VAISALA

USER'S GUIDE

Vaisala Weather Transmitter Display MCC201

M211582EN-A

PUBLISHED BY

Vaisala Oyj
P.O. Box 26
FI-00421 Helsinki
Finland

Phone (int.): +358 9 8949 1
Fax: +358 9 8949 2227

Visit our Internet pages at www.vaisala.com.

Table of Contents

CHAPTER 1

GENERAL INFORMATION

This chapter provides general notes for the manual and the Vaisala Weather Transmitter Display MCC201.

About This Manual

This manual provides information for installing and operating Vaisala Weather Transmitter Display MCC201.

Version Information

Table 1 Manual Revisions

Manual Code	Description
M211582EN-A	This manual. First version.

Related Manuals

Table 2 Related Manuals

Manual Code	Manual Name
M210906EN	Vaisala Weather Transmitter WXT520, User's Guide

Documentation Conventions

Throughout the manual, important safety considerations are highlighted as follows:

WARNING	Warning alerts you to a serious hazard. If you do not read and follow instructions very carefully at this point, there is a risk of injury or even death.

CAUTION	Caution warns you of a potential hazard. If you do not read and follow instructions carefully at this point, the product could be damaged or important data could be lost.

NOTE	Note highlights important information on using the product.

Trademarks

Windows® is a registered trademark of Microsoft Corporation in the United States and/or other countries.

Software License

This product contains software developed by Vaisala. Use of the software is governed by license terms and conditions included in the applicable supply contract or, in the absence of separate license terms and conditions, by the General License Conditions of Vaisala Group.

This product may contain open source software (OSS) components. In the event this product contains OSS components, then such OSS is governed by the terms and conditions of the applicable OSS licenses, and you are bound by the terms and conditions of such licenses in connection with your use and distribution of the OSS in this product. Applicable OSS licenses are included in the product itself or provided to you on any other applicable media, depending on each individual product and the product items delivered to you.

CHAPTER 2

PRODUCT OVERVIEW

This chapter introduces the Weather Transmitter Display.

Introduction to Weather Transmitter Display MCC201

Vaisala Weather Transmitter Display MCC201 is PC software designed for use with the Vaisala Weather Transmitter WXT520. It is used for displaying and storing the meteorological measurement data needed for planning weather critical operations and examining longer-term weather phenomena or climatological trends.

Vaisala Weather Transmitter Display MCC201 can receive weather transmitter data via serial RS-232 port or TCP/IP port. In case of other connection methods are used, such as RS-485, a converter is required between the WXT520 and the computer.

Figure 1 WXT520 Transmitter and MCC201 Displays

MCC201 software includes the following components:

- Weather View for viewing real-time data and defining the settings
- ASCII Log View for viewing archived data
- IO Terminal for terminal connection to sensor
- System services that receive, process, and forward the data

Software Applications

Real-Time Display (Weather View)

The real-time display Weather View presents meteorological data in numerical and graphical formats. You can choose from a range of engineering units when displaying the latest measurement values.

The default weather parameters monitored include wind speed and direction, air temperature, relative humidity, atmospheric pressure, and precipitation. Observation data can also be displayed as a real-time graph.

Visual and audible alarms provide warnings of critical weather conditions or other important issues such as sensor or system failure.

Defining Settings

The Weather View application is also used for defining the operation and communication settings, for example, for data connection to the transmitter.

Data Archiving and Viewing (ASCII Log View)

The ASCII Log View application is used for viewing stored weather transmitter data and system events in tabular format.

The ASCII Log service automatically stores data chronologically as ASCII log files, and continues to run in the background even when the ASCII Log View application is closed.

The ASCII log files can be exported to external applications so that collected data can be viewed in tabular or graphical formats.

Terminal Software (IO Terminal)

With the IO Terminal application you can open a terminal connection to the transmitter to view and send messages.

System Services

The system services receive, process, and forward the data. The processes run automatically on the background and have no user interface.

Data Distribution

The data distribution feature allows several client PCs to gather weather data from the master PC.

The file transfer feature allows the latest data files to be transferred to another server using FTP protocol.

This page intentionally left blank.

CHAPTER 3

INSTALLATION

This chapter provides you with information that is intended to help you install the display software.

Minimum System Requirements

Table 3 Minimum System Requirements

Component	Minimum Requirement
PC	Desktop/Laptop
Processor	2.0+ GHz
Memory	2048 MB
Hard Disk Space	Software: 100 MB
	Data storage 1GB/Year
Ports	Ethernet/LAN
	Serial/USB port (may require an adapter)
Monitor resolution	1024 x 768 pixels (or higher)
Drives	DVD required for installation

Installation Procedure

Preparing for Installation

Before you install the software, ensure that the weather transmitter installation has been completed. You should be able to connect and receive data messages from the transmitter with terminal software (for example, HyperTerminal). Vaisala Weather Transmitter Display MCC201 can receive weather transmitter data via RS-232 serial port or TCP/IP port.

NOTE Always before disconnecting/connecting the weather transmitter from/to the PC, first stop the weather transmitter display software and services. After reconnecting the weather transmitter to the PC, remember to start the software and services. See section Starting and Stopping System Services on page 11.

Use the weather transmitter configuration tool to set weather transmitter parameters correctly. The configuration tool is delivered with the weather transmitter. Weather transmitter must be configured to send Automatic Composite Data Message (aR0) with all parameters enabled in ASCII protocol. For Automatic Composite Data message, see Vaisala Weather Transmitter WXT520 User's Guide.

Installing Software

NOTE	If you have a previous version of the MCC201 software, uninstall it before starting the installation procedure.

1. Log in as administrator.
2. Install the installation disk into your DVD drive.
3. The installation wizard will start and guide you during the installation. Follow the instructions of the wizard to complete the setup.

   If the installation wizard does not start, click the file "startup.html" on the installation disk and follow the instructions on the startup page to complete the installation.

4. After successful installation the Weather View application is automatically opened.
5. Proceed to configuring the initial settings to receive weather transmitter data. See section Configuring Initial Settings below.

Configuring Initial Settings

In order to receive weather transmitter data sensor data input (connection) settings on the **Communication** tab of the Weather View application must be set correctly.

As default the display settings are configured to support USB maintenance cable serial connection with parameters 19200, 8, N, 1.

Weather transmitter display includes a terminal software that can be used to check if data connection between weather transmitter and display has been set correctly. See Chapter 7, Terminal, on page 31.

The following lists the communication and operation settings that need to be defined, for more detailed information on the options, see Chapter 6, Defining Settings, on page 23.

1. Open the software and click the **Settings** tab.
2. On the **Communication** tab, configure the following settings:
   - Sensor data connection
   - Sensor data forwarding
   - File transfer and storage
3. On the **Operation** tab, configure the following settings:
   - Units of the displayed data
   - Location information of the sensor
   - Parameter limits for triggering alerts

Uninstalling

To uninstall the software, select **Start - Programs - Vaisala - MCC201 – Uninstall**.

When you uninstall the software the history files are not removed.

Starting and Stopping System Services

Data receiving, processing, and forwarding starts when the initial settings have been configured successfully and the system services are running. See section System Services on page 7.

If for some reason you need to stop the services, select **Start - Programs - Vaisala - MCC201 - Stop** from the Start menu of your PC. This will stop all data receiving, processing, and forwarding.

To start the services again, select **Start - Programs - Vaisala - MCC201 - Start**.

