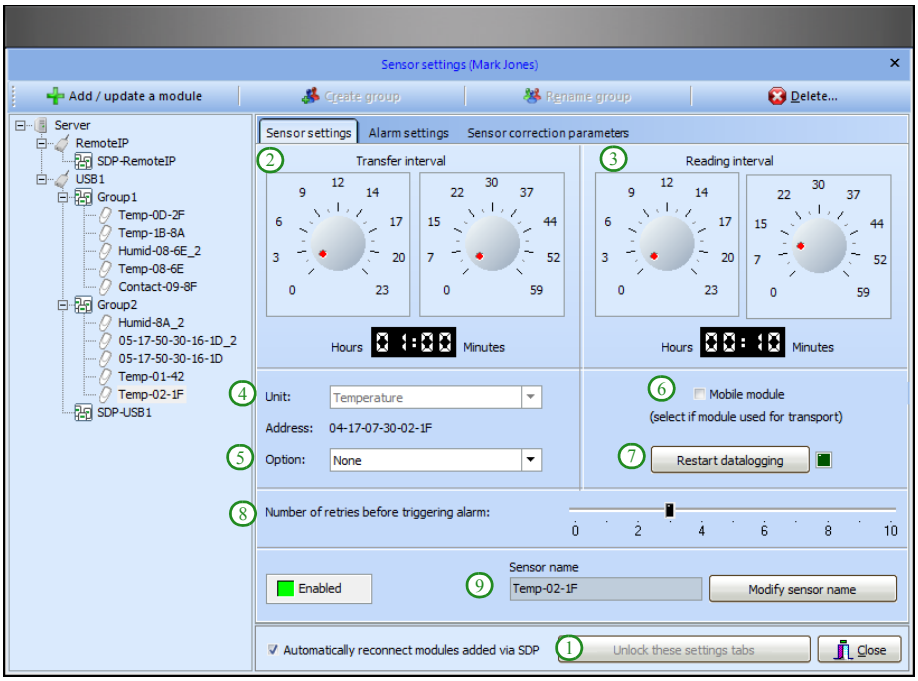



**Figure 43.** Using the Sensor settings window

1. Click on **Settings** ➔ (Sensor settings) or press F11, to open the Sensor settings window.

2. Sensors are shown in a tree list on the left-hand side of the window. The information here is displayed, but grayed out for normal operation.

To configure one or more sensors assigned to the same receiver, click on **Unlock sensor settings tabs** at the bottom of the window ①. You only have to press this button once per configuration session (F11) to configure sensors on a given receiver.

3. Select the sensor you would like to configure. Start by setting the following values on the *Sensor settings* tab by adjusting the dials or double-clicking directly in the digital hours/minutes fields:

- **Transfer interval** ② corresponds to the lapse of time between each collection by the system of the measurements recorded by the sensor. This value must be higher than the Reading interval. Values can be changed by moving the dial with a mouse or by double-clicking on field and typing in the value directly.

- **Reading interval** ③ corresponds to the lapse of time between each measurement recorded by the sensor. This value must be lower than the Transfer interval. Values can be changed by moving the dial with a mouse or by double-clicking on field and typing in the value directly.

**Note** *For $CO_2$ sensors, the reading interval must be equal to or greater than three minutes.*

**CAUTION:** To optimize system operation, we recommend setting **Transfer interval** as a multiple of **Reading interval**.
Many factors affect the "ideal" settings for these values, such as your precise needs and the number of modules in your system. The default values are every 10 minutes for reading, and 1 hour for transfer. Please check with a qualified technician for more information on this topic.

- **Unit** ④ is used to define sensor measurements (temperature, humidity, etc.). The sensor serial number is also shown in this zone.

**Note** *The Unit label may only be redefined for 4-20 mA sensors.*

Some Smart-Vue modules include additional options, such as light, battery/power, and contact detectors. Generally, these options are used to trigger alarms in case a problem is detected. If your Smart-Vue module has one of these options, select it using the **Option** ⑤ pull-down menu.

- **Mobile module** ⑥ disables technical alarm transmission when the sensor is beyond wireless range. This feature is generally used for data-logging and monitoring in transportation and logistics applications.
- **Restart data logging** ⑦ reinitializes measurement collection by the sensor. All measurement data stored in the module will be deleted when data logging is restarted.

**Note** *You cannot restart data logging on a module that is currently disabled. You must enable it first and then go back into the F11 settings window.*

When you restart data logging, the readings contained in the module's memory are erased and data logging starts fresh. Sensor parameters are not transferred by this action. If you have replaced the module battery, please follow the instructions in *Changing a Smart-Vue module's* battery (refer to Section 3.6).

- **Number of retries before triggering alarm** ⑧ indicates the number of times that the system will try to download data from the module at the time of its designated transfer interval. If the system cannot download data after the specified number of tries, an **alarm** is triggered.

  If a module fails to respond, the system retries one minute later regardless of the transfer interval. This ensures fast notification in case of communication errors. For example, if the transfer time is set to 4 hours and the module fails to respond at that time, the system retries after just one minute. If communication is still not successful, the system retries the specified number of times at one-minute intervals.

  The number of modules being read simultaneously may affect this retry rate. For example, if 20 modules are being read and one module fails, the system will continue reading the other modules before retrying the one that failed.

- **Sensor name** ⑨ is the name the system associates with the serial number and is used as an identifier in application tree structures and monitoring windows.

**Modify sensor name / Validate sensor name** is a toggle button used to change and verify a name change. According to the sensor type, you may enter up to 18 or 19 characters in the software. You may enter up to 19 characters for temperature sensor of a $Co_2$ / Temp module and for Humidity sensor of Dual Temperature / Humidity module. But the number of characters displayed on the LCD of some modules is limited as listed below:

| Smart-Vue module type | Number of characters |
|---|---|
| Digital temperature | 18 characters |
| Differential pressure | 14 characters |
| Dual temperature / humidity | 18 characters |
| PT100 (temperature) | 18 characters |
| $CO_2$ | 14 characters |
| Dry contact | 14 characters |
| 4-20 mA | 14 characters |

**Figure 44.** Number of characters for module name on LCD display

**CAUTION:** The name on the module's LCD is refreshed every 24 hours (maximum) to preserve battery life. Thus, name changes may not be shown immediately on the module, but they are taken into account in the software.

**CAUTION:** “Reserved” Windows characters may be used in sensor names ( < > : " / \ | ? * ). The sensor name is used when creating the files exported from the **Sensor details** window, as well when saving downloaded calibration certificates. In these cases, if sensor names use those characters, Smart-Vue Client will replace them with an underscore character [ _ ] in the name of the document.

## 3.13 Enabling/Disabling Sensors

You may use the *Sensor settings* window (accessible directly from the Smart-Vue Client main window by pressing **F11**) to enable and disable specific sensors.

**CAUTION:** Keep in mind that Smart-Vue modules communicate via a wireless connection. To enable or disable a sensor, Smart-Vue Client must be able to communicate with the module that controls the sensor.

1. In the tree structure, select the sensor to be enabled or disabled and click on the **Sensor settings** tab.

2. At the bottom of the Sensor settings window is a toggle button labeled **Enabled** or **Disabled**, along with the sensor’s status indicated in color:


**Figure 45.** Click to enable/disable sensors

3. Click on this button to enable a disabled sensor or to disable an enabled sensor.

Datalogging features are non-operational (measurement is not performed) on sensors that are disabled.

**CAUTION:** On a dual module, both sensors are disabled in a single operation. You must select the first sensor of the two to disable these sensors. You may also choose to disable a sensor when acknowledging an alarm (*refer to* Section 5 - *Configuring and managing alarms*).

If the module does not respond to an enable/disable command

- If Smart-Vue Client is unable to communicate with the Smart-Vue module in order to enable it, the module (and its sensors) remain disabled in the application and datalogging is not started on the module.

- If Smart-Vue Client is unable to communicate with the Smart-Vue module in order to disable it, the module continues to log data locally, but readings are not transferred to the application.

## 3.14 Adding a Reading Unit

You may create a new measurement unit to assign to Smart-Vue **4-20 mA** sensors. This enables you to use Smart-Vue Client to display readings that are meaningful in your context.

1. Press **F11** in the main Smart-Vue Client window to access sensor settings. Select a 4-20 mA sensor from the list.

2. On the **Sensor settings** tab, click on the **+** on the right-hand panel of the **Unit** drop-down menu.

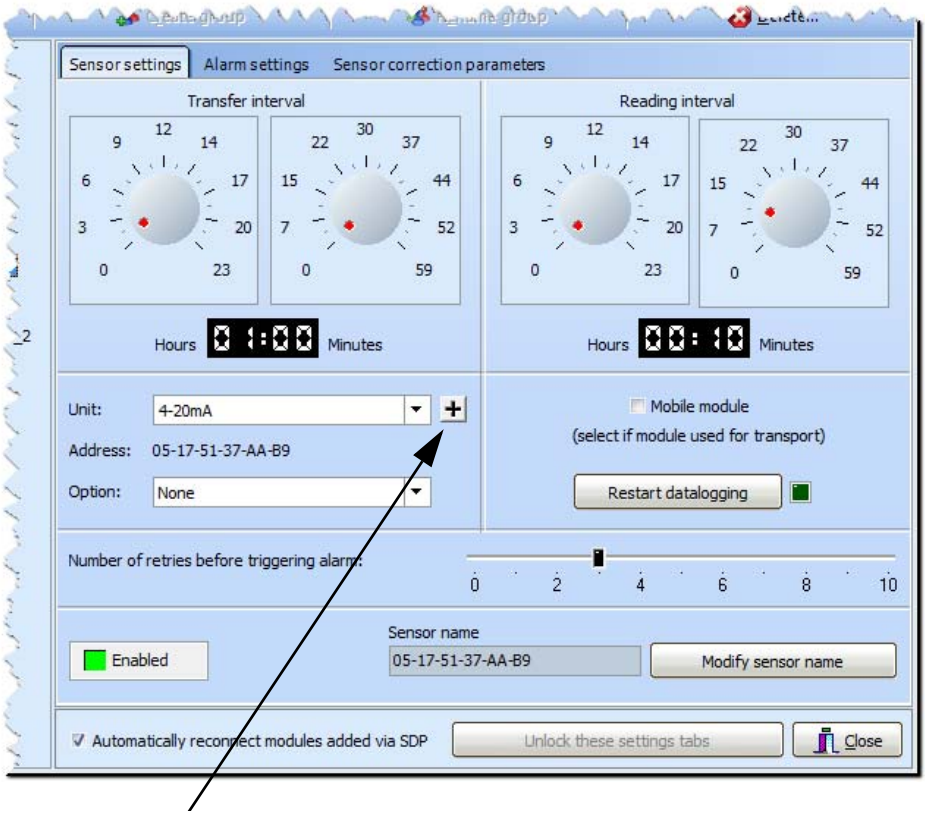



**Figure 46.** Add your own units for 4-20 mA modules

3. This displays the reading unit window.

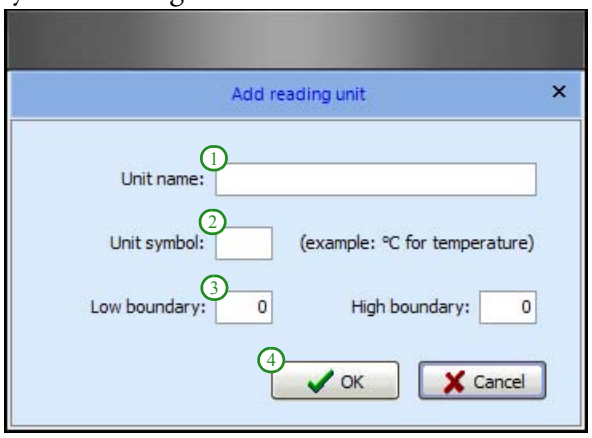



**Figure 47.** Measurement unit details

4. Use this window to add your own reading units for 4-20 mA sensors.

   - Enter the name of the unit you wish to add in **Unit name** ①
   - Enter abbreviation of up to three characters in **Unit symbol** ②
   - Enter the high and low boundaries ③ (you may enter numbers from -500 to +999 in these fields).

5. Click on **OK** ④ to confirm the new unit.

This new unit is automatically added to the drop-down menu and can be used to assign units to sensors. Select the appropriate unit for the sensor in question and save your changes by closing the *Sensor settings* window. The symbol and the high and low boundaries are transmitted to the module when SEA window (Spontaneous Emission of Alarms) is updated at this time.

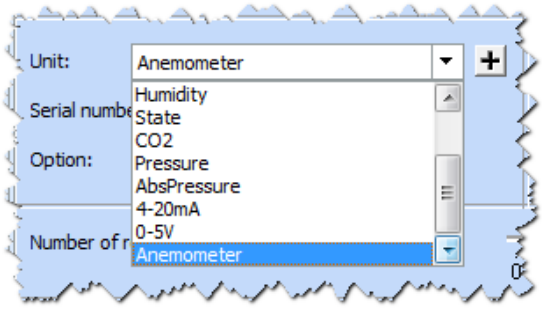



**Figure 48.** Updated reading unit list

To save your changes and transmit the symbol, as well as the upper and lower boundaries, to the Smart-Vue module, click on **Close ➔Yes ➔OK**. If you do not want to save your changes click on **No**, or on **Cancel** to stay in the *Sensor settings* window.

**CAUTION:** By default, "4-20mA" is assigned to 4-20 mA sensors upon initialization.

You may change existing units for these values in the *Add reading unit* window described above by typing their exact names. Their symbols and high and low boundaries will then be updated.

## 3.15 Automatic Module Reconnection via SDP

Smart-Vue modules have the ability to reconnect automatically to the system if a transmission problem occurs. This feature may be activated or deactivated for the selected module using a checkbox located at the bottom of the Sensor Settings window (**F11** from the main Smart-Vue Client window), as shown below:

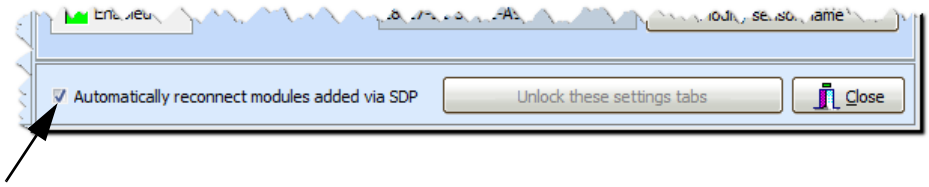



**Figure 49.** Click to enable automatic reconnection

If this checkbox is selected, the option is enabled for all modules that were added to the system using the SDP installation method. These modules will seek to reconnect to their configured receiver if their wireless connection becomes unavailable and remains unavailable for **6 hours**.

**CAUTION:** This option is activated or deactivated for a given module on the next update of SEA parameters that follows the change in this checkbox.

## 3.16 Using Correction Parameters

On the **Sensor correction parameters** tab shown below, you may load **A** and **B** correction parameters for the selected sensor. To do this:

1. Click on **Modify** (the button label changes to **OK**).

2. Enter the **A** and **B** values exactly as they are provided on the calibration certificate, into the **A** and **B** fields respectively.

3. Click on **OK** to confirm the values and save the information.

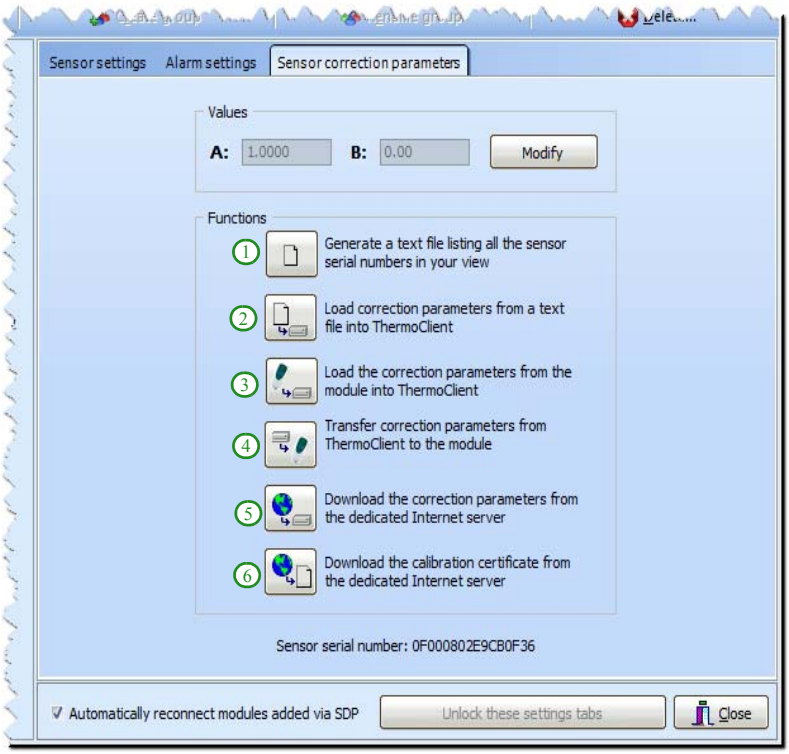



**Figure 50.** Correction parameters window

**CAUTION:** The correction parameter A field is limited to 4 decimal places. Given the module's accuracy of 5/10,000, the 4th decimal place may only be 0 or 5.
For example, when you enter an A correction parameter of 1.123**4**, the value is automatically rounded to 1.1235. The change can be seen after you save your changes successfully and return to this tab.

Choose the function that corresponds to your needs:

- **Generate a text file…①.**
  This button creates a text file on your computer containing the serial numbers of all the sensors in your view. This is the only one of these buttons that remains active even if the user has not unlocked the settings tabs by clicking on **Unlock these settings tabs** on the **Settings tab**. The exported text file is stored in a sub-folder of your Smart-Vue Client folder, whose default path is: `C:\Program files (x86)\SVuClient\Listing.txt`

- **Load correction coefficients (from text file)…②**
  The A & B correction parameters used in Smart-Vue Client may be loaded from a text file. This operation only loads the information into the software (i.e. for displaying meaningful information on the window). You will be prompted to save these settings (by transferring them to the modules) when you close the F11 window.

- **Load correction coefficients (from module)…③**
  This button reads the correction parameters currently stored in the module's memory and loads them into Smart-Vue Client.

- **Transfer correction coefficients… ④**
  This button launches the transfer of correction values from the software to the module.

- **Download correction coefficients…(from Internet) ⑤**
  Downloads correction values stored in an on-line database for the selected sensor (*see note below*).

- **Download calibration certificate… (from Internet) ⑥**
  Downloads calibration certificate stored in an on-line database for the selected sensor (*see note below*):

  - If downloading from the PC hosting Smart-Vue Server:
    - `C:\SmartVue\SVuClient\certificates`
  - If downloading from a PC only running Smart-Vue Client and not running Smart-Vue Server:
    - `C:\Program Files (x86)\SVuclient\certificates`

**CAUTION:** Correction parameters and calibration certificates may be downloaded for your sensor(s) only if:

- The sensor was initialized correctly.
- The sensor has been initially supplied to you calibrated or has been re-calibrated by Thermo Scientific.

- The workstation you are using is connected to the Internet.

## 3.17 Altitude Settings (for $CO_2$ Sensors Only)

Due to atmospheric pressure, readings taken by $CO_2$ sensors are influenced by altitude. Follow these instructions to configure Smart-Vue Server system to compensate for the altitude of your system and calibrate readings accordingly. Here we assume that the $CO_2$ modules being used are within relatively close proximity to your server.

**CAUTION:** Altitude adjustment can only be configured on the computer hosting Smart-Vue Server via Smart-Vue Client.

1. On the **Settings** tab, click on (Altitude settings). The default altitude is 0 m.

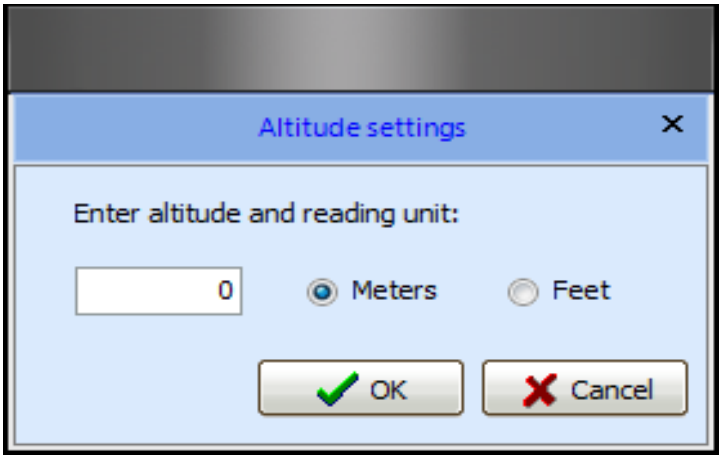



**Figure 51.** Altitude settings for $CO_2$ modules

2. Enter the altitude where your server is located.

3. Select **Meters** or **Feet**.

4. Click on **OK** when done, or on Cancel to discard changes.

The altitude value may range from:

- -500 to 9,000 meters
- -1,500 to 30,000 feet

Any changes you make here will be taken into account the next time parameters are transferred to modules.

# 4 Displaying Sensors and Readings

## 4.1 Viewing Sensor Settings

In Smart-Vue Client, Smart-Vue modules are assigned to one or more users.

- **Administrators**, **Super Administrators**, and **Metrology** accounts can manage all the sensors configured in the system.
- Users with **View and acknowledge** rights can view sensors and acknowledge alarms on those sensors assigned to them.
- Users with **View only** rights can only view those sensors explicitly assigned to them.

**CAUTION:** Only Super Administrators and Metrology profiles can access the window to assign sensor views.

Follow these steps to assign sensors to a particular user:

1. In the Settings tab, click on the **View sensors** icon (), or press **F2**, for sensor viewing settings.

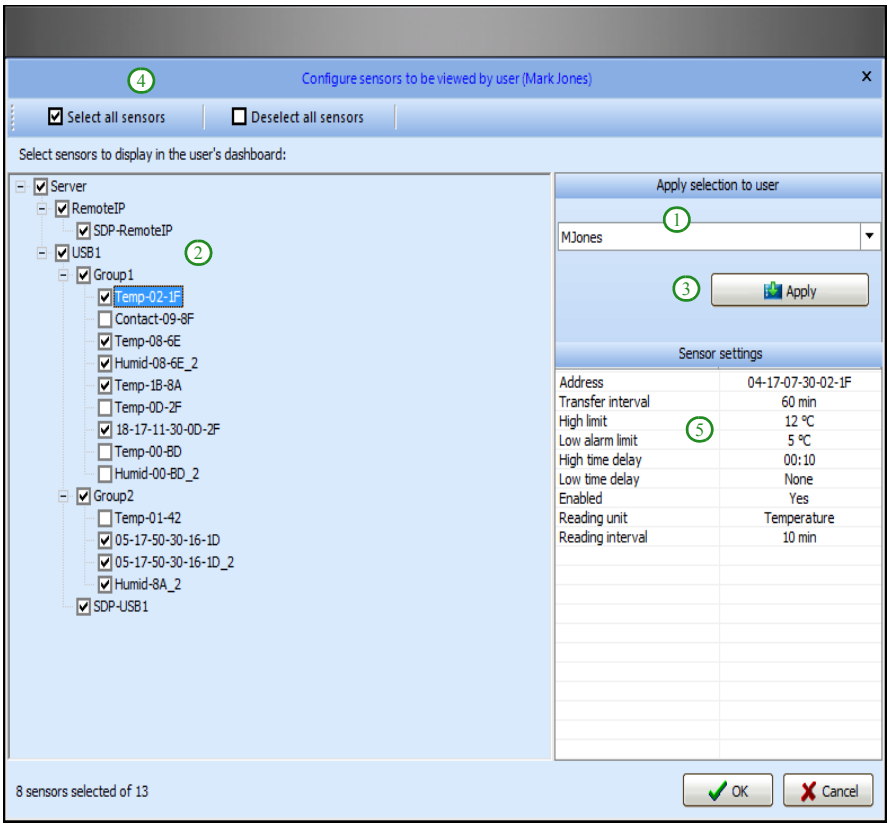



**Figure 52.** Assigning viewable sensors to users

2. Choose a user from the user account drop-down menu ①

3. Click in the tree structure checkboxes ② to select the sensors you would like this user to be able to view within Smart-Vue Client.

   - If no specific view is defined for a user, the default setting is to see all sensors.

   - If you select to assign a sensor that is part of a dual module (such as the temperature sensor on a dual temperature/humidity module), the second sensor is selected automatically. The same applies when deselecting sensors.

You may select or deselect all the sensors in the tree in a single click using the dedicated buttons at the top of the window ④.

When you select a sensor in the tree ②, you will see a short summary of its settings on the right-hand panel of the window under **Sensor properties** ⑤.

4. Save changes by clicking on **Apply** ③.

**CAUTION:** When a user adds a new sensor to the system, the sensor is added automatically to the list of sensors that the user in question can see.

## 4.2 Displaying Sensors in the Main Window

Smart-Vue Client's main window allows you to visually monitor the status of all sensors you are authorized to view:

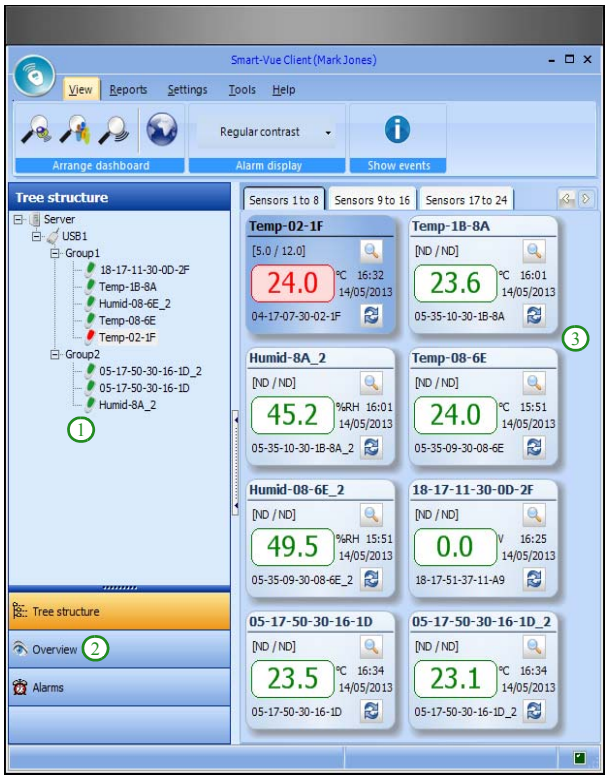



**Figure 53.** Smart-Vue Client main window - Dashboard

The tree structure in the left-hand panel ① shows a hierarchical representation of all the items you are set up to view (receivers, groups and sensors). The icon color next to each sensor indicates its current status:

Light green: sensor enabled and functioning within programmed high and low alarm limits.

Red: high alarm limit exceeded

Orange: pre-alarm before reaching high alarm limit

Blue: low alarm limit exceeded

Purple: pre-alarm before reaching low alarm limit

Gray: disabled, technical alarm, no readings in database, or all readings have been archived

**CAUTION:** You may double-click on a sensor in the tree structure ① to open a window with complete details about the sensor (see Displaying sensor readings and Displaying sensor settings later in this chapter).

On the left-hand panel of the main window, click on **Overview** from the menu at the bottom of the window ② to display a summary curve and various other information about the selected sensor.

