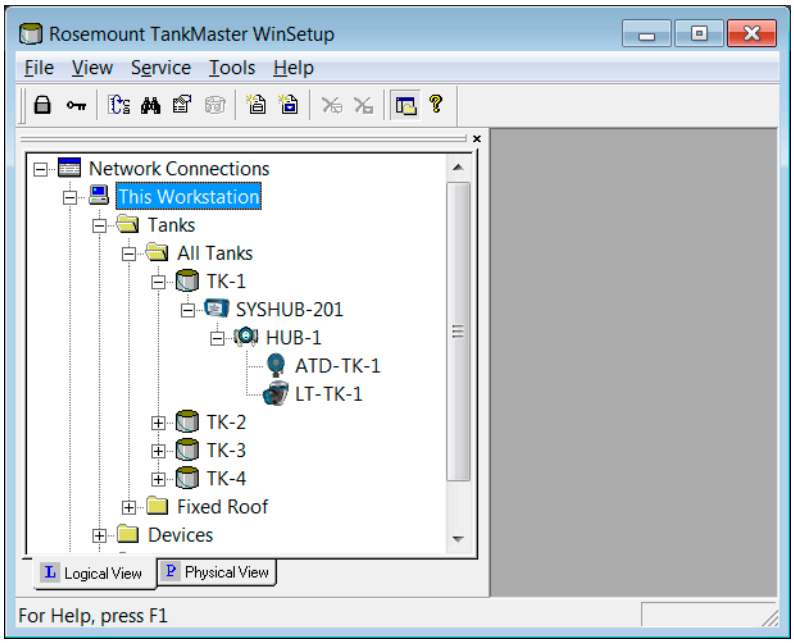
Reference Manual
00809-0100-5110, Rev AC
November 2023

Rosemount™ TankMaster™ WinSetup Configuration Software

for tank gauging systems



ROSEMOUNT™

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NOTICE

Read this manual before working with the product. For personal and system safety, and for optimum product performance, make sure you thoroughly understand the contents before installing, using, or maintaining this product.

For equipment service or support needs, contact your local Emerson representative.

Version

This manual is based on the functionality of TankMaster version 6.G1.

For older TankMaster versions all functionality described in this manual may not be available and the Graphical User Interface (GUI) may look different.

Safety messages

⚠ WARNING

Physical access

Unauthorized personnel may potentially cause significant damage to and/or misconfiguration of end users' equipment. This could be intentional or unintentional and needs to be protected against.

Physical security is an important part of any security program and fundamental in protecting your system. Restrict physical access by unauthorized personnel to protect end users' assets. This is true for all systems used within the facility.

Contents

1 Introduction

Rosemount TankMaster WinSetup is the recommended tool for setting up a Rosemount Tank Gauging system.

This manual describes the basic functions of the WinSetup configuration software, how to set up tank capacity tables (TCT), product parameters for inventory calculations, and various service functions. The manual includes a brief description of the recommended setup procedure for a Rosemount Tank Gauging system.

Related information

The WinSetup main window

1.1 What is Rosemount TankMaster™?

The TankMaster software suite provides you with the tools that you need to configure and operate the Rosemount Tank Gauging system. The Rosemount Tank Gauging product portfolio includes a wide range of components for small and large customized tank gauging systems. The system includes various field devices, such as radar level gauges, temperature transmitters, and pressure transmitters for complete inventory control. For detailed descriptions of how to setup various devices refer to the respective reference manuals.

TankMaster is an Emerson inventory management software package for installation and configuration of level gauging equipment. It is a complete custody transfer and inventory software package that provides operator overview for Rosemount Tank Gauging systems. All calculations are based on current API and ISO standards.

TankMaster provides you with powerful and easy-to-use tools for installation and configuration of level gauging devices such as radar transmitter gauges (RTGs). The settings for protocols, devices and tanks can be changed in real time.

The graphical interface gives you a clear overview of installed devices and tanks. For each tank you can easily see the associated transmitters in the WinSetup application.

1.1.1 Key features

- Monitoring of measured data
- Clear overview of installed tanks and devices (using WinSetup)
- Simple installation using wizards (using WinSetup)
- Open connectivity
- Object-oriented, user-friendly Graphical User Interface (GUI)

TankMaster is designed to be used in a Microsoft® Windows environment, providing easy access to measurement data from any PC in your network. Measurements and data are presented in realtime and you can customize views to suit your needs.

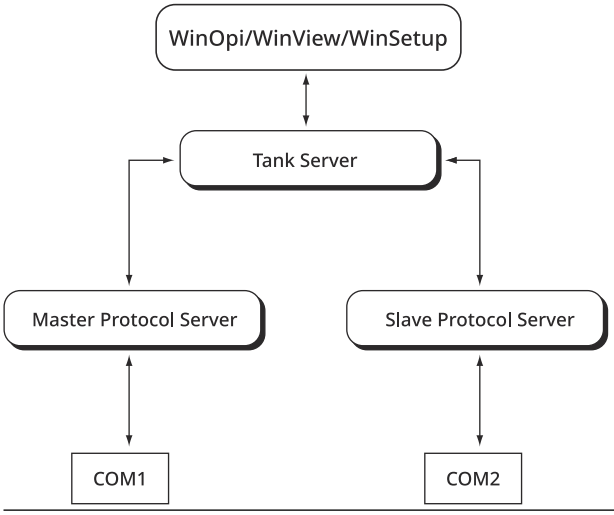
Rosemount TankMaster lets you connect via the Ethernet TCP/IP interface. You may also use TRL2, RS232, or RS485 interfaces if needed. Other communication interfaces, such as Enraf BPM, are also supported. Rosemount TankMaster is based on the open OPC standard, allowing you to import data into other systems such as DCS:s, PLC:s, Scada systems and Microsoft Office programs.

1.2 TankMaster software package

The TankMaster software package comprises the following software modules:

- WinOpi
- WinSetup
- WinView
- Batch server
- Tank server
- Master Protocol servers
- Slave Protocol servers

Figure 1-1: Software Modules



WinOpi

WinOpi is the operator interface to the tank gauging system. It communicates with the Tank Server and various protocol servers to let the user monitor measured tank data. WinOpi also provides:

- alarm handling
- automatic report distribution
- historical data sampling
- inventory calculations for volume, observed density and other parameters.

WinSetup

The WinSetup program is a graphical user interface (GUI) for installation, configuration and maintenance of level gauging devices.

WinView

WinView is a software package with basic inventory capabilities. It communicates with the Tank Server and the different protocol servers to let the user monitor measured tank data.

Tank server

The Tank Server communicates with devices via the Master Protocol Server and handles configuration data for all installed tanks and devices. Parameters stored by the Tank Server include:

- device names
- configuration data, such as antenna type
- number of connected temperature sensors
- number of connected analog inputs

The Tank Server collects data from connected devices and distributes this information to the TankMaster and WinSetup user interface.

Master protocol server

The **Master Protocol Server** transfers configuration data and measured data between the Tank Server and connected devices in the tank gauging system. The Master Protocol Server is able to communicate with various types of devices such as FCUs, the Rosemount 2410 Tank Hub, and the Rosemount 5900S Radar Level Gauge to collect measurements for, for example, level, temperature and pressure.

Slave protocol

The **Slave Protocol Server** is used to connect the TankMaster system to a host computer (DCS system). The Slave Protocol Server exchanges tank data between the Tank Server and the host computer.

OPC Server with browser

TankMaster uses **OPC Data Access 2.0** (OLE for Process Control), an open industry standard, which eliminates the need for costly customized software integration.

With the **OPC** server and the browser it is easy to import all custody transfer and inventory data to other OPC clients such as different DCS:s, PLC:s, Scada systems, or Microsoft® Office programs.

See the web site for the OPC Foundation for more information: www.opcfoundation.org.

Customized views

You can customize specific views and windows in TankMaster. Existing objects can be modified, or you can build new ones. You could, for example, create a window with an embedded image of your own plant, to give a realistic overview, and configure the window so that when you click on a specific tank in the image you can access the corresponding data for that tank.

1.3 Manual overview

The Rosemount TankMaster WinSetup Reference Manual includes the following sections:

Chapter Introduction provides a description of the various components in the Rosemount Tank Gauging system and an introduction to the TankMaster software package.

Chapter The WinSetup main window provides an introduction to the basic features of the WinSetup configuration program. It describes the workspace, menus, and various toolbars.

Chapter Basic functions provides a brief description of basic functions supported by the Rosemount TankMaster WinSetup configuration tool for setting up a Rosemount Tank Gauging system.

Chapter Device handling describes basic functions for changing device configuration and uninstalling devices.

Chapter Service functions includes a description of various functions supported by TankMaster WinSetup for service and maintenance of field devices.

1.4 Technical documentation

The Rosemount Tank Gauging System includes a wide portfolio of user documentation. For a complete list, see product pages on Emerson.com/Rosemount.

Reference manuals

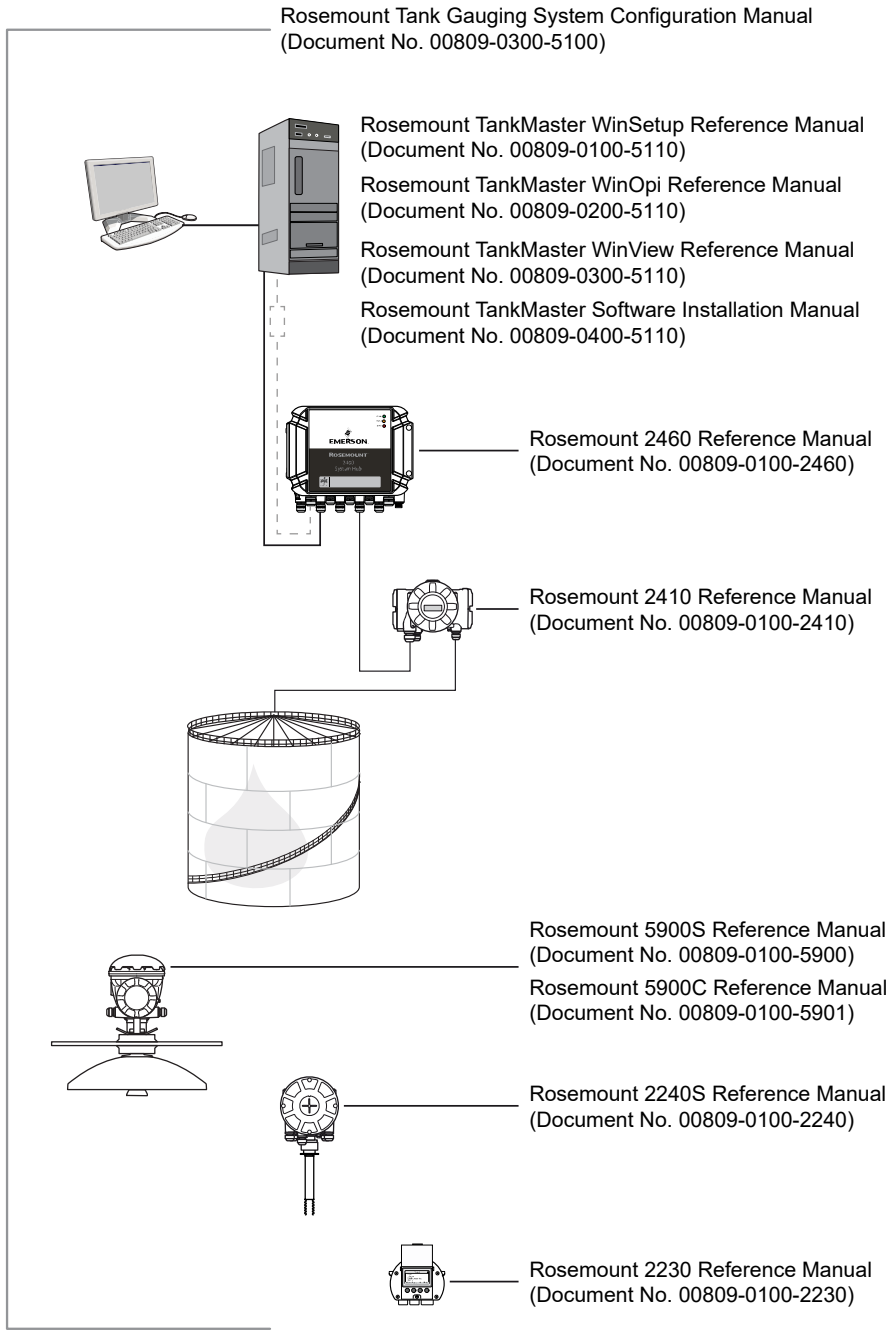
- Rosemount Tank Gauging System Configuration Manual (00809-0300-5100)
- Rosemount 2460 System Hub (00809-0100-2460)
- Rosemount 2410 Tank Hub (00809-0100-2410)
- Rosemount 5900S Radar Level Gauge (00809-0100-5900)
- Rosemount 5900C Radar Level Gauge (00809-0100-5901)
- Rosemount 2240S Multi-Input Temperature Transmitter (00809-0100-2240)
- Rosemount 2230 Graphical Field Display (00809-0100-2230)
- Rosemount 5300 Guided Wave Radar (00809-0100-4530)
- Rosemount 5408 Radar Level Transmitter (00809-0300-4408)
- Rosemount 3308 Series Wireless Guided Wave Radar (00809-0100-4308)
- Rosemount Tank Gauging Wireless System (00809-0100-5200)
- Rosemount TankMaster Software Installation Manual (00809-0400-5110)
- Rosemount TankMaster WinOpi (00809-0200-5110)
- Rosemount TankMaster WinSetup (00809-0100-5110)
- Rosemount TankMaster WinView (00809-0300-5110)
- Rosemount 5900 Proof Test with Reference Reflector (00809-0200-5900)
- Rosemount TankMaster Floating Roof Monitoring (00809-0500-5100)
- Rosemount TankMaster Full containment tanks (00809-0500-5110)
- Rosemount 5900 Radar Level Gauge and Rosemount 2410 Tank Hub Safety Manual Option S (00809-0400-5100)
- Rosemount 5900 Radar Level Gauge and Rosemount 2410 Tank Hub Safety Manual SIL3 (00809-0200-5100)
- Rosemount TankMaster Mobile User Guide (00809-0100-5120)
- Rosemount TankMaster Mobile Installation Manual (00809-0200-5120)

Product data sheets

- Rosemount Tank Gauging System (00813-0100-5100)
- Rosemount TankMaster Inventory Management Software (00813-0100-5110)
- Rosemount TankMaster Mobile Inventory Management Software (00813-0100-5120)
- Rosemount 2460 System Hub (00813-0100-2460)
- Rosemount 2410 Tank Hub (00813-0100-2410)
- Rosemount 5900S Radar Level Gauge (00813-0100-5900)
- Rosemount 5900C Radar Level Gauge (00813-0100-5901)
- Rosemount 2240S Multi-input Temperature Transmitter (00813-0100-2240)
- Rosemount 565/566/765/614 Temperature and Water Level Sensors (00813-0100-5565)
- Rosemount 2230 Graphical Field Display (00813-0100-2230)
- Rosemount 5300 Level Transmitter (00813-0100-4530)
- Rosemount 5408 Level Transmitter (00813-0100-4408)

1.5 System and user documentation structure

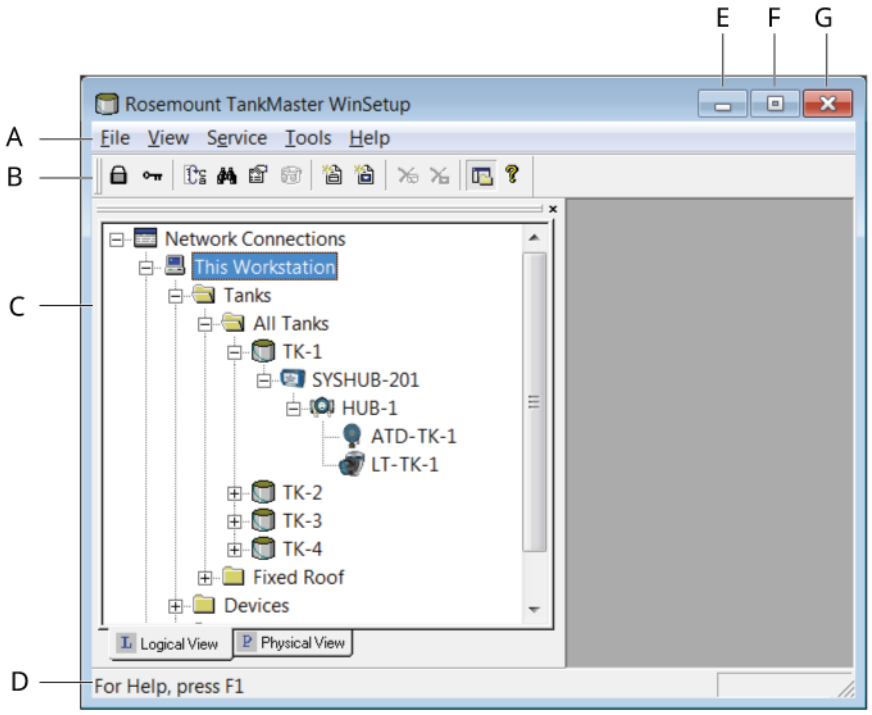
Figure 1-2: Rosemount Tank Gauging System and User Documentation Structure



2 The WinSetup main window

The TankMaster WinSetup main window includes a Workspace which displays tanks, devices, a menu bar at the top of the screen, a status bar at the bottom of the screen and a number of buttons in the toolbar.