You can also start and stop the services by clicking the **Restart** button on the **Settings - Communication** tab.

NOTE	Always before disconnecting/connecting the weather transmitter from/to the PC, first stop the weather transmitter display software and services. After reconnecting the weather transmitter to the PC, remember to start the software and services. See section Starting and Stopping System Services above.

This page intentionally left blank.

CHAPTER 4
REAL-TIME WEATHER DATA

Real-time weather data in numerical and graphical format is displayed on the **Weather** tab of the Weather View application.

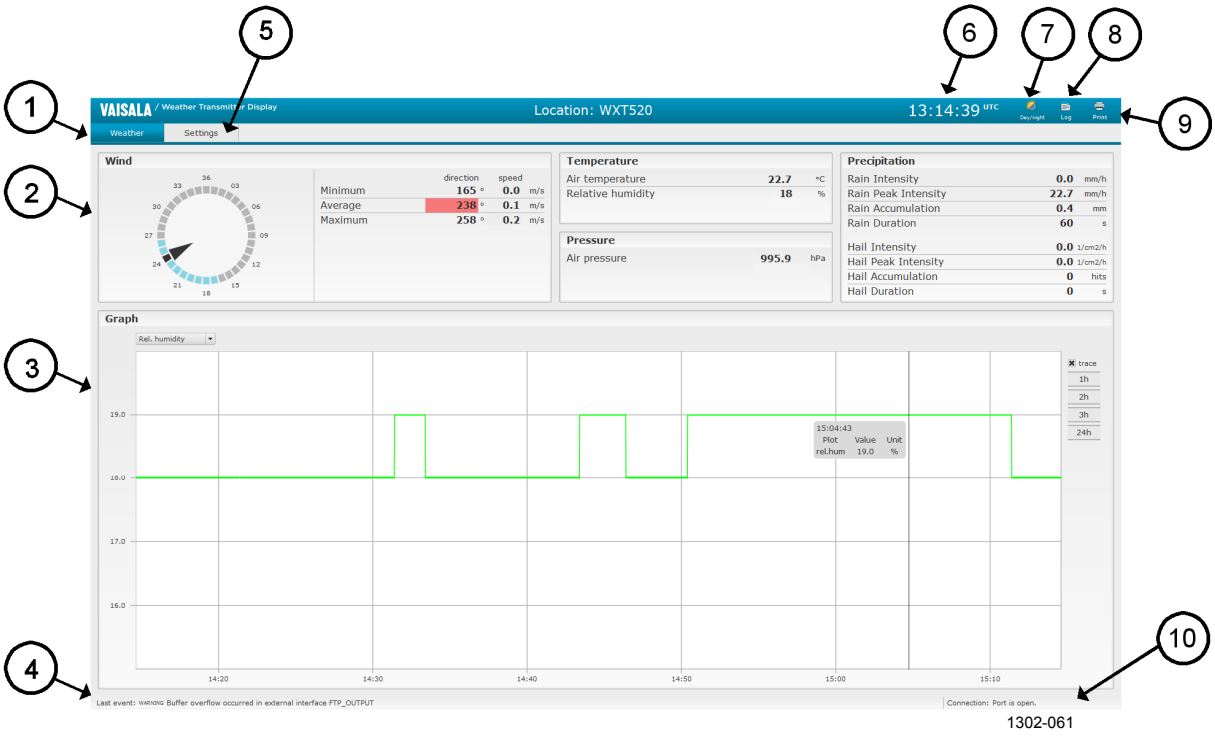


Figure 2 Weather View Application

The following numbers refer to Figure 2 above:

1 = Tabs for switching between weather data and settings
2 = Weather data (Wind, temperature, pressure, precipitation)
3 = Weather data in graph format
4 = Status bar with event and alert information
5 = Settings tab for communication and operation settings
6 = UTC time
7 = Button for switching between day and night display mode
8 = Button for viewing archived data files in ASCII Log View
9 = Button for printing the screen
10 = Connection status information

The **Settings** tab is used for defining the initial settings for example, for communication, as well as defining the weather data units and alert limits. See Chapter 6, Defining Settings, on page 23.

Starting and Exiting Weather View

After installation the Weather View application is opened automatically. The real-time data will be displayed once the initial settings have been configured successfully. See section Configuring Initial Settings on page 10.

The Weather View application must be open at all times to ensure that the system can update the data on the screen, for example, the graphs. However, when you close the application, but the system services are running, the system continues receiving, processing, and forwarding the data.

If closed, you can reopen Weather View from the Start menu of your PC by selecting: **Start - Programs - Vaisala - MCC201 - Weather View**.

To close the application, press Alt + F4.

Weather Data Fields

The weather data displayed comes from the WXT transmitter defined on the **Settings** tab. The data is displayed when the initial settings have been configured successfully. See section Defining Settings on page 23.

All data calculations and averaging for the displayed data are performed in the weather transmitter. Averaging period and precipitation accumulation reset are defined by the weather transmitter configuration.

The display software always converts the data received from the weather transmitter into metric units. However, on the **Settings - Operation** tab, you can select the units used in the Weather View application. See section Changing Operation Settings on page 23.

Wind Data

Wind frame displays the wind data in the unit that has been selected on the **Settings** tab.

Table 4 Wind Data

Element	Description
Minimum direction	Minimum wind direction from the sensor during the averaging period selected in the weather transmitter.
Average direction	Average wind direction from the sensor during the averaging period selected in the weather transmitter.
Maximum direction	Maximum wind direction from the sensor during the averaging period selected in the weather transmitter.
Minimum speed	Minimum wind speed from the sensor during the averaging period selected in the weather transmitter.
Average speed	Average wind speed from the sensor during the averaging period selected in the weather transmitter.
Maximum speed	Maximum wind speed from the sensor during the averaging period selected in the weather transmitter.
Wind rose	Arrow indicates the average wind direction.
	Colored pegs on the circle perimeter indicate the wind direction variation during the averaging period selected in the weather transmitter.

Temperature Data

Temperature frame displays relative humidity and air temperature as measured in the weather transmitter, in the unit that has been selected on the **Settings** tab.

Pressure Data

Pressure frame displays the pressure data as measured in the weather transmitter, in the unit that has been selected on the **Settings** tab.

Precipitation Data

Precipitation frame displays the Precipitation data as measured in the weather transmitter, in the unit that has been selected on the **Settings** tab.

Table 5 Precipitation Data

Element	Description
Rain intensity	Rain intensity in the selected unit during the averaging period used in the weather transmitter.
Rain peak intensity	The highest rain intensity in the selected unit during the averaging period used in the weather transmitter.

Element	Description
Rain accumulation	Rain accumulation in the selected unit since the last precipitation accumulation reset used in the weather transmitter.
Rain duration	Duration of continuous rain since the last precipitation accumulation reset used in the weather transmitter.
Hail intensity	Hail intensity in the selected unit during the averaging period used in the weather transmitter.
Hail peak intensity	The highest hail intensity in the selected unit during the averaging period used in the weather transmitter.
Hail accumulation	Hail accumulation in the selected unit since last weather transmitter accumulation reset in the weather transmitter.
Hail duration	Duration of continuous hail since the last weather transmitter accumulation reset in the weather transmitter.

Graph

Selecting Parameter

Select the parameter to be displayed in graph format from the list at the top of the graph (for example, air temperature).