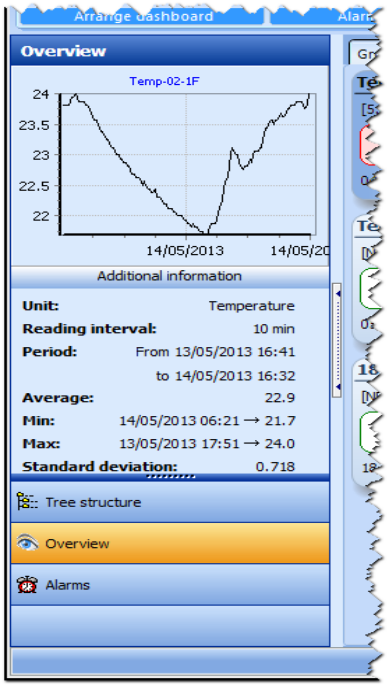



**Figure 54.** Sensor overview

The graph in the overview window displays:

- Upper and lower limit values (if configured)
- Information for the period of time defined in **Reports ➔Graphs ➔Filters**

The main display ③ shows a small square zone that indicates the most important information about each sensor:

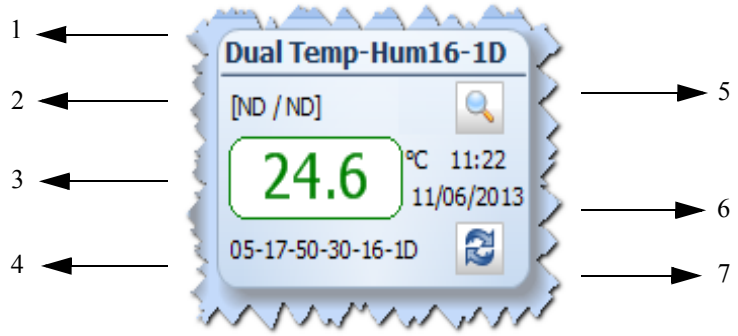



**Figure 55.** Details for each sensor

1: **Sensor name**. Double-click on the name to display this sensor's details (see the Displaying sensor readings and Displaying sensor settings sections later in this chapter).

2: **High and low alarm limits** (if configured)

3: **Last reading**, with the color indicating sensor status (like the icons in the tree structure view):


Light green: sensor enabled and functioning within programmed high and low alarm limits.


Red: high alarm limit exceeded

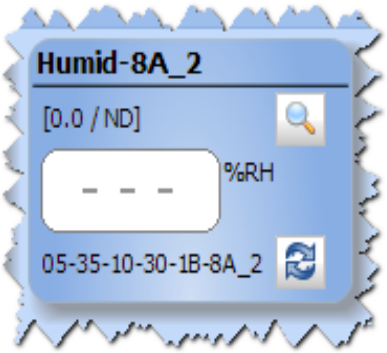

Orange: pre-alarm before reaching high alarm limit


Blue: low alarm limit exceeded


Purple: pre-alarm for low alarm limit


Gray: disabled, technical alarm, no readings in database

**CAUTION:** Sensors for which there are no readings in the database, or for which all readings have been archived, the dashboard displays "- - -" in gray, as shown here:




4: **Module address.** The modules wireless address is indicated at the bottom of the zone.

5: **Sensor details.** Click on magnifying glass to view detailed information about the sensor. The icon indicates that the "Mobile module" option is enabled.

6: **The date and time** that the displayed value was measured.

7: **Refresh button.** Click to update module information with an on-demand read (not stored in audit trail). On dual-sensor modules, this action updates the displayed values for both sensors.

Four different layout options exist for displaying your sensors in the monitoring area. Click on the icons below in the **View** tab to choose the display you want:

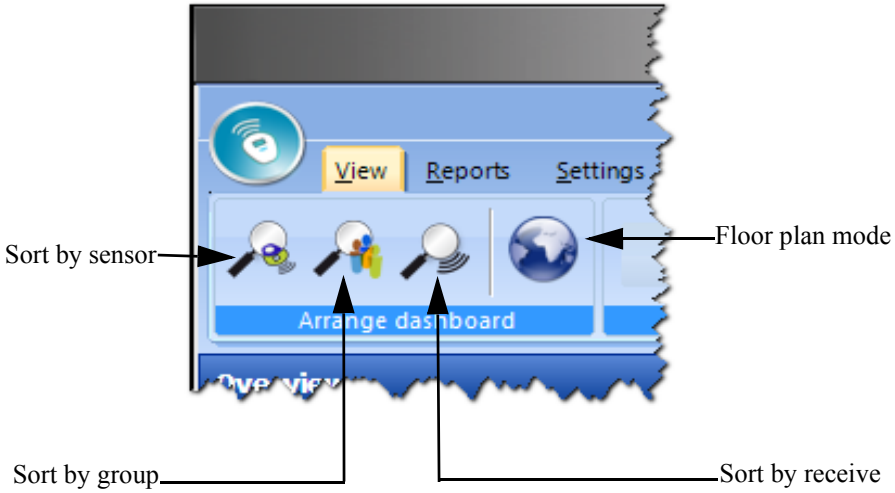



**Figure 56.** Sensor view layout options

### 4.2.1 Sort by Sensor

With this option, sensors are displayed in the order in which they were added to the system:

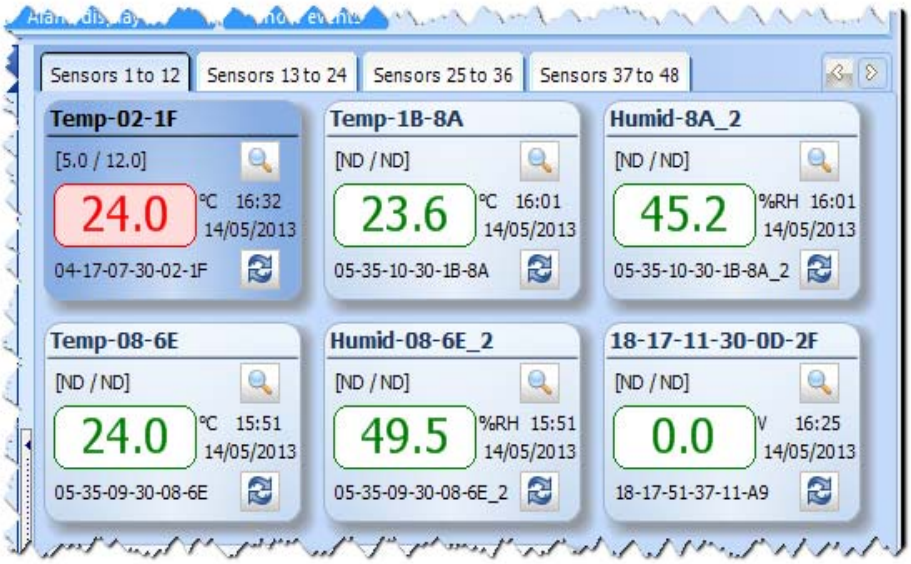



**Figure 57.** View sorted by sensor

### 4.2.2 Sort by Group

With this option, sensors are displayed on tabs labeled with the name of the group to which the sensors are assigned.

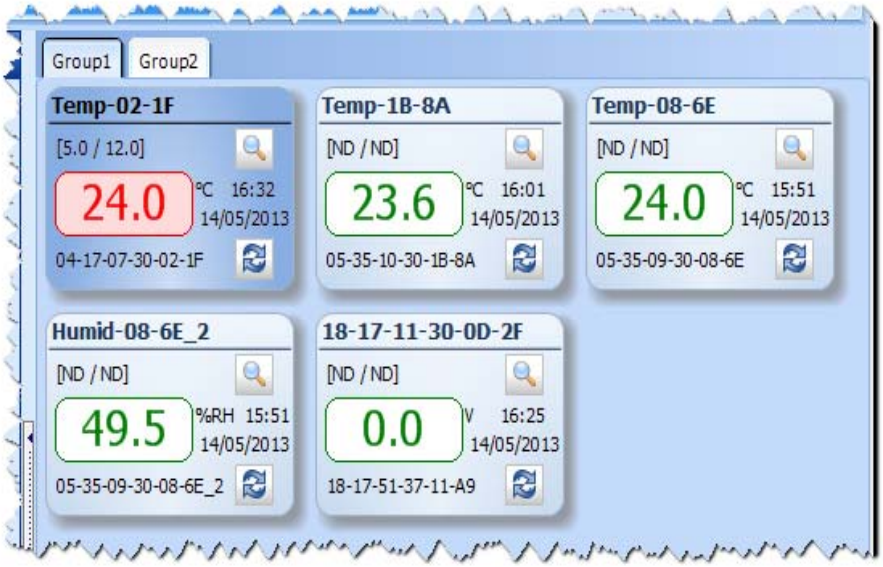



**Figure 58.** View sorted by group

### 4.2.3 Sort by Receiver

With this option, sensors are displayed on tabs labeled with the name of the receiver to which the sensors are assigned.

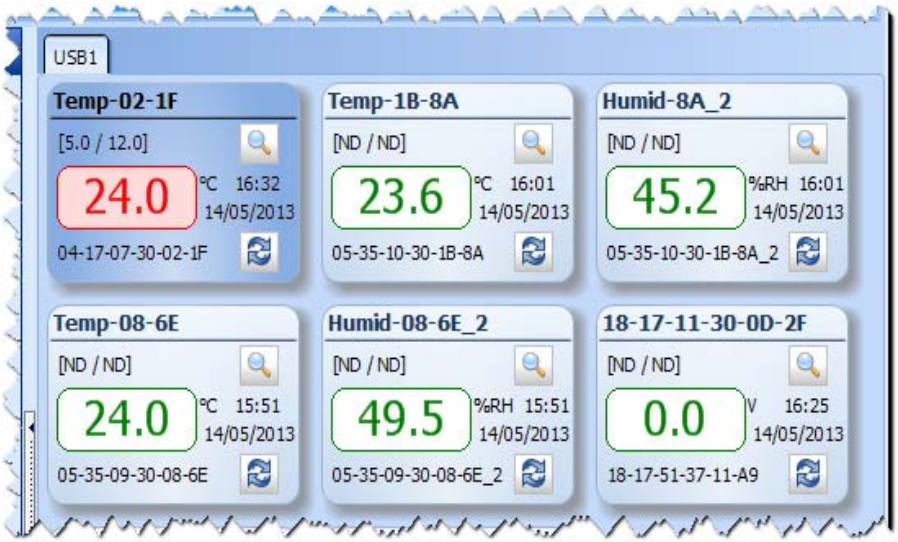



**Figure 59.** View sorted by receiver

## 4.3 Using Floor Plans

For each defined group, Smart-Vue Client allows you to use an image representing your floor plan. For each group, you may then place sensors on the image according to their physical location.

**CAUTION:** The default search folder for image files is C:\SmartVue\SVuClient\maps on the server hosting Smart-Vue Server. The easiest ways to load floor plans is to copy them to this folder. You may also choose to leave the image files in their original locations on the server. These folders will be used by the application. Image files may be in JPG or BMP format. The software does not resize the image, so the floor plan display depends on the resolution of your window.

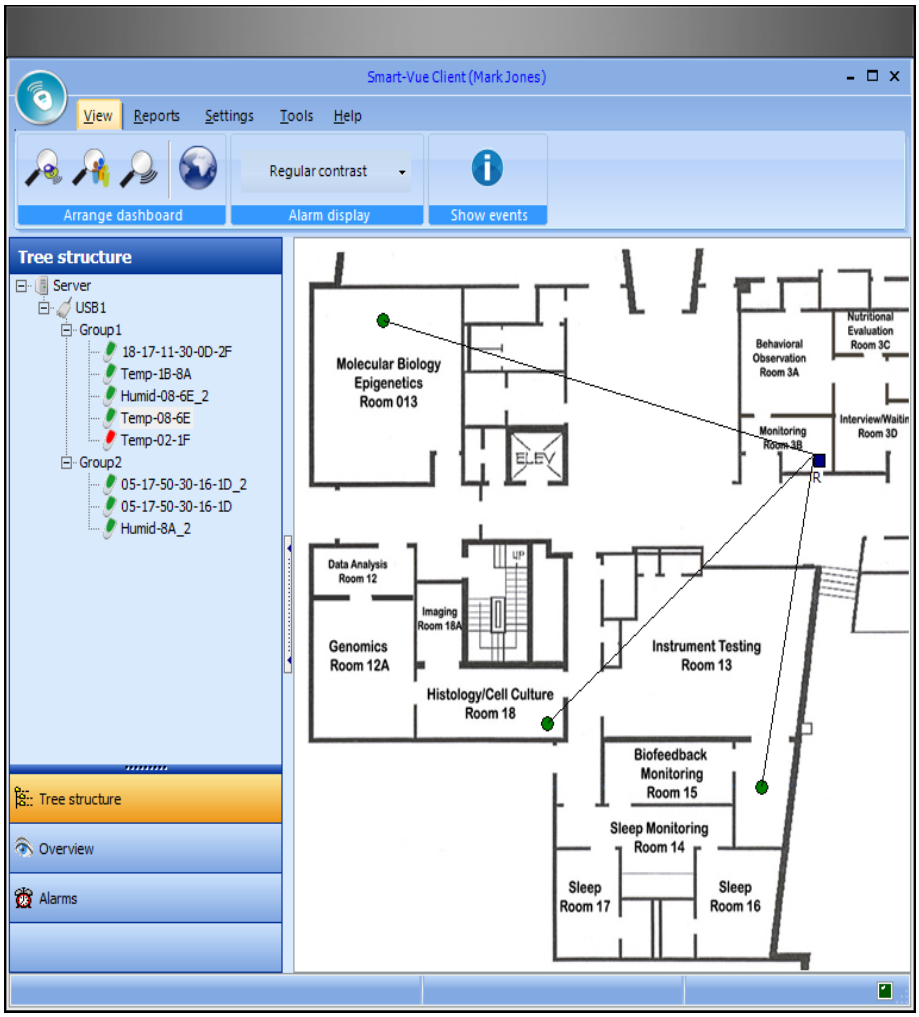



**Figure 60.** Sample dashboard display in floor plan mode

In order for a floor plan image to be available to all Smart-Vue Client instances (i.e. those running on different computers in the network), it first needs to be loaded using the Smart-Vue Client application running on the PC hosting the Smart-Vue Server application.

To do this:

1. Click on **Floor plan mode** ①.

2. In the tree structure window, select the group to which you want to add a floor plan image ②.

3. Right-click anywhere on the dashboard ③.

4. Select **Download** floor plan from the menu in the right-hand panel ④, and select the appropriate JPEG or BMP image.

**CAUTION:** Once floor plans are loaded on the Smart-Vue Server computer as described here, they are accessible from other Smart-Vue Client computers.

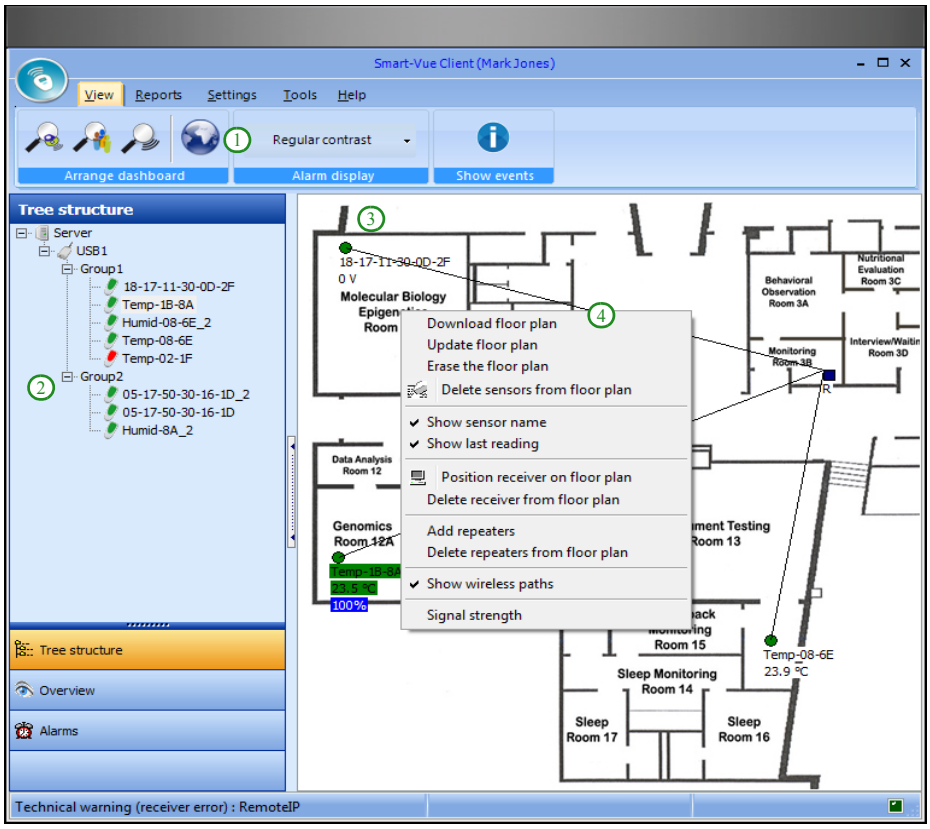



**Figure 61.** Update floor plan image and drag sensors from tree (shift-drag to move them on image)

5. After loading the floor plan image, simply drag the desired sensors from the Tree structure menu onto the image. To move sensors around the image, hold the <shift> key and drag them with your mouse.

When you select a sensor group in the tree structure, the image assigned to that group on the server is automatically copied to the Smart-Vue Client Maps folder and is displayed on the monitoring dashboard.

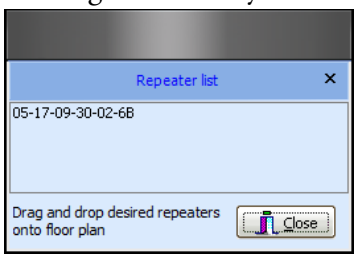
Whether you use Smart-Vue Client on the server computer or on a remote workstation, you may right-click on the floor plan to perform the operations listed below. Please note that only *Administrators* and *Super Administrators* can use options that change the floor plan and related modules. Users with *View* and *View and acknowledge* rights cannot download, update, or erase floor plans; or delete sensors, place, or remove receivers; add or remove repeaters, or display paths. These users may only use floor plans to obtain information.

Features marked with (*) only apply to the Smart-Vue Client application running on the PC hosting Smart-Vue Server.

| | |
|---|---|
| **Update floor plan(*)** | Use this feature to force replacement of the floor plan image stored by client, when this image has been updated with a file of the same name. Smart-Vue Client automatically downloads the latest floor plan image assigned to the group if it has a different name than that which is currently being used. |
| **Erase floor plan(*)** | You may erase the floor plan currently assigned to the selected group. |
| **Delete sensors from floor plan** | The floor plan image remains on the display for the selected group, but the sensors are removed. |
| **Show sensor name** | This option displays the name of each sensor beneath its circle symbol for all groups in the tree structure. |
| **Show last reading** | This option displays the last-read value beneath each sensor's circle symbol for all groups in the tree structure. |
| **Position receiver on floor plan** | Lets you place your receiver on the current floor plan by clicking with the mouse. The receiver is indicated by a blue square (■). |
| **Delete receiver from floor plan** | Removes the receiver from the current floor plan. |

**Add repeaters**

The Repeater list displays all repeaters, as well as all modules being used as a repeater. You may drag a repeater onto the floor plan from this list. It is necessary to then use the Show Repeaters function to make the repeaters visible on your floor plan, where they are shown as black squares (■). You may relocate the repeater on this floor plan by clicking and dragging the repeater while holding the shift key.




If the repeater is also used as a module, the icon on the floor plan will show both a circle and a square (  ).

**Delete repeater from floor plan**

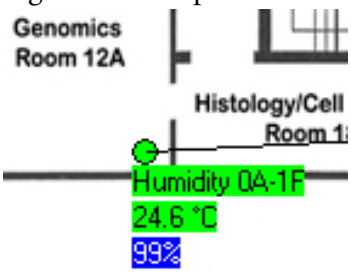
Removes the repeater from the current floor plan.

**Show wireless links**

Lets you view the repeaters, and wireless links between receivers, repeaters and modules for the group selected.

**Signal test**

Runs a wireless signal strength test for an individual module, and displays the result as a percentage. The mouse cursor must be over the sensor's circle symbol when you right-click to open the contextual menu.



## 4.4 Collecting Readings with Smart-Vue Client

### 4.4.1 Programmed Data Transfer

Smart-Vue Client automatically downloads readings stored by the sensors according to programmed data transfer intervals *(refer to* Section 3.12 – *Configuring sensors).*

### 4.4.2 On-demand Read of a Single Module.

On the monitoring dashboard of the Smart-Vue Client main page, double-click on the latest reading displayed by a sensor to perform an on-demand read. An on-demand read will download all recorded values since the last transmission. If there are no new values to download, the module will take a measurement at that point in time, and download this value to the database.

On-demand reads do not apply when viewing sensors in *Floor plan mode*.

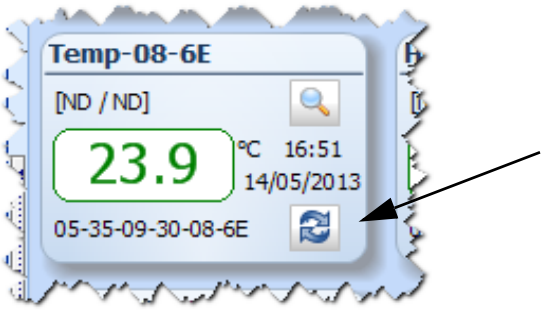



**Figure 62.** Click on the refresh button on-demand read

**CAUTION:** On-demand read values will not trigger an alarm limit.

### 4.4.3 On-demand Read of All Modules.

To read all sensors in a single operation:

1. In the Smart-Vue Client main menu, click on Tools ➔ (Rescan all sensors).

2. The system will read all sensors in your view, one after the other, to collect all the latest readings for each.

### 4.4.4 On-demand Read of Selected Module

To read selected sensors in a single operation:

1. In the Smart-Vue Client main menu, click on Tools ➔ (*Download saved data*)

2. A sensor selection window is displayed. Move the sensors for which you would like the system to download all logged readings from the **Source list** panel to the **Destination list** panel.

3. To do this, choose a sensor, and click on > (>> moves all the sensors). Repeat as necessary. The < and << buttons move a selected sensor back to the Source list. Click **OK** to confirm your selection.

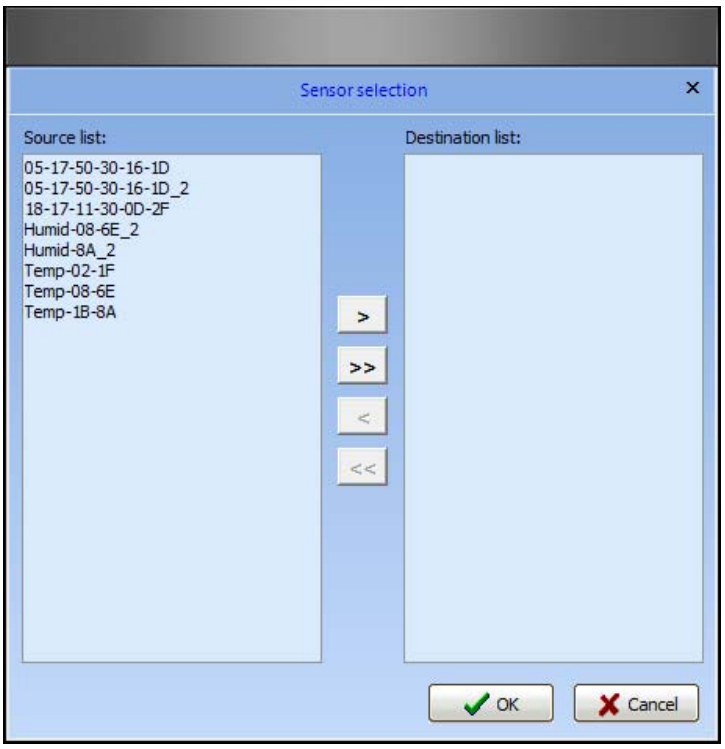



**Figure 63.** Selecting sensors for data download

In the left- and right-hand zones in this window, enabled sensors are shown in black-normal text; disabled sensors are shown in gray-italic text.

4. A table shows an estimation of how many readings are to be downloaded from each sensor. The **Send requests** button launches the command to collect the desired readings. Readings will be performed by the system in

sequence, one module after another. You may close this window during the process.

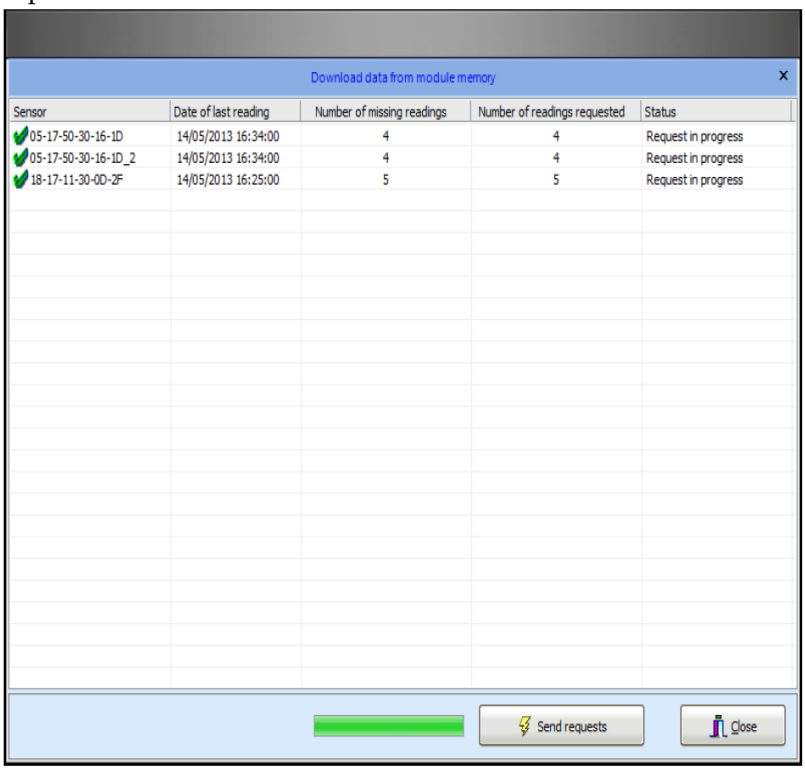



**Figure 64.** Confirmation of data downloaded from selected sensors

## 4.5 Viewing Individual Sensor Graphs

Regardless of your user level in Smart-Vue Client, you may always check the data for the sensors you are authorized to view.

In order to view a graph for a given sensor, with complete measurement details as stored in the Smart-Vue Server database:

1. Double-click on the name of the desired sensor in the tree structure or on the sensor name or magnifying glass ( ) in the dashboard area of the application's main window.