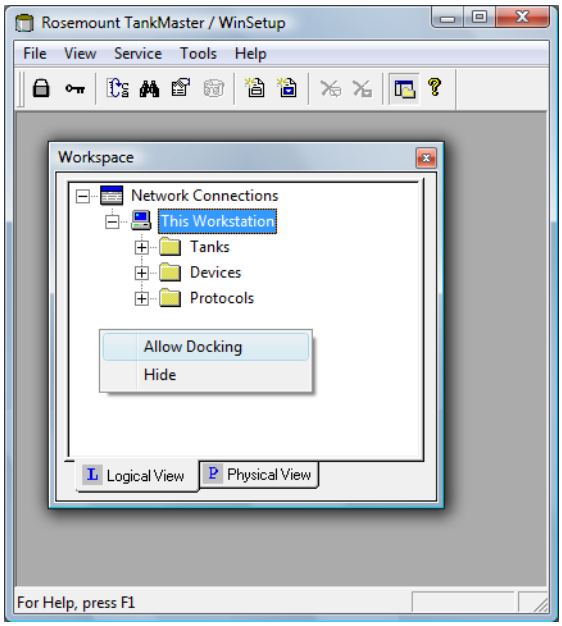
Figure 2-1: The WinSetup Main Window



A. Menubar
B. Toolbar
C. Workspace
D. Status bar
E. Minimize
F. Maximize
G. Close

The ***Workspace*** window can be moved anywhere on the ***Main*** window. It can be docked to either side, to the top, or to the bottom. It can also be left floating in the ***Main*** window.

Figure 2-2: The WinSetup workspace



Right click in the ***Workspace*** window and choose **Allow Docking** to place the ***Workspace*** window along the ***Main*** window side.

Related information

Introduction

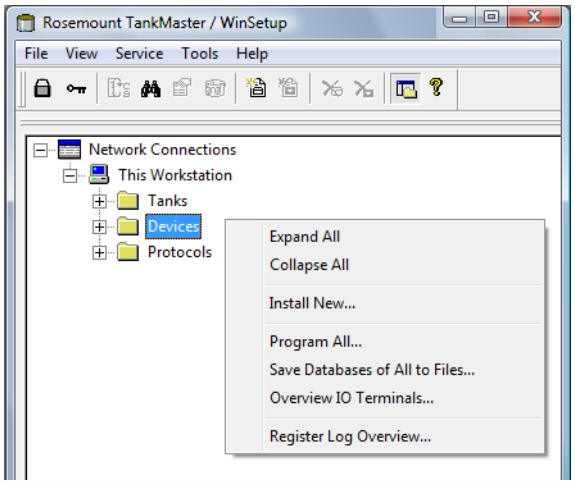
2.1 Menus

The menu bar at the top of the screen contains menus such as **File**, **View**, **Service**, **Tools**, and **Help**.

Figure 2-3: WinSetup menu

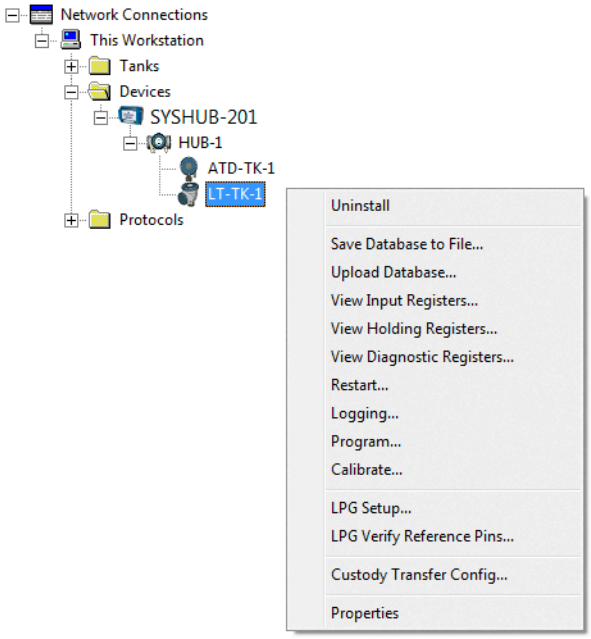
Service menu options are also available by clicking the right mouse button. Different options are available depending on the type of object selected in the Workspace window. For example, clicking the right mouse button on the Devices folder will open the following menu:

Figure 2-4: Service menu



Clicking the right mouse button on a device icon brings up a menu with different configuration and service options:

Figure 2-5: Right-click menu

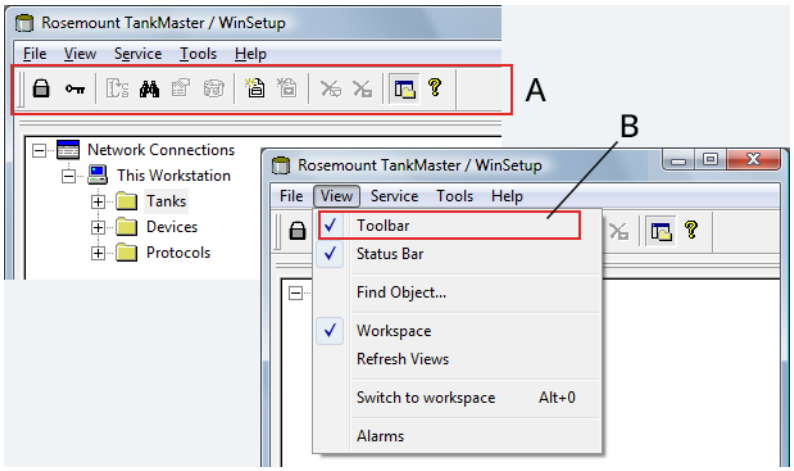


2.2 Toolbar

The toolbar provides buttons acting as shortcuts to certain menu options.

Normally the Toolbar is visible. To hide it, open the **View** menu and deselect the **Toolbar** option:

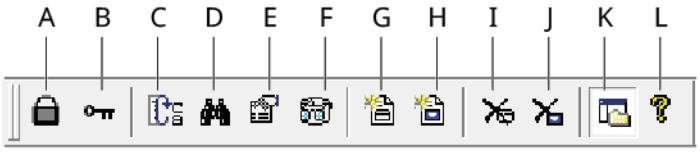
Figure 2-6: WinSetup Toolbar



A. Toolbar
B. Hide/Show Toolbar

Items included in the standard toolbar:

Figure 2-7: Toolbar items



A. Log off to View Only mode
B. Log on to TankMaster as Operator, Supervisor or Administrator
C. Rename a tank
D. Search for a tank or a device in the workspace tree structure
E. Open the Properties dialog
F. Open the Tank View window
G. Install a new tank
H. Install a new device
I. Uninstall a tank
J. Uninstall a device
K. Turn the Workspace window On or Off
L. About WinSetup

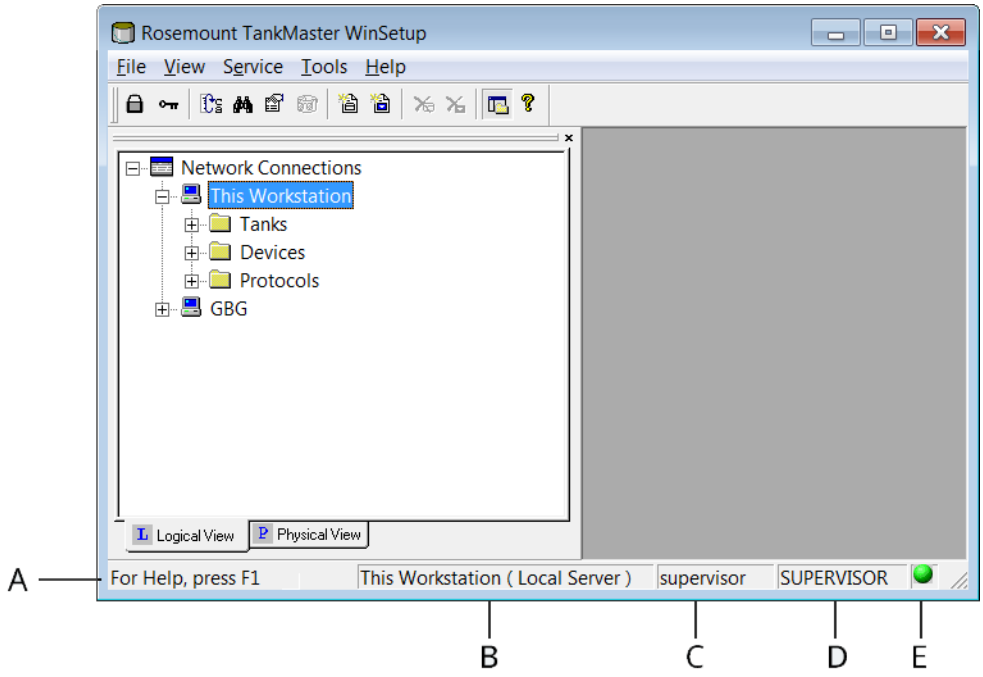
2.3 Status bar

The status bar is located at the bottom of the TankMaster main window. It provides general information about the current system state.

The status bar shows information about a device, tank or any other item that is selected in the WinSetup main window. Connection status, current user, current protection level (View Only, Operator etc.), and operation status are shown as well.

To hide the TankMaster status bar, open the **View** menu and deselect the **Status bar** option:

Figure 2-8: WinSetup Status bar

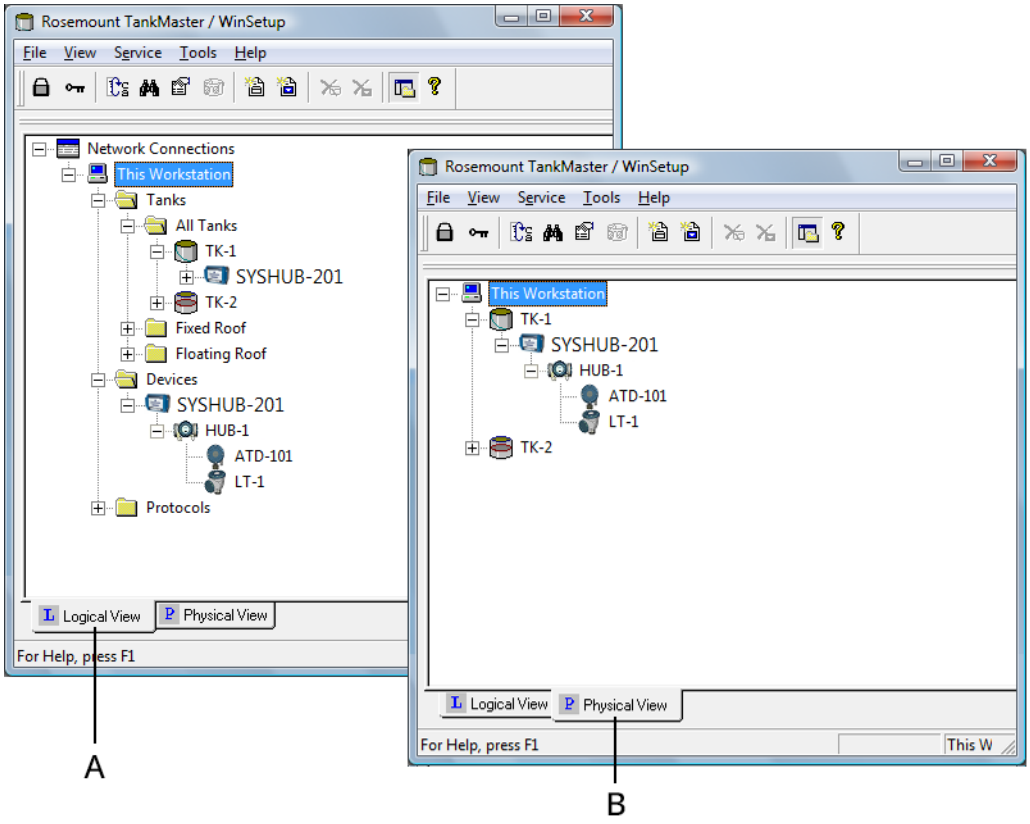


A. Status bar
B. Connection status
C. Current user
D. Current protection level
E. Indicator for normal operation

2.4 Workspace - viewing tanks and devices

The workspace displays an overview of all devices and tanks. You can switch between two different views: **Logical** and **Physical** view.

Figure 2-9: Logical and Physical Views in the WinSetup Workspace



A. Logical view
B. Physical view

In the workspace you can perform various tasks such as:

- Install and configure tanks, devices, and protocols
- Remove tanks and devices
- Change the configuration of tanks and devices
- View database and input registers
- Setup the tank view layout
- Specify tags for tank and device names
- Upload new application software to a radar tank gauge
- View communication log

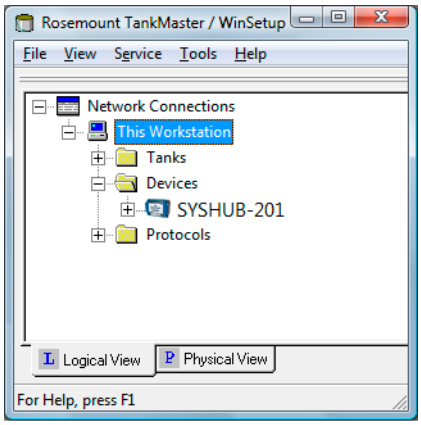
2.4.1 Workspace examples

The Workspace window shows the installed tanks and devices and available communication protocols. It also provides information about the configuration of installed devices.

Example 1

In the Logical View all installed tanks and devices, as well as available communication protocols, are organized in separate folders to provide a clear overview of the system. “+”-sign indicates that a device is connected to associated devices.

Figure 2-10: Logcial view

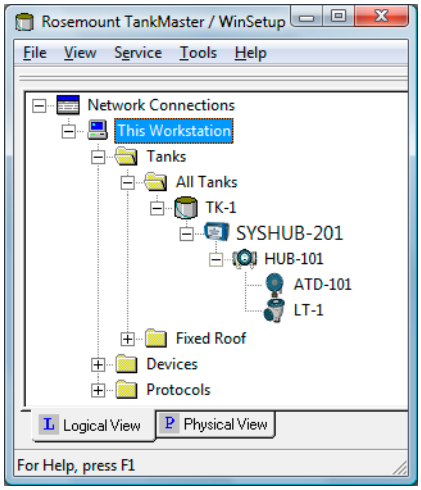


Example 2

The Tanks folder shows an overview of the installed tanks. For each tank the associated devices are displayed. The Workspace provides information that reflects the system configuration.

In this example, the symbols indicate that level gauge LT-1 communicates with This Workstation via Rosemount 2410 Tank Hub HUB-101 and Rosemount 2460 System Hub SYSHUB-201.

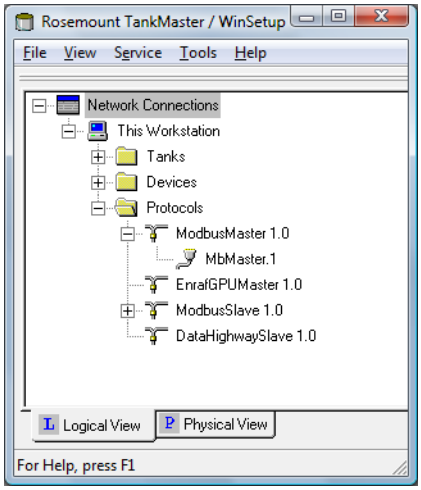
Figure 2-11: Logcial view



Example 3

Available communication protocols are displayed in the Protocols folder.

Figure 2-12: Logcial view



2.4.2 Icons

In the Workspace window the different tanks and devices are represented by varous icons.

