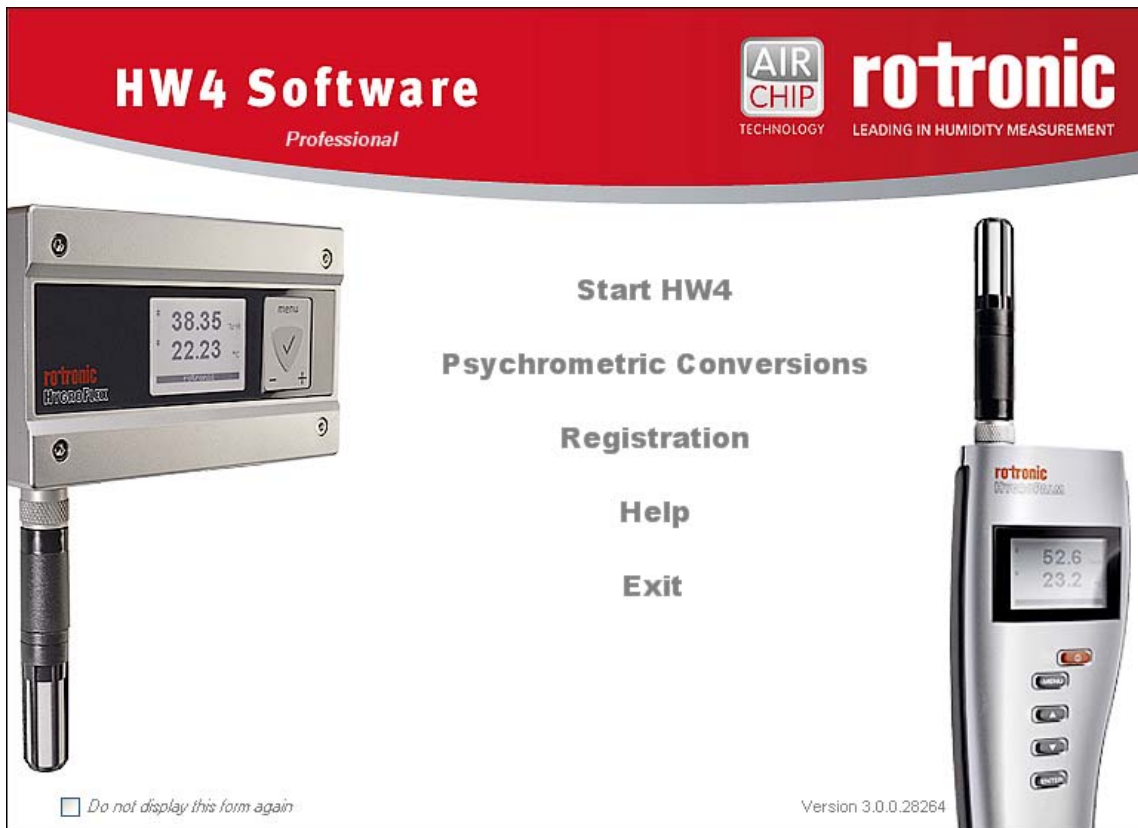


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## HW4 Software version 3

### Device Manager TF5 Temperature Transmitter



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## 1 ORGANIZATION OF THE HW4 MANUALS

The HW4 manuals are organized in separate books so as to limit the size of the individual documents. A list of the HW4 manuals is provided in document **E-M-HW4v3-DIR**

HW4 Manuals	Contents
HW4 Main Book	General software description Installation, start-up and settings Device connection methods Functions common to all devices used with HW4
Device Specific Functions 1 (separate book for each device type or model)	Legacy devices (original HygroClip technology): <ul style="list-style-type: none"> <li>○ HygroLog NT data logger</li> <li>○ HygroFlex 2, HygroFlex 3 and M3 transmitters (same icon in device tree)</li> <li>○ HygroLab 2 and HygroLab 3 bench indicators</li> <li>○ HygroPalm 2 and HygroPalm 3 portable indicators</li> <li>○ HygroClip DI digital interface</li> <li>○ HygroClip Alarm programmable logic</li> <li>○ HygroStat MB</li> </ul> Device Manager (device configuration) and other device specific functions
Probe Adjustment 1	Humidity and temperature adjustment function common to all legacy devices (original HygroClip technology)
Device Specific Functions 2 (separate book for each device type or model)	Devices based on the AirChip 3000 technology: <ul style="list-style-type: none"> <li>○ HygroClip 2 (HC2) probes</li> <li>○ HF3 transmitters and thermo-hygrostats</li> <li>○ HF4 transmitters</li> <li>○ HF5 transmitters</li> <li>○ HF6 transmitters</li> <li>○ HF7 transmitters</li> <li>○ HL20 and HL21 data loggers</li> <li>○ HP21, HP22 and HP23 hand-held indicators</li> <li>○ Custom designed OEM products, etc.</li> </ul> Device Manager (device configuration) and Data Logging functions
Probe Adjustment 2	Humidity and temperature adjustment function common to all devices based on the AirChip 3000 technology
Data Recording Function	Data recording function common to all devices based on the AirChip 3000 technology

Both the HW4 manuals (software) and device specific manuals (hardware) are available from the HW4 CD. The manuals can also be downloaded from several of the ROTRONIC web sites.