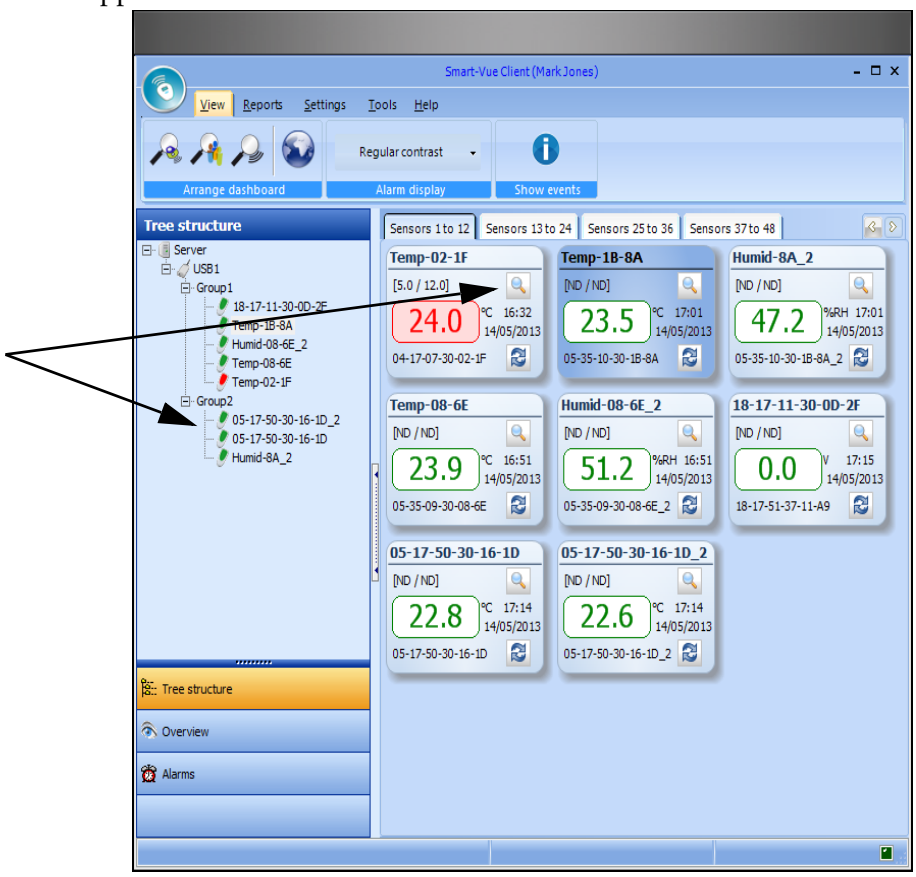



**Figure 65.** Double-click to access sensor details

2. Then click to open the **Graph** tab, which displays sensor readings over time:

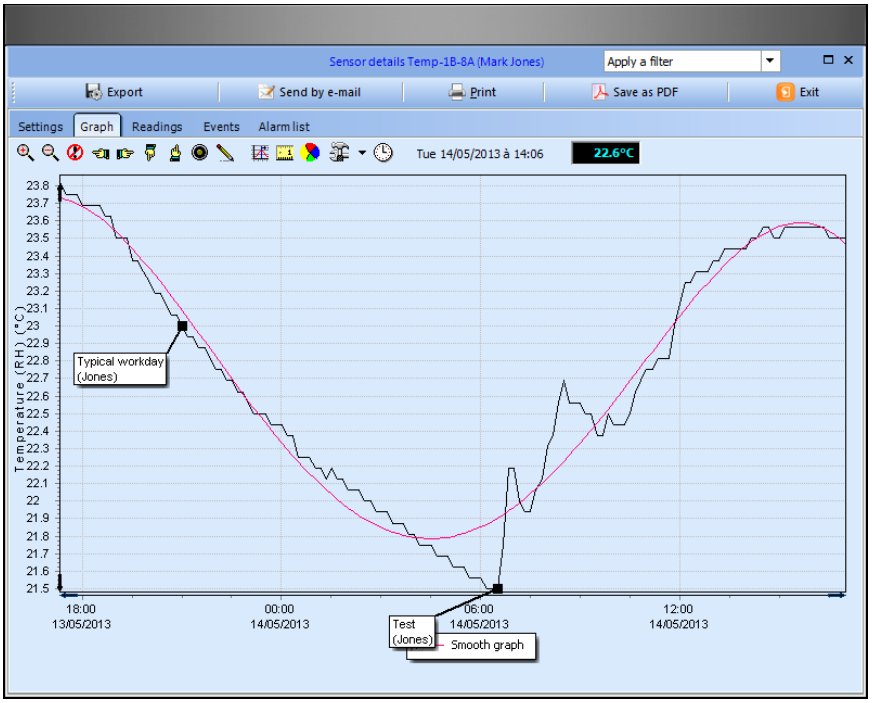


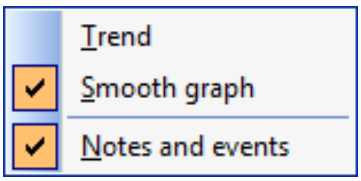
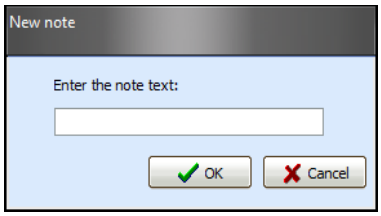

**Figure 66.** Graph view options

**Note** *If screen or printer resolution is not high enough, certain information in graphs might not be shown properly, such as a single peak value.*

The options in the menu bar are:

| | |
|---|---|
| Last 24 h | This drop-down menu contains several options for selecting the time period for your graph (all readings, Last 24 hrs, Last week, Last month, Date range).<br><br>**CAUTION:** This value determines the number of sensor readings held in the application memory buffer. Whereas the Smart-Vue Server database contains the entire history of all sensor measurements, the value here determines the "working" data used by the application. The date range of your selection may have an effect on multi-curve displays, as described in the next section. |

| | |
|---|---|
| Export | Exports the graph and/or data in a variety of formats. |
| Send by e-mail | Creates an e-mail message with graph data attached as a JPG image file. |
| Print | Prints the graph. |
| Save as PDF | Saves graph in PDF format. |
| Exit | Closes the graph window. |
| | Zoom in and out on the graph, or reset the graph back to its original scale. |
| | Restore default view |
| | Move around the graph horizontally and vertically. |
| | Display measurement points on the curves. |
| | Change curve thickness |
| | Centers graph within alarm limits |
| | Manual scaling (by entering values) |
| | Export to JPEG image file |

| | |
|---|---|
| | Tools to enhance the display with the overall trend, a smoothed graph, and your own annotations.<br>  <br><br>When you select the Notes and events option, you may double-click on a point in the curve to add a comment. Double-clicking opens this dialog box so you can enter the desired text:<br>  <br><br>**Figure 67.** Entering a note on the graph |
| | Displays daylight savings values. If this option is enabled, a second graph with a few measurement points is displayed parallel to the regular graph in order to indicate measurements that were read during the daylight savings time change.<br>If Smart-Vue Client stays open during the daylight savings time transition from summer to winter, the graph might not be displayed correctly. Simply adjust any filter value to update the display, In any case, the data stored by the system is correct. |

**CAUTION:** You may switch the sensor detail display window to full-window using the icon in the upper right-hand corner of the display. ( ) to see curves more clearly. We recommend that you zoom in on the graph to make it easier to add annotations.

# 4.6 Viewing Multiple Sensor Graphs

## 4.6.1 Multi-Sensor Multi-Graph Display

To view sensor graphs with multiple sensors:

1. From the Smart-Vue Client main menu, click on **Reports** ➔  (Graphs).

2. A sensor selection window is displayed. Move the sensors for which you would like to display graphs from the Source list to the Destination list (click on the right arrows to add up to 30 sensors from the left-hand side; click on the left arrows to remove sensors from the right-hand side).

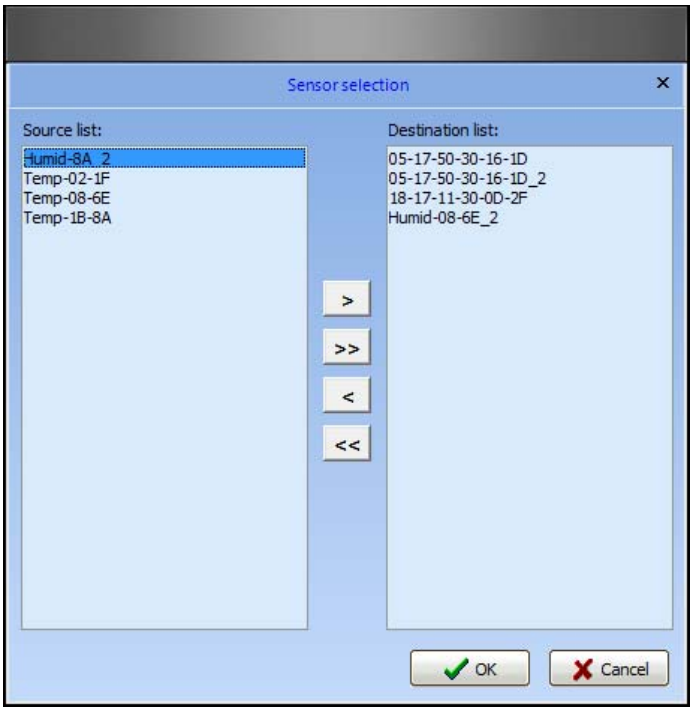



**Figure 68.** Selecting sensors to display multiple graphs

3. Click on **OK** to confirm your selection. A colored curve is drawn using readings stored for each selected sensor. Use the checkboxes at the bottom of the window to show or hide specific sensors. Curve colors are automatically assigned by the application.

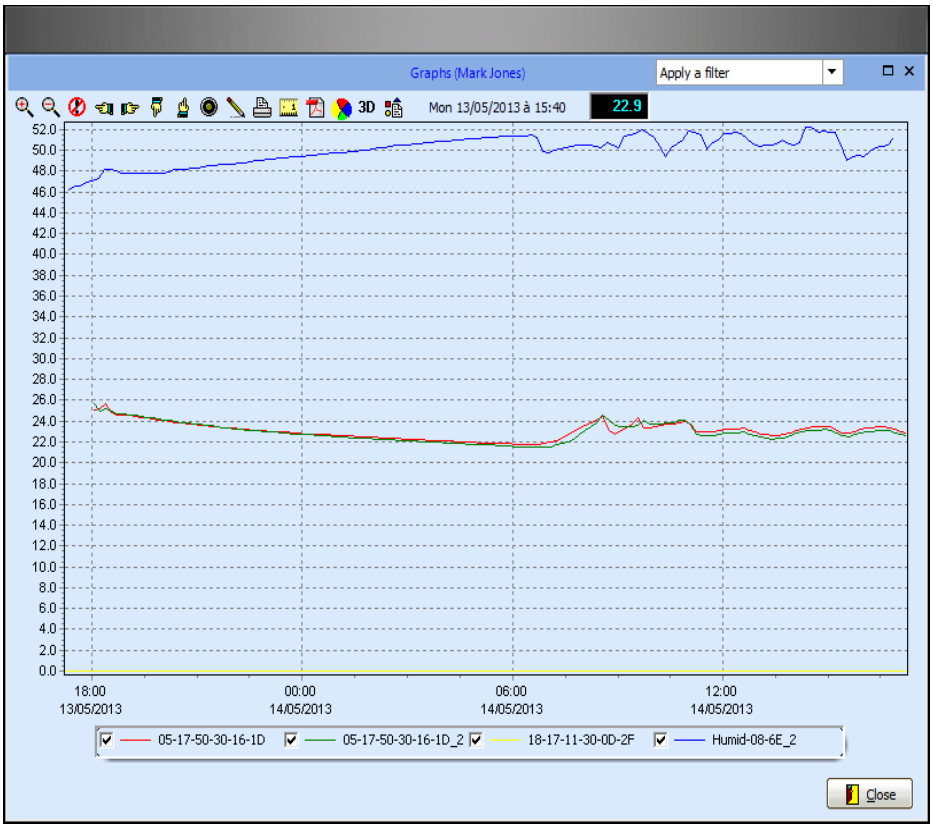



**Figure 69.** Sensor measurement graphs

You may use the mouse (click and drag inside the graph from top to bottom) to select and zoom into a specific area in the sensor graph.

The options in the menu bar are:

| | |
|---|---|
| | Zoom in and out on the graph, or reset the graph back to its original scale. |
| | Restore default view |
| | Move around the graph horizontally and vertically. |
| | Display measurement points on the curves. |
| | Change curve thickness |

| | |
|---|---|
| Save as PDF | Saves graph in PDF format |
| | Manual scaling (by entering values) |
| | Export to JPEG image file |
| | Prints the graph display |
| | Exports the graph and/or data in a variety of formats. |
| | Date filter (see below) to select dates for display |

### 4.6.2 Using the Date Filter

Use the date selection filter to adjust the dates for which to display graphs.

**CAUTION:** The graph display feature uses the data stored in application memory, not the complete sensor database. Therefore, data for the dates you select using this date filter must be loaded in memory. By default, only data from the past 24 hours is loaded into Smart-Vue Server. To change this, adjust the data download period for each sensor you wish to view in a multi-curve display, as described in the table on page 76.

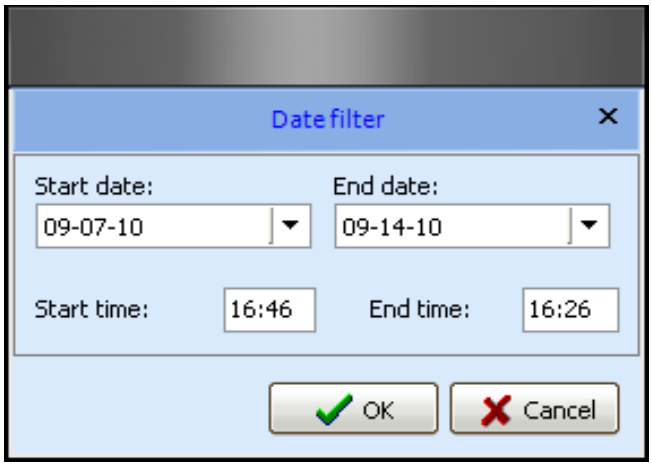



**Figure 70.** Date filter for multi-curve display

## 4.7 Displaying Sensor Readings

To check readings for a specific sensor:

1. Double-click on the name of the desired sensor in the tree structure or on the sensor name or magnifying glass ( ) in the dashboard area of the application's main window.

2. Click to open the **Readings** tab on the **Sensor details** window, as shown here:

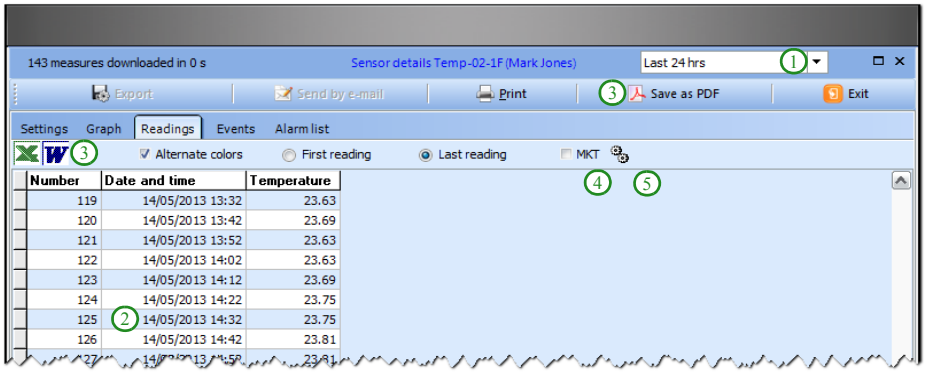



**Figure 71.** Sensor readings

The list of all readings logged by the module for the time period selected using the drop-down menu/filter ①, and downloaded by the application, is presented in chronological order in a table, as shown above ②.

You may export this data in various file formats, such as CSV or PDF. You may also export data directly to Microsoft Excel or Microsoft Word by clicking on the appropriate icon at the top of the window ③.

### 4.7.1 Mean Kinetic Temperature

To view Mean Kinetic Temperature values, a simplified way of expressing the overall effect of temperature fluctuations, instead of regular temperature values:

1. Click the **MKT** checkbox (④).

2. Click on ⑤ ( ) to change the Delta H value used to calculate the mean kinetic temperature as necessary:

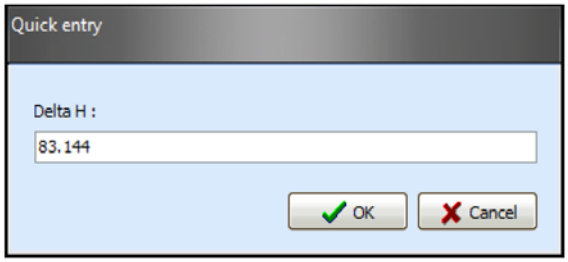



**Figure 72.** Delta H value for calculating mean kinetic temperature

## 4.8 Displaying Sensor Events

You may check the events recorded by a Smart-Vue module equipped with an option. To do this, open the **Events** tab in the **Sensor Details** window (or click on its name in the dashboard window).

1. Double click on the sensor in the tree of the main window, or on the sensor name or magnifying glass ( ).

2. Click on the refresh button ( ) on the left-hand side of the window below ① to read the events stored in the module's memory and to display them as shown here ②:

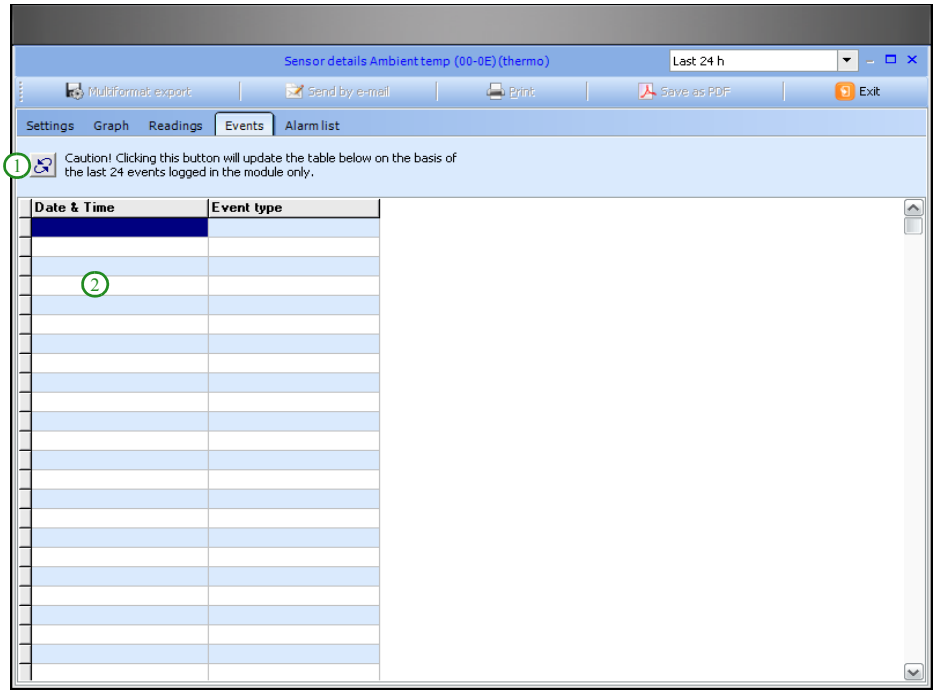



**Figure 73.** List of module options events

## 4.9 Displaying Sensor Settings

This section describes the sensor settings display for all modules except dry contact module (in next section).

1. Double-click on the name of the desired sensor in the tree structure or on the sensor name or magnifying glass ( ) in the dashboard area in the application's main window.

2. Click to open the **Settings** tab on the **Sensor details** window, as shown here:

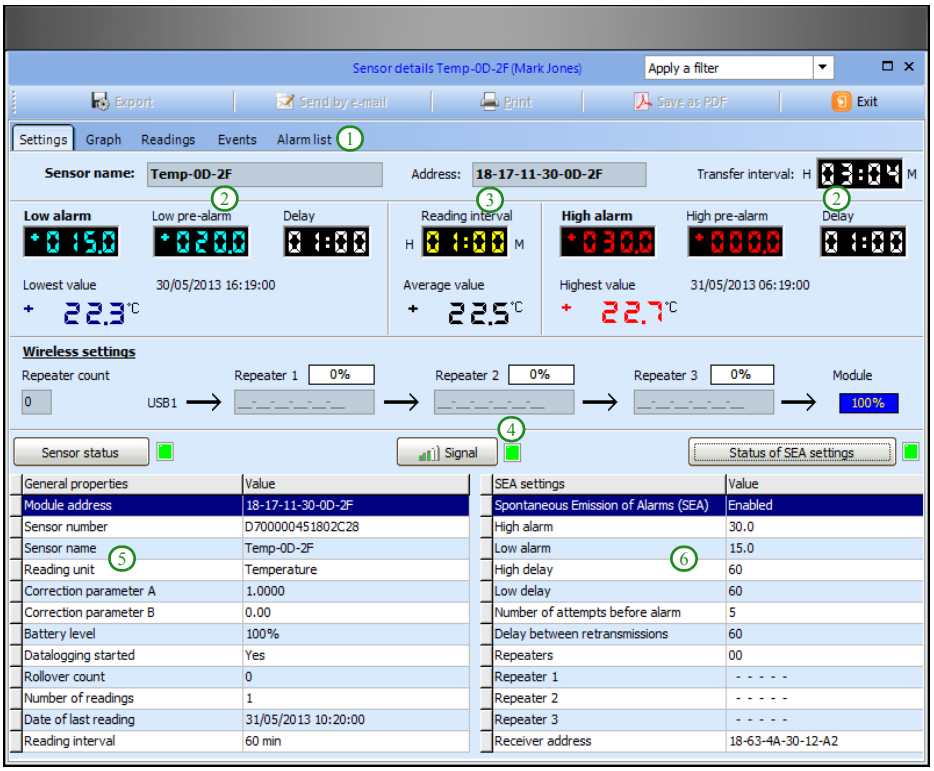



**Figure 74.** Detailed sensor settings

This tab summarizes all of the information related to this sensor's settings. This gives you an easy way to view the following (without modifying).

1: Sensor name, Module address (serial number), and Transfer interval.

2: Alarm limits, pre-alarm limits, delay, as well as the highest and lowest values logged during the selected period.

3: Reading interval, and the average value over the selected period.

4: Wireless communication performance between the receiver, repeaters (if used) and the sensor (after clicking on **Signal**).

5: Other specific module information displayed as a table (after clicking on **Sensor status**). This is very convenient for making sure that the parameter information stored on the module is indeed identical to that in the application.

This table shows:

| Field | Description |
|---|---|
| Module address | Module serial number (printed on sticker) |
| Sensor number | Sensor serial number (if applicable) |
| Sensor name | Name you assign to the sensor in Smart-Vue Client |
| Reading unit | Parameter being read by sensor |
| Correction parameter A | Value of correction parameter A |
| Correction parameter B | Value of correction parameter B |
| Battery level | Remaining battery level (in %) |
| Datalogging started | Whether or not module is set to store readings |
| Rollover count | The number of times that module memory has filled and cycled |
| Number of readings | Number of readings currently in module memory |
| Date of last reading | Date and time last reading was logged |
| Reading interval | Currently-programmed reading interval |

6: SEA settings read directly on the sensor, displayed as a table (after clicking on **Status of SEA parameters**). This is very convenient for making sure that the parameter information stored on the module is indeed identical to that in the application. If high/low alarms are not set, then the sensor's range limit values are displayed instead of **High alarm** and **Low alarm** .

**This table shows:**

| Field | Description |
|---|---|
| SEA | Spontaneous Emission of Alarms by module |
| High range limit | Highest tolerated value before issuing an alarm |
| Low range limit | Lowest tolerated value before issuing an alarm |
| High delay | Time to wait after reaching high limit before sending alarm |

| Field | Description |
|---|---|
| Low delay | Time to wait after reaching low limit before sending alarm |
| Number of attempts before alarm | The number of successive failed communication attempts between receiver and sensor before triggering a technical alarm. |
| Delay between repeats | How long the system waits before resending an alarm |
| Repeaters | The number of repeaters used by module to reach receiver |
| Repeater 1 | Serial number or address of first repeater (if present) |
| Repeater 2 | Serial number or address of second repeater (if present) |
| Repeater 3 | Serial number or address of third repeater (if present) |
| Receiver address | Serial number of the receiver to which module is connected |

### 4.9.1 Sensor Settings for Smart-Vue Dry Contact Module

The Smart-Vue dry contact module has slightly different options on the Sensor details window, as shown below:

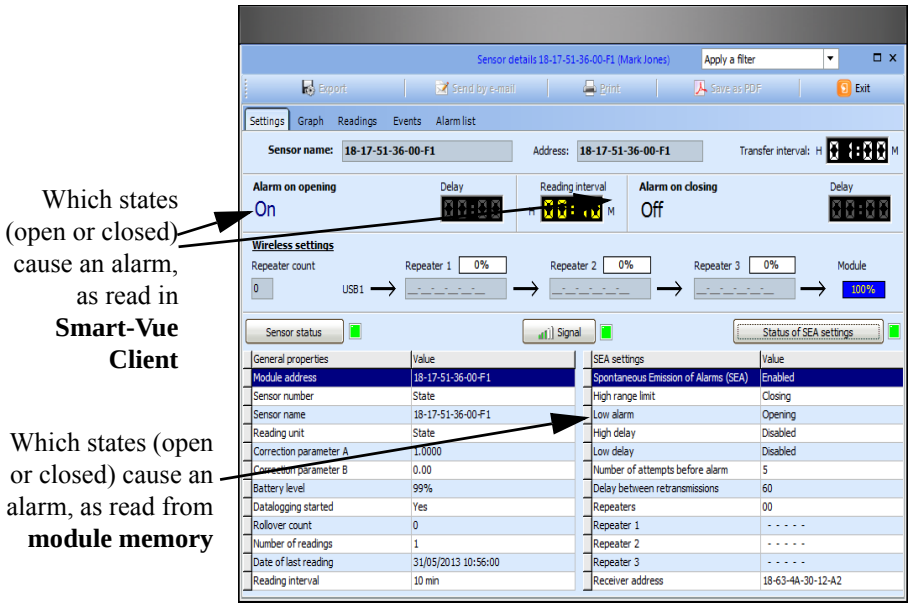



**Figure 75.** Detailed sensor settings for dry contact module

# 5 Configuring and Managing Alarms

## 5.1 Configuring Alarms

You must be connected to Smart-Vue Client with a Super Administrator, Administrator or Metrology profile order to configure alarms.

1. Click on **Settings** ➔ (Sensor settings) or press **F11**, to open the Sensor settings window.

2. Choose a sensor from the tree structure on the left-hand panel ➔**Unlock these settings tabs** ➔ **Alarm settings** tab.

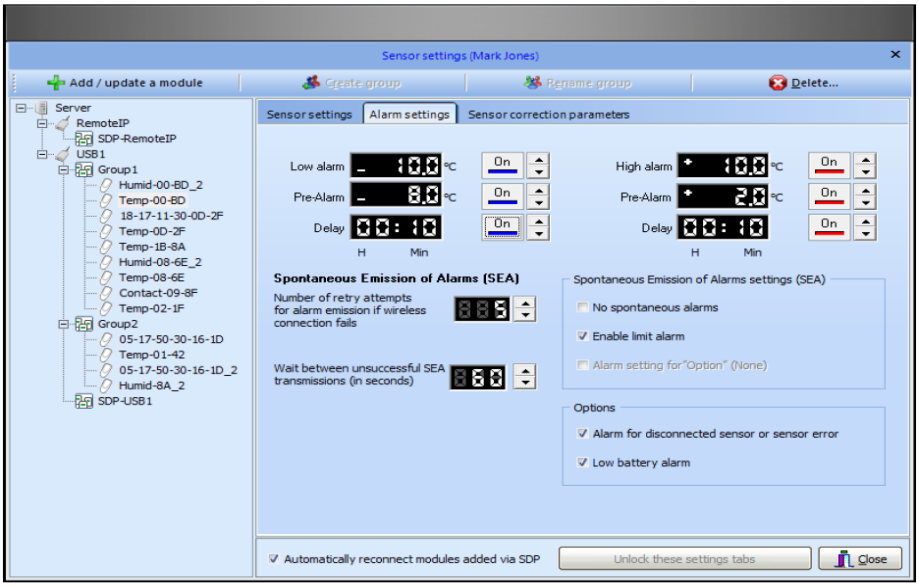



**Figure 76.** Alarm settings tab (for all sensors except dry contact)

### 5.1.1 Alarm Settings for Dry Contact Module

The alarm settings window is slightly different for dry contact modules, as shown here (described in more detail in the following paragraphs).