Table 2-1: Device icons

Icon	Device
	Rosemount 2460 System Hub
	Rosemount 2410 Tank Hub
	Rosemount 2410 Tank Hub (Simulation Mode)
	Rosemount 5900S Radar Level Gauge (configured)
	Rosemount 5900S Radar Level Gauge (not configured)
	Rosemount 5900C Radar Level Gauge. Configured.
	Rosemount 5400 Series Radar Transmitter
	Rosemount 5300 Series Radar Transmitter
	ATD (Auxiliary Tank Device; for example Rosemount 2240S, Rosemount 3051S). Configured.
	ATD (Auxiliary Tank Device; for example Rosemount 2240S, Rosemount 3051S). Not configured.
	Emerson Wireless 1410S Gateway
	Emerson Wireless 1420 Gateway
	Emerson Wireless 775 THUM Adapter
	Rex Radar Tank Gauge (RTG)
	Rosemount 2160/2165/2175 Field Communication Unit (FCU)
	Slave Data Acquisition Unit (SDAU)
	COM port status
	COM port status for wireless system
	Communication Protocol

Table 2-1: Device icons *(continued)*

Icon	Device
	Communication Protocol Channel
	Communication Channel Modbus TCP
	TRL PU
	IOT 51XX
	MCG32XX
	MDPII
	CIU
	DS4

Table 2-2: Tank icons

Icon	Tanks
	Fixed Roof, HTG Fixed Roof
	Floating Roof, HTG Floating Blanket
	Full Containment
	Sphere, LPG Sphere
	Horizontal, LPG Horizontal
	HTG Fixed Roof
	HTG Floating Roof, HTG Floating Blanket
	Servo Tank Fixed Roof
	Servo Tank Floating Roof
	Servo Tank Sphere, Servo Tank Sphere LPG
	Servo Tank Horizontal, Servo Tank Horizontal LPG

Table 2-2: Tank icons *(continued)*

Icon	Tanks
	Cryogenic Tank

2.5 User management

TankMaster provides several protection levels allowing you to prevent unauthorized changes. These protection levels are categorized as User Access Levels and User Access SubLevels.

Each user access level has five User Sub Access Levels providing a large number of unique access levels.

In order to change tank and device configuration, install new tanks and devices, calibrate a level gauge, change holding register values etc. you must be logged on to the appropriate TankMaster user access level.

You can be logged on as **Chief Administrator**, **Administrator**, **Supervisor**, **Operator**, or **View Only** mode. The default username and password for each user type is as follows:

Table 2-3: User Access Levels and Sub Levels

User	Level	Sub Level	Default password
View	VIEW ONLY	*	view
Operator	OPERATOR	*	oper
Supervisor	SUPERVISOR	*	super
Administrator	ADMINISTRATOR	*	admin
ChiefAdmin	ADMINISTRATOR	* * * * *	chief

Related information

To set required access levels

2.5.1 Logging on to TankMaster

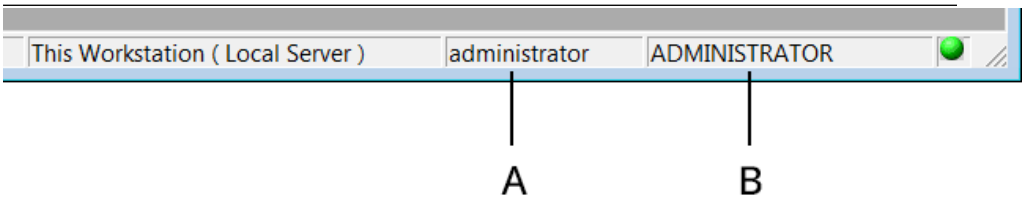
Procedure

1. From the **File** menu choose **Log On** or click the **Log On** button in the WinSetup toolbar.

2. Type your **Username** and **Password**. The password is case sensitive but the username is not.

Note
If logging on fails five consecutive times the user account is disabled. In this case the user account has to be enabled by an administrator.

3. Click the **OK** button. The currently logged on user and the corresponding protection level is displayed in the status bar.



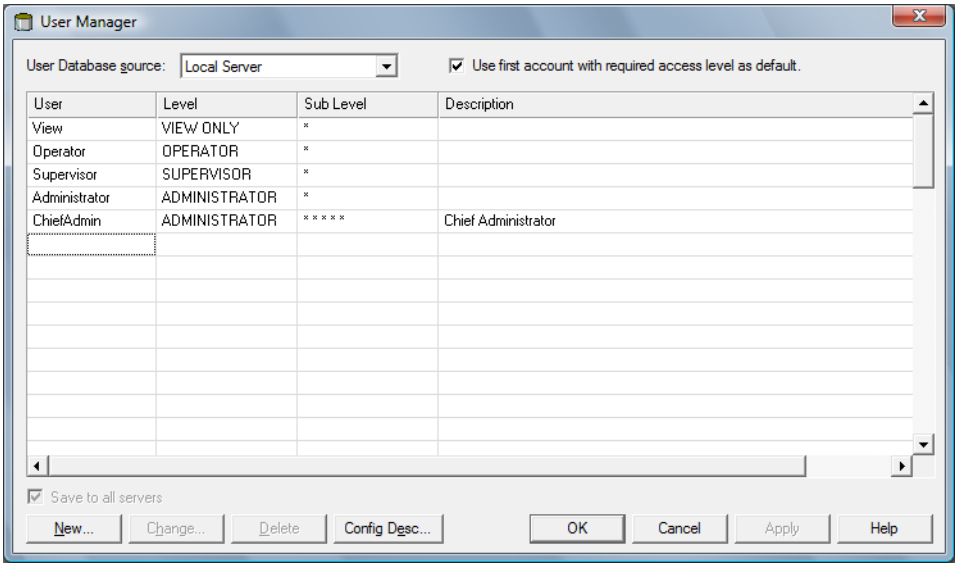
A. Username
B. User access level

2.5.2 Managing user accounts

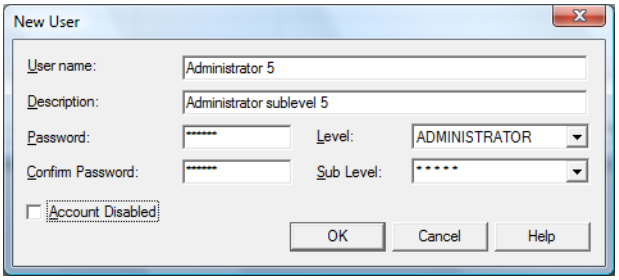
TankMaster allows you to setup a number of users at different levels and sub levels. You must be logged on as an **Administrator** in order to add new user accounts or to change the existing user account settings.

Procedure

1. Log on as an **Administrator**.
2. Go to **Tools** → **Administrative Tools** → **User Manager**.

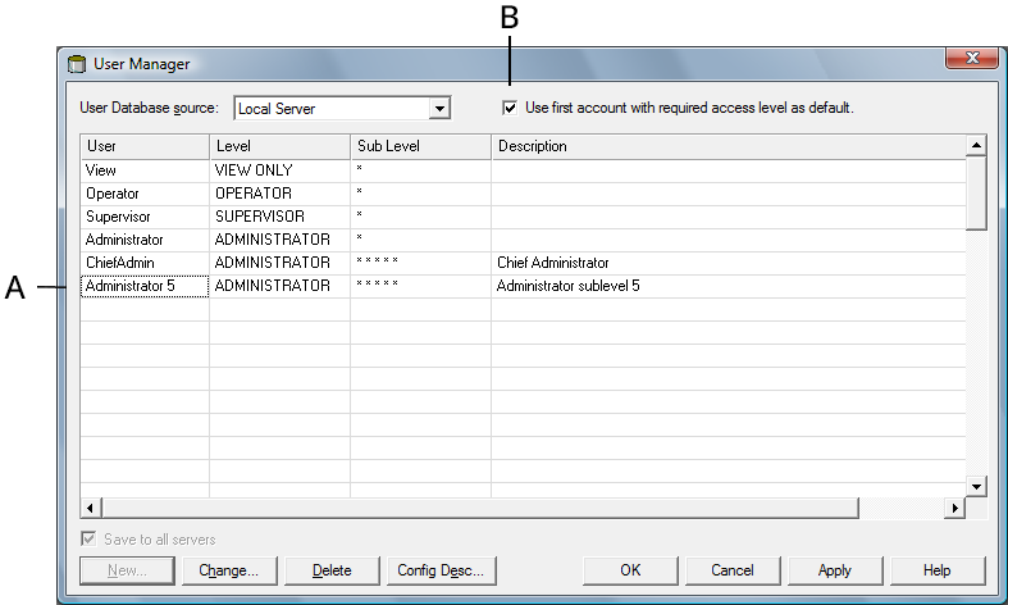


3. In the ***User Manager*** window, select a cell in an empty row and click the **New** button.



4. Type a user name and a password. If you like, you may enter a description in the Description field.

5. Choose the desired **User Access Level** and **Sub Level** and click the **OK** button.



A. A new user account is added
B. Use first account with required access level as default

6. Verify that the new user appears in the ***User Manager*** window.
7. Select the check box **Use first account with required access level as default** if you want a default user name to appear in the **Log On** dialog whenever it is opened. If this box is unmarked, the **User Name** field is empty when the **Log On** dialog opens.
8. Click **OK** to save the changes and close the ***User Manager*** window.

Related information

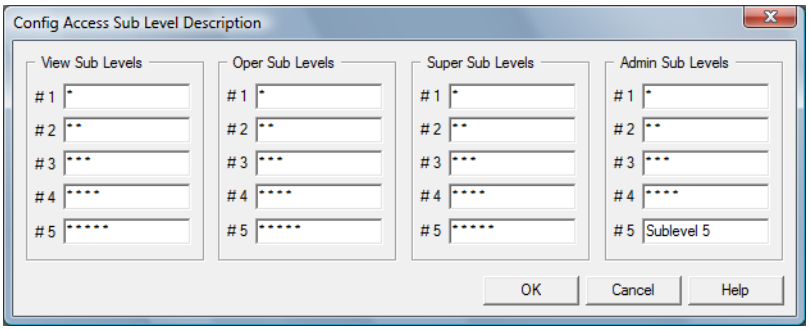
User management

2.5.3 Configuring a sub level description

TankMaster allows you to change Sub Level names to something more descriptive than the default settings.

Procedure

1. Go to **Tools** → **Administrative Tools** → **User Manager**.
2. In the ***User Manager*** window, click the **Config Desc** button.



3. In the ***Config Access Sub Levels Description*** window, enter new descriptions in the desired fields. In the example above, the description of item number 5 of category Admin Sub Levels is changed from "*****" to "Sublevel 5".
4. Click **OK** to close the window.

2.5.4 To set required access levels

In TankMaster WinSetup, you can set the access level required for the following actions:

- Tank/Device Install and Uninstall
- Tank/Device Configuration
- Replace, Restore and Restart Device
- Protocol Configuration
- Exit WinSetup
- Add Program
- Start Program (in the Tools menu)

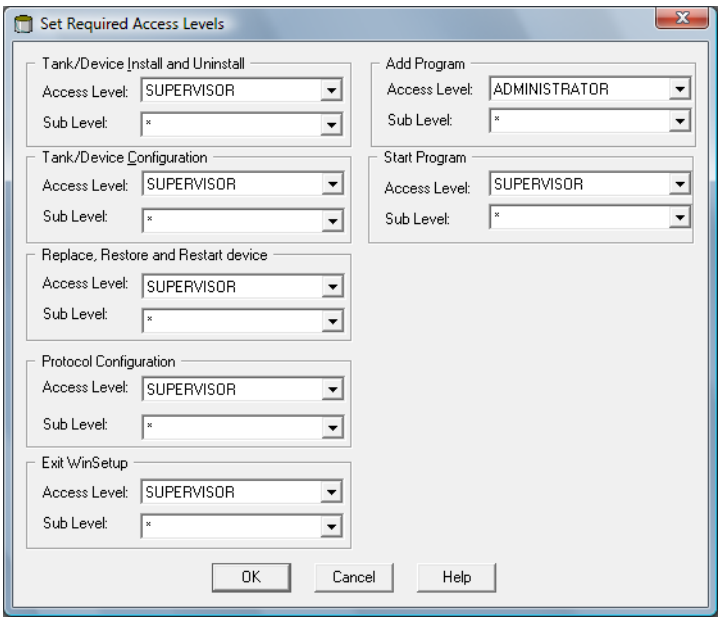
For example, if you are logged on as an Operator (* * * * *), you are not allowed to exit WinSetup if the required exit level for this action is set to Supervisor (*) or higher.

Prerequisites

You have to be logged on as an Administrator (* * * * *) to be able to set the required access levels.

Procedure

1. From the **Tools/Administrative Tools** menu choose **Set Required Access Levels**.



2. Set the required access levels for each type of action and click the **OK** button.

Related information

Customizing the Tools menu in WinSetup

2.5.5 To change protection level of separate windows

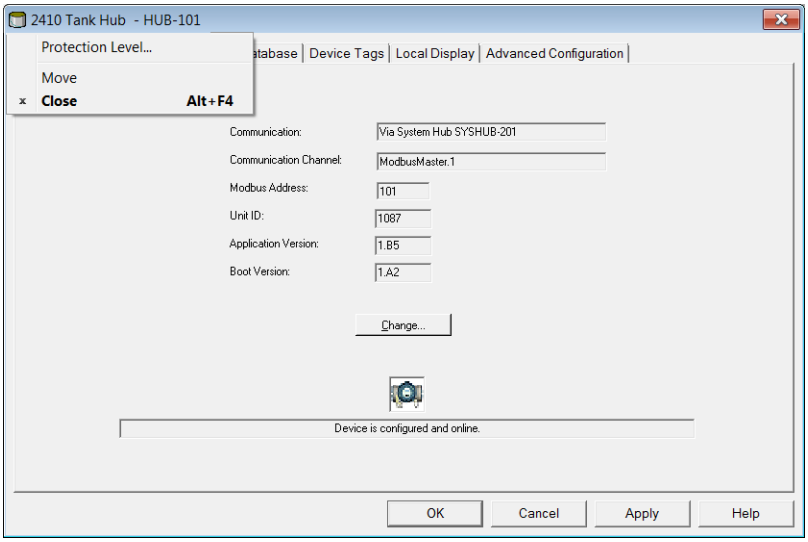
In TankMaster it is possible to set a Protection Level for a specific window, e.g. the ***Properties*** window for a device. This function is only available if you are logged on at **Administrator (* * * * *)** level.

Prerequisites

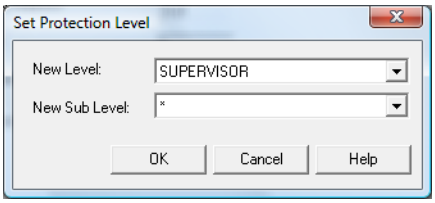
You have to be logged on as an Administrator (* * * * *) to be able to change the **Protection Level**.

Procedure

1. Put the cursor on the icon at the upper left corner and click the left mouse button.



2. Select the **Protection Level...** option.
3. Select the desired protection level from the drop down menus and click the **OK** button. Now you will have to be logged on at the specified protection level or higher in order to make any change in this window.



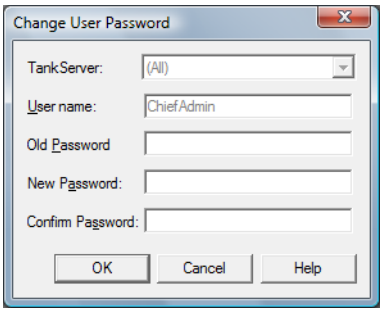
Related information

Managing user accounts

2.5.6 To change password

Procedure

1. From the **Tools/Administrative Tools** menu choose the Set Password option.



2. Select the Tank Server on which your user account is valid. You can see the different servers in the ***WinSetup workspace*** window. (If you are logged on, the current server is already selected in the Change User Password window).
3. Enter your username if the workspace is in View Only mode. If you are already logged on, your username appears in the Username field.
4. Enter the old password and the new password in the corresponding fields.

Note
The password is case sensitive.

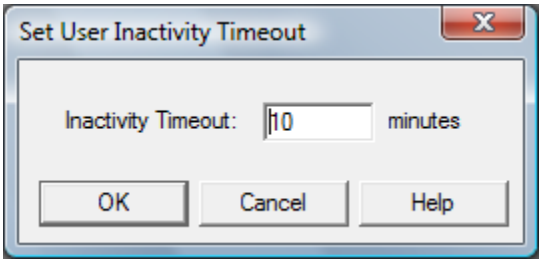
5. Confirm the new password and click the **OK** button.

2.5.7 To change inactivity timeout

TankMaster WinSetup includes the option to set a timeout after which the current user is automatically logged off. The timeout period is reset each time the user performs an activity that requires an access level check, for example changing the configuration of a device or logging on to WinSetup.

Procedure

1. From the **Tools/Administrative Tools** menu choose the **Set Inactivity Timeout** option (you have to be logged on as Administrator).



2. Type the desired value in the corresponding input field.
3. Click the **OK** button.

2.6 New connection

The New Connection window allows you to connect to another TankServer PC on a Local Area Network (LAN).

Before you can connect to another server on the network, a configuration of the DCOM(1) settings has to be performed.

Related information

Rosemount TankMaster Software installation Manual

2.6.1 Connecting to another server

Procedure

1. Select the ***Logical View*** in the WinSetup workspace.
2. Select the **Network Connections** icon.
3. Open the **File** menu or click the right mouse button.
4. Choose **New Connection**.
5. In the ***New Connection*** window press the Browse button and choose the computer with the desired Tank Server.
6. Type a name in the **Alias** field. This name will be used in the WinSetup workspace for the new server.
7. Press the **OK** button.

(1) Distributed Component Object Model is a Microsoft® technology for communication between software components on computers in a network.

3 Basic functions

This section describes functions supported by the Rosemount TankMaster™ WinSetup configuration tool for installing a Rosemount™ Tank Gauging system.