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## 2 OVERVIEW

This section of the HW4 manual covers only the following HW4 module:

HW4 Functional Modules for the TF5	Usage
Device Manager	<ul style="list-style-type: none"> <li>○ TF5 user configurable settings</li> <li>○ AirChip 3000 user functions: enable and configure</li> </ul>

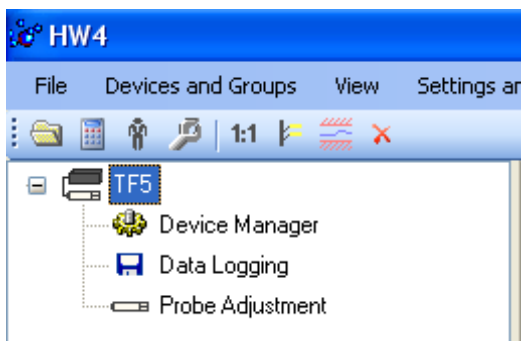
- The **Data Logging** module is common to all probes and instruments based on the AirChip 3000 technology and is separately described in the HW4 manual **E-M-HW4v3-DR-001**
- The **Probe Adjustment** module is used calibrate and adjust the probe humidity and temperature signals. This module is common to all probes and instruments based on the AirChip 3000 technology and is separately described in the HW4 manual **E-M-HW4v3-A2-001**
- HW4 functions that are not device dependent are covered in the HW4 manual **E-IN-HW4v3-Main**.



When HW4 has detected a TF5 transmitter, the TF5 appears as an icon in the left pane of the HW4 main screen. Click on the + sign to the left of the TF5 icon to display a list of the available functional modules.

## 3 DEVICE MANAGER

Device Manager is used to configure the TF5 and to enable, configure and access the AirChip 3000 functions.



To select the Device Manager module, click on it with the left mouse button. HW4 opens the Device Manager form.

Device Manager automatically interrogates the TF5 and downloads its current configuration.

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The different sub-forms that are available within the Device Manager form are listed in a tree located on the left pane of the form. The number of sub-forms depends on the TF5 model (Device Type). To select a sub-form, click on it with the left mouse button.

### 3.1 Device Manager Menu Bar

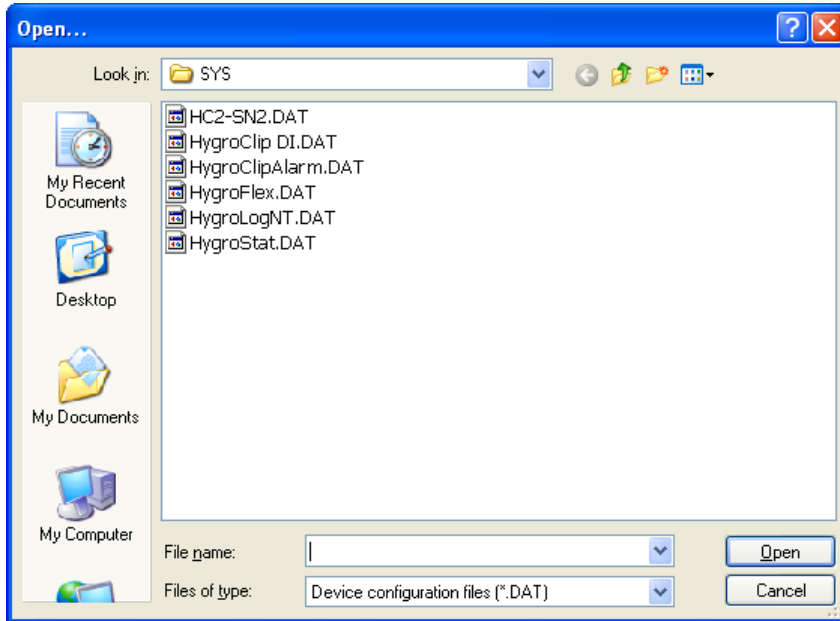
The Device Manager menu bar is located at the top of the form.