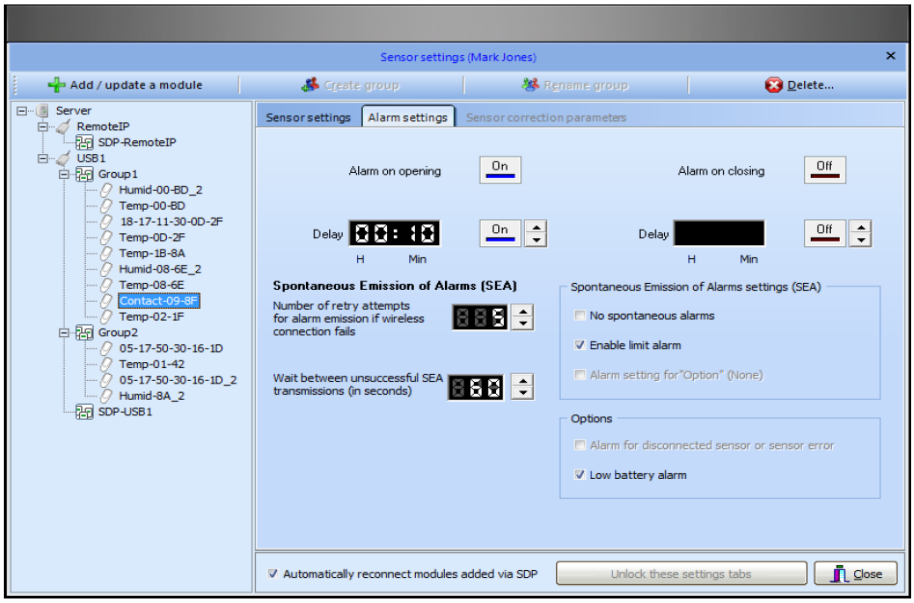



**Figure 77.** Alarm settings tab in sensor settings for dry contact.

## 5.2 Enabling and Setting Limits

This section describes how to enable and set limits for all sensors except dry contact sensors.

1. Click **On/Off** to enable/disable high and low limit alarms ①, and then set the limits.

2. You may enter values directly after double-clicking in the value field ②, or use the up/down arrows ③.

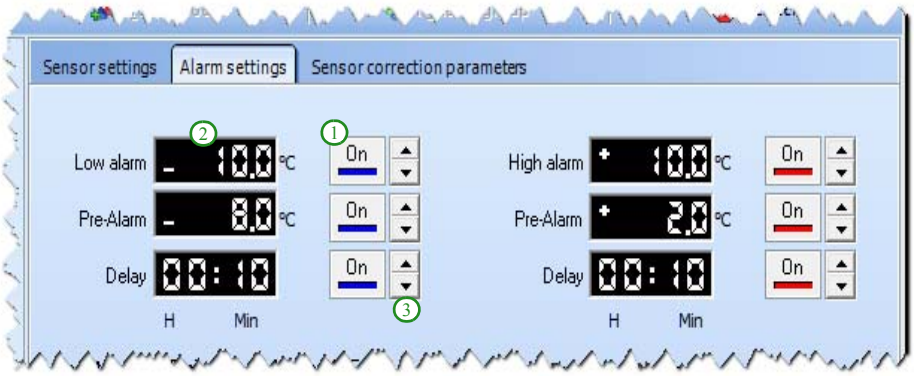



**Figure 78.** Enabling limits for a temperature sensor

Pre-alarm values and wait periods are set and enabled in the same manner.

**What is the Delay setting?**

**Delay** refers to the period of time for which the temperature may exceed a limit without generating an alarm. The delay value is limited to 4 hours and must be a multiple of the reading interval. The corresponding alarm must be enabled in order for you to set the delay time.

**What is a pre-alarm?**

A pre-alarm value can be set as an early warning that a module may be headed towards an alarm condition. This field is not required, and serves only to provide a visual clue to the user. Pre-alarms do not constitute an alarm condition. Pre-alarm is not available for dry contact.

### 5.2.1 Enabling and Setting Limits for Dry Contact Sensors.

Dry contact modules offer the following options:

1. Click **On/Off** to enable/disable alarms ① when the dry contact module detects opening or closing, and then set the time to wait before sending the alarm delay.

2. You may enter delay values directly after double-clicking in the value field ②, or use the up/down arrows ③.

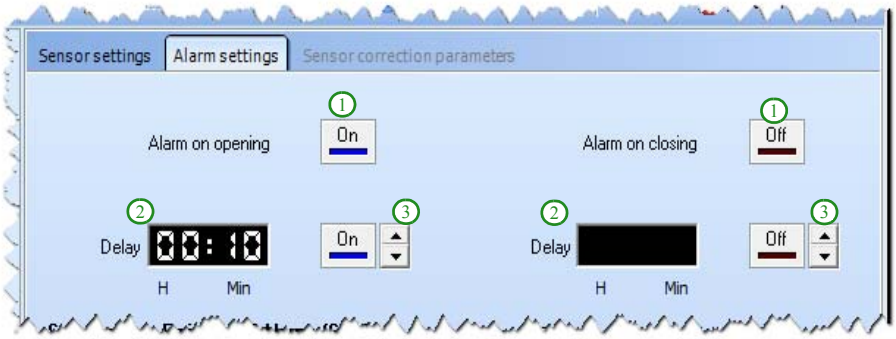



**Figure 79.** Alarm settings for a dry contact sensor

### 5.2.2 Choosing Spontaneous Emission of Alarms settings (SEA)

Spontaneous Emission of Alarms (SEA) is a feature that enables sensors to instantly transmits an alarm wirelessly to the system, without waiting for the scheduled transfer interval. The options for Spontaneous Emission of Alarms are shown below:

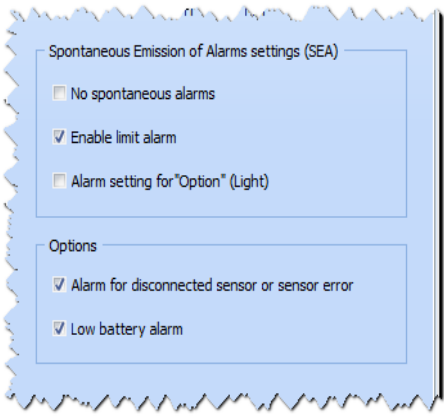



**Figure 80.** Spontaneous Emission of Alarms settings

**No spontaneous alarms** — Disables Spontaneous Emission of Alarms (SEA) for the sensor. If this box is checked, the module will not spontaneously send out alerts based on the high and/or low alarm limits, disconnected sensor or sensor error, low battery, or module "Option" (*if applicable*). With this setting, these alarms are <u>only</u> transmitted upon the next scheduled transfer interval.

**Enable limit alarm** — Enables automatic transmission of *limit* alarms (measured values that exceed limits specified in the software).

**Alarm setting for "Option"** — Click to receive alerts if "Option" is assigned on the **Sensor settings** tab, depending on the specific option integrated in the Smart-Vue module (*if applicable*).

**Alarm for disconnected sensor…** — If this box is checked, the module will send out an alarm sensor error or disconnected sensor is detected. If this box is not checked and a sensor fault is detected, the module will send out an alarm <u>only</u> at the scheduled reading.

| | |
|---|---|
| **Low battery alarm** | Activates alarm (SEA) in case module battery is low. |

**CAUTION:** Please check with your Thermo Scientific reseller or representative for more information about module options.

**CAUTION:** Even if **Alarm setting for "Option"** is not activated, you may check the previous 24 events recorded by an equipped Smart-Vue module. See **Sensor details ➔Events** tab.

### 5.2.3 Setting SEA Retransmission

Here you may set the number of times the module will try to send an alarm if a problem is detected, as well as the time between retries.

In the example below, if the module fails to communicate with the system, it will try 5 times, with 60 seconds between retries.

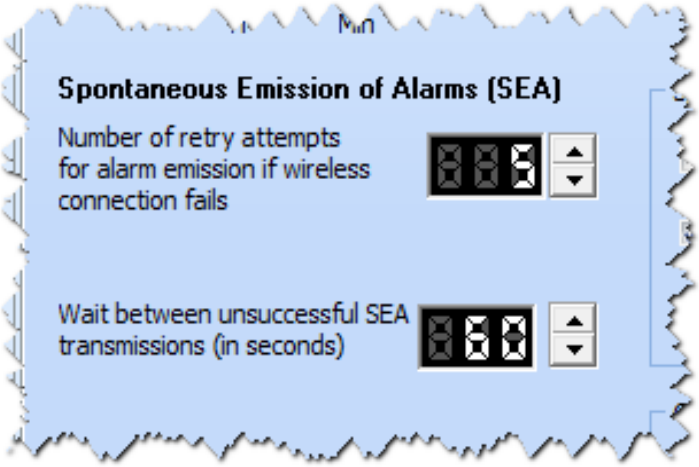



**Figure 81.** Spontaneous Emission of Alarms (SEA) retry values

You may edit these values either by clicking on the up/down arrows, or by double-clicking on the field to enter a number directly.

**CAUTION:** For larger systems we recommend increasing these values.

## 5.3 Receiving Alarms

When the system triggers an alarm, whether a technical alarm (e.g., communication problem, sensor disconnection) or limit alarm, all currently open Smart-Vue Client sessions will move the Client main window to be on top of any other open windows.

For high limit alarms, the sensor's colored rectangle in the dashboard area turns red; for low limit alarms, the color is blue; for technical alarms, the color is grey. Pre-alarm status is indicated by orange for high limits and purple for low limits.


**Figure 82.** High alarm (displayed with Regular contrast or High contrast)


**Figure 83.** Low alarm (displayed with Regular contrast or High contrast

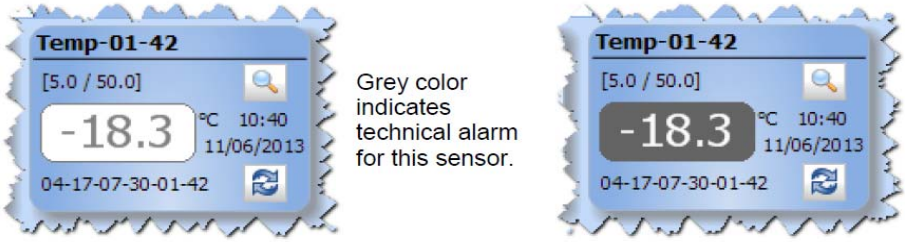



**Figure 84.** Technical alarm (displayed with Regular contrast or High contrast)

In the main dashboard window, you may display unacknowledged alarms concerning your sensors by clicking on the **Alarms** button in the lower left-hand corner:

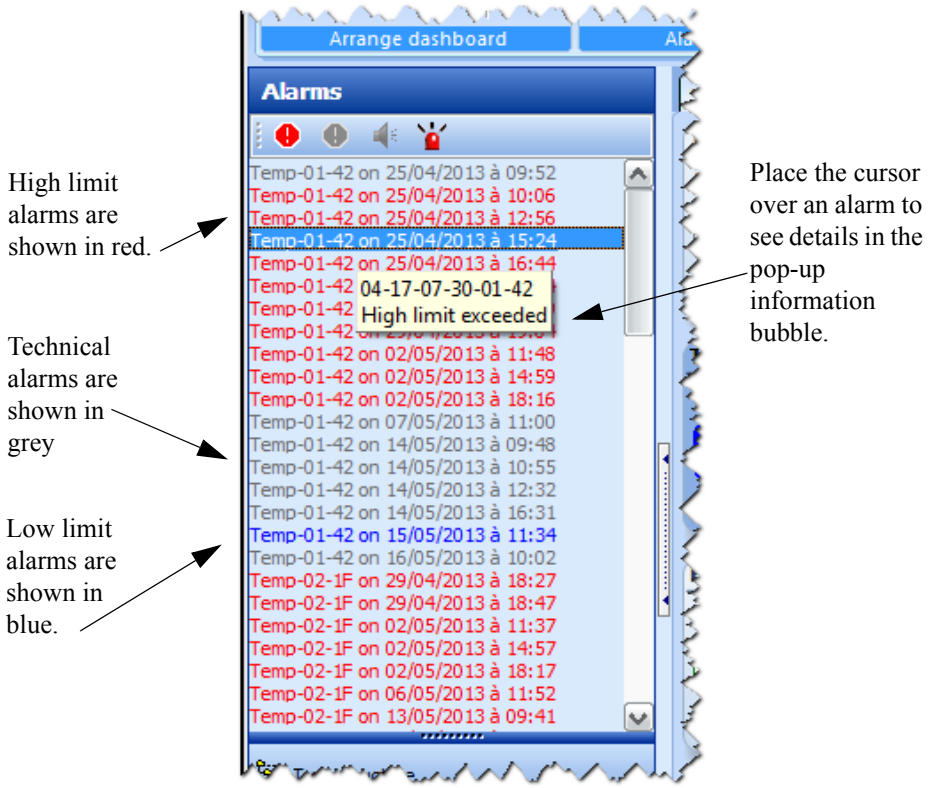



**Figure 85.** Alarm list in main dashboard

To acknowledge an alarm, double-click the corresponding line in the alarm list or select the corresponding line from the alarm list and click on the red acknowledgment button ( ).

**CAUTION:** An alarm may be displayed *in italics*, exceptionally, if a problem is encountered during the alert process.

**CAUTION:** At this point you will be prompted to confirm your login and password, with the usual window as shown here:

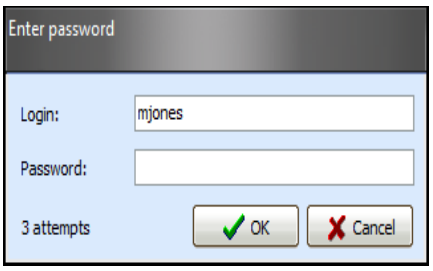



**Figure 86.** Another user may authenticate for acknowledging alarms

It is important to note that the login name may be replaced by another user name, only for the purpose of acknowledging the alarm. That user must be configured with *Acknowledgment rights* in the system. After acknowledgment, the Smart-Vue Client session returns to that of the original user.

The following window is displayed after identification:

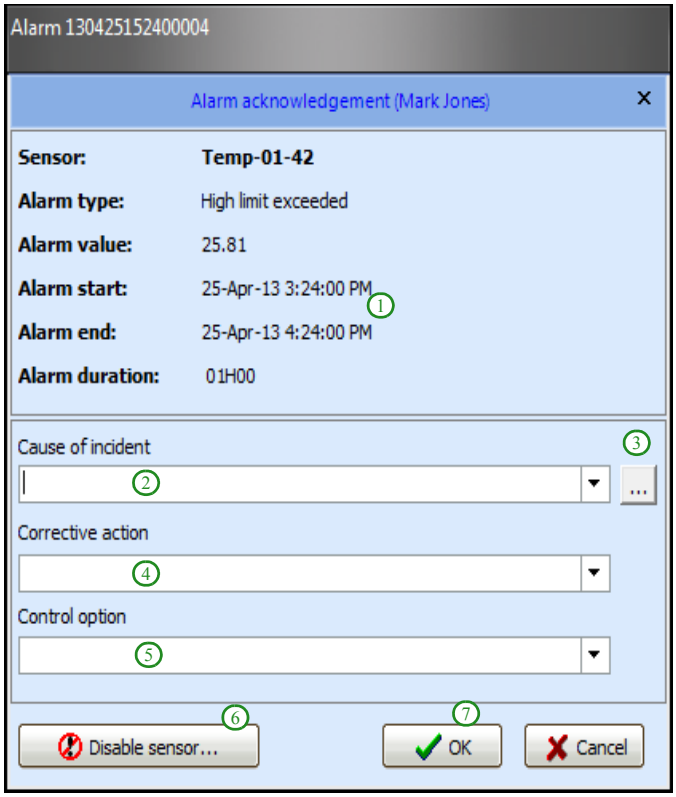



**Figure 87.** Entering description for alarm acknowledgment

### 5.3.1 Alarm Acknowledgment Window

1. The upper part of the window ① provides a summary of key information about the alarm, including the sensor in question, type of alarm, when the alarm occurred and when it ended.

2. To acknowledge the alarm you must enter a description in the **Cause of incident** field ②. Write your own text or choose existing text from the drop-down menu.

You may also add choices to this list by:

- Clicking on ... ③
- Or from the main Smart-Vue Client menu by selecting **Settings** ➔ (*Acknowledgment responses*) ➔ .

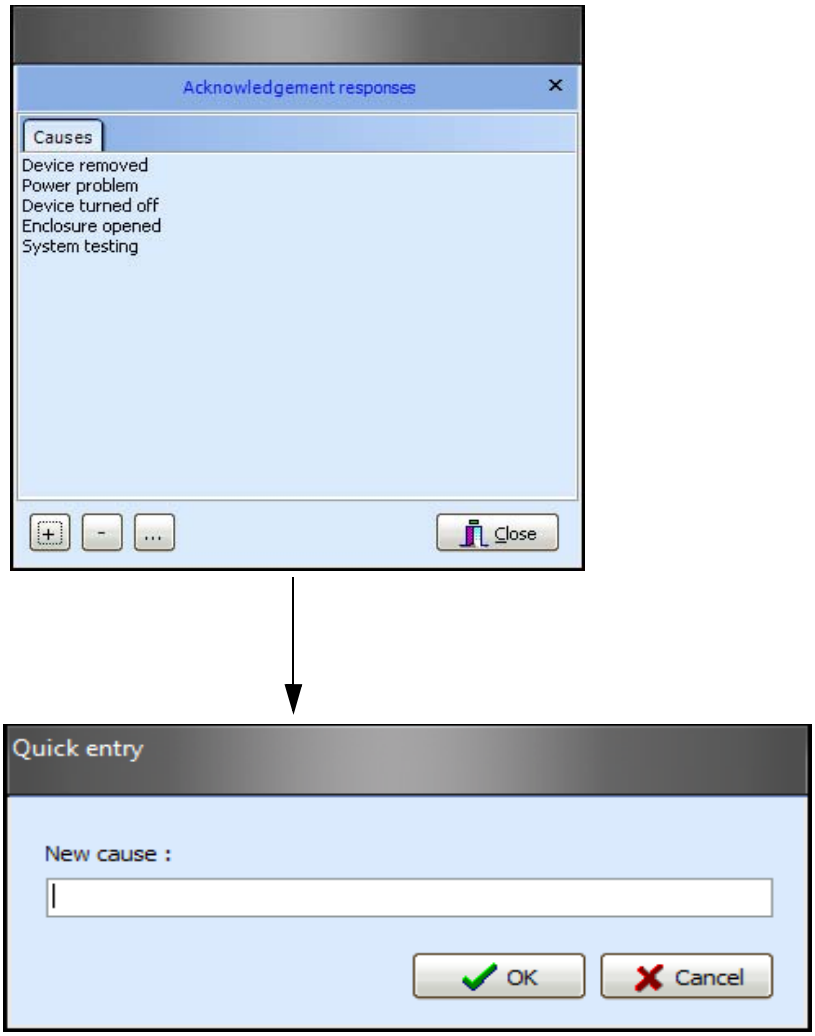



**Figure 88.** Entering custom acknowledgements

3. You may also enter text in the **Corrective action** ④ and **Control option** ⑤ fields. These fields are not required.

4. If the module is currently enabled, you may click on **Disable sensor** ⑥ to disable the sensor before closing the alarm acknowledgement window necessary (assuming your user account is authorized to do so). This action stops data-logging on the sensor in question (*refer to 7 – Enabling/disabling sensors*). If the module is already disabled, then the **Disable sensor** option is grayed-out.

**CAUTION:** If the sensor you are disabling is on a dual module, both sensors on that module are disabled in a single action. For this to function properly, communication with the wireless module must be successful.

5. Click on **OK** ⑦ to confirm the acknowledgement and close the window. The alarm line is automatically removed from the list on the application's main window.

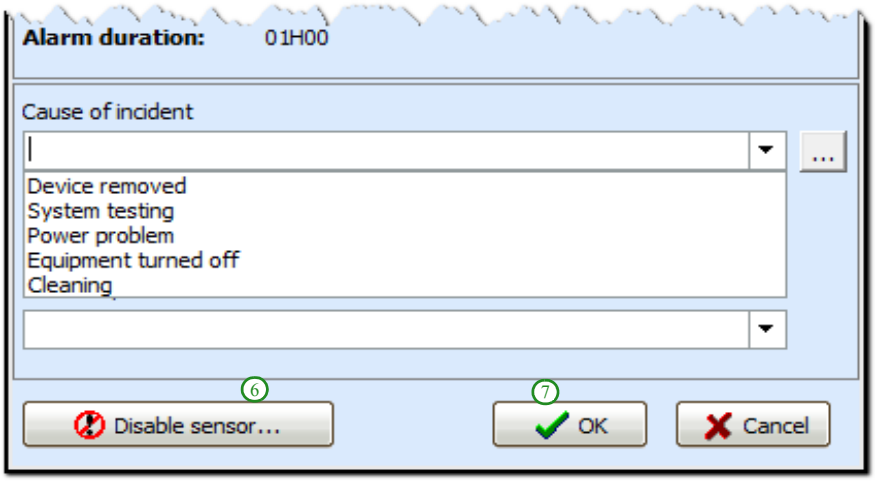



**Figure 89.** Select a cause to use for acknowledging an alarm

## 5.4 Looking up Alarms

You may view and print alarms at any time in Smart-Vue Client, including a complete list of alarms for all the sensors in your view.

1. In the main Smart-Vue Client menu, click on **Reports** ➔ (**Alarm status**)

2. The window below opens with a list of all the alarms that occurred over the past week (the time period can be adjusted) for all the sensors in your view. This report only shows the sensors you are configured to see.

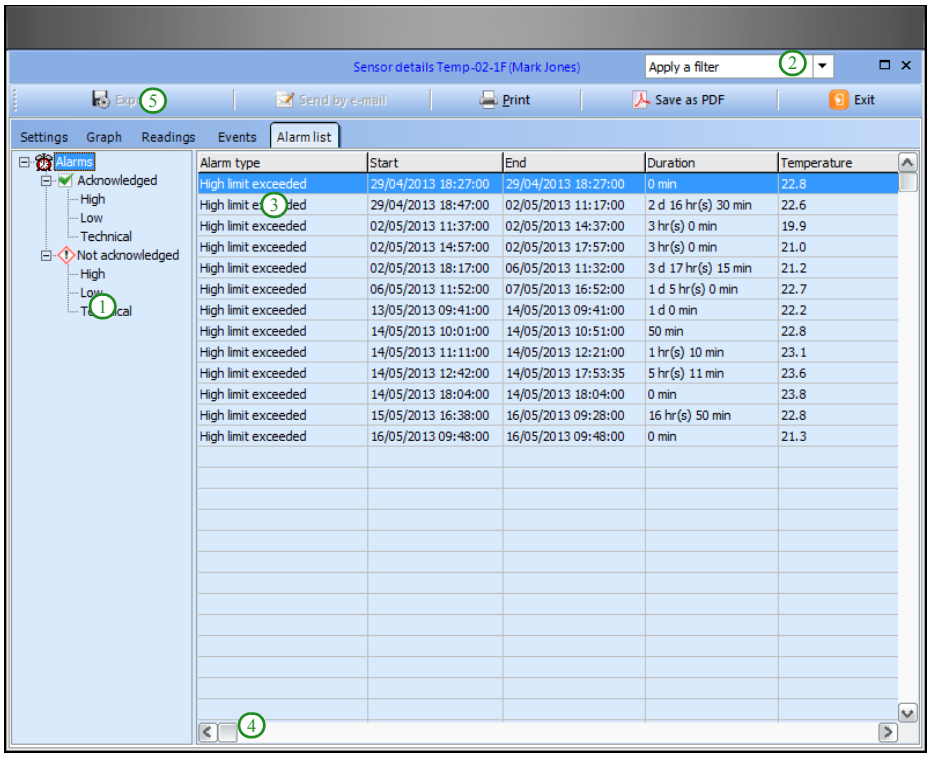



**Figure 90.** Viewing and printing alarms

3. Use the tree structure ① to filter the alarms displayed by type and/or by acknowledgment status.

4. Use the drop-down menu ② to specify the period of time for which you wish to display alarms.

5. The table ③ refreshes automatically according to your selection.

6. Use the horizontal scroll bar ④ to navigate through the columns in the table.

7. Use the buttons in the menu bar ⑤ above the table to export the data to Microsoft Excel or Microsoft Word, or to print the table.

### 5.4.1 Listing all Alarms Generated for One of the Sensors in Your View

To list all alarms for a particular sensor

1. Double-click on the sensor name in the tree structure in the Smart-Vue Client main window or click on the sensor name or magnifying glass ( ) in the dashboard area.

2. Click on the **Alarm list** tab in the Sensor details window.

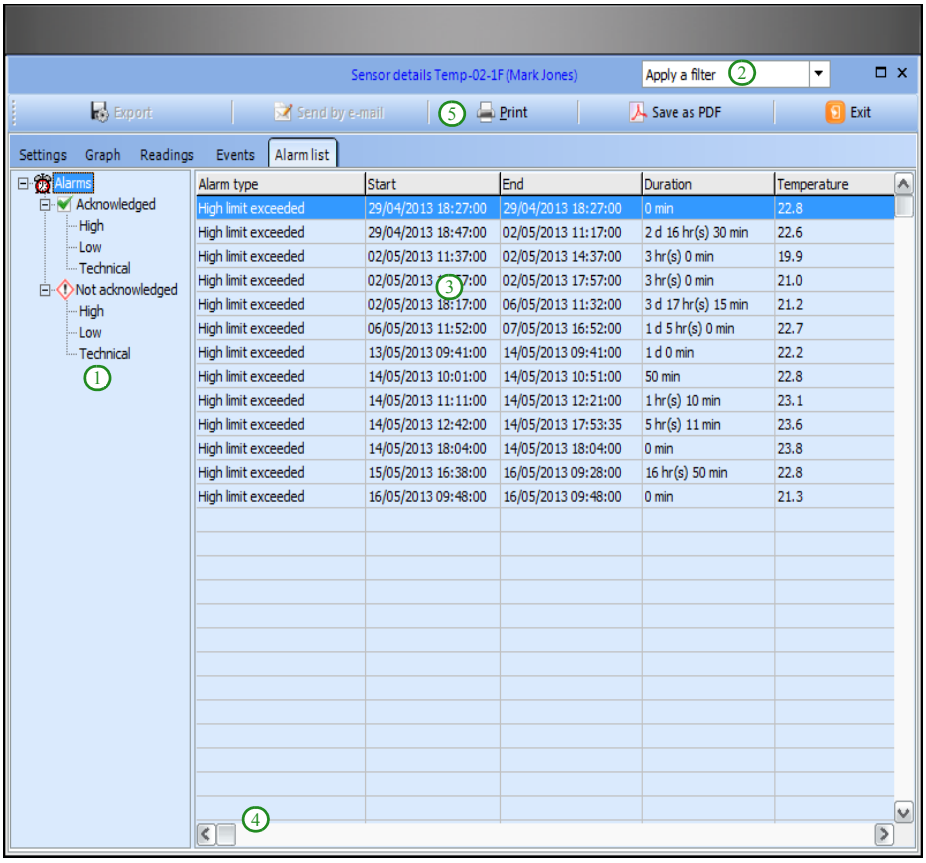


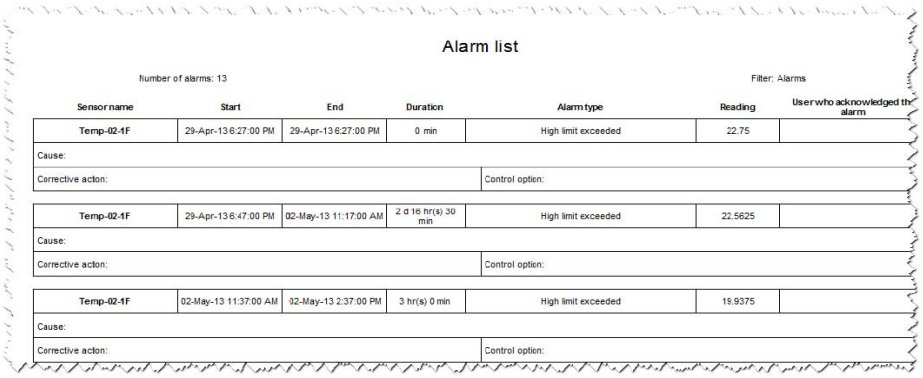

**Figure 91.** Alarm list for a specific sensor

3. Use the tree structure ① to filter the alarms displayed by type and/or by acknowledgement status.

4. Use the drop-down menu ② to specify the period of time for which you wish to display alarms. The table ③ refreshes automatically according to your selection.