The WinSetup configuration program lets you setup communication protocols, preferences for measurement units, inventory parameters, as well as device installation, and tank installation.

In brief, the installation procedure includes the following steps:

- Communication protocol setup
- Preferences
- Installation and configuration of a Rosemount 2460 System Hub
- Installation and configuration of a Rosemount 2410 Tank Hub
- Installation and configuration of field devices
- Installation and configuration of tanks
- Calibration

Related information

Rosemount Tank Gauging System Configuration Manual

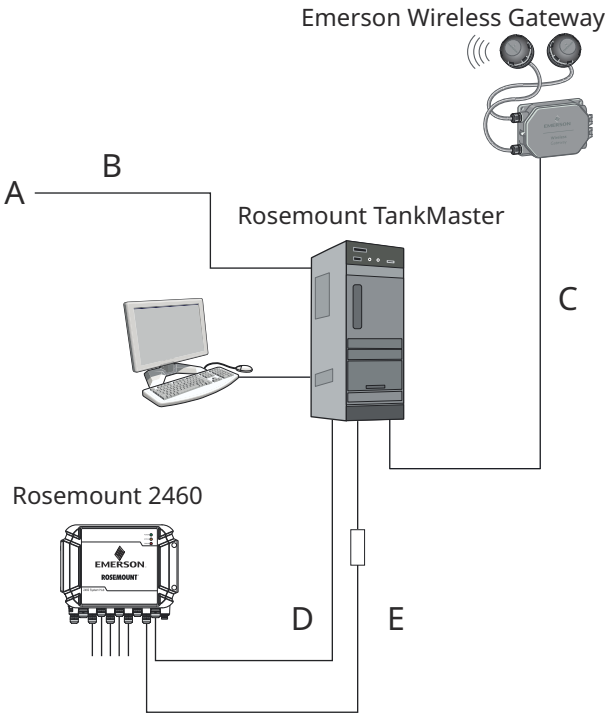
3.1 Communication protocol setup

The TankMaster work station can be connected to field devices and host computers via **Master** and **Slave** protocols.

Modbus Master protocol such as Modbus TCP (Ethernet) and Modbus RTU (TRL2, RS232, RS485) is available as default protocol when the Rosemount TankMaster software is installed on a TankMaster work station. Optional protocols, such as the **Modbus Slave** protocol for communication with host systems such as OPC and Modbus RTU (PLC, SCADA, DCS), can be obtained as well. Please contact Emerson Automations Solutions for more information on various options in Rosemount Tank Gauging systems.

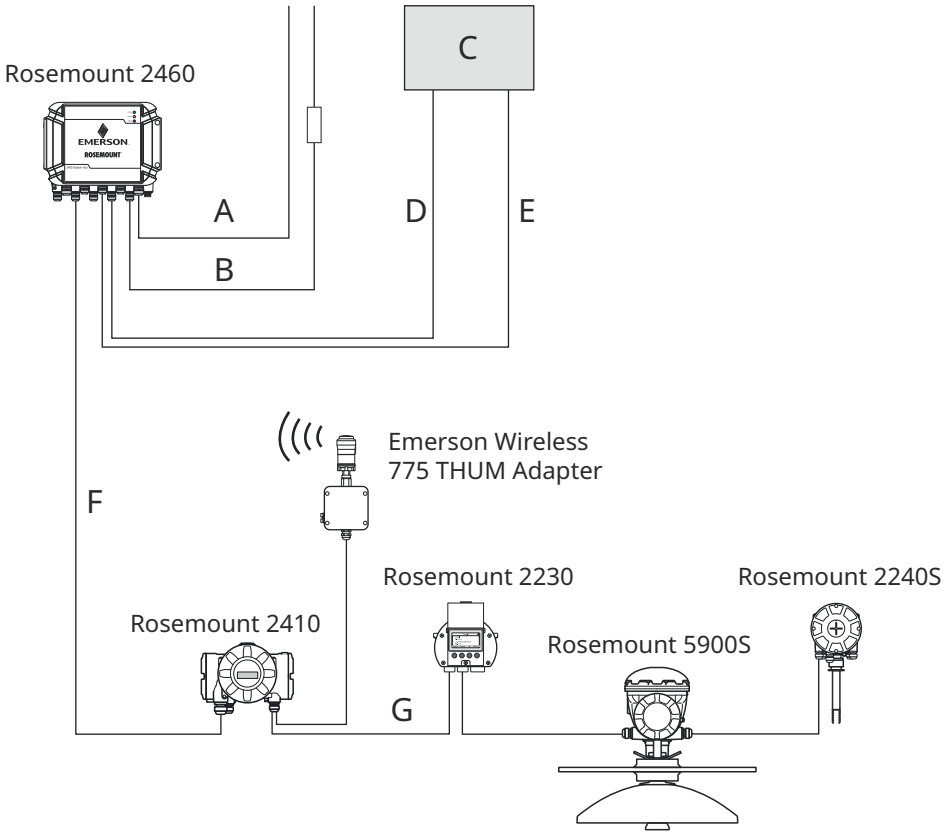
A Modbus protocol offers up to 32 channels. Enraf and HART protocols support 16 channels. For each channel you can specify which PC communication port (USB/COM) to connect to, as well as standard communication parameters such as Baud Rate, Parity, and number of Stop Bits.

Figure 3-1: Rosemount TankMaster and Rosemount 2460 System Hub



A. To host computer
B. Slave protocols such as OPC and Modbus RTU for communication with hosts such as PLC, SCADA, and DCS.
C. HART TCP via Ethernet
D. Modbus TCP (Ethernet)
E. Modbus RTU (TRL2, RS232, RS485)

Figure 3-2: Rosemount 2460 System Hub and field devices



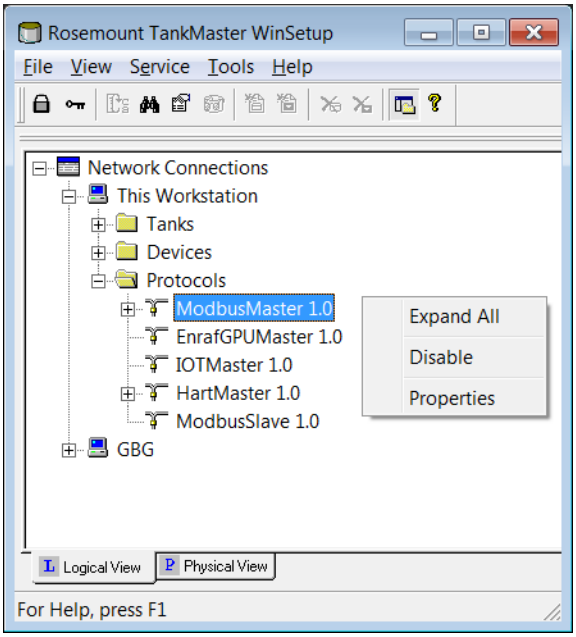
A. Modbus TCP (Ethernet)
B. Modbus RTU (TRL2, RS232, RS485)
C. Host computer
D. Modbus TCP (Ethernet)
E. Modbus RTU (RS232, RS485)
F. Modbus RTU (TRL2, RS485)
G. Tankbus

3.1.1 Master protocol channel configuration

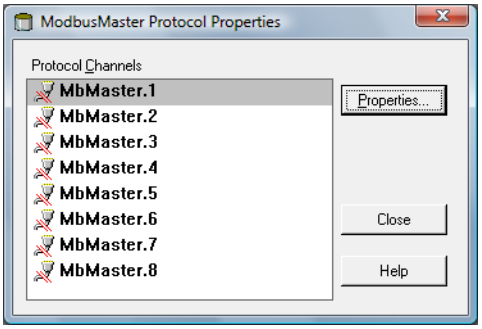
The Modbus Master protocol channel can be configured for communication between field devices and a TankMaster work station. The procedure applies to other protocols and modems as well, but other parameter settings may be required.

Procedure

1. Open the Protocols folder in the Workspace window.
2. Select the icon that corresponds to the particular protocol to be configured (this example shows the Modbus Master protocol).

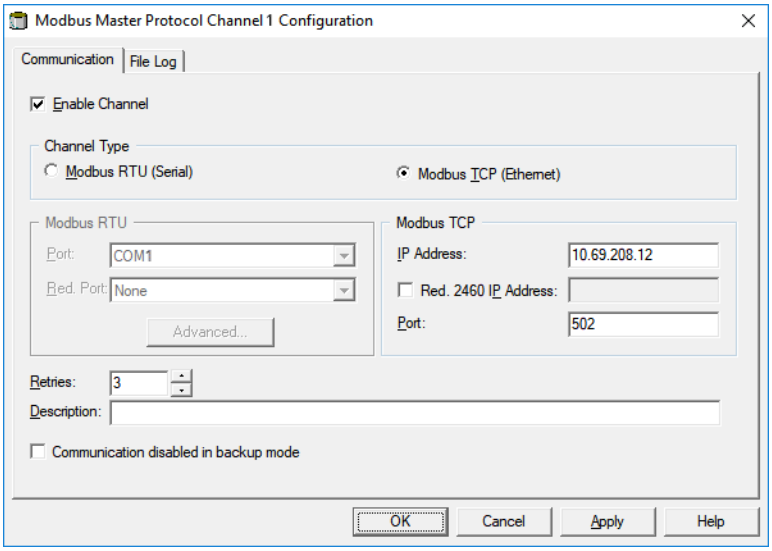


3. Click the right mouse button and select **Properties**, or from the **Service** menu, choose **Protocols** → **Properties**.



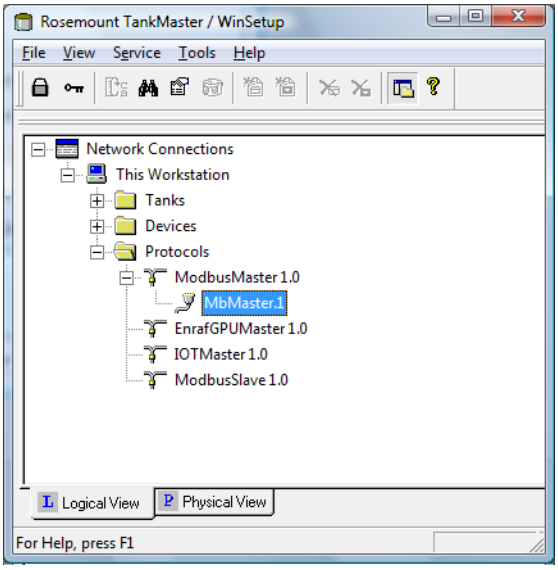
4. The Protocol Properties window lists the available protocol channels. For each channel the corresponding icon indicates whether the channel is enabled or disabled.
5. Select the desired channel.
6. Click the **Properties** button to configure the protocol channel.

7. The **Enable Channel** check box lets you activate the protocol channel.



- The ***Communication*** tab allows you to configure parameters for communication between field devices and a TankMaster work station.
- The ***File Log*** tab lets you specify what type of information to be logged and saved to disk.

Once enabled, the Modbus Master Channel icon appears in the WinSetup workspace.



Related information

Saving the communication log to file

3.1.2 Slave protocol channel configuration

A Slave protocol allows you to collect data from a TankMaster workstation to a host computer.

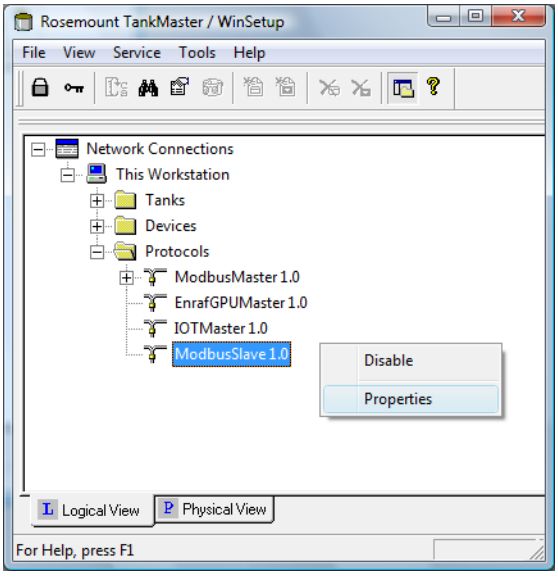
Prerequisites

A **hardware key** must be installed in order to run a slave protocol server. Host communication needs to be enabled.

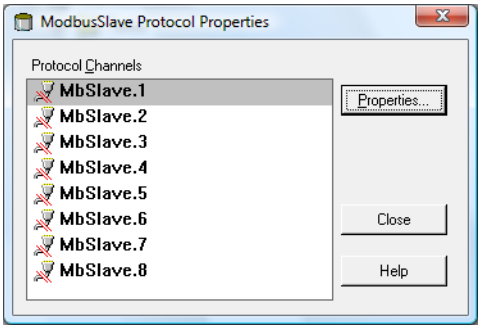
To configure the Modbus Slave protocol channel:

Procedure

1. Open the **Protocols** folder in the Workspace window.
2. Select the **ModbusSlave** protocol icon.
3. Click the right mouse button and select **Properties**, or from the **Service** menu select **Protocols → Properties**.

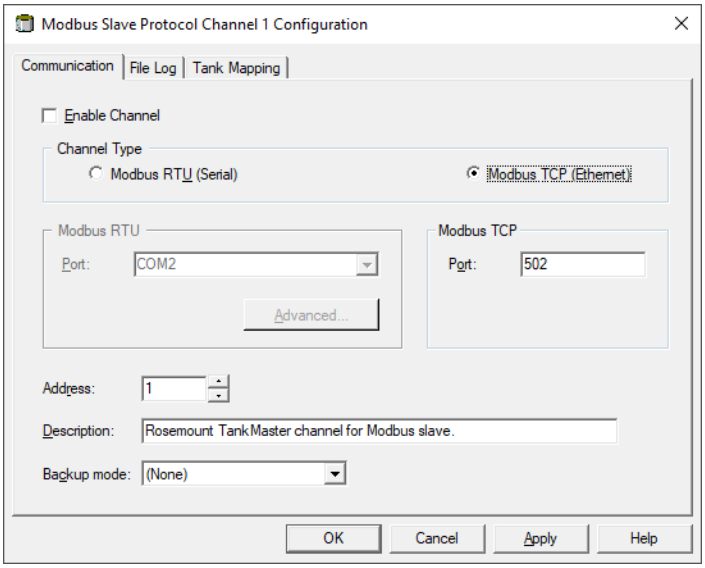


4. The ***Protocol Properties*** window lists enabled and disabled protocol channels.



5. Select the desired channel.
6. Click the **Properties** button to configure the protocol channel.

7. The **Enable Channel** check box lets you activate the protocol channel.



This window has three tabs:

- The ***Communication*** tab allows you to configure parameters for communication between field devices and a TankMaster work station.
- The ***File Log*** tab lets you specify what type of information to be logged and saved to disk.
- The ***Tank Mapping*** tab lets you specify from which tanks to collect data for the host system.

Note
If handshaking includes DSR, no query will be sent from the TankMaster Protocol Server if the communication is interrupted. This may result in a Query Timeout.

8. Click the **OK** button to store the current configuration and close the configuration window.e

Related information

Saving the communication log to file
Tank mapping configuration

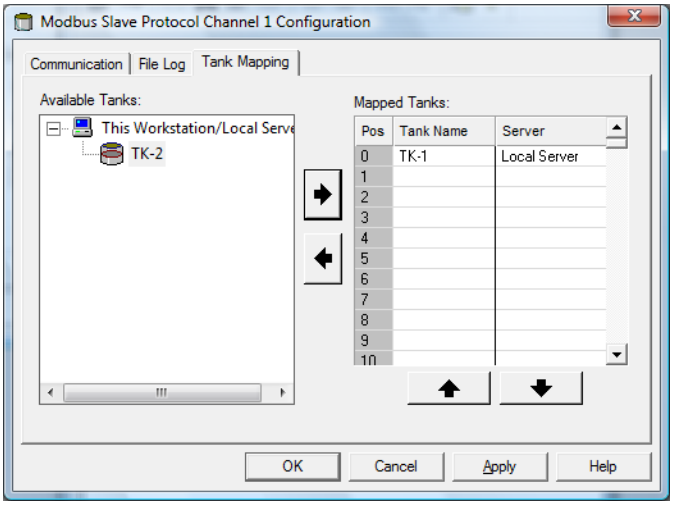
Tank mapping configuration

The slave protocol allows you to send data from a Rosemount Tank Gauging system to a host computer.

In the ***Tank Mapping*** window you can specify from which tanks to collect data for the host system.