Showing Graph Details (Trace)

When you select the **Trace** check box and place the mouse pointer over the graph, the graph name, the exact values at the pointer location, and the units for all the displayed graphs are shown on top of the graph:

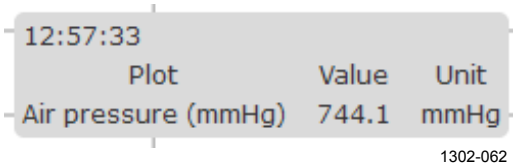


Figure 3 Graph Details (Trace)

Changing Time Span

You can change the time span of the displayed graph by clicking the time span buttons, for example, **1 h**.

Configuring Axes and Time Scale

You can change the properties of the unit axis and the time scale by right-clicking on the graph and then selecting the **Configure** option.

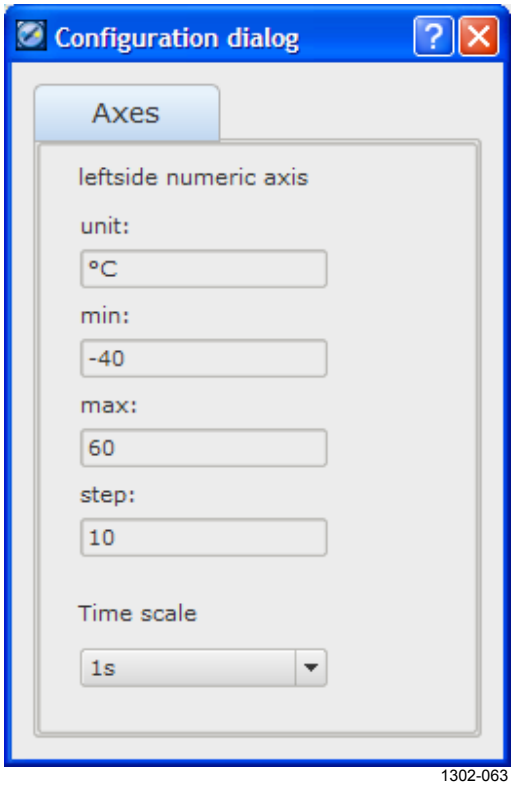


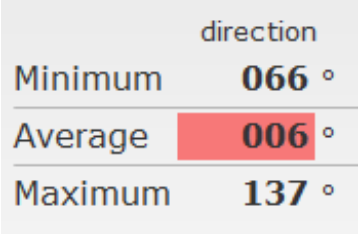
Figure 4 Graph Configuration Window

Alerts

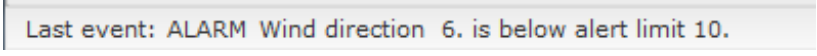
You can set alert limits for the weather parameters on the **Settings** – **Operation** tab, in the **Parameter alert limits** frame. You can also enable/disable the defined alerts. For more information, see section Parameter Alert Limits on page 25.

When a weather parameter value exceeds the set alert limit, the following indicate the alert:

- Red color on the data field background:

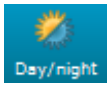


- Sound alert of three beeps is played
- Alert event description in the status bar at the bottom of the view:



Day/Night Display Modes

The display can be used in two different display modes depending on the lighting conditions, the "day mode" and the "night mode". The modes can be switched using the **Day/night** button at the top of the display:



The day mode is used in conditions with a lot of background light, when the screen also needs to be illuminated well to be visible, for example, during day time. The night mode is useful when there is not much light available, and the reflections should be minimized, typically, during night time.

1302-064

Figure 5 Night Display Mode

Printing

To print the displayed view, click the **Print** button at the top of the window.

CHAPTER 5

ARCHIVED DATA (ASCII LOG VIEW)

Storing Data

The software automatically stores data chronologically as ASCII log files and continues to run in the background so that data collection can continue even when the user interface is closed, as long as the system services are running.

The default location for the file is C:\ProgramData\MCC201\History. To change the location and name of the folder where the history files are saved, see section File Transfer and Storage Settings on page 28.

Starting and Exiting ASCII Log View

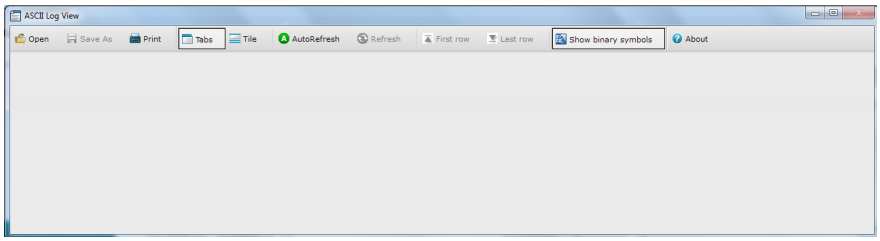
Open the ASCII Log View application by clicking the **Log** button at the top of the Weather View window. You can also start it by selecting **Start - Programs - Vaisala - MCC201 – ASCII Log View**.

You can close the application by pressing Alt + F4. The storing continues even when the application is closed.

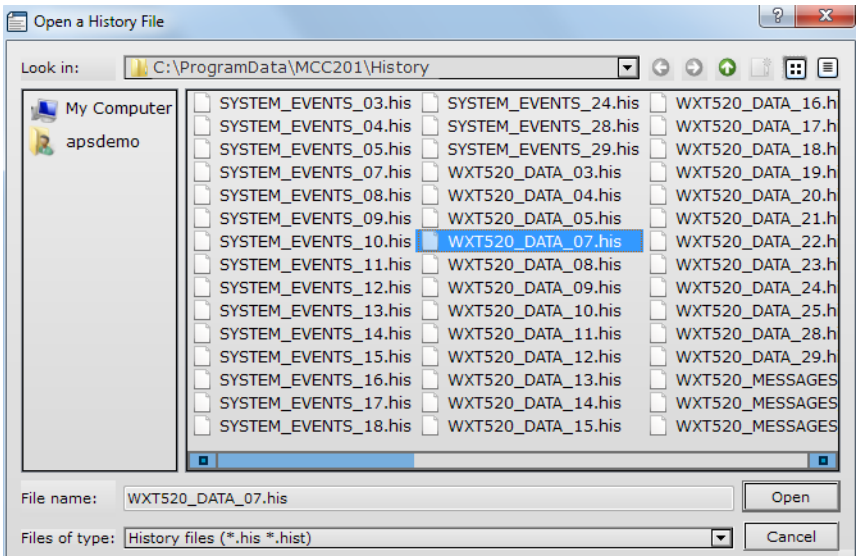
Viewing Archived Data in ASCII Log View

To view archived data in the ASCII Log View application, do the following:

1. Click the **Log** button at the top of the window. The ASCII Log View window is displayed:



2. In the ASCII Log View toolbar, click **Open** and browse to the archived file that you want to view.



3. Click **Open** and the file is displayed:

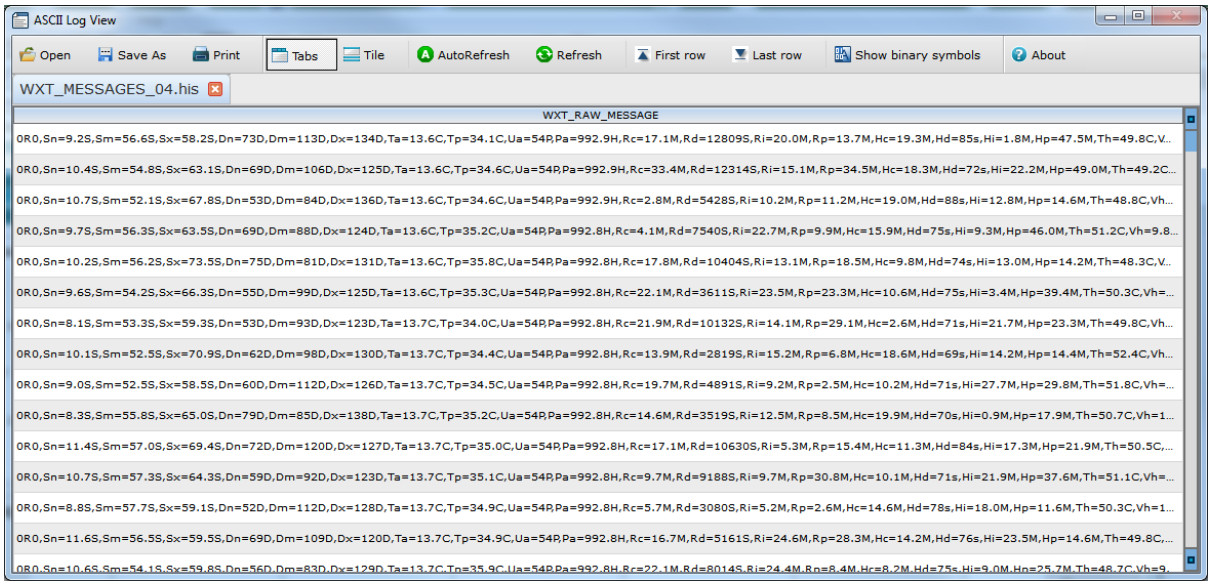


Figure 6 Example ASCII Log View Window

The ASCII Log View toolbar contains the following options:

Table 6 ASCII Log View Toolbar Buttons

Button	Description
Open	Opens a new file.
Save as	Saves the file as a .txt file in the same folder with the .his file.
Print	Prints the active screen.
Tabs	Arranges the opened history files in tab format
Tile	Arranges the opened history files in tile format. You can view several files simultaneously and resize and arrange the windows.

Button	Description
AutoRefresh	Checks every 10 seconds if the file has changed and updates the data on the screen with the changed data.
Refresh	Immediately checks if the file has changed and updates the data on the screen with the changed data.
First row	Moves to the first row of the file.
Last row	Moves to the last row of the file.
Show binary symbols	Shows the non-printable characters (binary values) as symbols.
About	Displays software version and copyright information.

Viewing Several History Files at the Same Time

You can open several files and arrange them either in tab or tile format by using the buttons at the ASCII Log View toolbar.

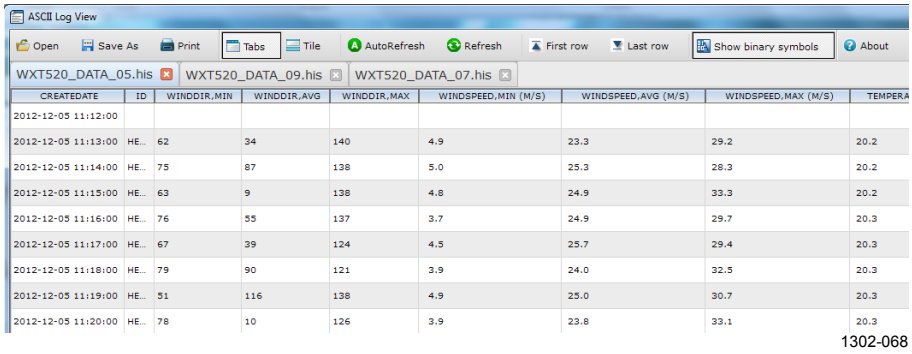


Figure 7 Several ASCII Log View Files Open in Tab Format

Exporting History Files

The ASCII log files can be exported to external applications for troubleshooting or other post-processing purposes such as finding, filtering, sorting, or graphical presentation of the data.

1. With the log file open in the ASCII Log View, click **Save as** in the application toolbar and save the file in the txt format.
2. Use the Import functionality of, for example, the spreadsheet application of your office tool kit.

This page intentionally left blank.

CHAPTER 6

DEFINING SETTINGS

The settings need to be correctly defined in order to get data from the transmitter and send forward and save the data as applicable. The settings are divided into the following two categories and tabs in the user interface:

- Operation settings: Units, location information of the sensor, and alert limits. See section Changing Operation Settings below.
- Communication settings: Sensor data input and forwarding options, and file transfer and storage settings. See section Changing Communication Settings on page 25.

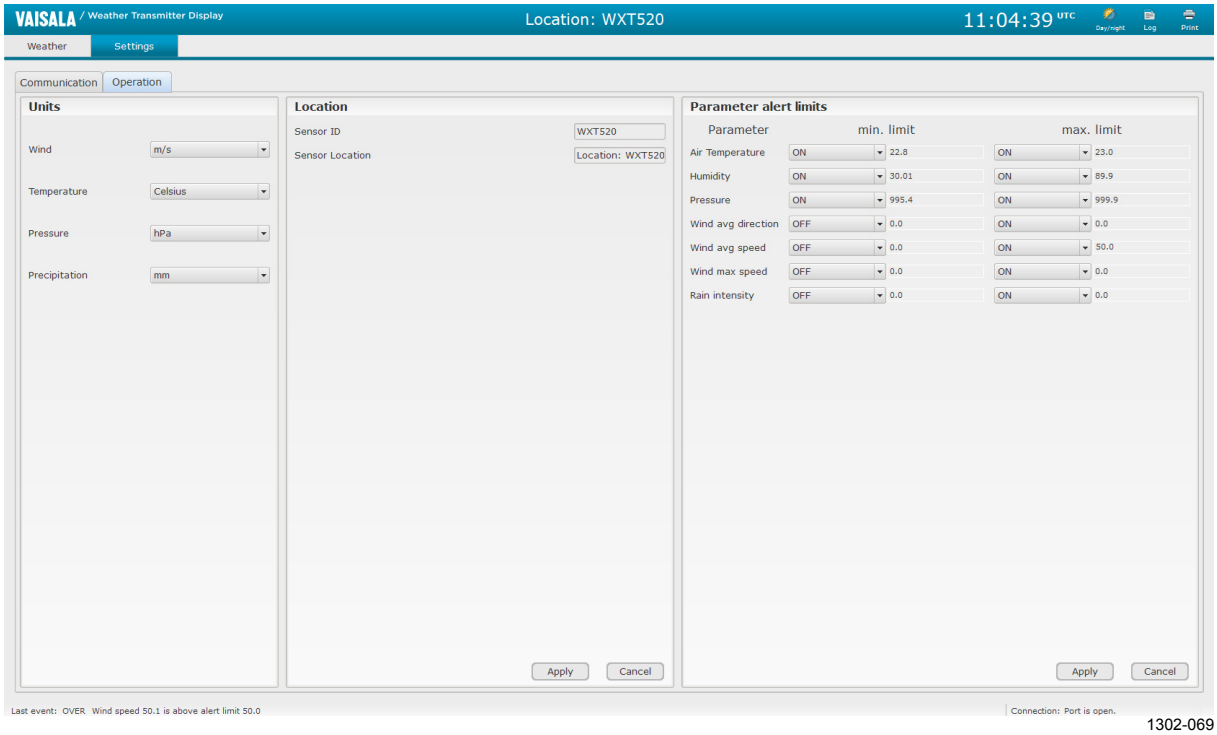
Changing Operation Settings

The settings can be defined on the **Settings** tab of the Weather View application. Select the **Settings** tab and then click on the **Operation** tab. See Figure 8 on page 24.