#### File

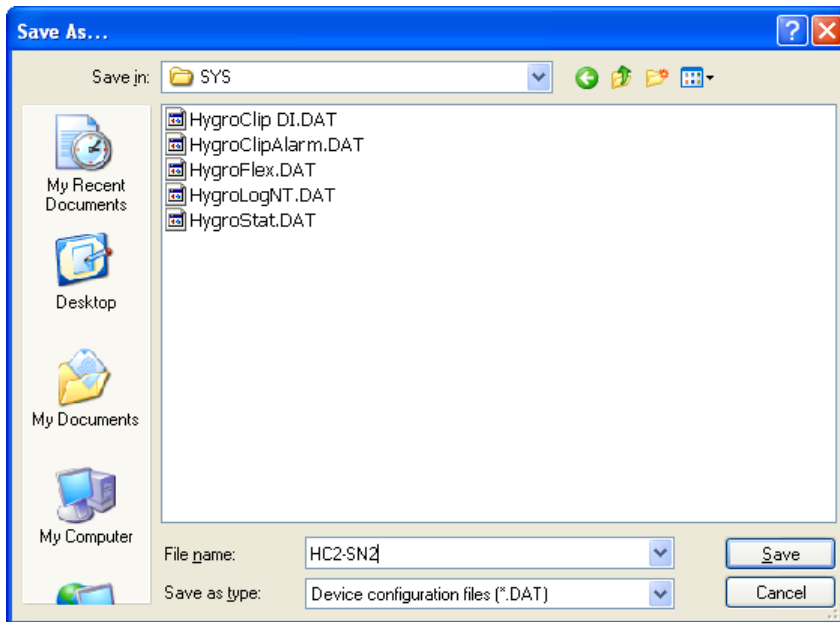
The file menu is used to save to the PC, or to retrieve from the PC, the configuration settings of the TF5. The settings are saved in an XML file with the extension DAT. Saving the configuration settings to a file is useful for several reasons:

- provides a backup when the device configuration has been changed in error
  - provides a means of quickly configuring a replacement device in the exact same manner as the original device
  - provides a means of quickly configuring a number of identical devices
- **Open:** opens the device configuration folder specified in HW4 Global Settings - File Locations Tab - and displays all available probe and device configuration files (extension DAT). Select the appropriate file and click on Open in the explorer form. The contents of the configuration file are loaded to the Device Manager form. Review the contents of the Device Manager sub-forms. Click on the Device Manager OK button to write the configuration settings to the device or click on the Cancel button to leave the device unchanged.

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- **Save As:** saves the current configuration to an XML file with the extension DAT) in the device configuration folder specified in HW4 Global Settings - File Locations Tab. If so desired, any directory and any file type may be specified.



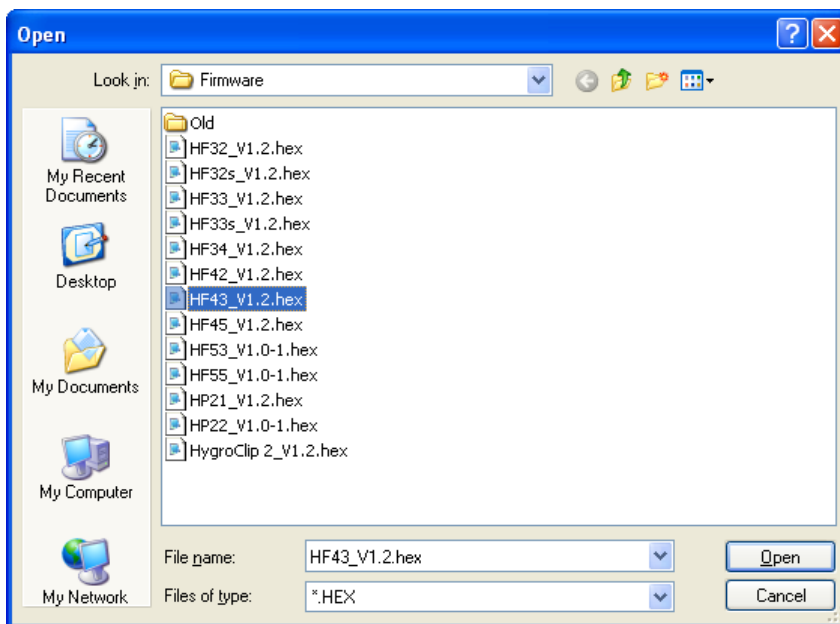
- **Exit:** exits Device Manager

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## Tools

- **Firmware Update:** This tool is used to update the firmware of the TF5 after downloading a new firmware file from the ROTRONIC website to your PC. Firmware files are given a name that shows both to which device the file applies and the version number of the firmware. All firmware files have the extension HEX. The ROTRONIC website will publish firmware updates as required.

The tool opens a form that allows you to specify the folder where the firmware update file is located and to select the file. Click on OPEN to start the update process.