Procedure

1. In the ***Slave Protocol Channel Configuration*** window, select the ***Tank Mapping*** tab.



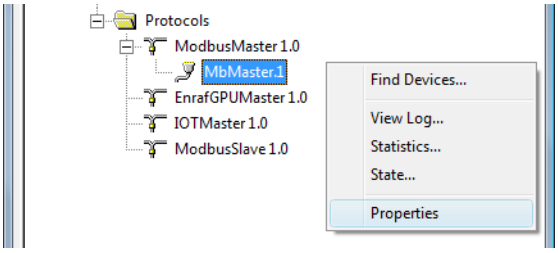
2. From the list of tanks that appear in the **Available Tanks** pane, select the tanks that the host will connect to.
3. Click the  button to move the selected tanks to the list of Mapped Tanks. Ensure that the tanks appear in the order required by the host system. When the host sends a query, TankMaster responds by sending tank data in the order as the tanks are listed in the **Mapped Tanks** column. You can easily change the position of mapped tanks by using the  and  buttons.
4. Click the **OK** button to save the current configuration and close the window.

3.1.3 Log file configuration

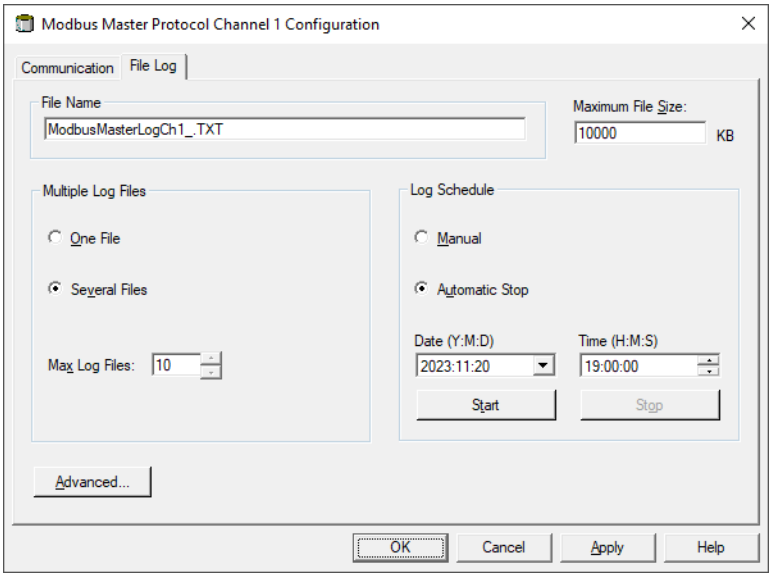
The Master Protocol Channel log file can be saved to disk.

Procedure

1. Select the protocol channel icon.



2. Click the right mouse button and choose **Properties**, or from the **Service** menu choose **Channels → Properties**.
3. Select the ***File Log*** tab.



4. Type a name of the log file in the **File Name** field and set the **Maximum File Size** to limit the amount of disk space required for storing log files. The **Maximum File Size** option can be used in combination with the **Multiple Log Files** option in order to store the log files on a number of floppy disks.

   Note
   If the maximum number of files is reached, TankMaster will replace existing log files.

5. Configure other options as desired and click the **OK** button.

Related information

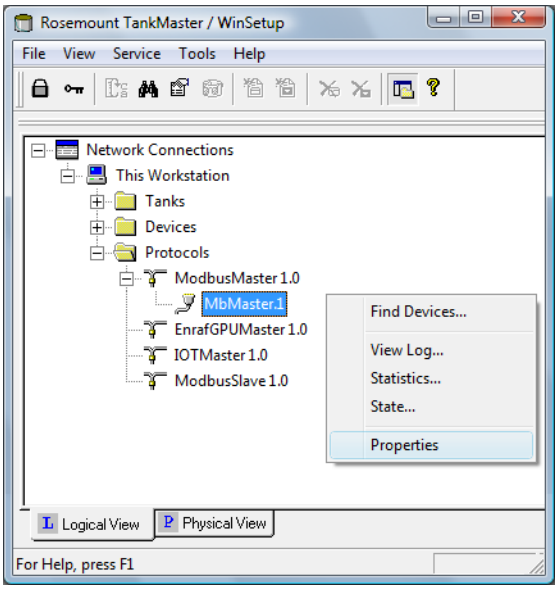
Protocol handling

3.1.4 Changing the current protocol channel configuration

The channel configuration can be changed at any time.

Procedure

1. In the WinSetup Workspace open the **Protocols** folder and the protocol sub folder with the enabled channels.



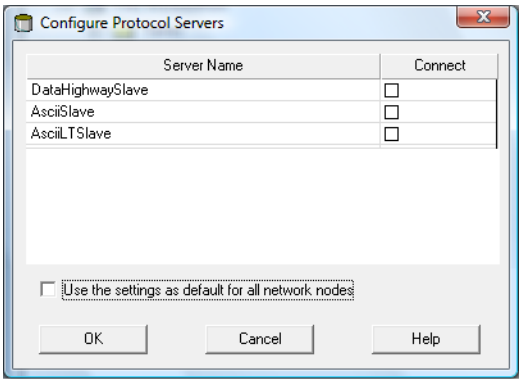
2. Select the channel icon.
3. Click the right mouse button and choose **Properties**, or from the **Service** menu choose **Channels** → **Properties**.
4. Choose the appropriate tab and change the protocol settings as described in the previous sections.

3.1.5 Protocol server configuration

You can specify which protocol servers that will be connected when starting TankMaster WinSetup.

Procedure

1. In the WinSetup workspace select the **Protocols** folder.
2. Click the right mouse button and choose **Configure**.



3. In the **Connect** column, select the check box of each protocol to be automatically connected when WinSetup starts up

Disable protocol server

You may disable a protocol server at any time by using the **Disable** command.

Procedure

1. In the Winsetup workspace, open the **Protocols** folder.
2. Click the right mouse button on the desired protocol server icon and choose **Disable**.

3.2 Preferences

3.2.1 Measurement units

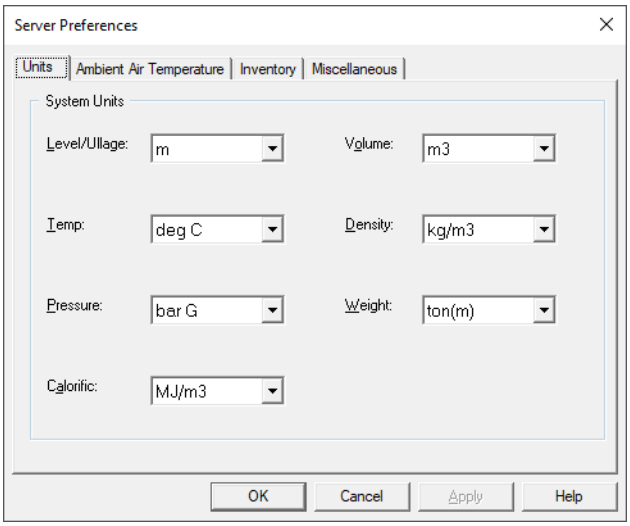
Specify units for inventory calculations and measured variables such as level and temperature

Prerequisites

Note
Make sure that the desired measurement units are specified before installing new tanks and devices.

Procedure

1. Select the desired server (e.g. “This Workstation”) in the WinSetup workspace.
2. Click the right mouse button and choose **Setup**, or from the **Service** menu choose **Servers** → **Setup**.
3. In the ***Server Preferences*** window, select the ***Units*** tab.



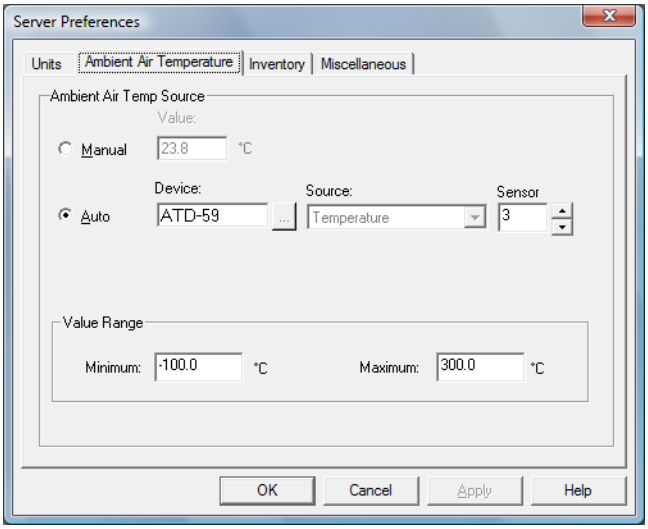
4. Choose the desired measurement units for level/ullage, temperature, pressure, volume, density, and weight.
5. Click the **OK** button to save the current setting and close the window.

Note
Note that these settings only affect installation of new tanks. Tanks which are already installed in the WinSetup Workspace will not be affected.

3.2.2 Ambient air temperature

Procedure

1. Select the desired server (e.g. “This Workstation”) in the WinSetup workspace.
2. Click the right mouse button and choose **Setup**, or from the **Service** menu choose **Servers → Setup**.
3. In the ***Server Preferences*** window select the ***Ambient Air Temperature*** tab:



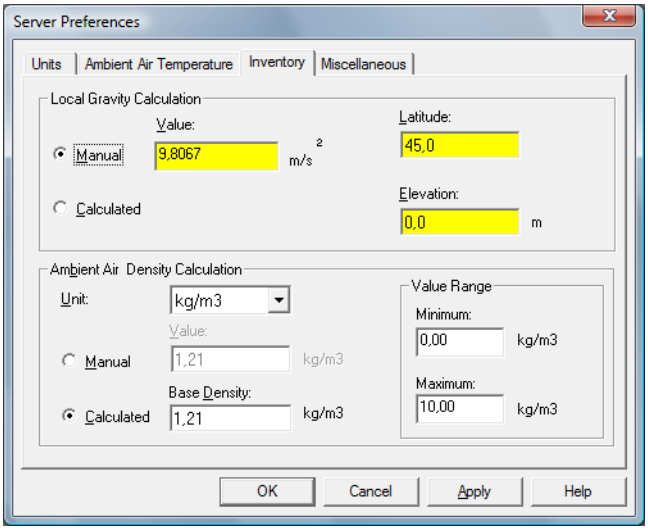
4. Choose **Auto** when there is a temperature sensor available that can be used for Ambient Air Temperature measurements. Otherwise, select the Manual option and type a value for the Ambient Air temperature.
   - Click the ... button and select the device to which a temperature sensor is connected
   - Select Ambient Air Temperature source associated with the selected device. In a Rosemount Tank Gauging system the associated temperature transmitter has to be configured in the tank database of the Rosemount 2410 Tank Hub.
   - Choose a specific sensor to be used for Ambient Air Temperature.
   - The Value Range defines the minimum and maximum values when Ambient Air Temperature is manually entered.
5. Click the **OK** button to save the current setting and close the window.

3.2.3 Inventory

Local Gravity and Ambient Air Density calculations are used for automatic density measurements.

Procedure

1. Select the desired server (e.g. “This Workstation”) in the WinSetup workspace.
2. Click the right mouse button and choose **Setup**, or from the **Service** menu choose **Servers → Setup**.
3. In the ***Sever Preferences*** window select the Inventory tab.



4. **Local Gravity** is used for density and weight calculations when an optional pressure transmitter is installed.

Local Gravity Calculation	Option
Manual	Allows you to use a specific value for the Local Gravity.
Calculated	If you want the local gravity to be calculated by TankMaster. In this case you need to enter the Latitude and Elevation of the site.

5. **Ambient Air Density** is used for calculating **Observed Density** and **Weight in Air** (WIA).

Ambient Air Density	Option
Manual	Allows you to use a specific value for the **Ambient Air Density**.
Calculated	If you want the **Ambient Air Density** to be calculated by TankMaster. The calculated value is based on the **Base Density** and the **Ambient Air Temperature**.

6. Click the **OK** button to save the current settings and close the window.

Related information

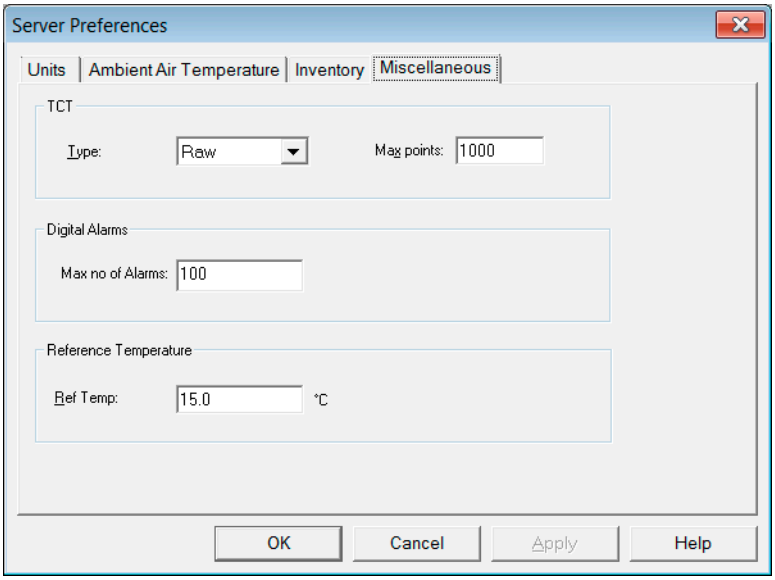
Rosemount TankMaster WinOpi Reference Manual

3.2.4 Miscellaneous

The ***Server Preferences Miscellaneous*** window lets you change parameters such as type of Tank Capacity Table, Reference Temperature, and number of digital alarms.

Procedure

1. Select the desired server (e.g. “This Workstation”) in the WinSetup workspace.
2. Click the right mouse button and choose **Setup**, or from the **Service** menu choose **Servers** → **Setup**.
3. In the ***Server Preferences*** window select the ***Miscellaneous*** tab.



4. Choose the type of **Tank Capacity Table** (TCT) to be used as default setting when installing new tanks. The default TCT type will automatically be chosen when strapping tables are created for new tanks. However, the TCT type can be changed when the strapping table is specified in the ***Tank Capacity Setup*** window regardless of the settings in the ***Server Preferences*** window.

   You can choose between TCT type Raw, Raw Comp, International, and Northern.

5. Specify the maximum number of Digital Alarms that will be used.
6. Specify the **Reference Temperature** to be used for inventory calculations. Normally, the standard value 15 °C (59 °F) is used.
7. Click the **OK** button to save the current settings and close the window.

Related information

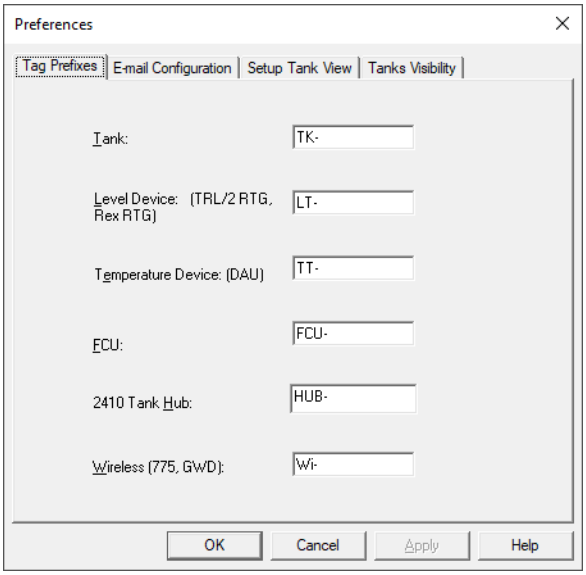
Rosemount TankMaster WinOpi Reference Manual

3.2.5 Setting the name tag prefixes

TankMaster WinSetup allows you to specify default name tag prefixes that will appear automatically when installing new tanks and devices. Note that Tank Tag must begin with a letter. These prefixes can be ignored if you want to use other prefixes instead.

Procedure

1. From the **Service** menu choose **Preferences**.
2. In the ***Preferences*** window select the ***Tag Prefixes*** tab.



3. Type the prefixes to be used for tank names and device names. and click the **OK** button.

   You can change the prefixes later at any time. Note that this will not affect names of existing tanks and devices.

   The following characters should not be used when naming objects in TankMaster as this may cause undesirable results:

Table 3-1: Illegal Characters

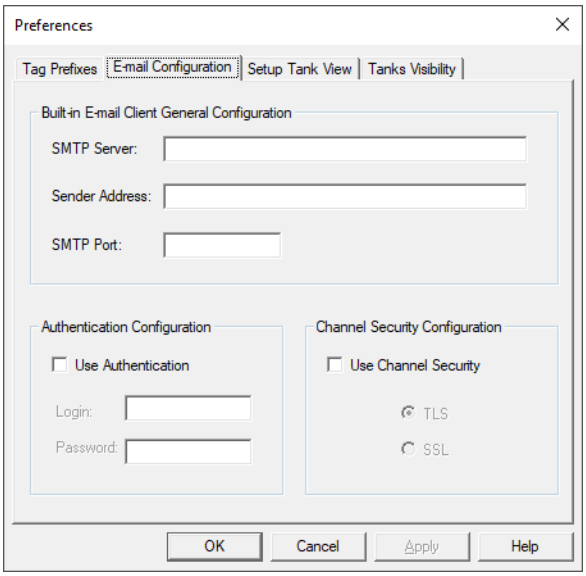
\	Reverse solidus	%	Percent symbol
/	Solidus	<	Less-than symbol
?	Question mark	>	Greater-than symbol
*	Asterisk	{	Left curly bracket
[	Left square bracket	}	Right curly bracket
]	Right square bracket	'	Apostrophe
|	Vertical line	"	Quotation mark

3.2.6 E-mail configuration

TankMaster WinSetup allows you to setup an e-mail client for alarm notifications and reports.