On the **Operation** tab you can define and edit the following:

- The units of the displayed data
- The location information of the sensor
- The limits for triggering alerts

After changing the settings click the **Apply** button, when available.



1302-069

Figure 8 Settings – Operation Tab

Unit Settings

In the **Units** frame on the **Operation** tab, select which units are used in the weather display. The unit changes immediately on the **Weather** tab.

Location Settings

In the **Location** frame on the **Operation** tab, you can enter and edit the ID and location information of the sensor.

Table 7 Location Settings

Element	Description
Sensor ID	Enter the ID for the sensor, for example, WXT520.
Sensor location	Enter the location of the sensor. This text will appear in the application header of the display.

Parameter Alert Limits

An alert is raised when a weather parameter value does not fit between the limits defined in the **Parameter alerts limits** frame on the **Operation** tab:

1. Enter the minimum and maximum limits for the weather parameter values that you want to raise an alert. The units are the same that you have selected in the **Units** frame.
2. Make sure the **ON** option is selected to enable the alert.
3. Click the **Apply** button.

You can disable the defined alerts by selecting the **OFF** options.

For more information on alerts, see section Alerts on page 17.

Changing Communication Settings

On the main page, select the **Settings** tab and then click on the **Communication** tab. See Figure 9 on page 26.

You can define and edit the following:

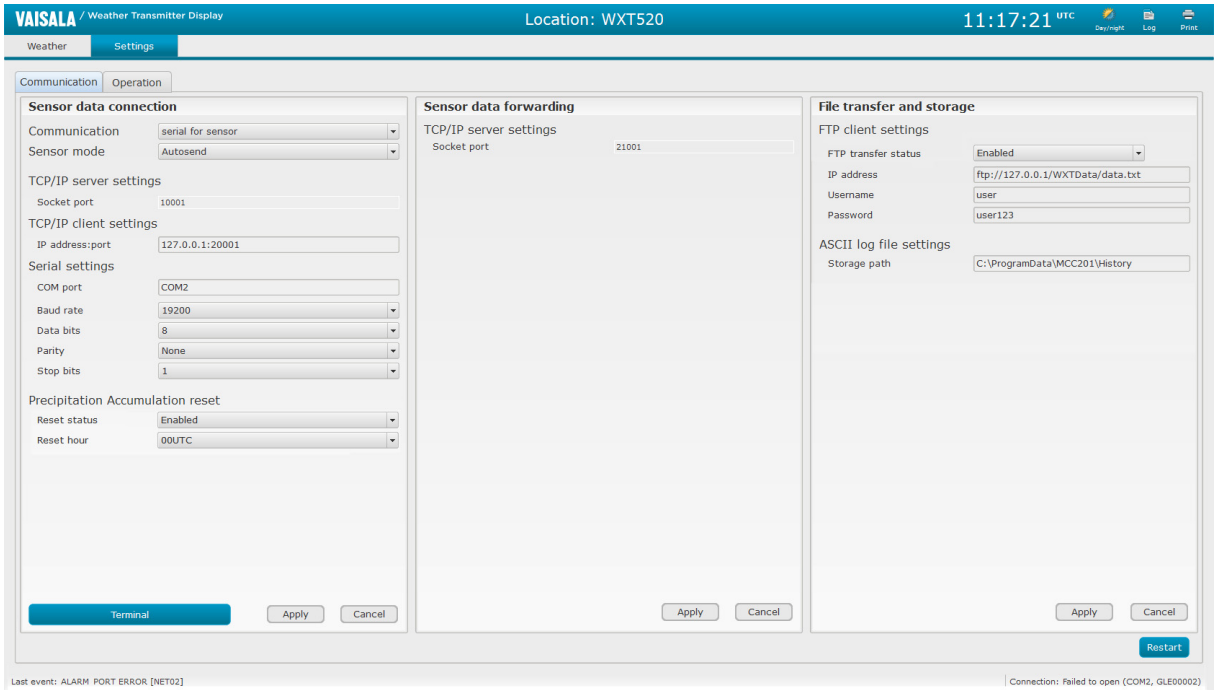
- Sensor data connection options (receiving data)
- Sensor data forwarding options
- File transfer settings
- File storage settings

After changing the settings click the **Apply** button.

See also section Configuring Initial Settings on page 10.

With the **Terminal** button, you can also open a terminal connection to the weather transmitter to verify that the communication settings are have been correctly defined. See Chapter 7, Terminal, on page 31.

For some settings you need to restart the system services by clicking the **Restart** button available on the **Settings - Communication** tab. See also section Starting and Stopping System Services on page 11.



1302-070

Figure 9 Settings – Communication Tab

Sensor Data Connection Settings

In the **Sensor data connection** frame on the **Communication** tab, you can enter and edit the communication settings for receiving data to the display. Table 8 below describes the data connection settings options.

Select or enter the options relevant to your connection to the weather transmitter (sensor) or to the main weather transmitter display (main PC).

If several displays show data from the same sensor, the main weather transmitter display is connected to the sensor and serves as the TCP server. The other displays are TCP clients that are connected to the main display via TCP/IP connection.

Table 8 Sensor Data Connection Settings

Element	Description
Communication:	Select communication method for receiving data:
Serial for sensor	Data is received from the sensor via serial connection. This is the default selection.
TCP client to main PC	Data is received from the main display via TCP/IP connection. The receiving display is the TCP client, the main display is the TCP server.
TCP server for sensor	Data is received from the sensor via TCP/IP connection (media converter required). The receiving display is the TCP server, the sensor's media converter is the TCP client.

Element	Description
Sensor mode	Select if data is sent automatically or polled. Default selection is "Poll". Only relevant to Main PC connection.
TCP/IP server settings:	
Socket port	Socket port used when the display is connected to sensor via TCP/IP.
TCP/IP Client settings:	
IP address: port	IP address of the main weather transmitter display and socket port to connect. The entry format is, for example, 127.0.0.1:20001
Serial settings:	
COM port	Serial port ID, for example, COM9. **Note!** When the port number is greater than 9, use the following format: \\.\COM10
Baud rate	Baud rate setting of the serial port
Data bits	Data bit setting of the serial port
Parity	Parity setting of the serial port
Stop bits	Stop bit setting of the serial port
Terminal	Click the button to open the IO Terminal software connection to the transmitter.
Precipitation accumulation reset:	
Reset hour	Select when the precipitation accumulation is reset. Default selection is "00 UTC". **Note!** To take into use the changes you need to stop all the services of the application. See section Starting and Stopping System Services on page 11.
Reset status	Select if the reset function is enabled or disabled. Default selection is "Enabled". **Note**! If the used sensor mode is "autosend", the reset status does not work and has to be disabled.

NOTE

Remember to click the **Apply** button to save the changes.

After changing the **Reset hour** of the Precipitation accumulation you also need to stop and start all system services before the change is applied. See section Starting and Stopping System Services on page 11.

Sensor Data Forwarding Settings

The data forwarding feature allows several client PCs to gather weather data from the master PC.

In the **Sensor data forwarding** frame on the **Communication** tab, you can enter and edit the communication settings for forwarding the sensor data to client displays.