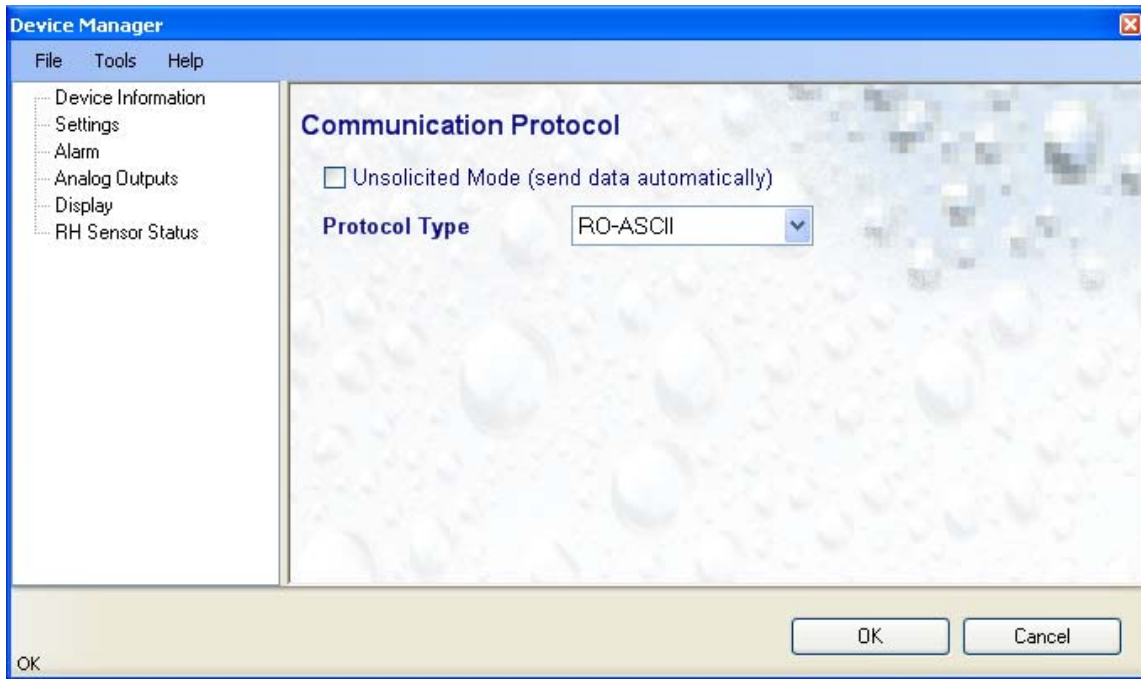
**IMPORTANT:** the TF5 must be powered during the entire process. Loss of power when the probe is being updated may have unexpected results and prevent future operation of the TF5.

- **Generate Protocol:** generates a Device Configuration Protocol. This text file is automatically saved in the folder specified in HW4 Global Settings - File Locations Tab. If so desired, any directory and any file type may be specified. This action is not recorded in the User Event file.

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- **Communication Protocol:** This tool is provided for users who want to digitally communicate with the TF5 digital interface without relying on the HW4 software and is used to select and configure one of the available communication protocol options.

The tool opens the form shown below:



#### Protocol Type:

Select from one of the following options:

**RO-ASCII:** This is the standard (default) communication protocol used by the TF5 transmitter and by the HW4 software.

**Custom:** This communication protocol can be used to provide compatibility of the TF55 with an existing digital communication system. The Custom communication protocol is limited to reading measurement data from the TF55. Functions such as device configuration, humidity and temperature adjustment, etc. are not supported. The Custom protocol allows RS-485 networking.

**Modbus:** Use of the Modbus protocol is limited to the RS-485 interface of the TF55. The AirChip 3000 Modbus protocol is limited to reading measurement data from the TF55. Functions such as device configuration, humidity and temperature adjustment, etc. are not supported by the AirChip 3000 Modbus protocol.

**I2C:** This protocol option does not apply to the TF5 transmitter series. Use of the I2C protocol is limited to HC2 probes and to some OEM products. The I2C protocol available with the AirChip 3000 is limited to reading measurement data. Functions such as device configuration, humidity and temperature adjustment, etc. are not supported by the I2C protocol



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**Unsolicited Mode:**

Selecting this mode causes the TF55 to send data automatically after each refresh cycle without requiring a data request. This is the only mode available with the I2C protocol.

**NOTES:**

- The Custom, Modbus and I2C protocols can be used only with AirChip 3000 devices with firmware version 1.3 or higher.
- For detailed instructions, see document **E-M-AC3000-CP**

**Help:**

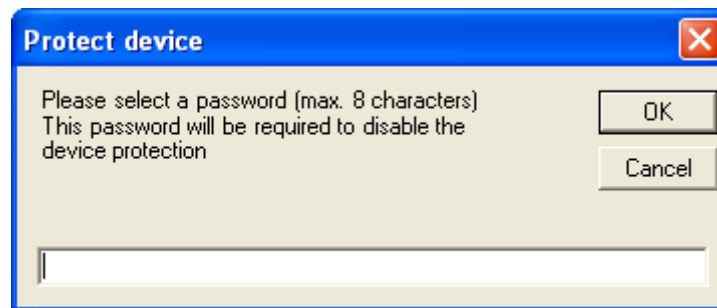
- **HW4 Help:** Opens HW4 Help
- **About HW4:** Displays the version number and ID number of HW4