Procedure

1. From the Service menu choose Preferences.
2. In the ***Preferences*** window select the ***E-mail Configuration*** tab.



3. Enter the following information:

Item	Description
SMTP Server	Specify an SMTP server for outgoing messages. Contact your LAN administrator or Internet Service Provider (ISP) for details.
Sender Address	The e-mail account which will send e-mails from the current workstation must be located on the specified SMTP server.
SMTP Port	Optional. Contact your LAN administrator or ISP for details.
Authentication Configuration	Select this option and enter a Login name and Password if authentication is required on the mail server. Contact your LAN administrator or ISP for details.
Channel Security Configuration	Select this option if the e-mail client requires the use of channel security. Contact your LAN administrator or ISP for details.
Subject	Enter a title for an e-mail alarm notification. This subject is only used for Alarm notification and is optional. This subject will not be used for other e-mails sent from the built-in e-mail client.

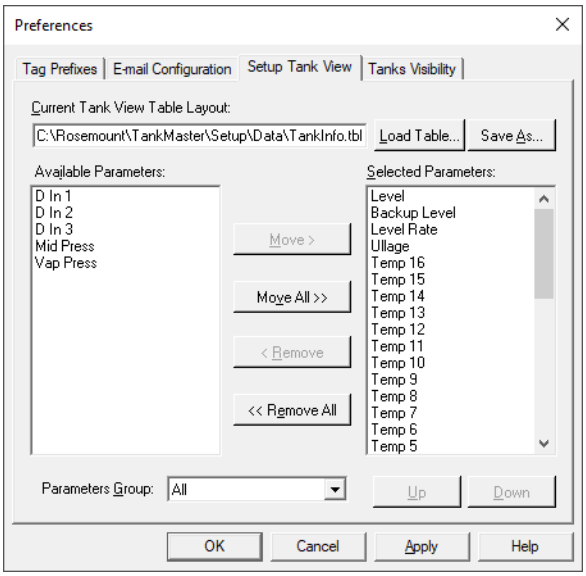
3.2.7 Tank view layout

The ***Setup Tank View*** tab is used to specify variables to be presented in the ***Tank View*** window.

TankMaster WinSetup allows you to create a new tank view layout and store it on disk, or load an existing table layout from disk.

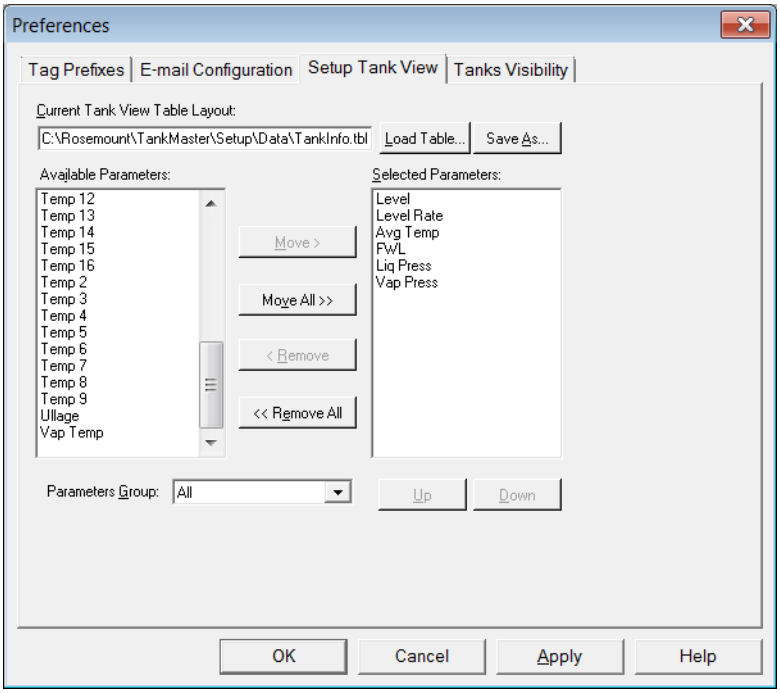
Procedure

1. From the **Service** menu choose **Preferences**.
2. In the ***Preferences*** window select the ***Setup Tank View*** tab.



3. Click the **Load Table** button if you wish to edit an existing Table Layout.
4. In the ***Available Parameters*** pane on the left-hand side of the ***Preferences/Setup Tank View*** window, select the parameter to be presented in the ***Tank View*** window.
5. Click the **Move** button to move it to the ***Selected Parameters*** pane on the right-hand side of the ***Preferences/Setup Tank View*** window.
6. Repeat for each parameter you wish to include. The **Move All** button allows you to move all variables at once to the **Selected Parameters** list box.

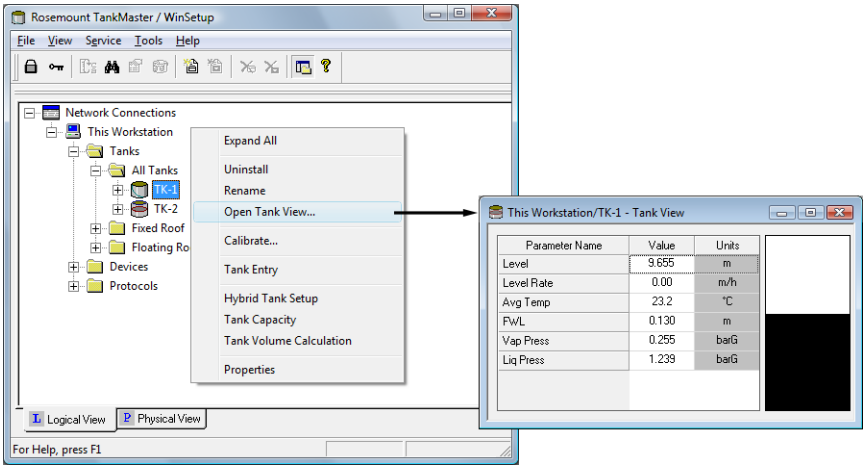
7. Ensure that all parameters to appear in the ***Tank View*** window are included in the **Selected Parameters** list box as illustrated below:



8. Click the **Save As** button if you wish to store the current tank view table for future use.
9. Click the **OK** button to save the current Tank View settings and close the window.

Note
when clicking the **Apply** or the **OK** button, the parameter setup is stored in the table layout that is currently used by the ***Tank View*** window.

To view the result in ***Tank View*** with specified parameters, click the right mouse button and choose the **Open Tank View** option:



Related information

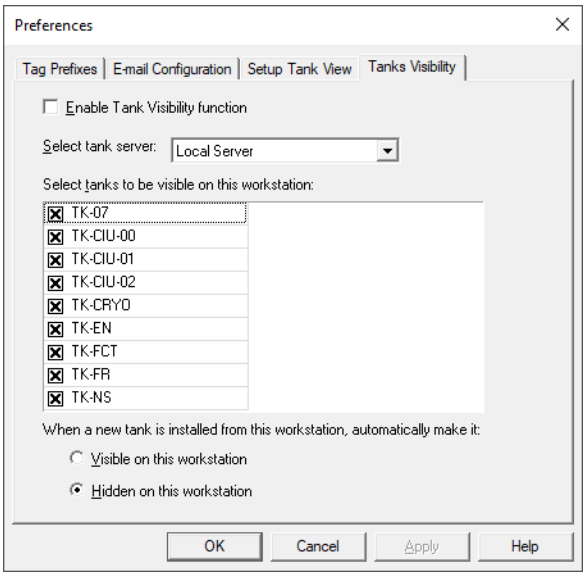
Viewing tank data

3.2.8 Tank visibility

The ***Tanks Visibility*** tab lets you configure tanks on a tank server to make them visible on the current TankMaster client.

Procedure

1. From the **Service** menu choose **Preferences** and select the ***Tanks Visibility*** tab:



2. Select the **Enable Tank Visibility** function check box.
3. From the **Select tank server** drop-down list, select the remote tank server on which the tanks are installed.
4. In the ***Select tanks to be visible on this workstation*** pane, check the tanks you wish to make visible on the current workstation. In the default setting all tanks are visible.
5. Choose the **Visible on this workstation** option to make new tanks visible on the current workstation.
6. Click the **OK** button to store the current configuration and close the ***Preferences*** window.

7. Figure 3-3 and Figure 3-4 show result in the WinSetup workspace when tank visiblity is enabled and disabled, respectively:

Figure 3-3: Tanks Visiblity Enabled for All Tanks

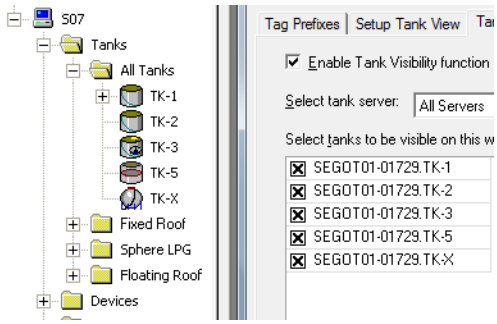
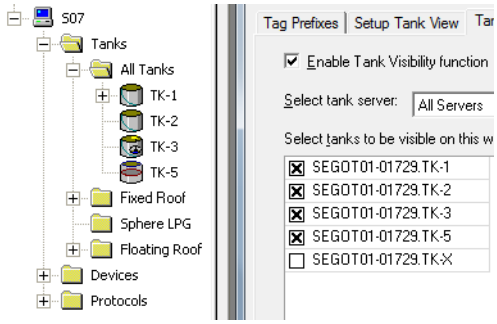


Figure 3-4: One Tank Disabled from Visiblity (TK-X)



3.3 Device installation

The WinSetup device installation wizard guides you step-by-step through the installation procedure. See the respective device manuals and the Rosemount System Configuration Manual for comprehensive information on how to install various devices in a Rosemount Tank Gauging system.

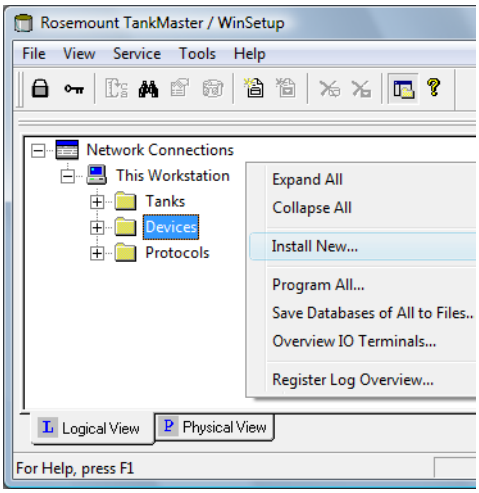
Related information

Rosemount Tank Gauging System Configuration Manual

3.3.1 Device installation via devices folder

Procedure

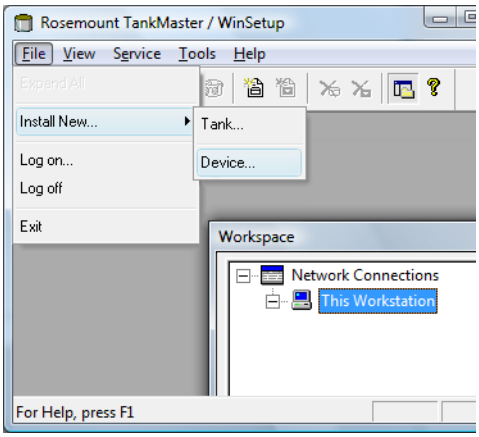
1. Select the **Devices** folder.
2. Click the right mouse button and choose **Install New** from the popup menu, or from the **Service** → **Devices** menu choose **Install New**.



3.3.2 Device installation via server

Procedure

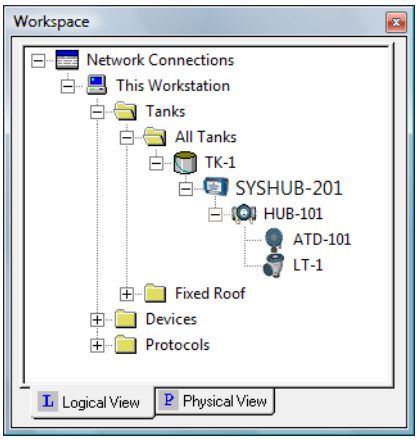
1. Select the **server** where your system is installed.
2. From the **File** → **Install New** menu choose **Device**.



3.4 Tank installation

The purpose of the tank installation procedure is to associate various devices to the right tanks. It also includes mapping variables such as Free Water Level and Vapor Pressure to specific instrument outputs.

Figure 3-5: Tank and associated devices



Prerequisites

Note

Make sure that measurement units are specified before installing a new tank.

The specified measurement units only affect installation of new tanks. Changing measurement units has no effect on tanks which are already installed in WinSetup. This means that if you want to change measurement units for an installed tank, it has to be uninstalled first, and then installed again after changing the measurement units in the ***Server Preferences/Units*** window.

Installing a new tank is a simple and straightforward procedure when using the tank installation wizard.

Procedure

1. In the TankMaster WinSetup workspace, select the **Tanks** folder.
2. Click the right mouse button and select **Install New** from the popup menu, or from the **Service** → **Tanks** menu, choose **Install New**.
3. Specify desired tank type: Fixed Roof, Floating Roof, Sphere, Horizontal or any other suitable tank type.
4. Select which devices to associate with the tank.
5. Configure the tank. For inventory calculations you will need to specify source signals for Free Water Level (FWL), Vapor Temperature, Vapor Pressure and Liquid Pressure.
6. Specify input for the different tank variables: automatic (measured by a field device) or manual values.

Related information

Rosemount Tank Gauging System Configuration Manual
Measurement units

3.5 Level gauge calibration

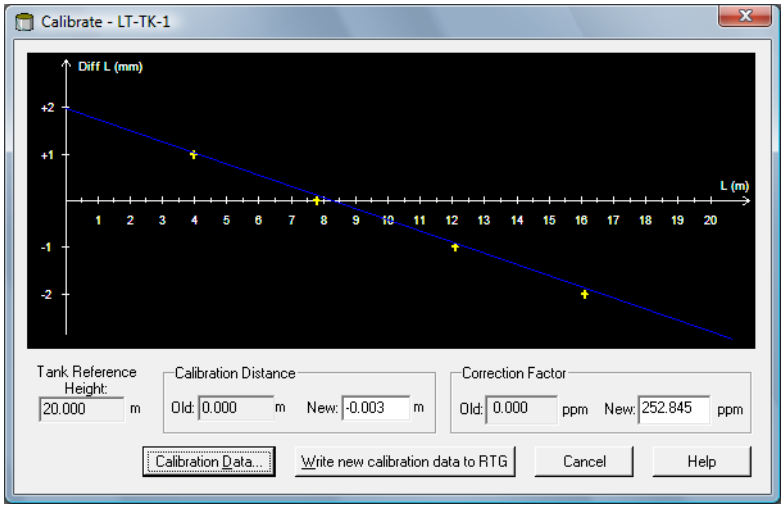
A minor level gauge adjustment may be needed in order to accurately match measured and actual product levels. For example, a deviation may result from minor errors in tank geometry parameters such as the tank height (R) or the position of the Gauge Reference Point (see the Rosemount 5900S Radar Level Gauge reference manual, for more information on tank geometry).

The Rosemount 5900 can be calibrated by using the **Calibration Distance** parameter. It can be manually adjusted in the ***5900 Properties/Geometry*** window.

For Still-pipe applications, you may use the **Calibrate** function to automatically calculate an optimized **Correction Factor** and **Calibration Distance** based on measurement data and hand dipping at different product levels.

Procedure

To access the Calibrate function, select the level gauge icon in the WinSetup workspace, click the right mouse button and choose **Calibrate**, or select **Calibrate** from the **Service/ Devices** menu:



Related information

Rosemount 5900S Reference Manual

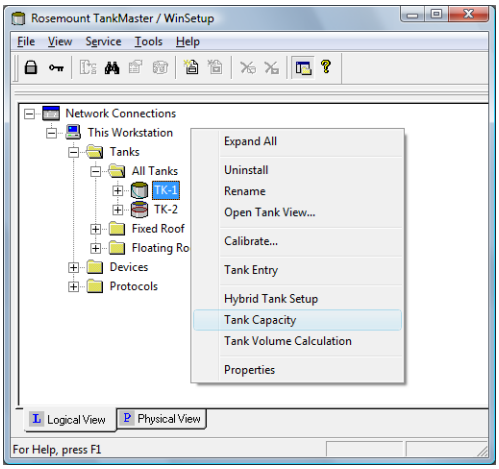
3.6 Tank capacity

The tank geometry can be defined in a strapping table; the Tank Capacity Table (TCT). The TCT is used to convert a product level to the corresponding volume. Different TCT types can be specified: Raw; International, and Northern.