NOTE Remember to click the **Apply** button to save the changes.

Table 9 Sensor Data Forwarding Settings

Element	Description
TCP/IP server settings:	
Socket port	Socket port in the main display providing the sensor data to the client displays.

File Transfer and Storage Settings

The file transfer feature allows the latest data files to be transferred to other computers using FTP protocol once a minute.

In the **File transfer and storage settings** frame on the **Communication** tab, you can enter and edit the communication settings for sending data through FTP.

You can also change the location where the ASCII Log View history files are stored on the computer by editing the storage path.

NOTE Remember to click the **Apply** button to save the changes.

After changing the **Storage path** you also need to stop and start all system services before the change is applied. See section Starting and Stopping System Services on page 11.

Table 10 File Transfer Settings

Element	Description
FTP transfer status	Select whether the FTP transfer is enabled or disabled. Default selection is "Disabled".
FTP client settings:	
IP address	IP address of the external computer where the FTP connection is established, including the folder and the file name. You can add the <timestamp> tag in the address to enable saving individual files. For example, `ftp://127.0.0.1/WXTData/data_<timestamp>.txt` If the address does not contain the timestamp, the file is always overwritten with the new one.
Username	Valid username for the FTP connection.
Password	Valid password for the FTP connection.

Element	Description
ASCII Log file settings:	
Storage path	Enter the path for the folder where you want the history files to be saved. **Note!** To take into use the changes you need to stop all the services of the application. See section Starting and Stopping System Services on page 11.

This page intentionally left blank.

CHAPTER 7

TERMINAL CONNECTION

This chapter contains instructions for monitoring sensors with the IO Terminal application.

Introduction to IO Terminal

The IO Terminal application connects to the sensor (weather transmitter) through a communication port. When there is an open terminal connection to the sensor, you can monitor the messages it sends and send commands to check and modify the device status.

You can use IO Terminal to:

- Open terminal connection to the sensor
- Send commands to sensor.
- Monitor and log messages sent by sensor.
- View communication settings.

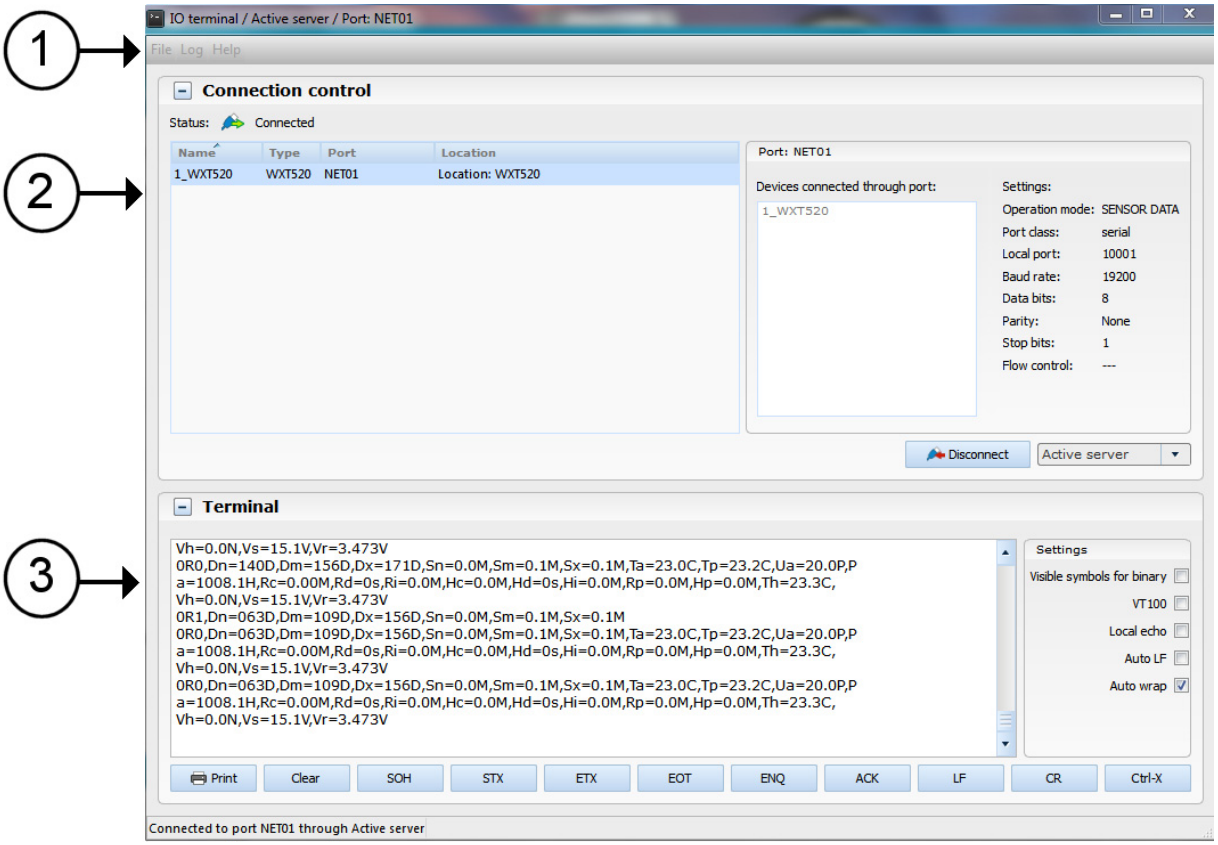
CAUTION	When the IO Terminal connection to the sensor is open no sensor data is usable for the other applications.

IO Terminal User Interface

The IO Terminal user interface consists of the following main elements:

- **Connection control** panel for connecting to devices and viewing communication settings.
- **Terminal** panel for viewing and sending messages to devices.
- Menu bar for exiting and logging data.

Figure 10 on page 32 below shows the IO Terminal user interface.



1302-071

Figure 10 IO Terminal User Interface

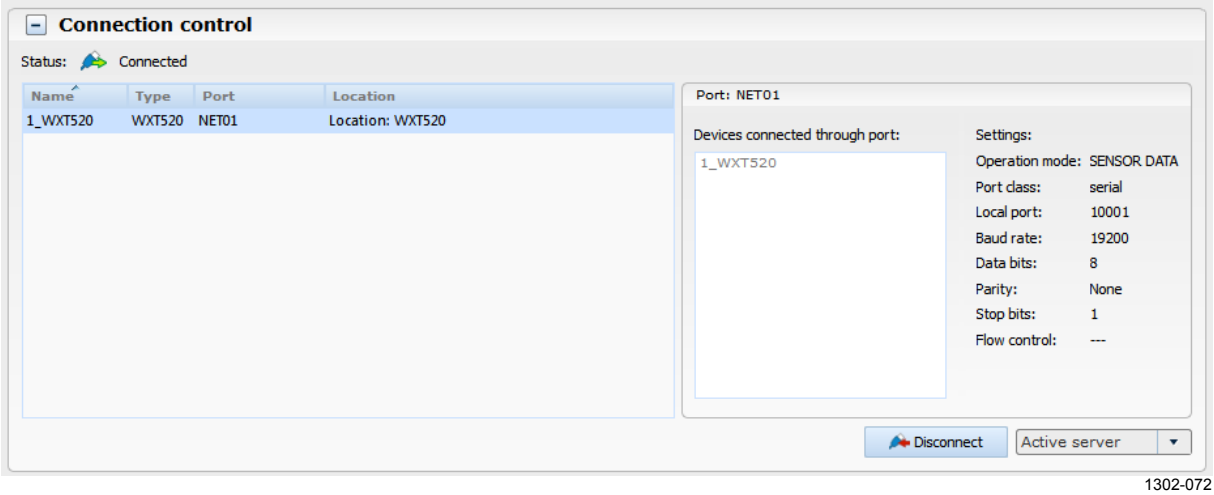
The following numbers refer to Figure 10 above:

1 = File, Log, and Help menus, for exiting and logging.
2 = Connection control panel for connecting/disconnecting, with communication settings.
3 = Terminal panel for viewing and sending messages, with settings.