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### 3.2 Device Information



- **RS485 Address:** click on the underlined blue link to change the TF5 address to be used in conjunction with a RS-485 network (multi-drop). Each network address should be unique and within the values of 1 to 64. Note: the default factory RS-485 address is 0. Click on the Device Manager OK button to write the new address to the TF5.
- **Device Protection:** This function is used to prevent unauthorized access to critical functions such as configuration changes, humidity and temperature adjustment, etc. Click on the underlined link next to Device Protection. HW4 opens the following form where a password can be entered (maximum 8 characters):

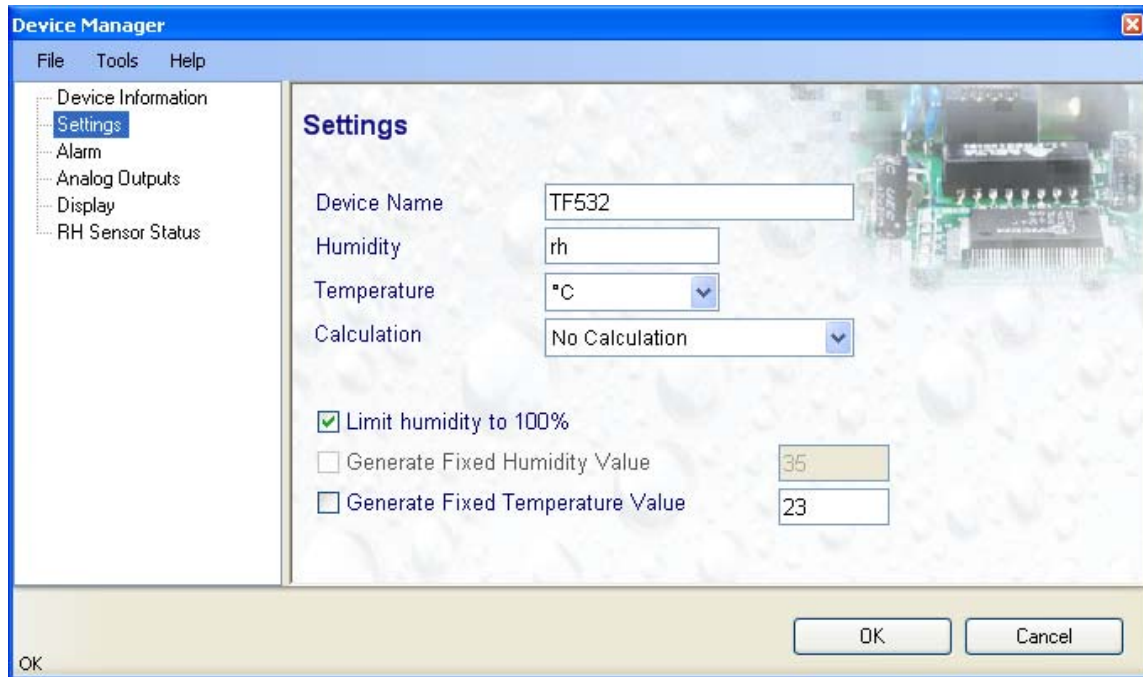


Click on the Device Manager OK button to write the new protection settings to the TF5.

**FORGOT THE PASSWORD?** - Power down the TF5. After powering up the TF5, you have about one minute to use the default password **!resume!** (include the exclamation marks). After one minute the default password is no longer accepted.

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### 3.3 Settings



- **Device Name:** As far as possible use a unique device name (maximum 12 characters)
- **Humidity:** this field has no effect on the TF5 (measures temperature only)
- **Temperature:** Left click on the arrow to the right of the text box and select the temperature engineering unit ('C or 'F).
- **Calculation:** this field has no effect on the TF5 (measures temperature only)
- **Limit humidity to 100%:** this field has no effect on the TF5 (measures temperature only)
- **Generate Fixed Humidity Value:** this field has no effect on the TF5 (measures temperature only)
- **Generate Fixed Temperature Value:** place a check mark in this box to make the TF5 generate a fixed temperature value instead of the actual measurements.