To open the ***Tank Capacity Setup*** window:

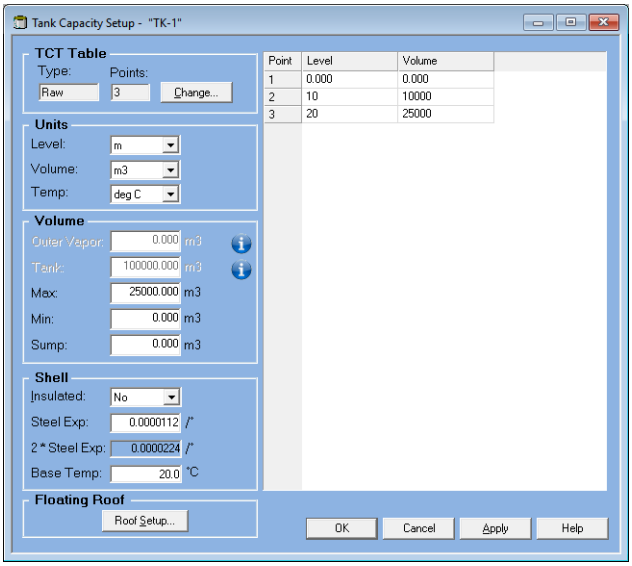
Procedure

1. Select the desired tank in the WinSetup workspace window.
2. Click the right mouse button and select the **Tank Capacity** option.



The ***Tank Capacity Setup*** window lets you configure the desired type of tank capacity table (strapping table).

Floating roof specific parameters can be configured by selecting the **Roof Setup** button.



Related information

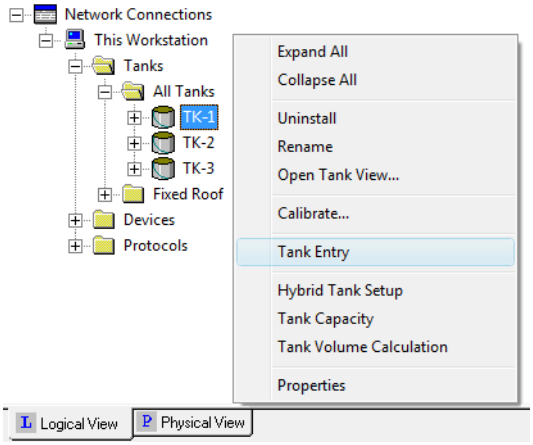
Rosemount TankMaster WinOpi Reference Manual

3.7 Tank Entry

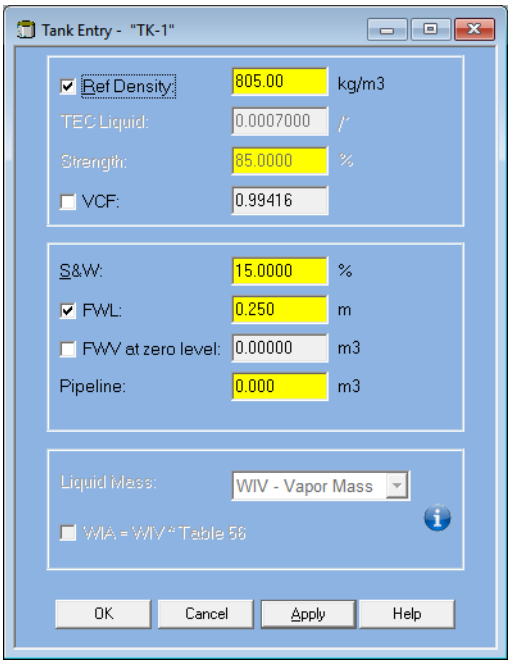
The ***Tank Entry*** window is used for specifying a number of product parameters to be used for inventory calculations. TankMaster can use measured data, or data that is manually entered.

Procedure

1. In the WinSetup workspace select the tank to configure.
2. Click the right mouse button and choose the **Tank Entry** option:



3. To enter manual values, select the check box and type the desired value in the input field. Manual values are marked yellow.



Related information

Rosemount TankMaster WinOpi Reference Manual

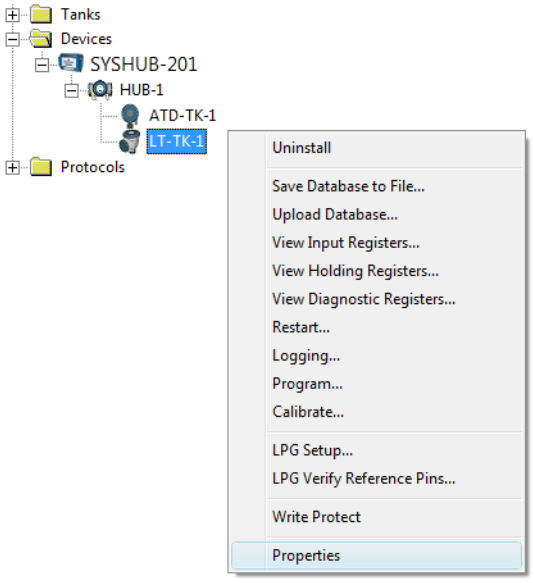
4 Device handling

4.1 To change device configuration

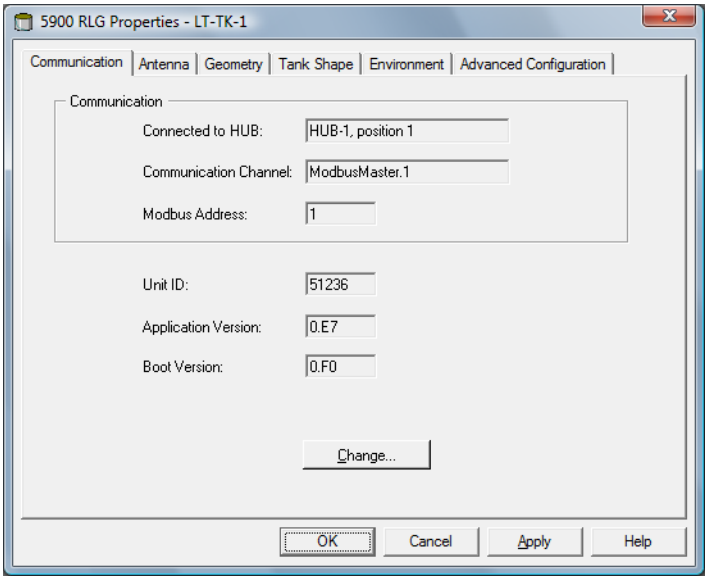
Once a device is installed and configured, you can modify the current settings at any time by opening the Properties dialog.

Procedure

1. In the Rosemount WinSetup workspace window select the desired device.
2. Open the **Devices** folder and select the device icon.
3. Click the right mouse button and choose the **Properties** option, or from the **Service** menu choose the **Devices/Properties** option.



4. The device properties window (5900S RLG Properties window in this example) appears with various tabs allowing you to change the current device settings.



Multiple tabs are available for configuration of communication parameters, tank geometry, device specific parameters and advanced configuration options. Some of the tabs refer to the different steps in the device installation wizard. Similar dialogs are available for other device types as well, for example the Rosemount 2410 Tank Hub.

Related information

Basic functions

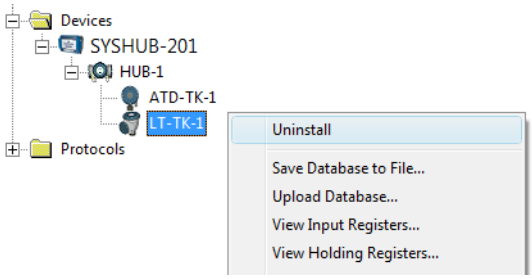
4.2 To uninstall a device

A device can be uninstalled from the WinSetup workspace at any time. The associated tank must be uninstalled first. As an alternative you may keep the tank by disconnecting the device from the associated tank before the device is uninstalled.

4.2.1 Uninstall a device and associated tank

Procedure

1. Start by uninstalling the associated tank (see the Rosemount Tank Gauging System Configuration manual for more information).
2. In the WinSetup workspace, select the device, click the right mouse button and choose the **Uninstall** option.



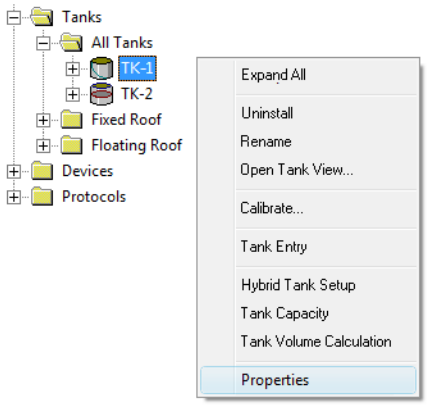
Now the device will be removed from the WinSetup workspace.

4.2.2 Uninstall a device without uninstalling the tank

If you prefer to keep the tank, you can disconnect it from the device and then uninstall the device.

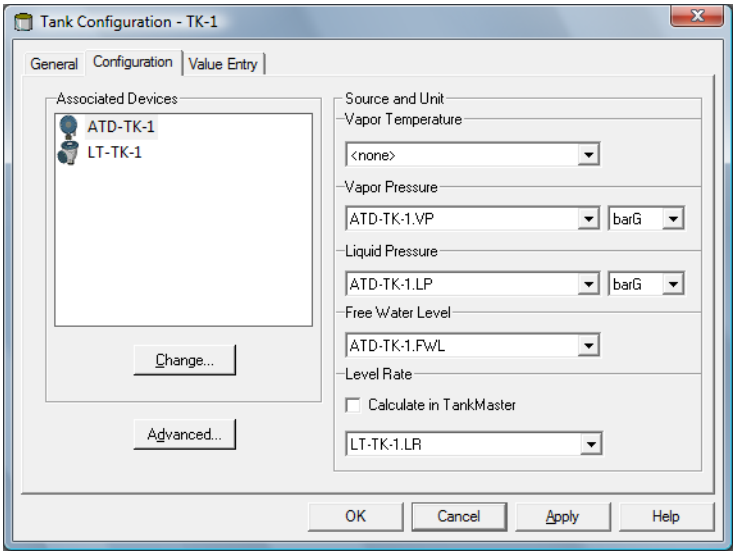
Procedure

1. In the WinSetup workspace, select the desired tank and click the right mouse button.

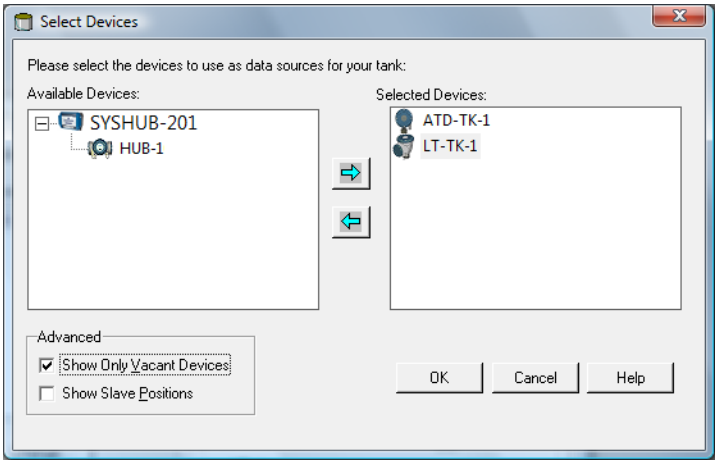


2. Choose the **Properties** option and select the ***Configuration*** tab.

3. In the ***Tank Configuration*** window, click the **Change** button.

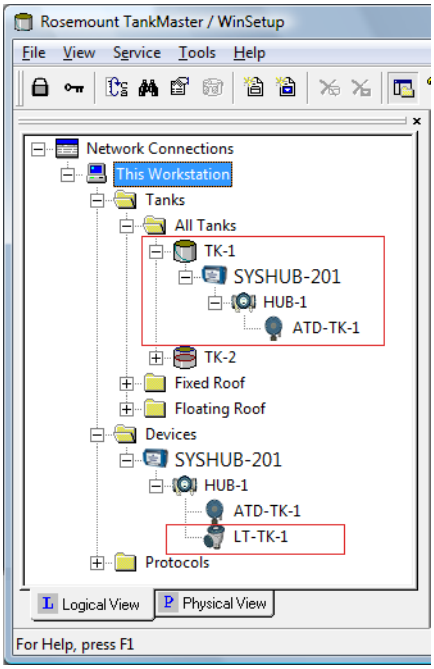


4. In the right-hand side of the ***Select Devices*** window, select the device and click the arrow button. Then the device will be removed from the **Selected Devices** pane to the **Available Devices** pane on the left-hand side. This means that the device is no longer associated with the tank.

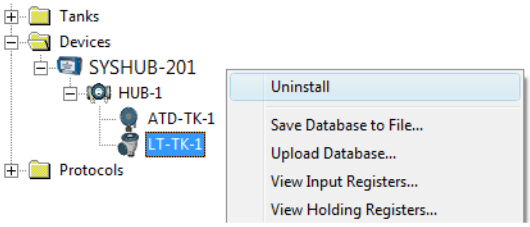


5. Click the **OK** button.
6. Open the **Tanks** folder.

7. Verify that the device (LT-TK-1 in this example) is no longer associated with the tank.



8. Open the **Devices** folder:



9. Select the device and click the right mouse button.
10. Choose the **Uninstall** option.

    Now the device will be removed. However, the tank is still available in the WinSetup workspace.

5 Service functions

5.1 Safety messages

Instructions and procedures in this section may require special precautions to ensure the safety of the personnel performing the operations. Information that potentially raises safety issues is indicated by a warning symbol (⚠). Refer to the following safety messages before performing an operation preceded by this symbol.

⚠ WARNING

Failure to follow safe installation and servicing guidelines could result in death or serious injury.

Ensure only qualified personnel perform the installation.

Use the equipment only as specified in this manual. Failure to do so may impair the protection provided by the equipment.

Do not perform any service other than those contained in this manual unless you are qualified.

⚠ WARNING

High voltage that may be present on leads could cause electrical shock.

Avoid contact with the leads and terminals.

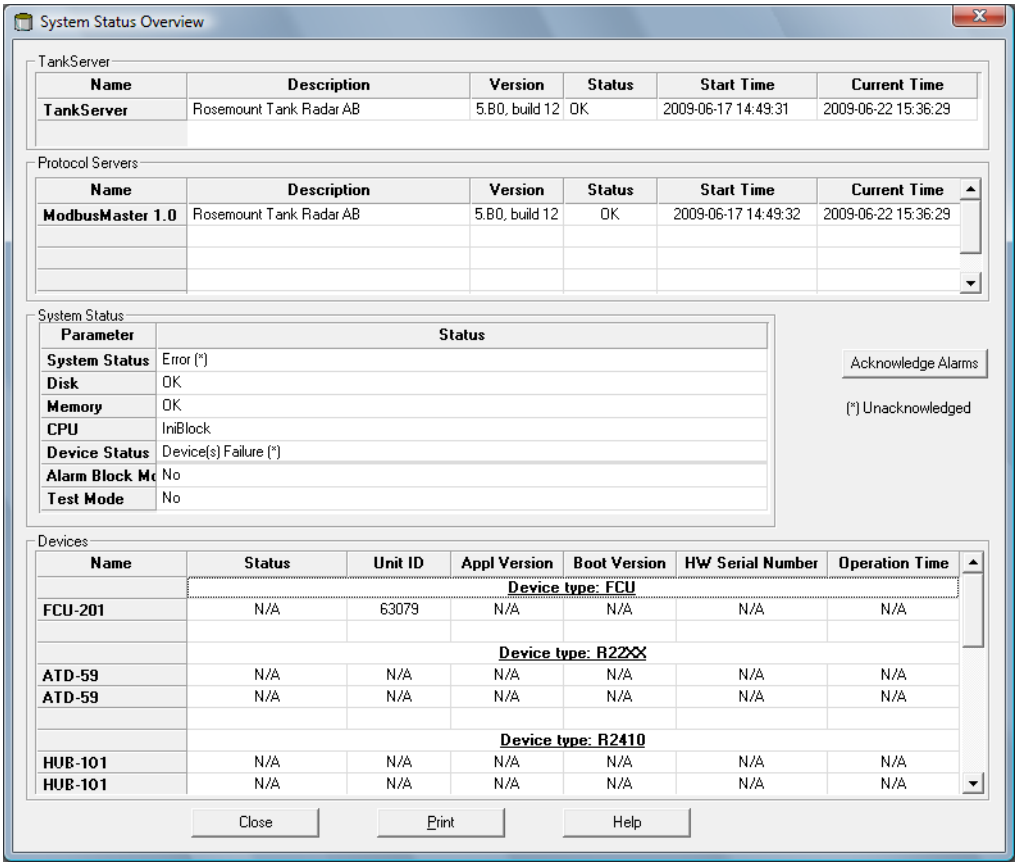
Ensure the mains power to the device is off and the lines to any other external power source are disconnected or not powered while wiring the device.

5.2 System status

The **System Status Overview** shows status and properties for the overall system, Tank Server, Protocol Servers, and devices.