Connection Control Panel

In the **Connection Control** panel you can establish connections to sensors and view connection status and communication settings. The available devices are listed on the left, and the port settings can be seen on the right.

The **Connection control** panel can be closed and opened by using the plus/minus icon on the upper left corner of the panel.



1302-072

Figure 11 IO Terminal: Connection Control Panel

The following describes the **Connection Control** panel elements.

Table 11 IO Terminal: Connection Control Panel Elements

Element	Description
Status	Connection status: "Connected" or "Not Connected".
Name	Name of the device.
Type	Type of the device.
Port	Port used for communicating with the device.
Location	Location of the device.
Devices connected through port	List of devices connected through the port.
Settings	Shows the port settings for the selected device and the port settings. See Table 12 below.
Connect	Click the **Connect** button to connect to the selected device.
Server selection drop-down list	Select the Active server option.
Disconnect	Click the **Disconnect** button to close the connection.

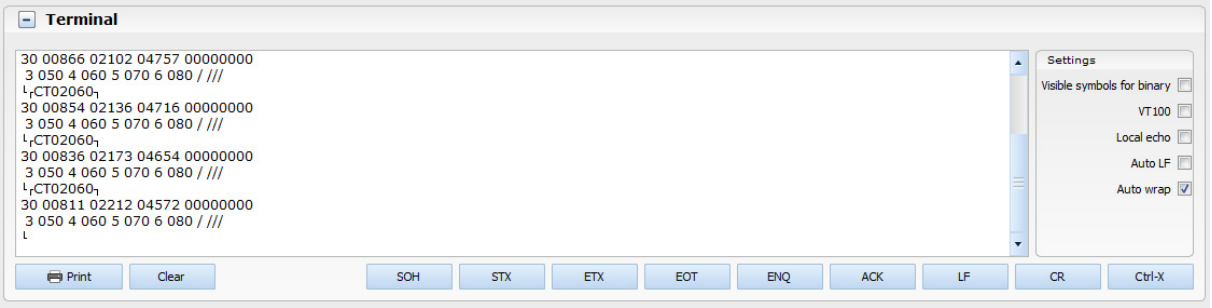
When you select a device in the list, the communication settings of the port are displayed on the right. Detailed settings depend on the communication class.

Table 12 IO Terminal: Port Settings

Element	Description
Operation mode	Indicates whether the data is sensor data or simulated data.
Port class	Communication type (for example, serial, TCP Server, TCP Client).
Remote host	TCP/IP address of the remote host of TCP connection.
Local port	TCP/IP address of the remote host of TCP connection.
Baud rate	Baud rate setting of the serial port.
Data bits	Data bit setting of the serial port.
Parity	Parity setting of the serial port.

Terminal Panel

In the **Terminal** panel you can view sensor data messages, and type and send commands to sensors.



1205-023

Figure 12 IO Terminal: Terminal Panel

The **Terminal** panel can be closed and opened by using the plus/minus icon on the upper left corner of the panel.

With the buttons in the **Terminal** panel, the ASCII characters needed in commands can be easily produced.

Table 13 IO Terminal: Terminal Panel Buttons

Button	Description
Print	Prints the Terminal panel content.
Clear	Clears the content of the Terminal panel.
SOH	ASCII character SOH (1), Start Of Header
STX	ASCII character STX (2), Start Of Text
ETX	ASCII character ETX (3), End Of Text
EOT	ASCII character EOT (4), End Of Transmission
ENQ	ASCII character ENQ (5), Enquiry
ACK	ASCII character ACK (6), Acknowledgement
LF	ASCII character LF (10), Line Feed
CR	ASCII character CR (13), Carriage Return
CAN	ASCII character CAN (24), Cancel

You can modify the terminal display settings by selecting the options in the **Settings** frame of the **Terminal** panel. The settings define the way sensor messages and commands are displayed in the **Terminal** panel.

Table 14 IO Terminal: Terminal Display Settings

Option	Description
Visible symbols for binary	Shows the non-printable characters (binary values) as symbols.
VT100	Emulates a VT100 terminal.
Local echo	Displays the commands you type in the Terminal panel on the screen. In this case, the commands may be shown on the screen twice: once by your workstation and once by the field device.

Option	Description
Auto LF	Inserts a new line on the screen after each message that is received from the field device. This makes it easier to read the field device messages.
Auto Wrap	Starts a new line on the screen after 80 characters.

Menu Bar

The main IO Terminal functions can be selected from the menu bar.

Table 15 IO Terminal: File Menu

Command	Description
Exit	Exits IO Terminal and closes the connection.

Table 16 IO Terminal: Log Menu

Command	Description
Log to file	To start logging data to the temporary directory (as defined by your TMP environment variable), select the Log to file option. To disable logging, clear the selection. Logging ends automatically when you close IO Terminal.
If logging use timestamps	Select this to use timestamps in log files.

Table 17 IO Terminal: About Menu

Command	Description
About	Displays software version and copyright information.

Status Bar

The status bar displays whether the status is connected or not connected. If connected, also the server and port are listed.

Operating IO Terminal

Starting IO Terminal

To start IO Terminal, select **Settings** – **Communication** in the Weather View application and click the **Terminal** button.

Exiting IO Terminal

To exit IO Terminal, select **Exit** from the **File** menu.

Opening and Closing Connection to Devices

Auto-Send or Polled Sensors

Most sensors can be configured to operate in either auto-send or polling mode. In polling mode the sensor sends messages only when requested with a specific polling string. Thus, when you make a direct connection to the sensors, you have to send the corresponding polling string to the sensor to display the sensor messages. With auto-send sensors, sensor messages will be displayed automatically after establishing the connection.

To connect to field devices, do the following in the **Connection Control** panel:

NOTE	When you connect to a sensor you interrupt the flow of automatic weather data from sensors to the end-user applications.

1. In the list on the left in the **Connection Control** panel, click the device that you want to connect to.
2. From the drop-down list, select **Active server**.
3. Click the **Connect** button.
4. The connection is opened. Connection status, device name, server, and port are displayed in the status bar. If the sensor is in auto-send mode, the sensor messages will appear in the **Terminal** panel.
5. Enter the commands as described in section Sending Commands to Devices on page 37.

You can close the connection by clicking the **Disconnect** button in the **Connection control** panel.

Sending Commands to Devices

Once you have opened the connection to a field device, you can browse the field device messages and send commands to the field device.

NOTE	This manual does not cover the sensor messages that are displayed in the Terminal panel or the commands you need to send. For information, see Vaisala Weather Transmitter WXT520, User's Guide.