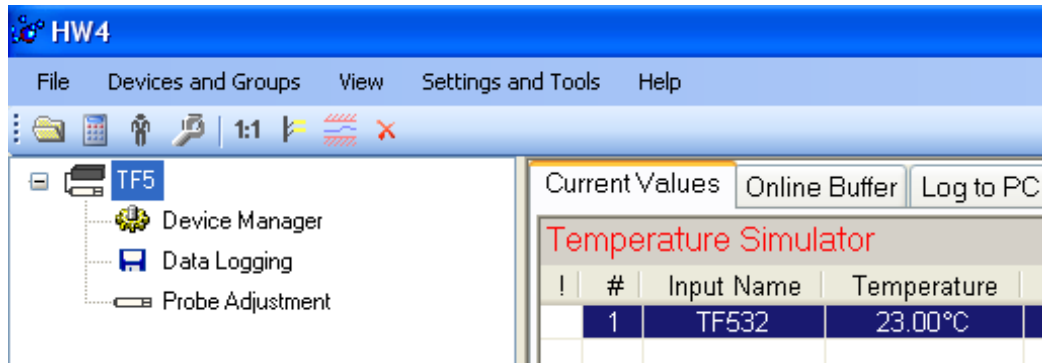
The fixed value must be with the following limits: -999.99 and 9999.99

**Note:** Make sure that the fixed value falls within the scale specified for the TF5 analog output

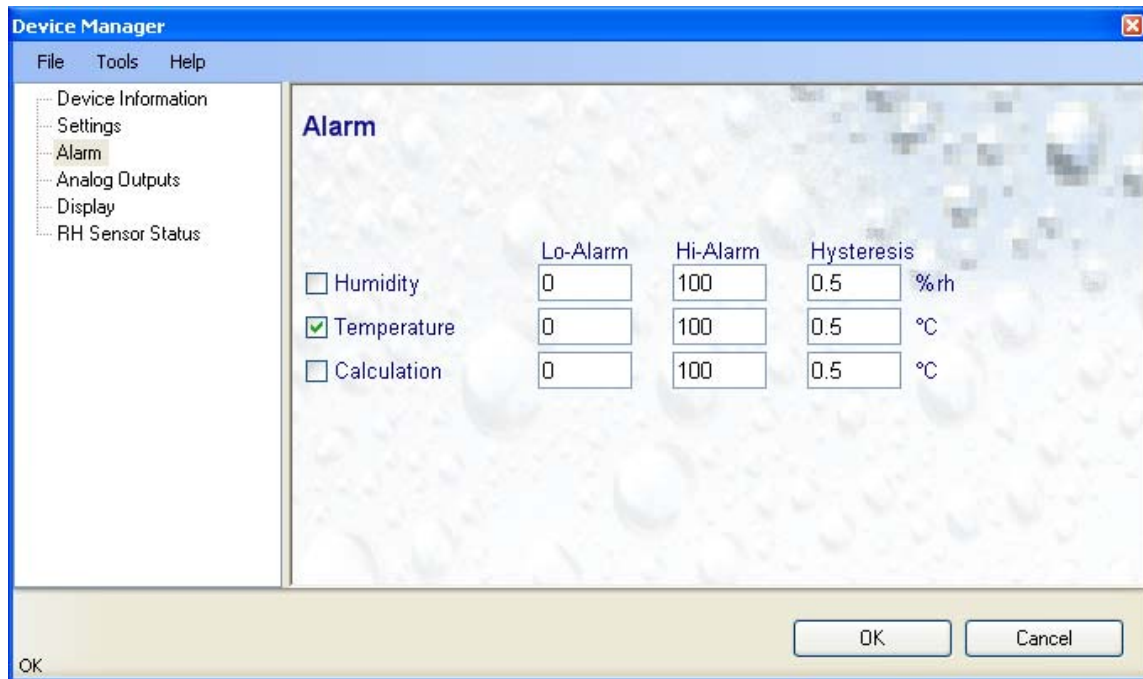
Using the TF5 as a simulator serves the purpose of verifying the analog signal transmission (loop validation) after completing an installation.

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Whenever the temperature signal is set to a fixed value, this is reported on the HW4 main screen (current Values tab) as shown below. The fixed value is shown in red when the TF5 is not selected.