5. Use the horizontal scroll bar ④ to navigate through the columns in the table.

6. Use the buttons in the menu bar ⑤ above the table to export the data in PDF format or to print the table.



Alarm list

Number of alarms: 13

Filter: Alarms

| Sensor name | Start | End | Duration | Alarm type | Reading | User who acknowledged the alarm |
|---|---|---|---|---|---|---|
| Temp-02-1F | 29-Apr-13 6:27:00 PM | 29-Apr-13 6:27:00 PM | 0 min | High limit exceeded | 22.75 | |
| Cause: | | | | | | |
| Corrective action: | | | | Control option: | | |
| Temp-02-1F | 29-Apr-13 6:47:00 PM | 02-May-13 11:17:00 AM | 2 d 16 hr(s) 30 min | High limit exceeded | 22.5625 | |
| Cause: | | | | | | |
| Corrective action: | | | | Control option: | | |
| Temp-02-1F | 02-May-13 11:37:00 AM | 02-May-13 2:37:00 PM | 3 hr(s) 0 min | High limit exceeded | 19.9375 | |
| Cause: | | | | | | |
| Corrective action: | | | | Control option: | | |

**Figure 92.** Sample alarm list printout from the sensor's details window

# 6 Alerts and Call Groups

## 6.1 Managing Call Groups

A call group is a group of people that are configured in the system to be alerted in case an alarm condition is detected on any module.

Follow these instructions to manage call groups in Smart-Vue Client:

1. Connected to Smart-Vue Client as a Super Administrator or Administrator

2. In the Smart-Vue Client main display, click on **Settings**➔ (*User and call group management*).

3. Click on **Call group list** in the left-hand panel:

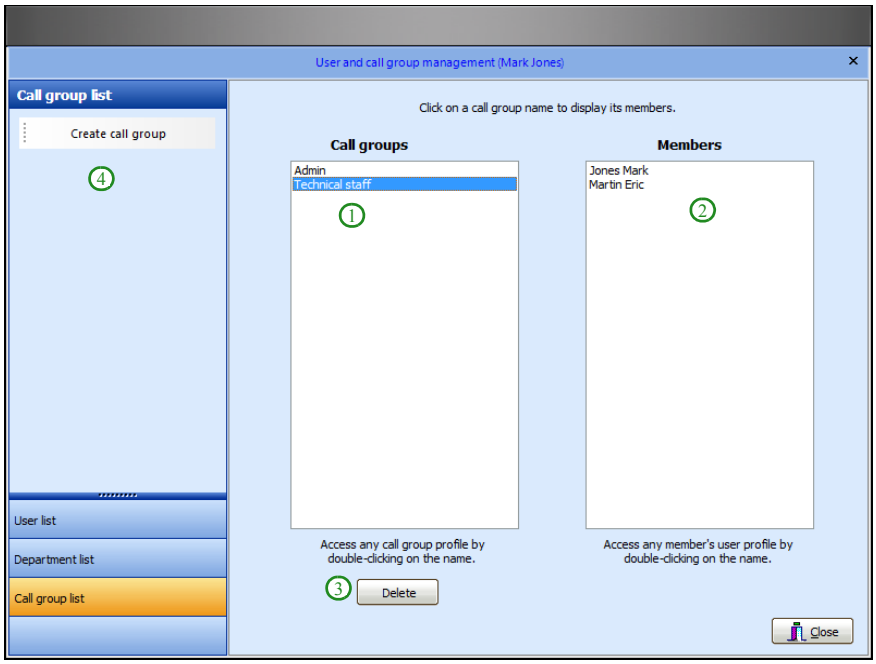



**Figure 93.** List of call groups for sensor alerts

4. Click on a call group name in the left-hand panel ① to display the users in that call group in the right-hand panel ②.

5. You may delete a call group by selecting it in the list and clicking on **Delete** ③. You will be prompted to confirm deletion if the call group in question is currently used by the system in alert settings.

**Note** *You may double-click on a group name to access call group details or double-click on a user name to access profile details directly.*

6. Create a new group by clicking on **Create call group** ④ in the left-hand panel's menu bar. This opens a new call group profile form:

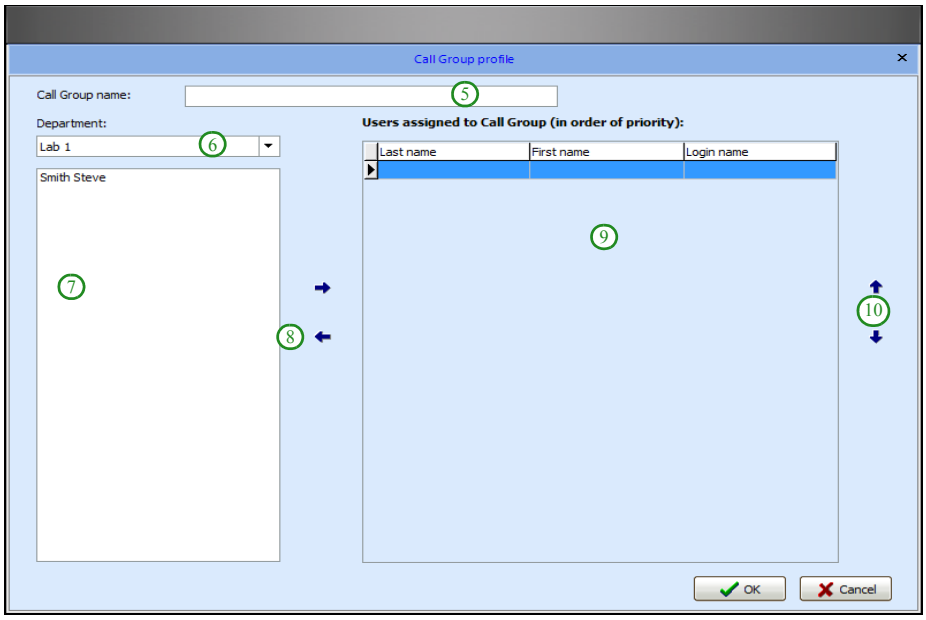



**Figure 94.** New call group profile form

7. Enter a name for the new call group ⑤. This name must not already be in use by another call group.

8. Use the Department drop-down menu ⑥ to choose a department and display its members ⑦.

9. Click to select the members you wish to add to this call group.

10. Use the right and left arrows ⑧ to add and remove members assigned to the call group ⑨. Call groups may contain users from several different departments.

11. After adding all the desired members to the group, use the up and down arrows ⑩ on the right-hand side of the window to arrange them in priority order. Members are contacted one after the other, moving down the list, in case of an alert concerning this call group.

12. Click on **OK** to confirm the new group and add it to the system. You may access the call group's profile at any time in order to make changes.

**CAUTION:** You may open and change user settings directly from a call group form by double-clicking in the list on the left-hand panel ⑦ or on the table ⑨.

## 6.2 Configuring Alerts for Sensor Groups and Receivers

With Smart-Vue Client, you can store a different alert configuration for each receiver and sensor group in your view. This configuration applies automatically to all the technical and limit alarms it covers.

Follow these instructions to configure alerts in Smart-Vue Client:

1. Connect to Smart-Vue Client with a Super Administrator, Administrator, or Metrology profile.

2. In the Smart-Vue Client main display, click on **Settings** ➔ (Alert settings) or press **F8**.

3. The **Alert settings** window is displayed. Click on the **Group settings** tab as shown below:

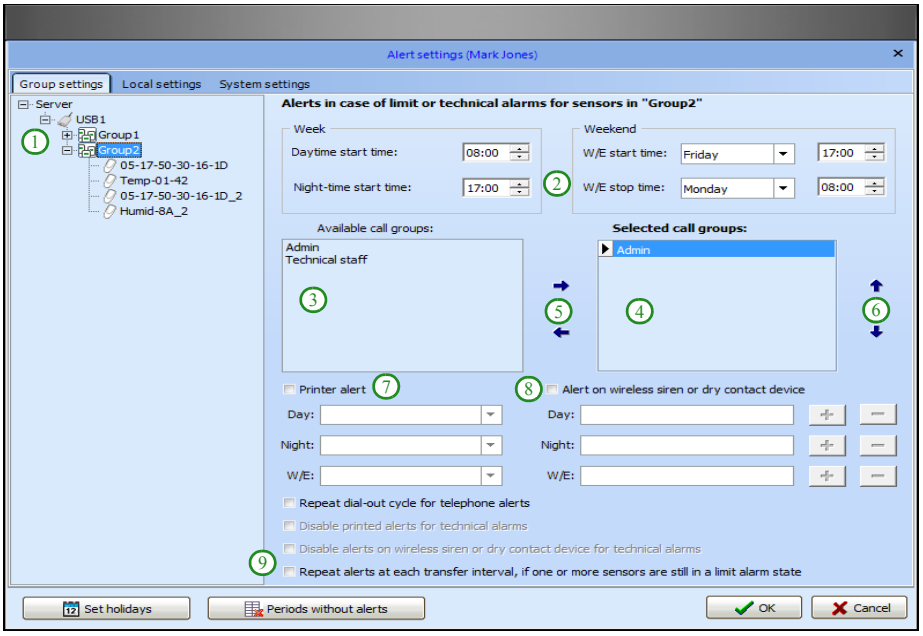



**Figure 95.** Alert settings window

4. In the tree structure on the left-hand panel ① select the group you would like to configure.

5. Define the start and end-times for the days of the week and the weekend for this group ②. These settings are used by the software to determine the start and end of each of the three alarm periods: day, night, and weekend. (*refer to* Section 2 - *Managing Users.*)

6. Click on the call group(s) of your choice in the list of **Available call groups** ③, and move it (or them) to or from the table of **Selected call groups** ④ using the right and left arrows ⑤.

7. Organize call group priority using the up and down arrows on the right ⑥. In case of an alert, call groups are contacted one after the other in descending order through this list ④.

**CAUTION:** You may open the call group profile at any time for viewing or to make changes by double-clicking on its name in either the list ③ or the table ④.

### 6.2.1 Printed Alerts

You may also configure a document to be printed in case of an alarm. To do this, click on the Printer alert ⑦ checkbox and assign a printer for day, night, and weekend times.

**CAUTION:** The printer list in the application is generated by Smart-Vue Server based on the printers installed on the server (either locally or on the network). If you add a new printer, you must restart the server application for the printer to be visible.

### 6.2.2 Activating Other types of Alerts (only for sensor groups)

To activate a siren or dry contact device, click on the checkbox next to the **Alert on wireless siren or dry contact device** option ⑧ and assign a device by clicking on **+** (*refer to* Section 6.3 – *Adding a siren alert device to your system*).

### 6.2.3 Alert Control Options

The following four options ⑨ are also available to control the way alerts are handled:

- **Repeat dial-out cycle for telephone alerts**

  If an alarm is triggered and all users in all the associated call groups have been contacted but none of them has acknowledged the alert, the system resumes calling, starting at the beginning of the list. This cycle continues until someone confirms reception of the alarm using their telephone keypad, for or up to 10 cycles.

**CAUTION:** This feature should be used sparingly if your call group includes a large number of contacts.

- **Disable printed alerts for technical alarms (*only for sensor groups*)**

  This option turns off printed alerts in case modules issue technical alarms, such as low battery.

- **Disable alerts on wireless siren or dry contact device for technical alarms (*only for sensor groups*)**

  This option turns off siren and dry contact alerts in case modules issue technical alarms.

- **Repeat alerts at each transfer interval…:(*only for sensor groups*)**

  If a sensor is still in an alarm state, all alerts (not just telephone alerts) are triggered each time data is transferred, even if the initial alert was acknowledged.

**CAUTION:** Technical alarms are not repeated with this function, only the alarms threshold is exceeded. This feature should be used sparingly if your call group includes a large number of contacts.

Configure the alerts for all your sensor groups in this manner, and click on OK to save your changes.

**CAUTION:** You must also configure alerts in case there is a problem with your wireless receivers. To do this, select each receiver in the tree structure on the left-hand panel of the window ①. Configuration, in this case, is identical to that for groups, except that wireless sirens and dry contact devices are not available and alarms are not re-triggered. The alerts you configure for receivers are automatically resent if the receiver is not communicating.

**CAUTION:** For alerts sent using a telephone modem, you may use custom. WAV files. These files need to meet the following specifications: 128 kps, 16-bit, mono, 8 kHz sampling rate, PCM format.

Three files are used for telephone alerts. Their names must be “Limit Alarm.wav”, “Technical Alarm.wav” and “Alarm Acknowledgment.wav" located in a folder in the Smart-Vue Server installation folder, by default:
`C:\SmartVue\SVuClient\Sound`

These files must not be moved or renamed.

## 6.3 Adding a Siren Alert Device to Your System

1. Select **Settings** ➔ (**Alert settings**), or press **F8**.

   Alerts are configured for either groups or receivers.

**CAUTION:** You may only add a single siren per receiver.

2. To add a siren alert device, click on the desired sensor group ①.

3. Click to select the checkbox **Audio and visual wireless siren** ②.

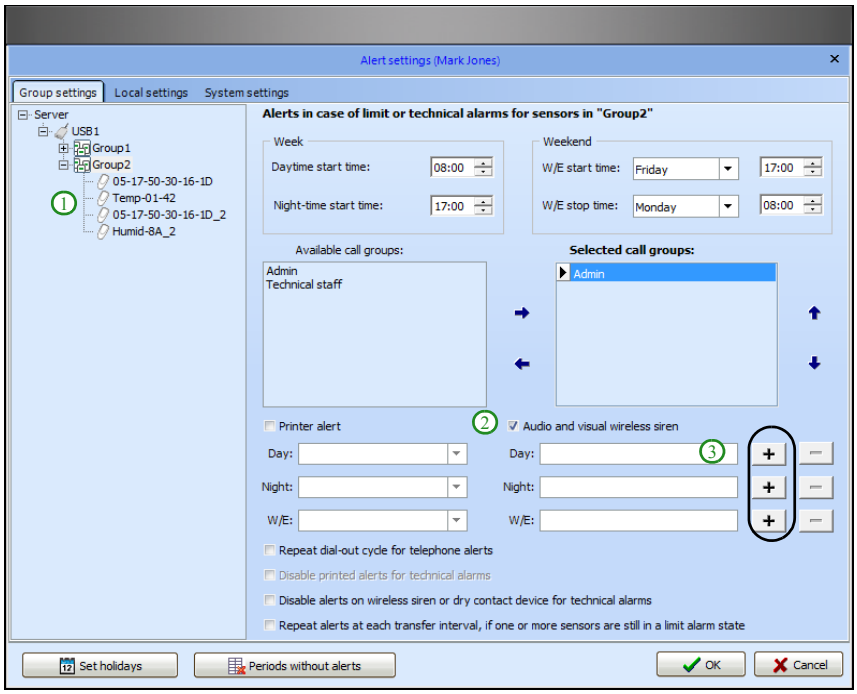



**Figure 96.** Adding a siren alert unit to your system

4. Depending on when you wish to use this siren, click on the plus sign (+) next to Day, Night or WE (weekend) in the lower right-hand part of the window ③.

5. Enter the device's wireless address into the **Siren** ④ (this number is printed on a label on the siren), then click on **Signal** ⑤ The signal strength should be 50% or higher to ensure reliable communications.

6. After selecting the type of alert device and adding the required information, click **Add** ⑥ to create the new device ➔**OK (Select)** ⑦➔**OK** to confirm the selection of this alert device for Day, Night or W/E (weekend) periods.

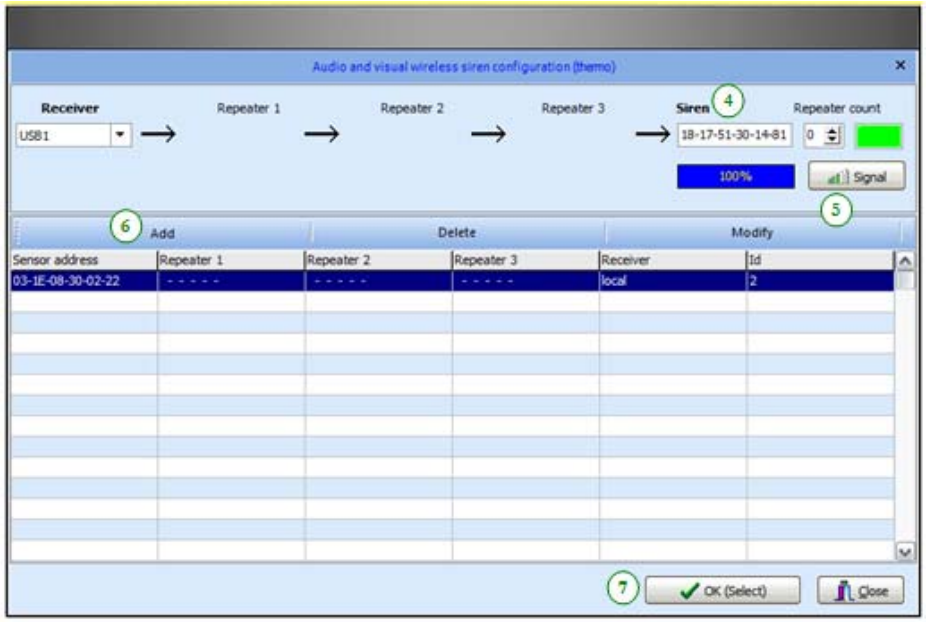



**Figure 97.** Adding a wireless siren to a receiver

At this point alert device is up and running, ready to react if an alarm condition is detected on any module in the specified sensor group and in the specified day, night or weekend period.

**CAUTION:** Alert devices function independently of other alerts, such as telephone or fax alerts. Therefore, you do not have to configure *Call groups* if you intend to use alert devices exclusively.

## 6.4 Configuring Local Alerts

Local alerts are played only in the local session of Smart-Vue Client. Follow these instructions to configure local alerts:

1. Login to Smart-Vue Client with a Super Administrator, Administrator, or Metrology profile.

2. In the Smart-Vue Client main display, click on **Settings** ➔ (Alert settings) or press **F8**.

3. Click on the **Local settings** tab:

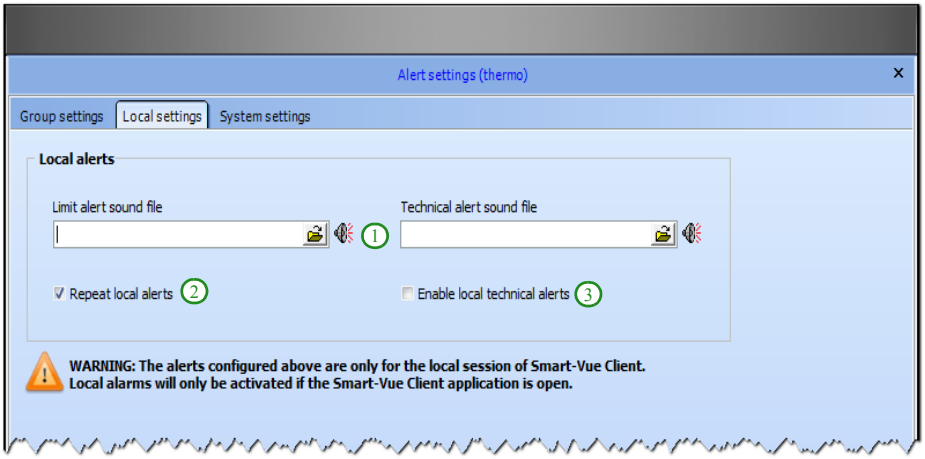



**Figure 98.** Local settings in the Alert management window

Alerts configured on this tab are triggered by Smart-Vue Client for any alarm for which they are programmed. Therefore, the Smart-Vue Client application must be running on the computer in question (which also must not be in standby mode).

4. You may choose to play a sound file (.WAV) on the computer's speakers when a new limit is detected (enter the .WAV file name in the field to the left of ① in Figure 98) or when a new technical alarm is detected (enter the .WAV file name in the field to the right of ①).

5. If you select the checkbox **Repeat local alerts** ②, the list of alarms in the main Smart-Vue Client window (to the left of the dashboard) is scanned once every minute. The .WAV sound is played when the first alarm configured to play the sound is found in the list (could be either a limit alarm or a technical alarm).

6. You may use the **Enable local technical alerts** option to enable or disable local technical alerts ③. When this option is disabled, only limit alarms will trigger local alerts.

**CAUTION:** For local alerts, you may use custom.WAV files. Local alert settings are configured independently on each PC running Smart-Vue Client.

## 6.5 Configuring Periods Without Alerts

You can disable the emission of alerts for specific periods, depending on your requirements. Follow these instructions to configure periods when alerts will not be sent:

1. Connect to Smart-Vue Client with a Super Administrator, Administrator, or Metrology profile.

2. In the Smart-Vue Client main display, click on **Settings**➔ (Alert settings) or press **F8**.

Click on Periods without alert at the bottom of the window. This opens the **Periods without alerts** window. Here you may configure periods during which alerts are not sent.

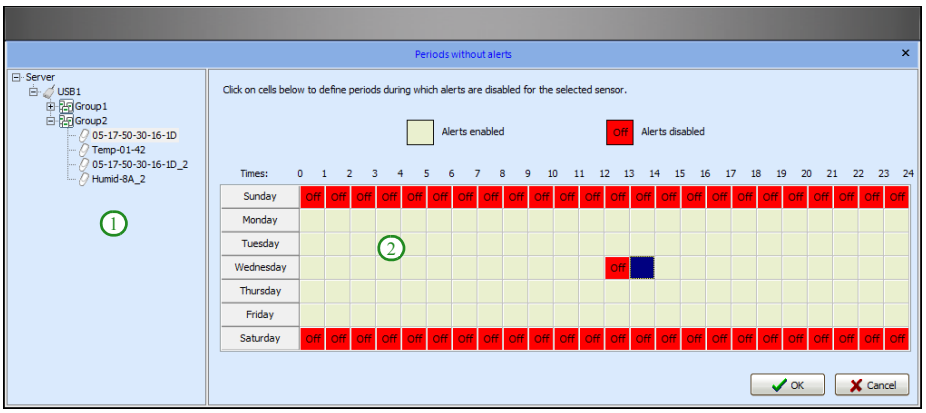



**Figure 99.** Configuration window for periods without alerts

Select a sensor from those in your view within the tree structure ①, and use the calendar to define the time slots ② in the week during which alerts are disabled. Click on a time slot to change its status. You can click and drag the mouse to choose multiple time slots at once.


**Figure 100.** Click on a time-slot to toggle on/off selection

If a technical or limit alarm is triggered during a time slot that is set to **Off** for a sensor, the alarm is automatically acknowledged by the system and no alert is issued.

### 6.5.1 Setting Holidays

Smart-Vue Client handles holidays using weekend settings (Saturday and Sunday). Follow these steps to set holidays:

1. Login to Smart-Vue Client with a Super Administrator, Administrator, or Metrology profile

2. In the Smart-Vue Client main display, click on **Settings➔** (Alert **settings**) or press **F8**.

3. Click on Set holidays at the bottom of the window. Simply double-click on those dates that are to be considered as holidays by Smart-Vue Client. Your selection of holidays is listed in the "My selection" column on the left-hand side of the window.

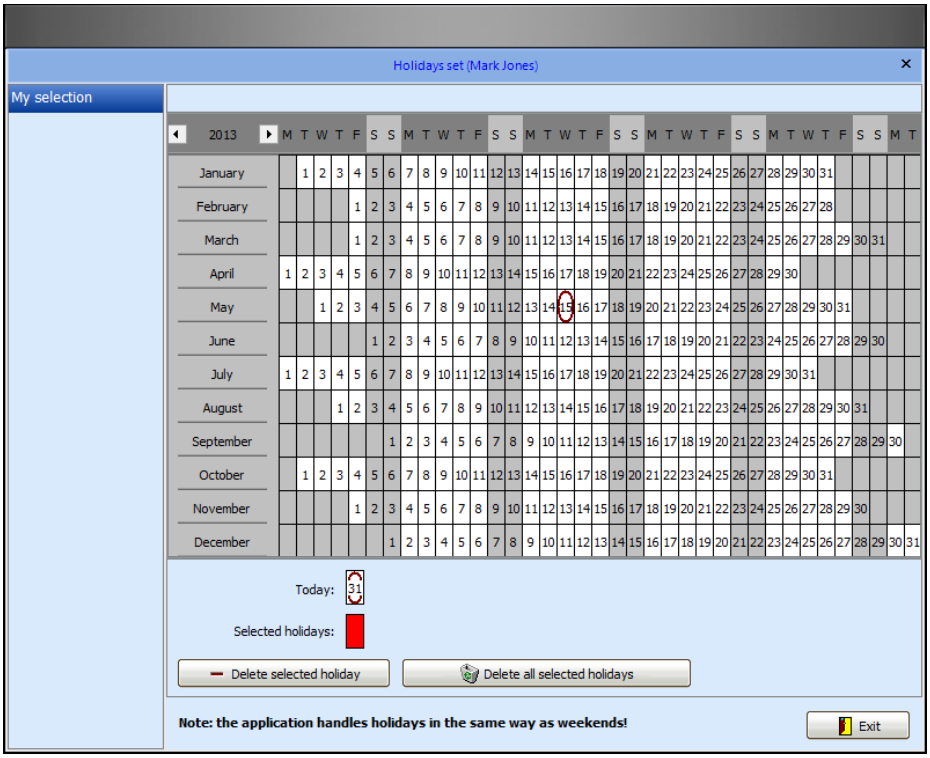



**Figure 101.** Setting holidays for alert-free periods

4. You may delete individual holidays by selecting the holiday in question (in red), and clicking on **Delete selected holiday**.
   If necessary, you may clear your entire selection at once by clicking on **Delete all selected holidays**.