To connect to field devices directly, do the following:

1. Open the connection to the field device as described in the previous section. If the sensor is in auto-send mode, the sensor messages will appear in the **Terminal** panel.
2. Start the command mode of the field device by typing the appropriate command in the **Terminal** panel and pressing ENTER. The command mode starts, and the appropriate command prompt is displayed on the screen.
3. Type the commands directly in the **Terminal** panel. You can select the necessary ASCII characters using the buttons at the bottom of the panel. See Table 13 on page 34.
4. You can change the settings by selecting the options on the right of the panel. For example, if you want the commands you type to be shown on the screen, select the **Local echo** option. The commands might be shown on the screen twice: once by local echo and once by the echo of the receiving line. See Table 14 on page 34.
5. When you have finished sending commands, close the field device command mode by typing the appropriate command.
6. Close the connection to the field device by clicking the **Disconnect** button in the **Connection control** panel.

NOTE	To get more space for the Terminal panel, you can close the Connection control panel by clicking the minus icon on the upper left corner of the panel.

Saving Field Device Messages (Logging)

For troubleshooting purposes, it is useful to save the field device messages. When the connection to a port is open, you can save all field device messages and the sent commands into a log file. To do this, do the following:

1. Select the **Log to file** option from the **Log** menu. The system will start logging data to the temporary directory (as defined by the user's TMP environment variable).
2. To include timestamps in log files, select the option **If logging use timestamps** from the **Log** menu.

To disable logging, clear the **Log to file** selection from the **Log** menu. Logging ends automatically when you close IO Terminal.

Modifying Terminal Display Settings

You can modify the terminal settings with the selections in the **Settings** frame of the **Terminal** panel. The settings define the way sensor messages and commands are displayed in the **Terminal** panel.

You can make the following selections:

- Select **Visible symbols for binary** to show the non-printable characters (binary values) as symbols.
- Select the **VT100 Mode**, if you wish the application to emulate a VT100 terminal.
- Select **Local Echo** to display the commands you type in the **Terminal** panel on the screen. In this case, the commands may be shown on the screen twice: once by your workstation and once by the field device.
- Select **Auto LF** to make the system insert a new line on the screen after each message line that is received from the field device. This makes it easier to read the field device messages.
- Select **Auto wrap** to make the system start a new line on the screen after 80 characters. This way you can see all text on the screen without having to scroll.

CHAPTER 8
TROUBLESHOOTING

This chapter describes common problems, their probable causes and remedies, and provides contact information for technical support.

Problem Situations

Table 18 Some Problem Situations and Their Solutions

Problem	Probable Cause	Solution
Slashes appear in the data fields instead of data.	Wrong or undefined communication settings.	Define the settings on the **Settings** tab in the Weather View application. Check that the settings match the settings required by the transmitter, for example, if poll or autosend mode is needed, and that correct COM port is used. See section Configuring Initial Settings on page 10 and Chapter 6, Defining Settings, on page 23.
	The required system services are not running.	Start the services from the PC Start menu. See section Starting and Stopping System Services on page 11.
	Connection problem or problem with the sensor.	Check the connection and sensor status with the IO Terminal application. See Chapter 7, Terminal, on page 31.
	The weather transmitter may have been temporarily disconnected.	Stop and start the services from the Start menu or by clicking the **Restart** button on the **Settings** - **Communication** tab. See section Starting and Stopping System Services on page 11.
The text "Waiting for license" is displayed.	The required system services are not running.	Start the services from the Start menu. See section Starting and Stopping System Services on page 11.

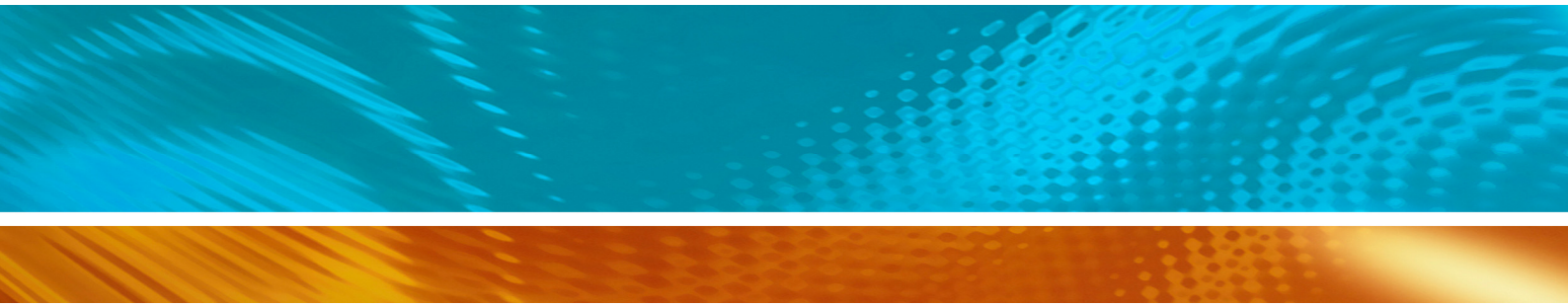
You cannot start or stop the services.	You are not logged in as administrator.	Log in as administrator.
Alerts are not raised, or are raised constantly.	Wrong alert settings or alerts have been disabled.	Check the alerts settings on **Settings** - **Operation** tab in the Weather View application. See section Parameter Alert Limits on page 25.
Wrong units are displayed.	Wrong unit settings.	Define the unit on the **Settings** - **Operation** tab in the Weather View application.
History files are not found.	Wrong storage path.	Check the ASCII Log file storage path on the **Settings** - **Communication** tab. If you change the path, click the **Apply** button and then start and stop the services.
	The services have not been stopped and started after changing the storage path.	Stop and start the services from the Start menu of your PC or by clicking the **Restart** button on the **Settings** - **Communication** tab. See section Starting and Stopping System Services on page 11.
	Storage folder may be a hidden system folder.	In Windows Explorer, select to show also hidden files.
Precipitation accumulation reset does not work.	Wrong reset hour has been selected.	Check the reset hour selection in the **Sensor data connection** frame on the **Settings** - **Communication** tab. If you change the reset hour, remember to enable the reset status, apply the changes, and start and stop the services.
	The reset status is **Disabled**.	Make sure the reset status selection is "Enabled" in the Sensor data connection frame on the **Settings** - **Communication** tab.
	The services have not been stopped and started after changing the storage path.	Stop and start the services from the Start menu of your PC or by clicking the **Restart** button on the **Settings** - **Communication** tab. See section Starting and Stopping System Services on page 11.
Client PC does not get data.	Main PC forwarding socket port and client PC receiving socket port do not match.	Check the settings on the **Settings** - **Communication** tab.
	Client PC TCP/IP client settings are incorrect. Client PC has wrong IP address for Main PC.	Check the IP addresses.
	Ethernet network does not function correctly and the PCs cannot connect.	Troubleshoot the network for example using the "ping" command.
	Main or client PC does not have a valid IP address.	Check the IP addresses.

FTP transfer does not work.	Ethernet network does not function correctly and PCs cannot connect.	Troubleshoot the network for example using the "ping" command.
	FTP settings are incorrect.	Check the settings on the **Settings - Communication** tab.
	Insufficient user rights.	Check the user rights policy on both computers.

Technical Support

For technical questions, contact the Vaisala technical support by e-mail at helpdesk@vaisala.com. Provide at least the following supporting information:

- Name and model of the product in question
- Serial number of the product
- Name and location of the installation site
- Name and contact information of a technically competent person who can provide further information on the problem.



www.vaisala.com

M211582EN