### 3.4 Alarm



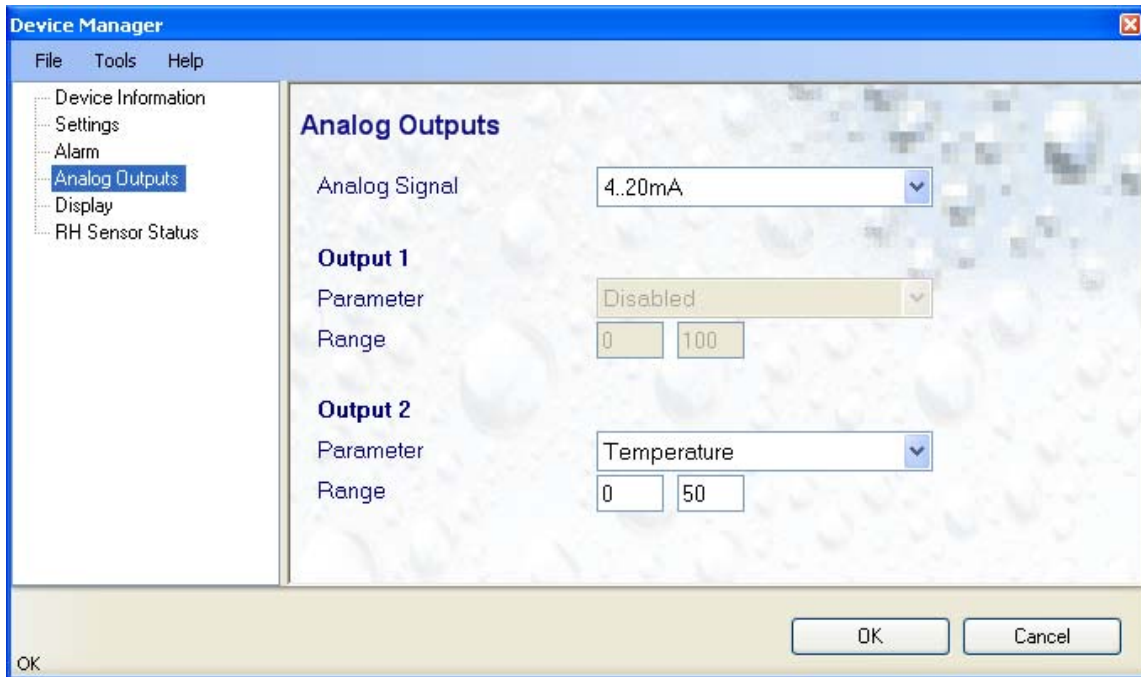
**Note:** This function has no effect on the TF5 analog output and applies only to the TF5 optional display (an alarm symbol appears) and to the TF5 digital communication with a PC via service connector or permanent digital interface.

Alarm conditions can be defined for temperature. Do not enable alarms for humidity and the calculated parameter. Temperature values that are below the low alarm value or above the high alarm value will trigger an alarm. The value specified for the alarm function hysteresis is used for both the low and the high alarm.

All versions of HW4 will show an out-of-limits value alarm in red on the monitor screen. In addition, HW4 Professional can be configured (HW4 global settings - Alarm settings tab) to display an alarm table and generate a report whenever an out-of-limits condition occurs.

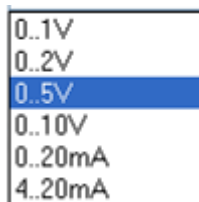
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### 3.5 Analog Outputs



**NOTE:** the configuration fields for Output 1 are blanked out because the TF5 uses only Output 2 for temperature

- **Analog signal:** the type of signal for the analog output of the TF53 (3-wire circuit type) can be configured with HW4 as shown below:

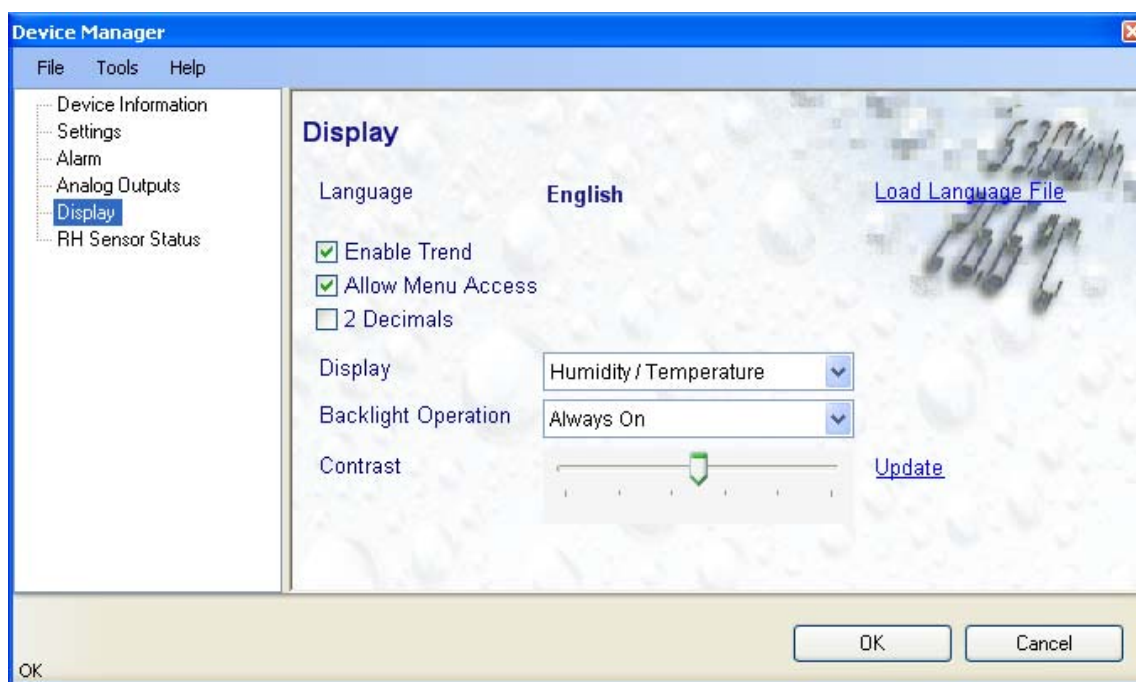


The analog signal type of the TF52 (2-wire, loop powered) is always 4...20 mA

- **Output 2:** be sure that Temperature is selected for this output. The output range (or scale) must be within the numerical limits of -999.99 and 9999.99