5. Click on **Exit** when done.

## 6.6 Stopping an Alert Device

As described in the previous sections in this chapter, a wireless siren or dry contact device may be activated in case of an alarm, depending on your settings. To stop an alert device:

1. Select the relevant alarm from the alarm list in the Smart-Vue Client main window (left-hand panel)

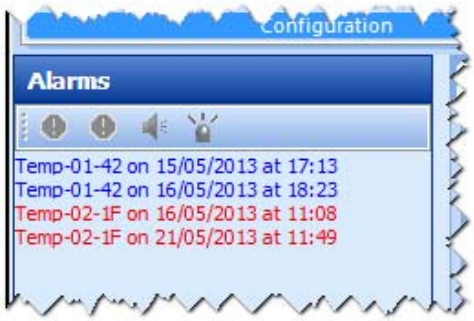



**Figure 102.** Acknowledging alarms

2. Click on the siren icon to acknowledge and stop the alarm.

**CAUTION:** If an alert device or local alert has been activated, the alert will be automatically stopped when the triggering alarm is acknowledged in Smart-Vue Client.

## 6.7 Running a Test Alarm

You may use Smart-Vue Client to simulate various types of alarms to test your alert scenarios. To do this:

1. In the Smart-Vue Client main display, click on **Tools➔** (Alert test).

2. The window below is displayed:

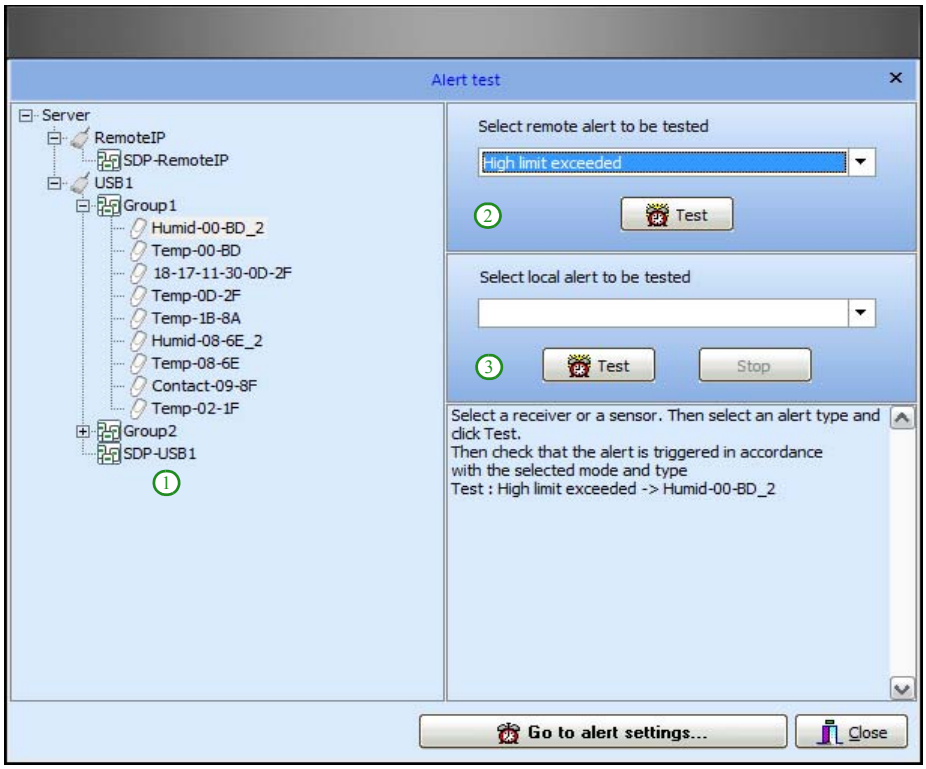



**Figure 103.** Alarm test window

3. Select a receiver or sensor in the tree structure ①.

4. Choose the type of alarm you wish to test, remote ② or local ③, depending on where the alert is to be "played", as configured in **Settings ➔Alert configuration** (F8).

5. Choose the alarm condition you wish to test:

   **Receiver tests:** No communication with server, No communication from Smart Service.
   **Sensor tests:** High limit exceeded, Low limit exceeded, Wireless connection temporarily interrupted, Sensor disconnected or sensor failure.

6. Then click on the appropriate **Test** button to simulate the desired error condition and trigger the fictitious alarm.

For remote alarms, a new line is inserted into the alarm list, with an artificial date such as 12/30/1899 to avoid disrupting the audit trail.

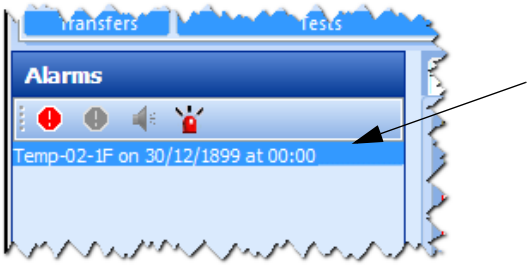



**Figure 104.** Test alarm with unrealistic time/date stamp

7. Make sure your test scenario runs as planned, and then acknowledge this fictitious entry to remove it from the alarm list.

8. Alert tests are recorded in the Audit Trail (**Reports ➔Audit trail** (F3), with complete details regarding the selected sensor or receiver, serial number, and fictitious alarm value.

## 6.8 Configuring Alert System Settings

This configuration option is only available in the Smart-Vue Client software running on the computer on which Smart-VueServer is installed.

Follow these steps to configure the Smart-Vue Client alert system:

1. Connect to Smart-Vue Client as a Super Administrator, Administrator or Metrology profile.

2. In the Smart-Vue Client main display, click on **Settings** ➔ (Alert settings) or press **F8**. This opens the **Alert settings** window, shown below. Click on the **System settings** tab.

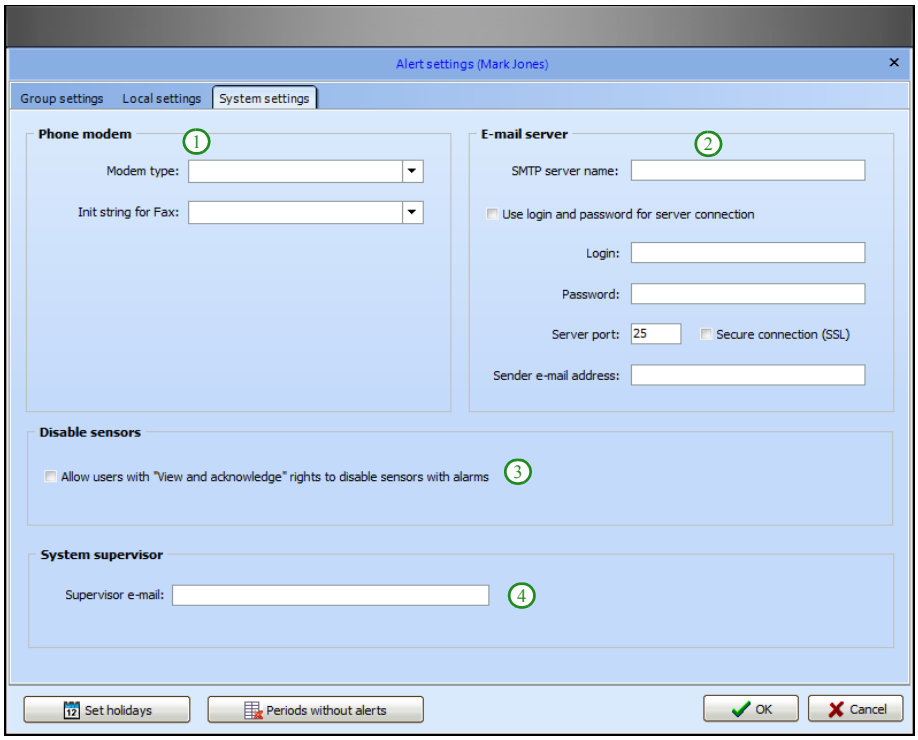



**Figure 105.** Alert system settings window

3. In the **Phone modem** section ①, select the Smart-Vue modem to use for alerts under **Modem type**. You may also enter an initialization string to use for **Fax** communications if necessary.

4. The **E-mail Server** section ② contains configuration parameters related to your e-mail server. Enter the appropriate information for your system: SMTP Server Name, **Login** and **Password** (which is encrypted) if necessary, as well as the **Server port** to use (port 25 is the standard port for SMTP) and the **e-mail address** that will be used to identify the sender of alert messages. Click the **Secure connection (SSL)** checkbox if your mail server uses SSL.

5. Use the option **Allow users with "View and acknowledge" rights to disable sensors with alarms** ③ to authorize these users to disable sensor that are in an alarm state from the **Alarm acknowledgment** window.

6. Enter an e-mail address for the **System supervisor** ④. The following types of e-mail messages are sent to this address:

   - System information regarding license.
   - Notification that Smart-Vue Server restarted the Alarm Management System AMS process, or if AMS detects that Smart-Vue Server is not running.
   - Notification of database or sensor problems detected during an automatic control on Saturday mornings (a.m. 05:00).

   You may enter several e-mail addresses here, separated by a semicolon ( ; ).

**CAUTION:** For maximum reliability over time, we recommend that you test alerts after any change to verify proper operation. Also, we recommend testing at regular intervals to ensure that existing configurations continue functioning as they should, based on standard operating procedure.

**CAUTION:** Check with your local IT department for mail server settings and create a user for sending alarms.
Some anti-virus programs may prevent e-mail from being sent until they are properly configured.

# 7 Testing System Status

The features described in this section are reserved for Super Administrator, Administrator, and Metrology profiles. These tests only display modules on which datalogging is enabled and modules in the user's view.

## 7.1 Testing Wireless Performance (Signal Strength)

Smart-Vue Client enables you to check the quality of wireless communication between all the modules, repeaters (if used), and their receivers.

1. In the Smart-Vue Client main menu, click on **Tools➔** (Signal strength).

2. Click on **Start analysis** ①.

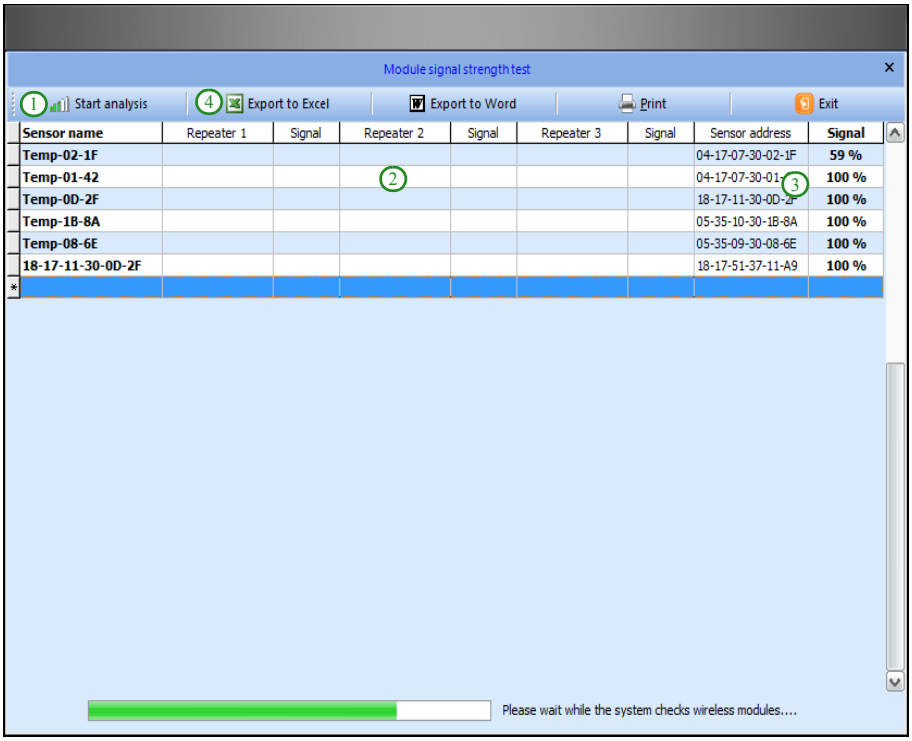



**Figure 106.** Checking wireless signal performance

3. The system carries out a communication test with each sensor in your view, and displays them one after the other in the table ②. The quality of the wireless connection between the receiver, repeaters you may be using, and the Smart-Vue module is expressed as percentage values ③.

**CAUTION:** A wireless performance test in a Smart-Vue Server system is acceptable if the displayed percentages are 50% or higher (recommended minimum for best reliability). Below this level, communication with the module may be impaired, which could result in a reduced ability to transmit readings or emit alarms. A value of 0% may simply indicate a temporary communication error. You may double-click on the line in question to rerun the test.

4. The buttons ④ in the menu bar at the top of the window can be used to export the table of obtained results to Microsoft Excel or Microsoft Word or to print it.

## 7.2 Testing Battery Counters

To check the battery level in the modules in your view:

1. In the Smart-Vue Client main menu, click on **Tools➔** (Battery strength test).

2. Click on **Start analysis** ① to begin testing.

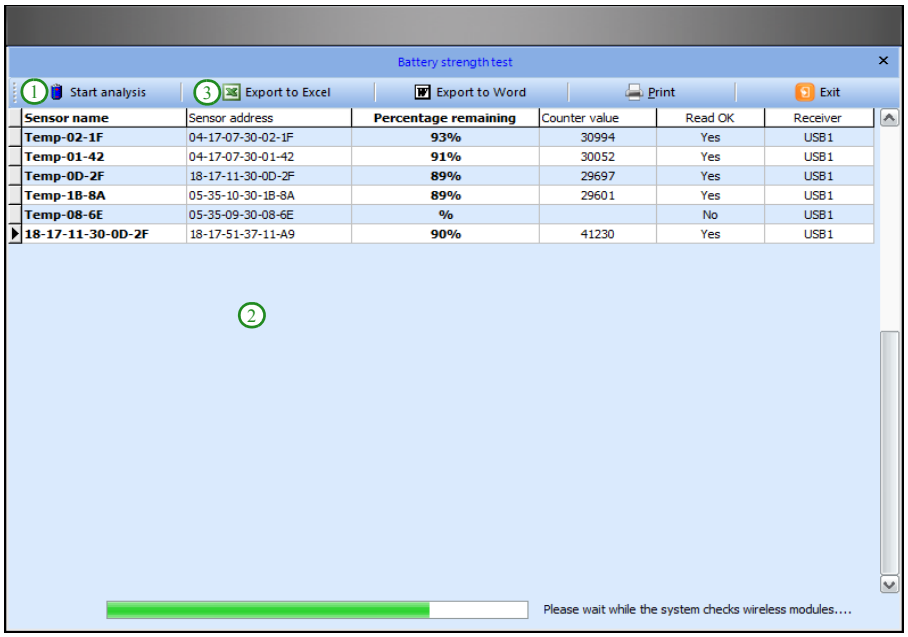



**Figure 107.** Checking module batteries

3. The system then queries the battery counter in each sensor in your view and displays the estimated remaining battery level in a table as shown above ②.

4. The buttons ③ in the menu bar at the top of the window can be used to export the table to Microsoft Excel or Microsoft Word or to print it.

## 7.3 Testing Sensor Data-Logging Status

At any time, you can check the status of data collection (reads) for each sensor in your view. To do this:

1. In the Smart-Vue Client main menu, click on **Tools** ➔ (Datalogging state).

2. Click on **Start analysis** ① to begin testing.

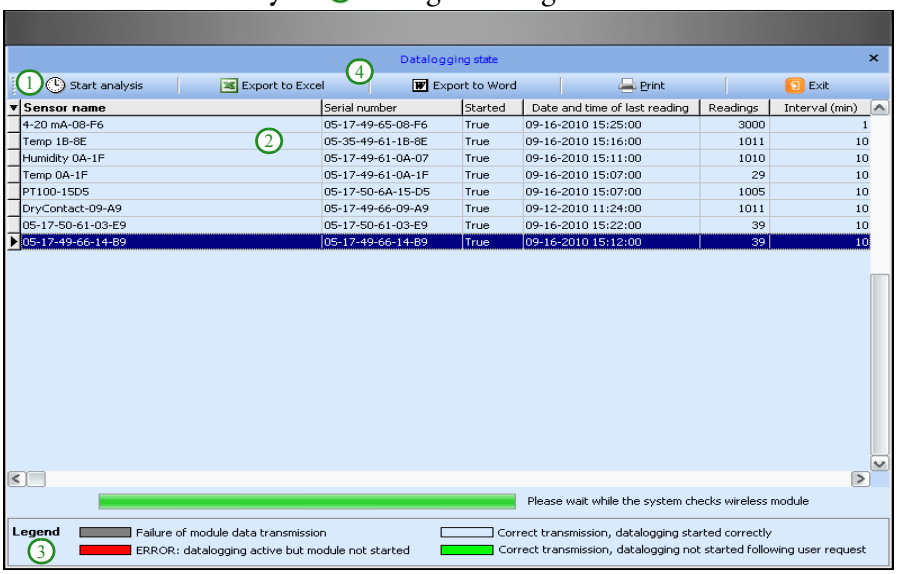



**Figure 108.** Datalogging status window

3. The system queries each module and collects information about its data-logging status, which is displayed in the table ②.

   You may use this feature to make sure that data-logging is running properly and to check the date and time of the last reading, the number of reads stored in memory, and the programmed interval.

   If a problem is detected on the module, the related line in the table is displayed in color. A legend describing the different colors is presented at the bottom of the window ③.

4. The buttons ④ in the menu bar at the top of the window can be used to export the table to Microsoft Excel or Microsoft Word or to print it.

# 8 Archiving Data

Smart-Vue Client lets you archive parts of its stored readings in a dedicated area in its database to lighten the system load and reduce processing time. This **operation is reserved for Super Administrator and Metrology profiles only**, and has no effect on the traceability of archived readings or their accessibility. Archives may be loaded at any time for viewing.

## 8.1 Selecting the Archive Period

1. Click on the Smart-Vue Client icon in the upper left-hand corner of the main window

2. Click on **Data ➔Archive readings**

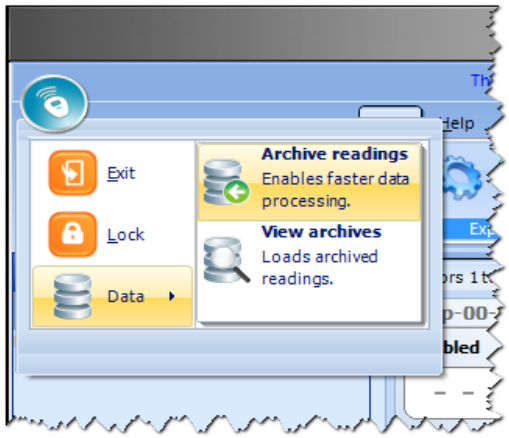



**Figure 109.** Archiving Smart-Vue Client data

3. This opens the **Archive data** window shown here:

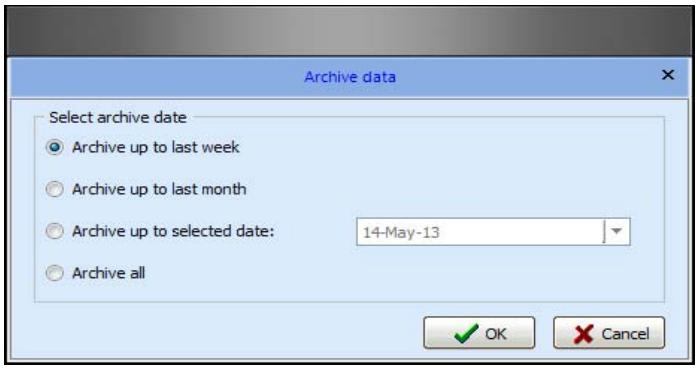



**Figure 110.** Data archive settings

Here you may choose one of the following options for archiving your data:

- **Archive up to last week:** archives all measurement values older than one week.
- **Archive up to last month:** archives all measurement values older than one month.

- **Archive up to selected date:** archives all measurement values prior to a specified date.
- **Archive all:** archives all measurement values up to the present moment.

Click on **OK** to confirm your choice.

**CAUTION:** If you choose **Archive all**: when you return to the dashboard window, the sensor color in the tree changes and the latest reading disappears (until new readings are transmitted) (refer to Section 4.1– *Viewing sensor settings, and* Section 4.2 – *Displaying sensors in the main window*).

**CAUTION:** We recommend that you at least archive readings that are older than one year to optimize application operation and keep the system running smoothly.

## 8.2 Displaying Archived Data

1. Click on the Smart-Vue Client icon in the upper left-hand corner of the main window
2. Click on **Data ➔View archives**

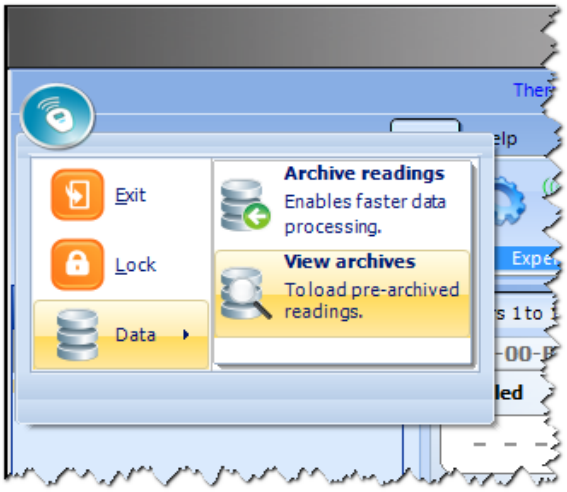



**Figure 111.** Opening Smart-Vue Client data archives

3. The **Display archive** selection window opens as shown here:

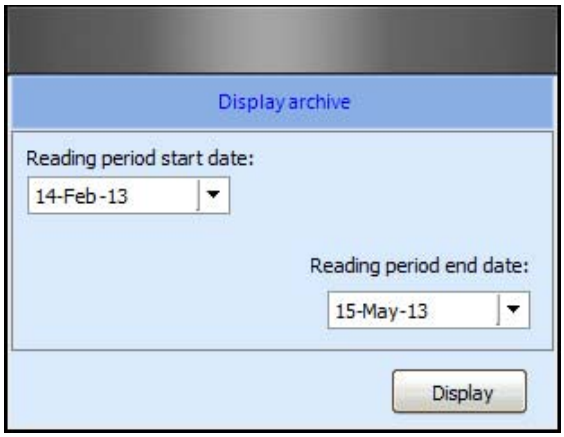



**Figure 112.** Selecting archive period to display

4. Set the time period for the archives you wish to view by selecting start and end dates using the two calendars.
5. Click on **Display**. The system includes data from archived readings in this period along with other current readings.
6. The application switches to **Archive Mode**, which is indicated in the title of the main window:

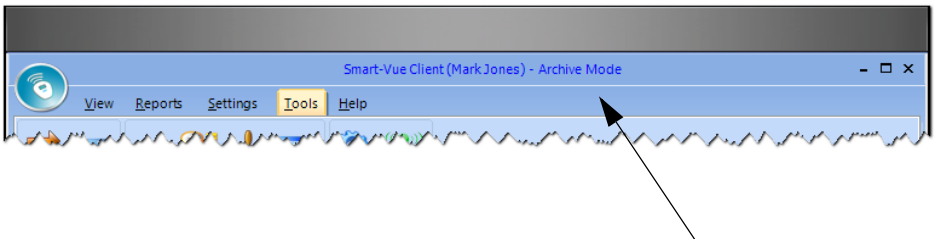



**Figure 113.** Smart-Vue Client in Archive Mode

7. Archive Mode ends automatically when you close the current Smart-Vue Client session or when you click on **Hide archives** in the **Data** menu:

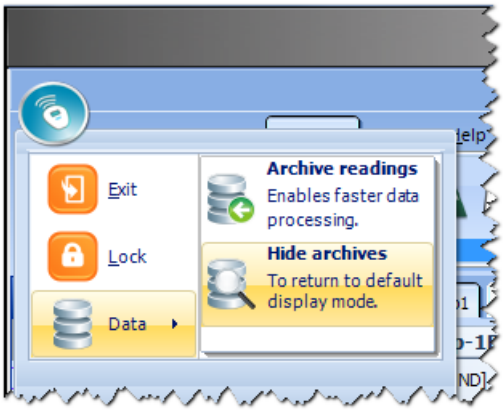



**Figure 114.** Hiding archive view

# 9 Printing and Exporting Reports

You can print several different types of reports summarizing system status using the printer(s) installed on your computer. The information contained in these reports can generally also be exported in various electronic file formats.

## 9.1 Sensor Status Report

1. In the main Smart-Vue Client menu, click on **Reports**➔ (Sensor status).

2. A sensor selection window is displayed. Move the sensors for which you would like to display sensor status from the Source list to the Destination list (see section "Viewing Multiple Sensor Graphs", page 76). Click on OK to confirm your selection.

3. Select period you would like to cover in the report:

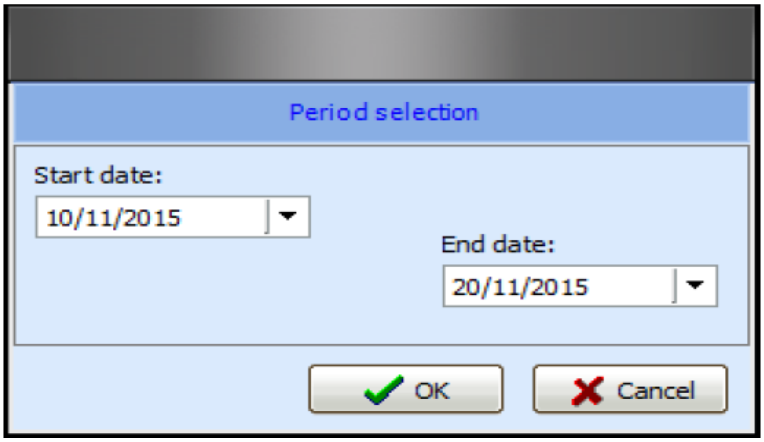
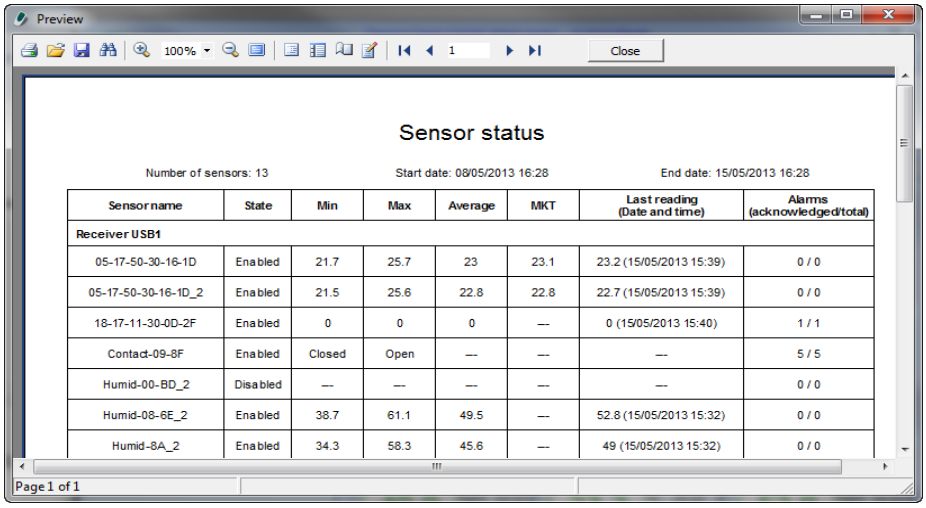



**Figure 115.** Printing sensor report

4. With this option, you may check sensor activity over the period selected.

5. Click on **OK** to confirm your selection.

6. The report preview window is displayed:



Sensor status

Number of sensors: 13 Start date: 08/05/2013 16:28 End date: 15/05/2013 16:28

| Sensor name | State | Min | Max | Average | MKT | Last reading (Date and time) | Alarms (acknowledged/total) |
|---|---|---|---|---|---|---|---|
| Receiver USB1 | | | | | | | |
| 05-17-50-30-16-1D | Enabled | 21.7 | 25.7 | 23 | 23.1 | 23.2 (15/05/2013 15:39) | 0 / 0 |
| 05-17-50-30-16-1D_2 | Enabled | 21.5 | 25.6 | 22.8 | 22.8 | 22.7 (15/05/2013 15:39) | 0 / 0 |
| 18-17-11-30-0D-2F | Enabled | 0 | 0 | 0 | --- | 0 (15/05/2013 15:40) | 1 / 1 |
| Contact-09-8F | Enabled | Closed | Open | --- | --- | --- | 5 / 5 |
| Humid-00-BD_2 | Disabled | --- | --- | --- | --- | --- | 0 / 0 |
| Humid-08-6E_2 | Enabled | 38.7 | 61.1 | 49.5 | --- | 52.8 (15/05/2013 15:32) | 0 / 0 |
| Humid-8A_2 | Enabled | 34.3 | 58.3 | 45.6 | --- | 49 (15/05/2013 15:32) | 0 / 0 |

**Figure 116.** Sensor status report preview

### 9.1.1 Sensor Report Details

This report shows all sensor measurements values, state (enabled/disabled), highest, lowest and average readings, most recent reading, and the number of alarms (acknowledge and total) for the selected period for each sensor in your view. Mean kinetic temperature is also displayed, as supported by specific modules.