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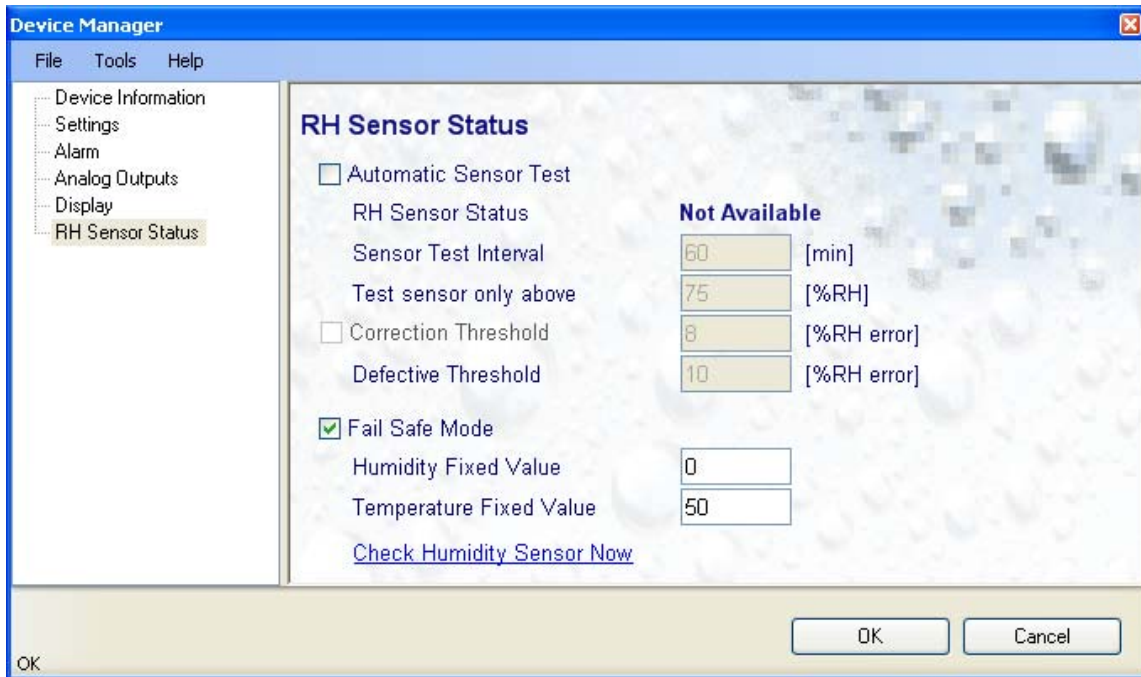
### 3.6 Display



- **Load Language File:** click on this link to change the language of the TF5 internal menu by writing to the TF5 the contents of a language file present on your PC
- **Enable Trend:** check this box to enable the trend indicators on the instrument local display. Trend indication in the HW4 Current Values tab is a Global Setting of HW4 (HW4 Main Menu > Settings and Tools > View tab)
- **Allow Menu Access:** this box is used only for devices that have the optional keypad and display and is used to prevent unauthorized or accidental access to the TF5 internal menu.
- **2 Decimals:** check this box to have the display show the values with 2 decimals instead of one decimal
- **Display:** the TF5 displays temperature only. The selection made here has no effect on the TF5 optional display
- **Backlighting:** click on the arrow to the right of the box and select from Always off, Always on or On Key Press (this last choice applies only to instruments that have the optional display with backlighting)
- **Contrast:** use the slider to adjust the contrast of the local LC display and click on the Update link to change the contrast. Click on the Device Manager OK button to write the new contrast setting to the TF5.

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### 3.7 RH Sensor Status



- **Automatic Sensor Test:** do not enable this function as it does not apply to the TF5 (no humidity sensor).
- **Fail Safe Mode:** Place a check mark in this box to have the TF5 generate a fixed temperature value (both digital and analog) in the event of a major failure of the temperature probe (shorted or disconnected probe)

The fixed temperature value must be with the numerical limits of -999.99 and 9999.99 and should also be within the range specified for the analog output.

- **Check Humidity Sensor Now:** this link works is not applicable to the TF5

## 4 DOCUMENT RELEASES

Release	Software Ver.	Date	Notes
_10	3.0.0	Jun. 18, 2010	Original release