**Figure 117.** Options in sensor report preview window

The table below lists the icons in the report menu bar and their function:

| Icon | Function |
|---|---|
| | Print |
| | Open |
| | Save |
| | Search |

| Icon | Function |
|---|---|
| | Display thumbnails |
| | Page setup |
| | Change page |
| | First page |

| Icon | Function |
|---|---|
| | Zoom in |
| 100% | Set zoom level |
| | Zoom out |
| | Full window |
| | Report profile |

| Icon | Function |
|---|---|
| | Previous page |
| 1 | Set page number |
| | Next page |
| | Last page |

### 9.1.2 Mean Kinetic Temperature (Only for Temperature Sensors)

Some products and devices have a faster rate of degradation at higher temperatures. For example, perishable food items, pharmaceutical products and many forms of bacteria can grow/degrade exponentially as the ambient temperature increases. Mean kinetic temperature is a calculation that accommodates the non-linear thermal effect that temperature can have on products. Mean kinetic temperature is represented as the equivalent temperature to which the product was thermally subjected during the period of time the various temperature readings were recorded.

The formula for calculating the mean kinetic temperature can be expressed as shown below:

$$mkt = \frac{-\frac{\Delta H}{R}}{\ln\left(\frac{\sum_{i=1}^{n}\exp\left(\frac{-\Delta H}{R\times(t_i+273.15)}\right)}{n}\right)} - 273.15$$

Where:

| | |
|---|---|
| mkt | Mean kinetic temperature (in degrees Celsius) |
| ΔH | Activation energy. Smart-Vue Client uses an activation energy value of 83.144 KJ/mol for the calculation. |
| R | Universal gas constant, which is 0.0083144 KJ/mol K |
| n | Number of data points to include in the calculation |
| $t_i$ | A data point to include in the calculation (in degrees Celsius) |

For example, if the 5 data points for which you wish to calculate mean kinetic temperature are 12.3, 15.9, 16.2, 14.7 and 14.9 degrees Celsius, then the mean kinetic temperature would be 14.9 degrees Celsius.

### 9.1.3 Automating Report Print-Out

All users can program the system to print their reports on a daily basis. To do this:

1. Click on **Reports**➔ (Automatic print-out)

2. The Automatic print-out settings window opens as shown here:

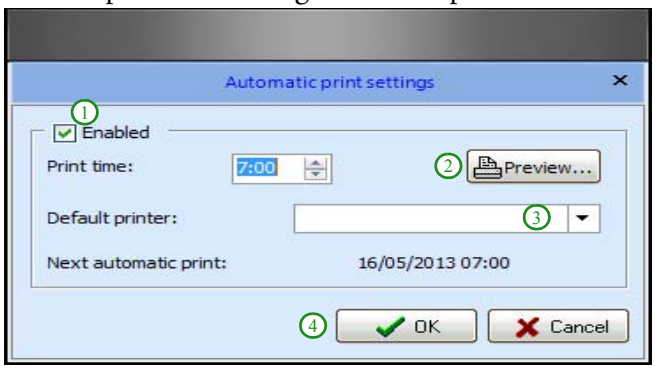



**Figure 118.** Automatic print-out settings

3. Click the **Enabled** checkbox ① to enable automatic daily printing.

4. Select the time of day (24 hour clock where 5:00 pm is 17:00, 11:00 am is 11:00, etc.) to print the report ② as well as the printer ③.

5. You can view the report by clicking **Preview**.

6. Confirm your configuration by clicking on **OK** ④.

**CAUTION:** Smart-Vue Client must be running (i.e. not in standby mode) at the scheduled time on the computer configured to print the status report automatically.

## 9.2 Alarm Report

To access the alarm report for the sensors in your view, click on **Reports➔** (Alarm status). For more details on this feature refer to Section 5.4 - *Looking up alarms*.

## 9.3 Settings Status Report

This report provides a summary of the settings on the sensors in your view.

1. To view the report, click on the **Reports➔** (Settings status).

2. The sensor parameters report is displayed as shown below.

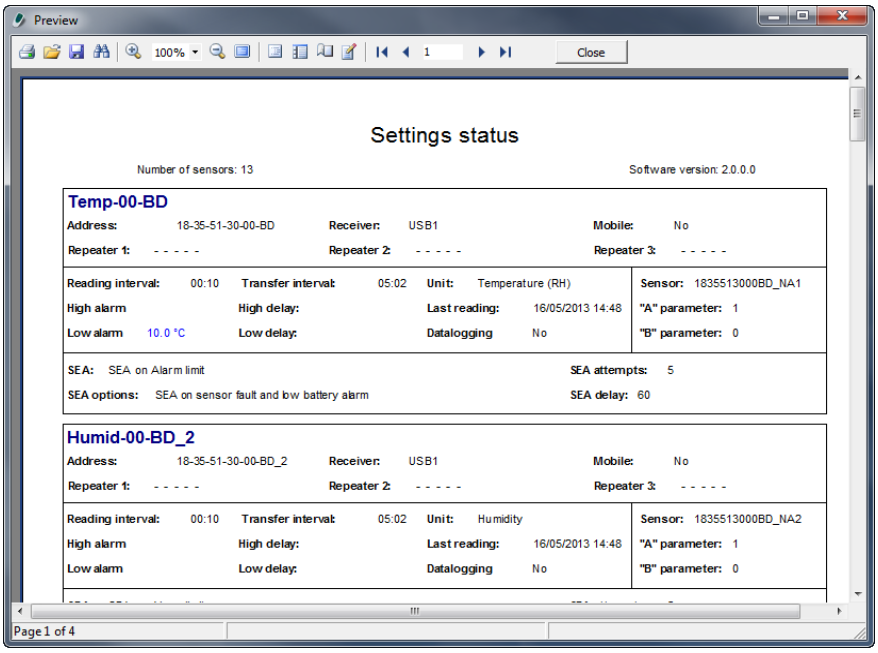



**Figure 119.** Sensor settings report

This report includes information on sensor settings, including sensor name, serial number (or module address), wireless settings, reading and transfer intervals, unit, limits, delay, data-logging status, sensor serial number, correction parameters, the most recent reading and SEA settings for each sensor in your view. It also indicates disabled sensors.

See the "Settings status report" section earlier in this chapter for a description of the toolbar at the top of the Settings status window.

## 9.4 Adding a Custom Logo to Your Reports

By default, the Thermo Scientific logo is included on reports generated by Smart-Vue Client. You may replace the logo with one of your own to personalize your reports. To do this

1. Click on **Reports➔** (Customize logo).

2. The Customize logo window is displayed, as shown here:


**Figure 120.** Changing the logo for your printed reports

3. Click on **Select** and locate the image that you want to use for the reports printed by Smart-Vue Client on your computer.

4. To restore the default image, click on **Default**.

**CAUTION:** For optimal display quality, only bitmap (.BMP) images are supported. Image size should not exceed 100 x 57 pixels. If you use a larger image, only the center part will be used.

# 10 Viewing the Audit Trail

All user events and actions that affect the system are recorded in an audit trail that you may view and print using Smart-Vue Client, regardless of your user profile.

To do this:

1. Click on **Reports➔** (Audit trail) icon, or press **F3.**

2. The **Audit trail** window is displayed as shown here:

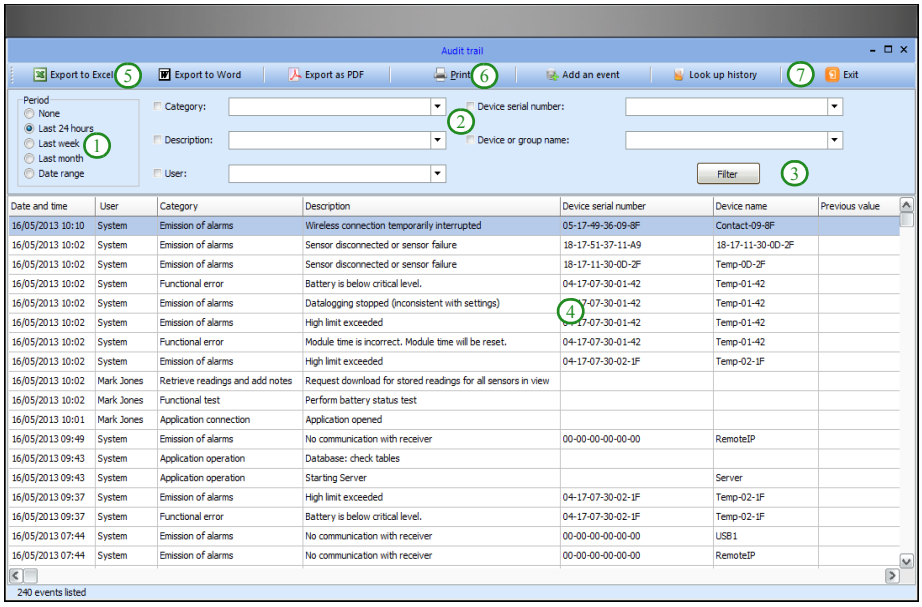



**Figure 121.** Audit trail window

3. You may filter the report to limit the covered time period ①, focus on a particular category of event, description, user, device serial number, and/or device or group name ②. Use the pull-down menus to select one or more criteria. To keep these filters easy to use, the options displayed in these lists are dynamically filled-in based on events actually present in the Audit trail.

4. Click on **Filter** ③ to refresh the table display ④ according to your criteria.

5. Use the buttons in the horizontal menu bar at the top of the window ⑤ to export the table to Microsoft Word, Microsoft Excel, a PDF file, or to print your report.

6. Click on **Add an event** ⑥ if you wish to insert a line at the current date and time on which you may enter up to 255 characters of your own text to add custom information to the audit trail. You may also choose to relate the event information to a specific module using the **Associate with sensor** field.

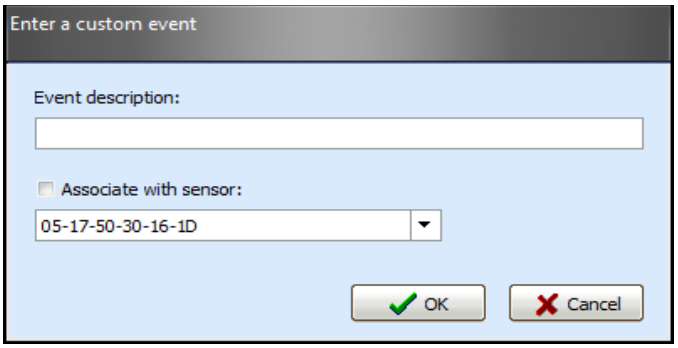



**Figure 122.** Adding a personalized event to the audit trail

This report provides a convenient way to monitor the activity of system users, as well as to see who performs setting changes.

**CAUTION:** Events generated by the system, such as triggered alarms, are displayed when you select **SYSTEM** as the user name for this report.
If the connection to the server is not available when the user quits Smart-Vue Client, the "Application close" event will not be included in the Audit trail.

### 10.0.1 Note for Systems Upgraded from Versions 1.0

The Smart-Vue Client Audit trail starting with version 2.0 offers new options with respect to prior versions of the software. If your system was upgraded to 2.0 from version 1.0, the new event list only shows those events that have occurred under the new version 2.0.

To access the existing Audit trail from your previous versions, simply click on **Look up history** ⑦.

# 11 Managing Sensor Calibration

## 11.1 Overview

Even though the sensors used in Smart-Vue products are designed to respect very tight specifications, some variation is inevitable from one sensor to another. Therefore, it is important to calibrate each sensor with respect to a reference sensor in order to fine-tune the accuracy of readings stored in your system and displayed on Smart-Vue module screens.

After sensor calibration in the laboratory, *correction parameters* are provided to you for use in Smart-Vue Client. These parameters are referred to as **A** and **B** correction parameters throughout the software.

The Sensor calibration option in Smart-Vue Client enables you to:

1. **Handle calibration parameters** for your sensors, whether or not sensors were calibrated by Thermo Scientific. If you have your own correction parameters and/or calibration and/or calibration certificate, you may enter those values in Smart-Vue Client but you won't be able to download the certificate.

2. **Push the A and B correction parameters** to the wireless module. For this, the module must be able to communicate properly with your receiver.

**Note** *this process updates existing A and B parameters entered via the **F11 ➔F11** window (if any).*

3. **Download calibration certificates** for sensor calibrations performed by Thermo Scientific.

**Note** *COFRAC 17025 certificates may not be delivered in electronic format. If you require a copy of your certificate, please contact your authorized representative.*

**CAUTION:** Technical alarms are not repeated with this function, only the alarms threshold is exceeded. This feature should be used sparingly if your call group includes a large number of contacts.

## 11.2 Calibration: Based on Sensor's Serial Number

Smart-Vue Client's calibration features are always based on the sensor serial number, independently of the wireless module.

Generally speaking, you enter the sensor serial number when you first install your Smart-Vue module (refer to Section 3.3 – *Adding a module or repeater manually*):

| | |
|---|---|
| **Digital temperature sensors** | The serial number is entered into the software automatically when you initialize the sensor (**Init** button in F11➔ F11 window). |
| **PT100 analog sensors**<br><br>**Dual temperature/humidity, $CO_2$/temperature, differential pressure, 4-20 mA, 0-5V sensors** | The serial number is provided on a plastic ring on the sensor.<br><br>The serial number is provided on a sticker on the sensor or module.<br>For these sensors, you are prompted to enter the number when you add the module to your system (**Init** button in F11➔ F11 window). If you chose not to do that, you may add it in the Calibration interface described here. |

## 11.3 Updating Parameters for Sensors Calibrated by Thermo Scientific

1. Connect to Smart-Vue Client with a Super Administrator, Administrator, or Metrology profile.

2. In Smart-Vue Client, click on Settings ➔Sensor calibration ( ). This opens a table that lists the sensors that you are able to view in your system, as shown here:

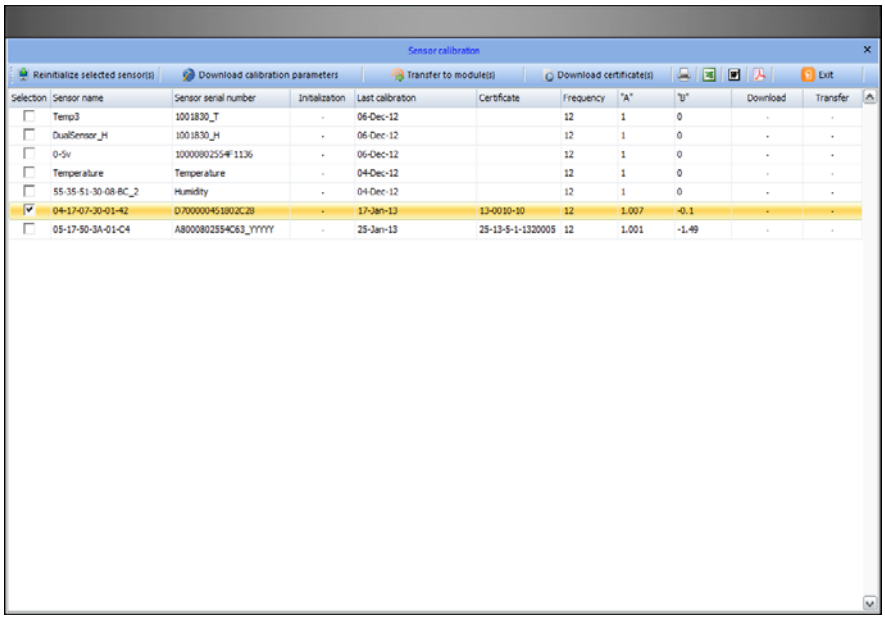



**Figure 123.** Sensor calibration window

As sensor calibration certificates and laboratory-calculated correction parameters are based on the sensor serial number, the **Sensor serial number** column must contain a valid serial number for you to download certificates or parameters. You may nonetheless enter your own parameters and calibration information as described later in this chapter.

3. If the sensor serial number is not present or not up-to-date, select the sensor(s) you want to update and then click on **Reinitialize selected sensor(s)**. For digital temperature sensors, the serial number is read automatically. For all other sensors, you will be prompted to enter the serial number.

   If initialization is successful, then module details are updated with the serial number, both in this **Sensor calibration** window and in the **Settings** (F11) windows.

   If initialization fails, no changes are made to the module details. Make sure the module in question is within wireless range for this operation.

4. For calibrations performed by Thermo Scientific, you may click on **Download calibration parameters** to display available metrology information via the Internet.

**CAUTION:** Downloading calibration information with this option only displays certain metrology information. It does not transfer the A and B correction parameters to module memory, or store those values in the database.
To update correction parameters in the actual modules and database, you must click on **Transfer to modules** (described below) and that process must run without errors.

5. **Note** *To see additional metrology information related to the A and B correction parameters, such as the calibration date, calibration values, and values read during calibration, double-click anywhere on the highlighted sensor line in the table:*

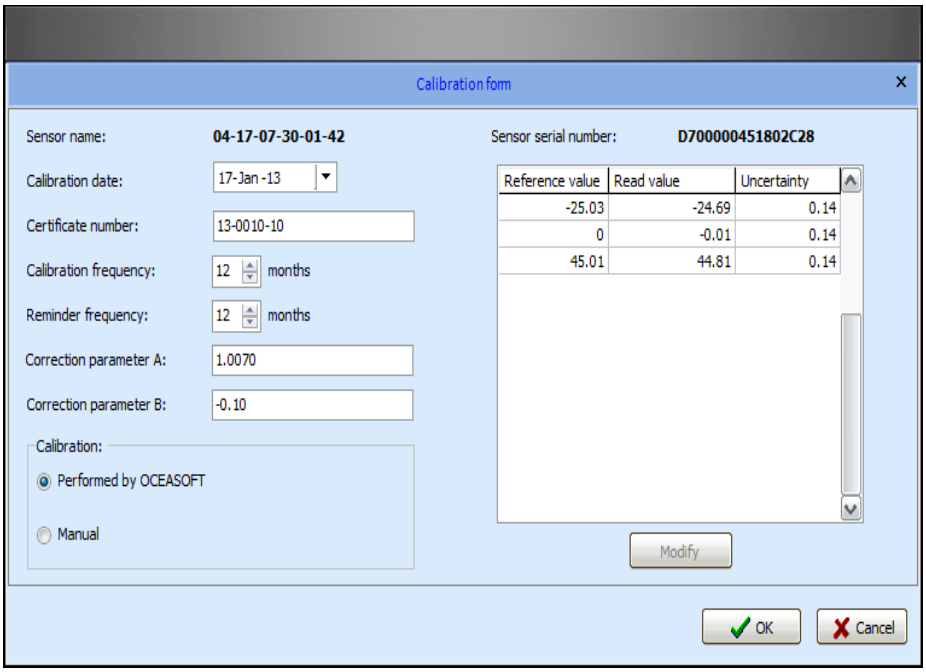



**Figure 124.** Calibration form for Thermo Scientific calibrated sensor

### 11.3.1 Calibration and Reminder Frequency

Here you may change certain information if necessary, notably the **Calibration frequency** (how often the sensor needs to be calibrated) and **Reminder frequency** (how often you should be reminded to calibrate the sensor).

The **Calibration frequency** and **Reminder frequency** fields may be modified using the up/down arrows next to the fields, or the up/down arrows on your keyboard. The up arrow increments the value by one month with each click, up to the maximum; the down arrow decrements the value by one month with each click, down to the lower limit.

You may also enter the **Calibration frequency** and **Reminder frequency** values manually after single-clicking in the text (number) field. The **Calibration frequency** must be greater than or equal to the **Reminder frequency**.

If you make changes to any other fields (except **Calibration frequency** and **Reminder frequency**), the information is no longer considered as “untouched”, and the radio button in the Calibration zone changes to **Manual** (more details on this are provided in the next section).

6. Click on **OK** to close this screen.

7. After downloading calibration information, you must then transfer the correction parameters to the wireless module by clicking on **Transfer to module(s)**. If the wireless module is within range and the transfer is successful, a ✔ symbol is displayed in the **Transfer** column. If you do not do this, then the software and the module will contain different values.

## 11.4 Updating Calibration Information Not Provided by Thermo Scientific

1. Double-click anywhere on the line containing the sensor you want to update. You do not need to update the sensor serial number for this operation. This opens the **Calibration form** shown here:

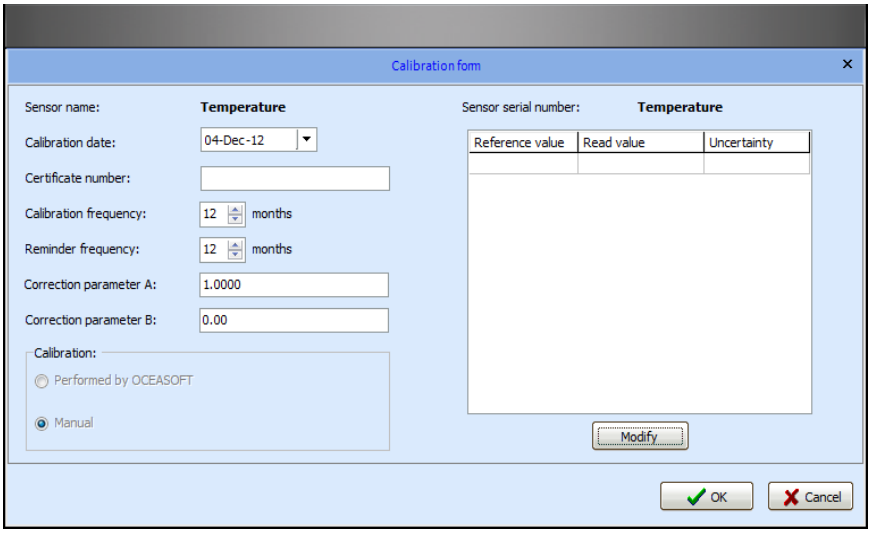



**Figure 125.** Entering your own calibration information

For sensors without serial numbers, or sensors not calibrated by Thermo Scientific, the radio button in the **Calibration** zone is set to Manual and cannot be changed.

2. Here you may enter your own information as desired (though you may not change the sensor name itself):

| | |
|---|---|
| **Calibration date** | The latest calibration date. |
| **Certificate number** | The reference certificate number. |
| **Calibration frequency** | How often the sensor should be recalibrated. |
| **Calibration reminder** | How often to remind you that the sensor needs to be recalibrated |
| **Correction parameter A** | Value provided on calibration certificate. |
| **Correction parameter B** | Value provided on calibration certificate. |

3. If you would like to enter the calibration references and results into the table on the right-hand side of the Calibration form, click on **Manual** in the Calibration zone (if **Performed by Thermo Scientific** button is still selected) ➔**Modify**. The Modify button then changes to **OK**.

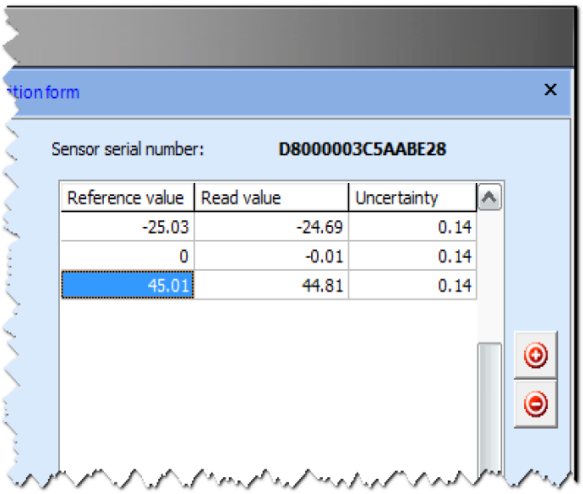



**Figure 126.** Entering calibration reference values and results

You may edit the fields by double-clicking in them. If you need additional lines, click on the "+" button. To remove lines click on the "−" button.

4. Click on **OK** when done and click again on **OK** to update the information on the module and close the Calibration form.

5. If the wireless module is within range and the transfer is successful, a ✔ symbol is displayed in the **Transfer** column.

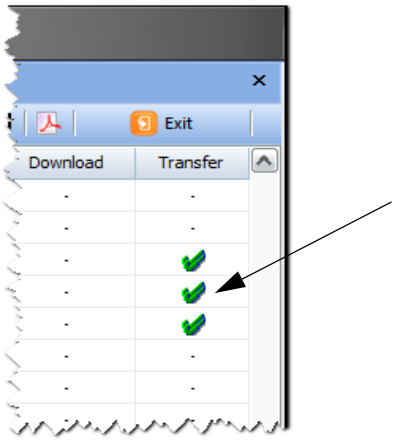



**Figure 127.** Parameters transferred to module successfully.

## 11.5 Exporting Calibration Information

For all listed sensors, you may export the calibration information in various formats, or print the information directly, by clicking on these buttons in the main menu bar:

| Icon | Function |
|---|---|
| | Shows a preview before printing the information on the printer of your choice. |
| | Exports the information in MS Excel format, prompting you to enter a location for the file. |
| | Exports the information in MS Word format, prompting you to enter a location for the file. |
| | Exports the information in Adobe PDF format, prompting you to enter a location for the file. |

## 11.6 Downloading Thermo Scientific Calibration Certificates

You may download copies of your calibration certificates if calibration was performed by Thermo Scientific. These certificates are stored on a secure Thermo Scientific server. To do this:

1. Select the sensor(s) for which you would like to download certificates and then click on **Download certificate(s)** in the main menu bar of the **Sensor calibration** window.

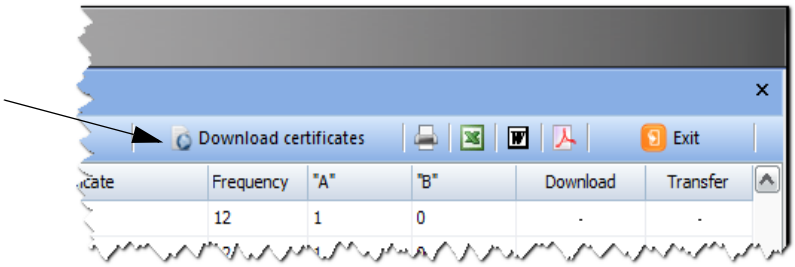



**Figure 128.** Click to download certificates

2. If the selected sensors are recognized as having been calibrated by Thermo Scientific, you are prompted to enter a company name to show in the certificate headers.

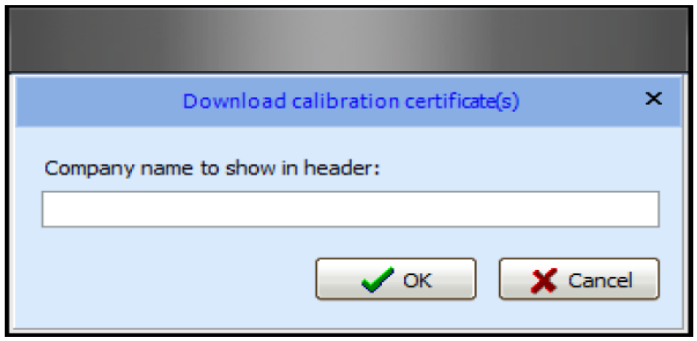
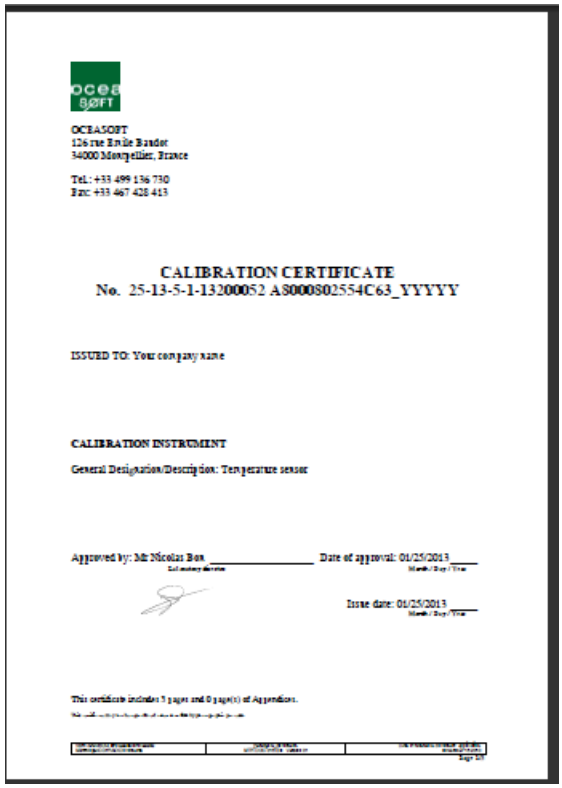



**Figure 129.** Enter the name you want to show on the cover page(s)

3. Click on **OK** to download the certificates, or **Cancel** to quit without downloading.

4. Certificates are downloaded into the certificates folder in the Smart-Vue Client installation folder.

5. Click on **OK** when the download is complete.



OCEASOFT
126 rue Emile Baudot
34000 Montpellier, France

Tel.: +33 499 136 730
Fax: +33 467 428 413

CALIBRATION CERTIFICATE
No. 25-13-5-1-13200052 A8000802554C63_YYYYY

ISSUED TO: Your company name

CALIBRATION INSTRUMENT

General Designation/Description: Temperature sensor

Approved by: Mr Nicolas Bon _____ Date of approval: 01/25/2013 _____

Issue date: 01/25/2013 _____

This certificate includes 5 pages and 0 page(s) of Appendices.

**Figure 130.** Sample calibration certificate

# 12 Advanced Maintenance Options

**CAUTION:** The features described here are authorized only for users with Super Administrator rights and should only be used by experienced and qualified Smart-Vue Client Smart-Vue Client technicians. Incorrect use of expert options could cause your solution to function incorrectly.

Smart-Vue Client includes an **Expert** section that may be used to verify and update basic receiver settings easily for troubleshooting purposes. Follow these steps if you are having problems with your system and would like to confirm proper operation of your receiver(s):

1. Login to Smart-Vue Client as Super Administrator on the computer running Smart-Vue Server.
2. Click on **Tools** ➔ (Advanced maintenance), or press F12.
3. Click on the desired tab: **Receivers**, **Database**, or **CFR 21 part 11**.

## 12.1 Receivers

The receivers tab enables you to view and adjust the settings of your system's receivers:

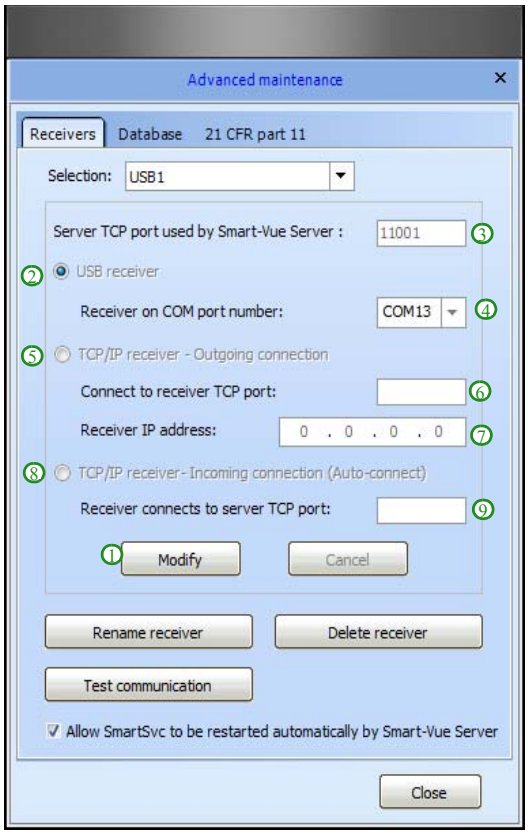



**Figure 131.** Receiver configuration in Advanced maintenance

If you need to make any changes, first select a receiver in the drop-down menu and click on **Modify** ① (the button becomes **OK**).

1. In the **Server TCP port used by Smart-Vue Server**… field ②, enter the TCP port used by the receiver to communicate with Smart-Vue Server (the port on which SmartSvc is listening). Generally you can leave this at the default setting of 11001 for your first receiver, unless you have changed the configuration. The number must be incremented for subsequent receivers.

2. For USB connections (where the receiver must be physically plugged into the server computer), select the **USB receiver** ③ section and enter the COM port number ④ that Windows uses to communicate with the receiver.

**Note** *Some IP receiver models use Lantronix port redirection software to simulate a COM port (even though communication actually takes place over TCP/IP). Those receivers are added here just like USB receivers.*

For receivers connected via a TCP/IP (Ethernet) network, select the TCP/IP receiver - Outgoing connection checkbox ⑤. *In this case, the server's SmartSvc service establishes the connection with the receiver.*

- Enter the TCP port on ⑥ which the TCP/IP receiver is listening (port used by Smart-Vue Server's SmartSvc process to reach the IP receiver.
- Enter the TCP/IP receiver's IP address. ⑦

For receivers equipped with auto-connect functionality, connected via a TCP/IP (Ethernet) network, select the **TCP/IP receiver - Incoming connection** checkbox ⑧. *In this case, the receiver automatically connects to the appropriate SmartSvc to communicate with the server.*

- Enter the TCP port used by the receiver to connect to its associated SmartSvc ⑨ (the port on which the SmartSvc will listen for incoming communications.

**CAUTION:** You must increment the TCP port number for receivers equipped with auto-connect functionality you add (⑨). Two TCP/IP receivers auto-connect cannot function on the same port. The software will inform you if you choose a port that is already being used by either Smart-Vue Server or the SmartSvc for the receiver in question.

3. If you make any changes to the above options, the **Modify** button changes to **OK**. Click on **OK** to save your **changes** or Cancel to restore the initial values.

Additional buttons in this window are:

**Rename receiver**

Enables you to change the name of the selected receiver. Enter a new name in the dialog box and click on OK to save your changes, or on **Cancel** to not save changes.

**CAUTION:** The following characters may be used in receiver names:
**Numbers:** 0 to 9
**Letters:** A to Z (capital or lower case)
**Special characters:** "_" (underscore)

**Delete receiver**

Enables automatic transmission of *limit* alarms (measured values that exceed limits specified in the software).

**Note** *in order to do this, any configured groups (except the SDP-Group, created by default) and sensors must first be removed from the receiver. After deleting a receiver here, you will be instructed to remove the corresponding SmartSvc folder on the server computer.*

**Test communication**

SmartSvc is the Windows process that handles communications with receivers in your Smart-Vue Server system. One instance of the SmartService application runs for each receiver configured in the system.

This option tests communication with SmartSVC process to make sure that it is able to communicate with the associated receiver. This is often a good place to start if you are experiencing problems connecting to wireless modules.

**Allow SmartSvc to be restarted automatically by Smart-Vue Server**

In case the SmartSvc services are configured for manual start-up, this option enables you to ensure that they are started correctly for operation with Smart-Vue Server.

## 12.2 Database

To view and/or modify system database settings, click on the **Database** tab.

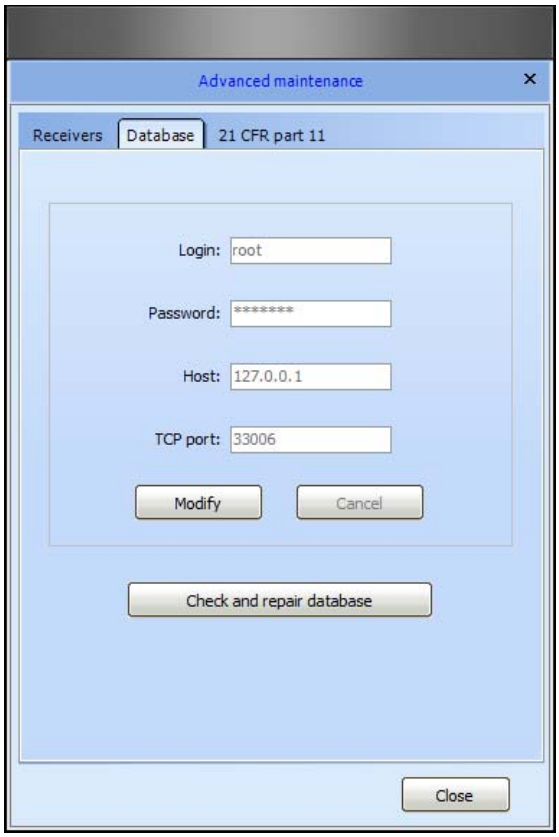



**Figure 132.** Database controls in **Advanced maintenance**

To make changes to any of these settings you must first click on **Modify**.

| | |
|---|---|
| **Login / password** | **CAUTION:** Login information used by Smart-Vue Server to connect to My SQL. The user name and password are set by default during installation and may only be changed by a qualified database administrator. |
| **Host** | **Note** *The IP address of the host computer running MySQL.* |
| **TCP port** | The port on which the MySQL application is listening. |

If you make any changes to the above options, the **Modify** button changes to **OK**. Click on **OK** to save your changes or **Cancel** to restore the initial values.

**Check and repair database** Click on this button to check database integrity. Check with your database administrator if any errors are displayed. **MAKE A BACKUP OF YOUR DATABASE BEFORE USING THIS FUNCTION**

**CAUTION:** The server automatically checks database and sensor status every Saturday morning starting at 5:00 AM.

## 12.3 21 CFR part 11

Smart-Vue Client includes the option to enable additional security and tracking features related to 21 CFR Part 11 implementation in your company or laboratory. This option slightly modifies Smart-Vue Client operation.

Additional controls include:

- Requiring the user to justify in writing when changes made to sensor status or sensor settings
- Locking the Smart-Vue Client interface after a specified amount of time, requiring the use to re-enter a password to re-open it
- Users are not allowed to make changes to this software protection feature.

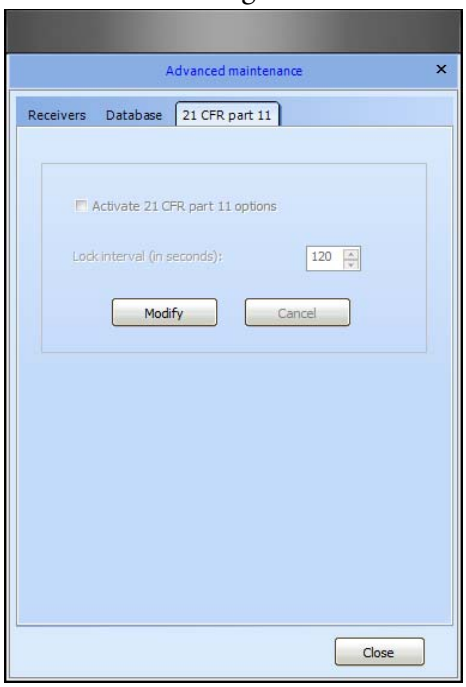



**Figure 133.** Other service controls in Advanced maintenance

To change these settings you must first click on **Modify**.

| | |
|---|---|
| **Enable 21 CFR Part 11** | Use this checkbox to enable 21CFR Part 11 compliance for the system. If the checkbox is not checked, 21CFR Part 11 compliance is not enabled. |
| **Lock Interval (in seconds)** | This field specifies the period of time after which, if no activity occurs on the computer, Smart-Vue Client will lock and require you to re-enter your login name and password. |

If you make any changes to the above options, the **Modify** button changes to **OK**. Click on **OK** to save your changes or **Cancel** to restore the initial values.

Click on **Close** to close the Advanced maintenance window and return to the Smart-Vue Client application.

### 12.3.1 Enabling / Disabling the Option for 21 CFR Part 11 Compatibility

A colored icon in the **Settings** menu bar in Smart-Vue Client indicates whether this option is currently enabled or disabled.

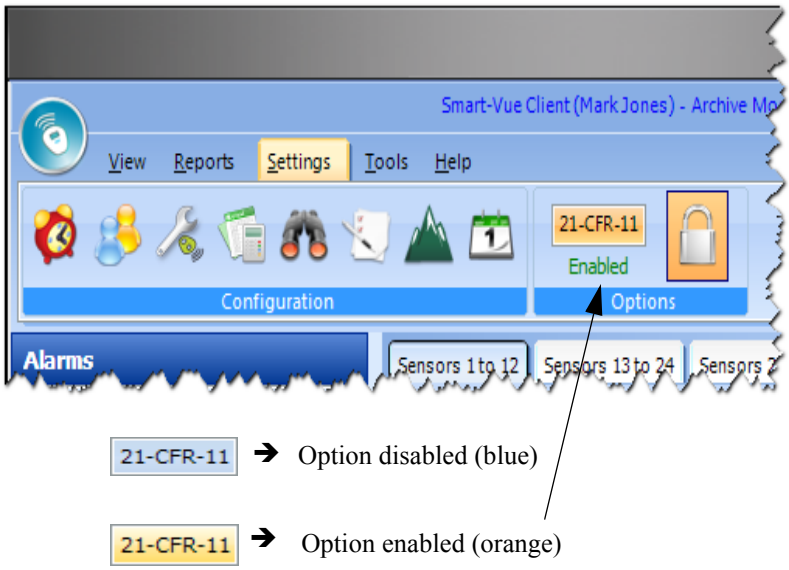



**Figure 134.** Main window view showing 21-CFR-11 feature activated

# 13 Customizing the Application

## 13.1 Dashboard Display

Smart-Vue Client offers two different color contrast options for alarm display in the dashboard window.

1. Click on **View**.

2. Select the style you prefer for your Smart-Vue Client display:

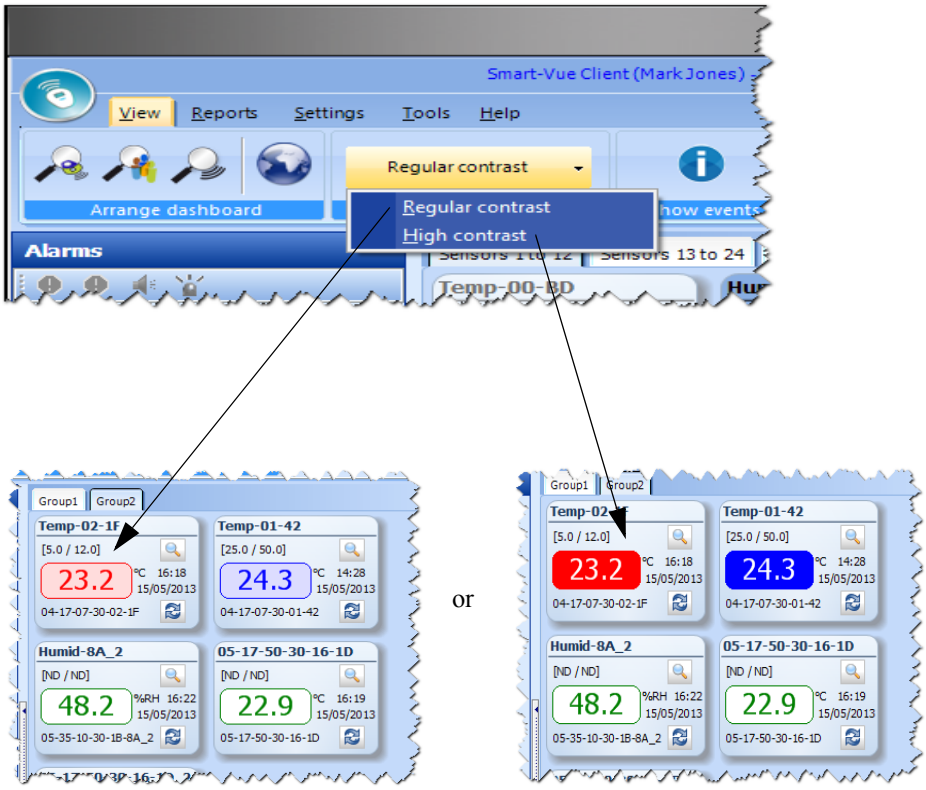



**Figure 135.** Color contrast options

**CAUTION:** The **High contrast** view offers a “louder” color display of the sensor’s colored rectangle in the dashboard for high limit alarms, low limit alarms and technical alarms (such as communication problems or sensor disconnection).

Pre-alarm status is not displayed in high contrast when the **High contrast** view is being used.

## 13.2 Enabling/Disabling the Recent Software Events Window

A scrolling window is available at the top of the application's main window, informing you on an ongoing basis of the main events recorded by the system.

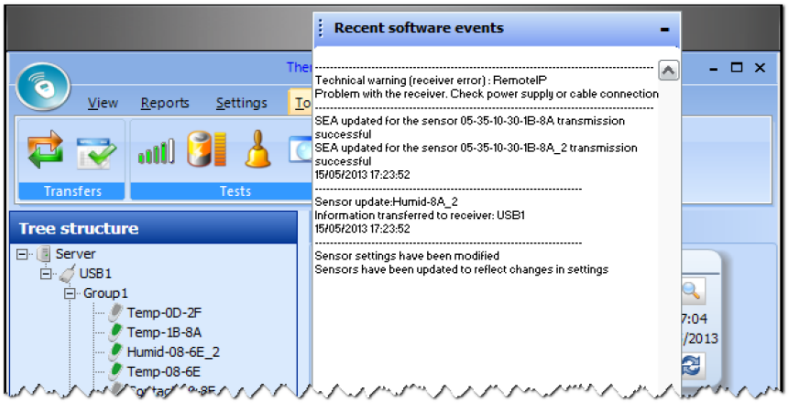



**Figure 136.** Live information window

You may enable or disable the display of this window by clicking on **View➔** .

**CAUTION:** Smart-Vue Client remembers your choice regarding the **Recent software events** window when you close your session and reapplies it the next time the application is opened on your computer, regardless of the user.

## 13.3 Disabling Settings Protection (Login Confirmation Window)

Users with Super Administrator, Administrator, or Metrology rights may select the lock icon to prevent the need to provide login credentials each time they access Applications Setting windows during a given session. However, the View Sensors (F2) window and the Archive Data feature always require authentication regardless of the status of the lock icon.

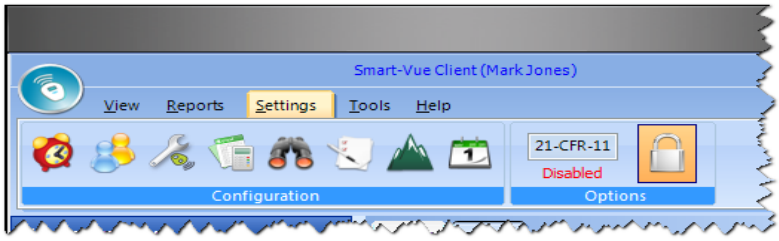



**Figure 137.** Protecting access to settings windows


➔ Locked


➔ Unlocked

**CAUTION:** Protection is automatically reactivated the next time the Smart-Vue Client application is opened.

## 13.4 Locking the Current Session

If you simply wish to lock your Smart-Vue Client session, click on the Smart-Vue Client menu icon ① as shown below, then on **Lock**. The login screen is then displayed and you must enter your password if you want to access your session again.

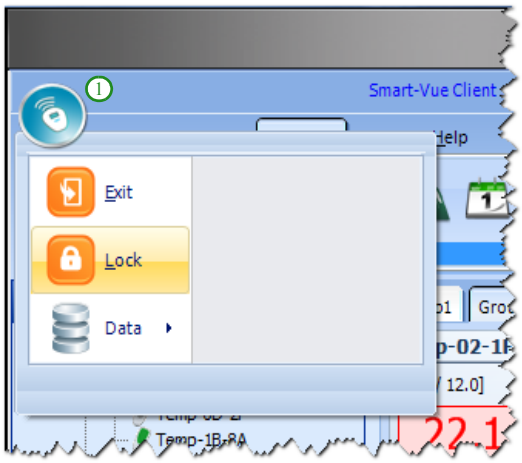



**Figure 138.** Menu option to protect access to settings windows

# 14 Getting Help

## 14.1 Opening the User Manual

The Smart-Vue Client Software User Manual is copied to the application's folder on your computer as a .PDF file during installation.

Click on **Help➔** (User manual) to open the manual.

## 14.2 Automatically Updating the User Manual

You need an Internet connection to download a new Thermo Scientific Smart-Vue Client/Smart-Vue Server Software User Manual. If for some reason the manual is not present in the Smart-Vue Client folder or if you want to download the latest version (and you have an internet connection):

1. Click on **Help ➔** (Download current manual) to download the latest PDF version of the manual.

2. When the download is finished, you may open the manual directly by clicking on **Open** in the **Download** window.

## 14.3 System Information

For information about your Smart-Vue Client/Smart-Vue Server solution, click on **Help ➔Support** ( ). Here you will see a complete summary of the various components in your system, including version numbers and license information (click on System status in the window below for details). You may need to provide this information when contacting technical support.

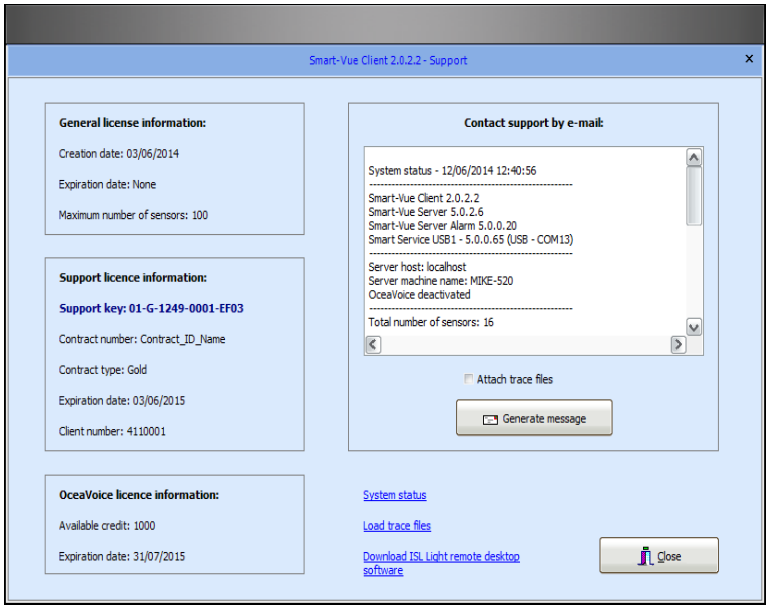



**Figure 139.** Application and license information

## 14.4 Getting Your Cloud ID

To be able to connect to the Cloud from the Smart-Vue Mobile application running on a smartphone or tablet, you must first obtain your **Cloud ID** .

**Use Smart-Vue Client (Windows version) running on server computer.**

1. Launch Smart-Vue Client.
2. In the **Help** menu, Click on the (Cloud ID) icon.
3. Your Cloud connection identifier is shown in the **Cloud ID** field, as in the example below.


**Figure 140.** Your Smart-Vue Cloud ID

4. Enter **Cloud ID** in Smart-Vue Mobile when connecting to Smart-Vue Cloud with your smartphone or tablet.

## 14.5 Contacting technical support by e-mail

Depending on your support license, you may contact Thermo Scientific technical support for assistance. You may contact Thermo Scientific technical support directly.

To send e-mail to technical support:

1. Click on **Help ➔Support** ( ). The upper right-hand part of the screen contains a zone in which you may write the body of your e-mail.

2. To include detailed version information in your e-mail, click on **System status ➔** .

3. Click on **Attach trace files** if you want to include technical trace files as a .ZIP file attachment with your e-mail. This information is often very helpful for support staff.

4. Click on **Generate message** to create an e-mail message with your system's default e-mail application (which must be configured and operational).

# 15 Warranty statement

Thermo Scientific warrants the functions of the Smart-Vue Monitoring system in accordance with our standard warranty as described in the Terms and Conditions of Sale applicable to your purchase of this product. Unless otherwise agreed to in writing, Thermo Scientific warrants that the product will conform to published specifications for a period of one year from the date of delivery.

For additional details concerning this warranty, please consult the “Warranty” section of our standard Terms and Conditions of Sale

# Important

For your future reference and when contacting the factory, please have the following information readily available:

Model Number: _____

Serial Number: _____

Date Purchased: _____

The above information can be found on the dataplate attached to the equipment. If available, please provide the date purchased, the source of purchase (manufacturer or specific agent/rep organization), and purchase order number.

---

## IF YOU NEED ASSISTANCE:

Thermo Scientific products are backed by a global technical support team ready to support your applications. We also offer cold storage accessories, including remote alarms, temperature recorders and validation services. Visit www.thermoscientific.com or call:

**USA/Canada**
**Sales:** +1 866 984 3766

**India toll free**
**Sales:** 1800 22 8374

**India**
**Sales:** +91 22 6716 2200

**China**
**Sales:** +800 810 5118 (or) +400 650 5118

**Japan**
**Sales:** +81 3 5826 1616

**Australia**
**Sales:** +61 39757 4300

**Austria**
**Sales:** +43 1 801 40 0

**Belgium**
**Sales:** +32 53 73 42 41

**France**
**Sales:** +33 2 2803 2180

**New Zealand**
**Sales:** +64 9 980 6700

**Germany international**
**Sales:** +49 6184 90 6000

**Germany national toll free**
**Sales:** 0800 1 536 376

**Italy**
**Sales:** +32 02 95059 552

**Netherlands**
**Sales:** +31 76 579 55 55

**Nordic/Baltic/CIS countries**
**Sales:** +358 9 329 10200

**Russia**
**Sales:** +7 812 703 42 15

**Spain/Portugal**
**Sales:** +34 93 223 09 18

**Switzerland**
**Sales:** +41 44 454 12 22

**UK/Ireland**
**Sales:** +44 870 609 9203

**Other Asian countries**
**Sales:** +852 2885 4613

**Countries not listed**
**Sales:** +49 6184 90 6000

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