Procedure

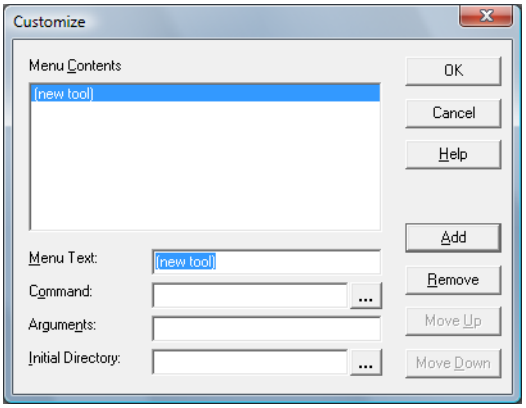
1. Select a workstation in the ***Workspace*** window.
2. Click the right mouse button and choose **System Status Overview**, or from the **Service** menu, choose **Servers** → **System Status Overview**.



5.3 Customizing the Tools menu in WinSetup

Procedure

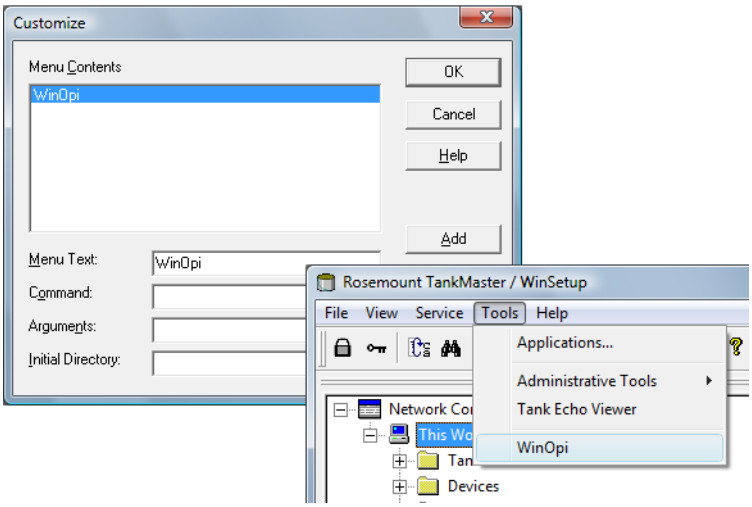
1. Choose the **Tools** → **Applications** menu option to open the ***Customize*** window.



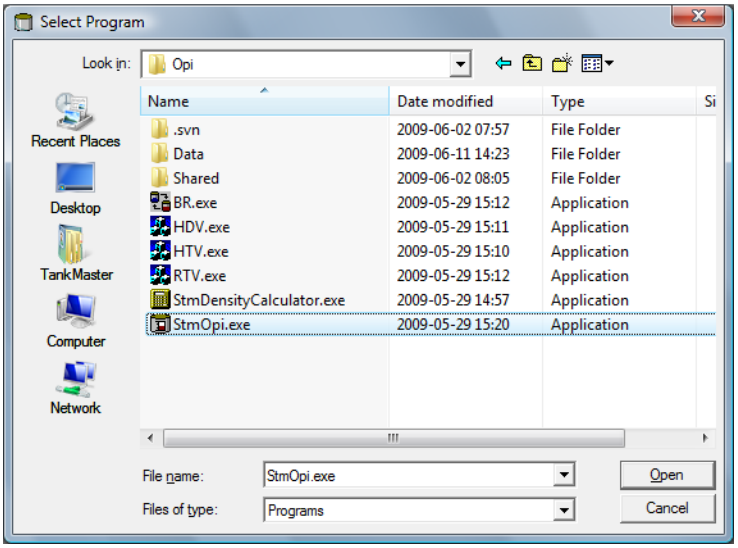
2. Click the **Add** button to add a new menu option to the **Tools** menu.
3. In the **Menu Text** field type the text you would like to appear in the **Tools** menu.

Example

In this example menu option **WinOpi** is added to the **Tools** menu.



4. Press the ... button next to the **Command** field.



5. Browse to the program file that will be associated with the new Tools menu option as given in the **Menu Text** field.
6. Click the **Open** button and return to the ***Customize*** window.
7. In the **Arguments** field, type any argument that you want to add to the command line. This line is usually left blank.
8. Click the **OK** button.
9. In the **Tools** menu, choose the **new menu** option and verify that the associated application starts as expected.

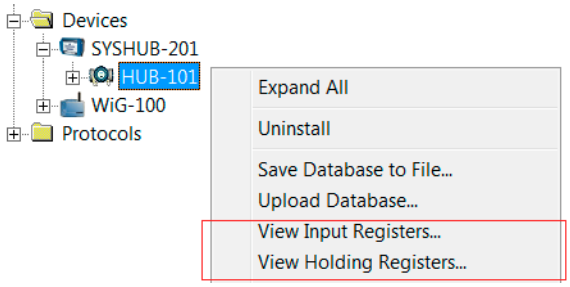
5.4 Viewing input and holding registers

In a Rosemount Tank Gauging system, measurement data is continuously stored in **Input registers** of devices such as the Rosemount 2410 Tank Hub, Rosemount 5900S Radar Level Gauge, and other devices. By viewing the input registers of a device, you can verify that the device is working properly.

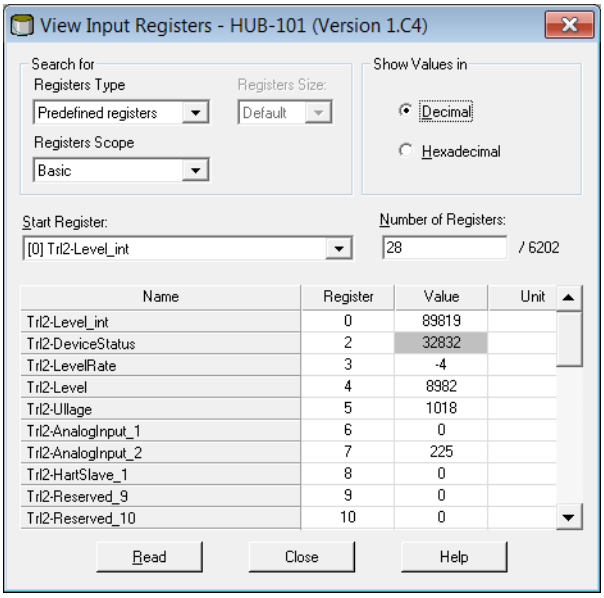
Holding registers store various device parameters used to control measurement performance.

Procedure

1. In the WinSetup Workspace, select the device icon.



2. Click the right mouse button, or open the **Service** → **Devices** menu, and choose the **View Input Registers** or **View Holding Registers** option.



3. Registers Type:
   - Choose **Predefined** if you would like to see a commonly used selection of database registers.
   - For advanced service the **All** option allows you to view a specific range of registers. Specify a start value in the **Start Register** input field, and the total number of registers to be displayed in the **Number of Registers** field (1-500).

4. The **Registers Scope** drop-down list has three options:

Scope	Description	Access level
Basic	Standard setting that includes the most commonly used registers	View only
Service	Includes a wider range of registers for advanced service and troubleshooting	Supervisor
Developer	For advanced users only	Administrator

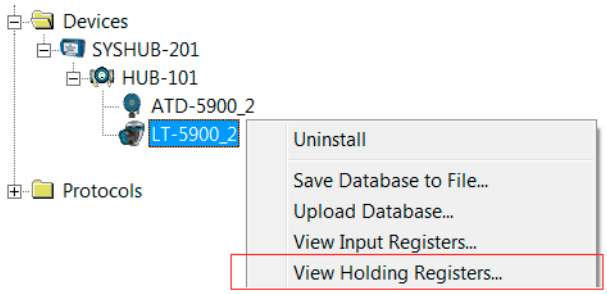
5. In the ***Show Values*** in pane, choose the appropriate register format Decimal or Hexadecimal.
6. Click the **Read** button to upload the contents of the device database registers.

5.5 To edit holding registers

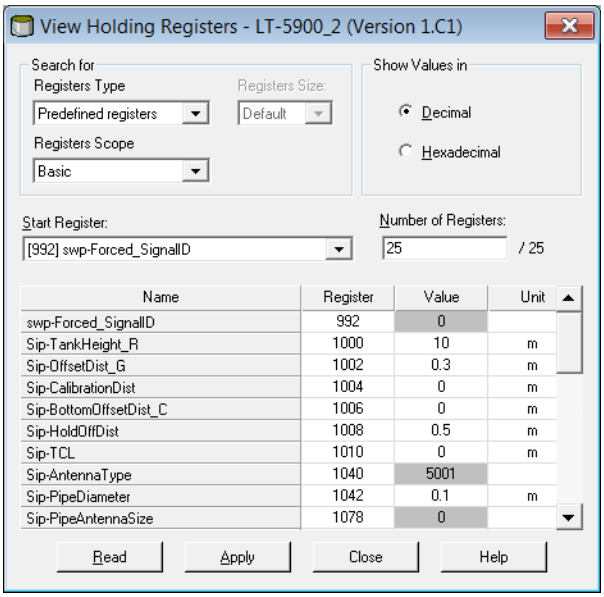
Most Holding registers can be edited simply by typing a new value in the appropriate **Value** input field. Some holding registers (marked grey in the **Value** column) can be edited in a separate window. Then you can choose from a list of options or you can edit separate data bits.

Procedure

1. In the WinSetup Workspace, select the device icon.



2. Click the right mouse button, or open the **Service** → **Devices** menu, and choose the **View Holding Registers** option.

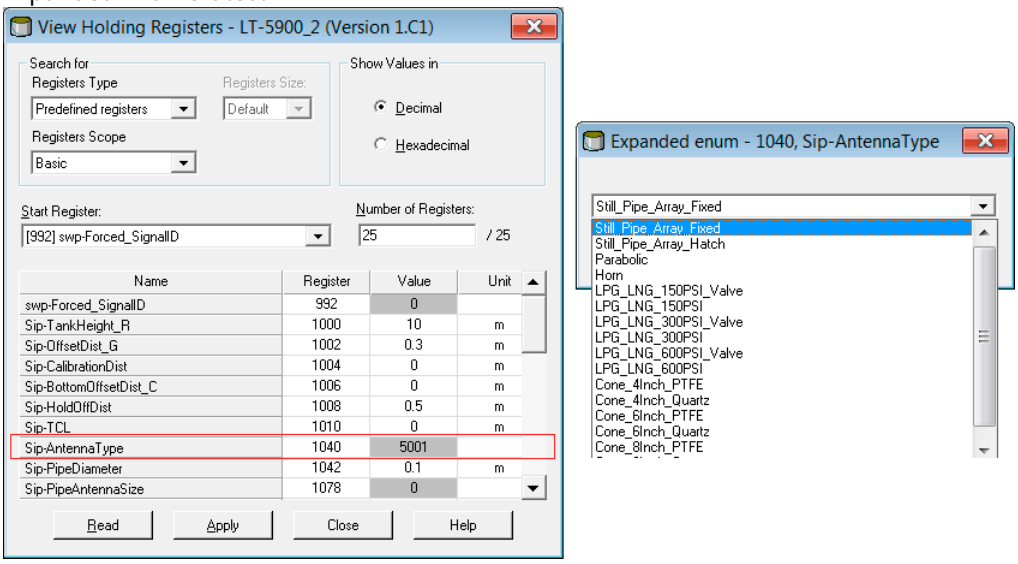


3. To change the contents of input fields with white background color in the **Value** column, put the cursor in the field and type a new value.

   To change input fields with grey background color, double click the field to open a new window for editing. Depending on the type of Holding register, an Expanded Enumerated or an Expanded Bitfield window is opened. Select from the list of options (Expanded Enumerated) or change the appropriate data bit (Expanded Bitfield).

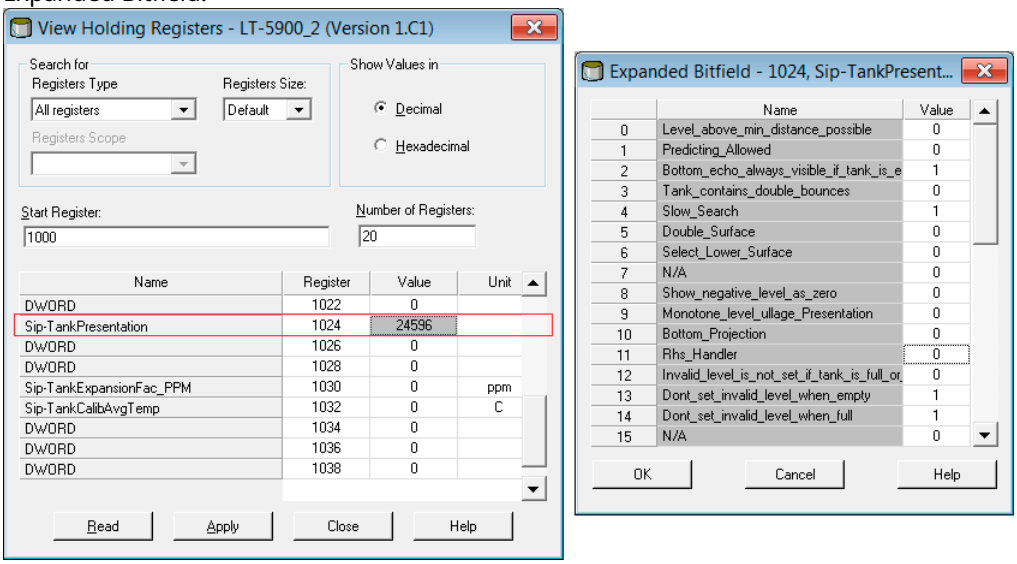
   Example

   Expanded Enumerated.



   Example

   Expanded Bitfield.



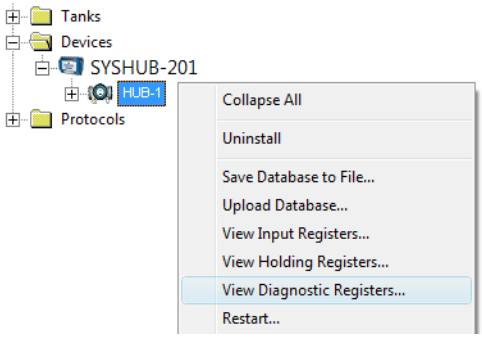
4. Click the **Apply** button to store the register data, or click the **Close** button to store and close the window.

5.6 Viewing diagnostic registers

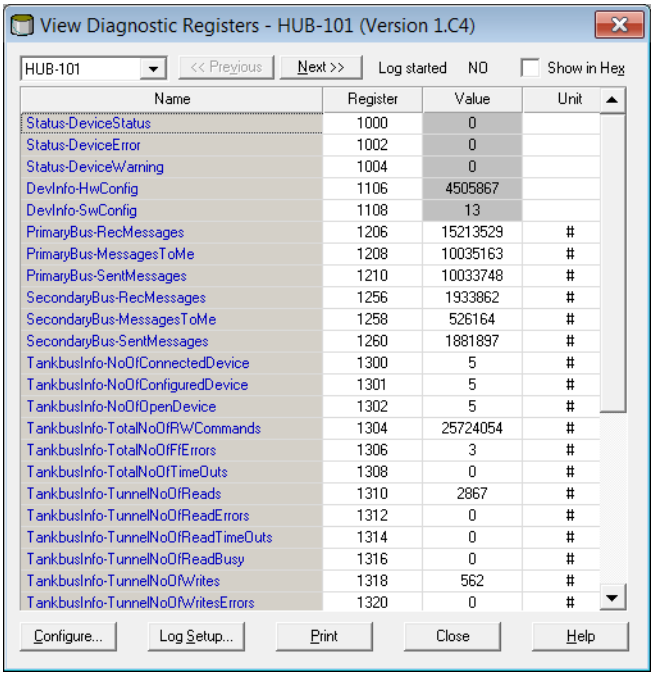
The ***View Diagnostic Registers*** window shows a predefined set of diagnostic Input and Holding registers. Each device has a standard set of diagnostic registers which can be changed in the ***Configure Diagnostic Registers*** window.

Procedure

1. Select the device icon (for example a Rosemount 2410 or Rosemount 5900) in the ***TankMaster WinSetup*** workspace.



2. Click the right mouse button and choose **View Diagnostic Registers**.



Register values in this window are of read only type. They are loaded from the device as the window is opened.

Table cells with grey background color in the **Value** column represent registers of either Bitfield or ENUM type. An expanded ***Bitfield/ENUM*** window can be opened for these register types. Double-click a cell to open the ***Expanded Bitfield/ENUM*** window.

Registers of Bitfield and ENUM type can be presented in hexadecimal format by selecting the **Show in Hex** check box.

It is possible to view diagnostic registers for devices of the same type without closing the window and opening it again for a new device. Press Next >> or << Previous buttons to step to the next or previous device. Alternatively, another device can be selected from the drop down menu on the left-hand side of the ***View Diagnostic Registers*** window.

The **Configure** button lets you specify a default setting of diagnostic registers.

The **Log Setup** button provides easy access to the ***Register Log Scheduling*** window, which allows you to setup a log schedule for automatic start and stop of register logging.

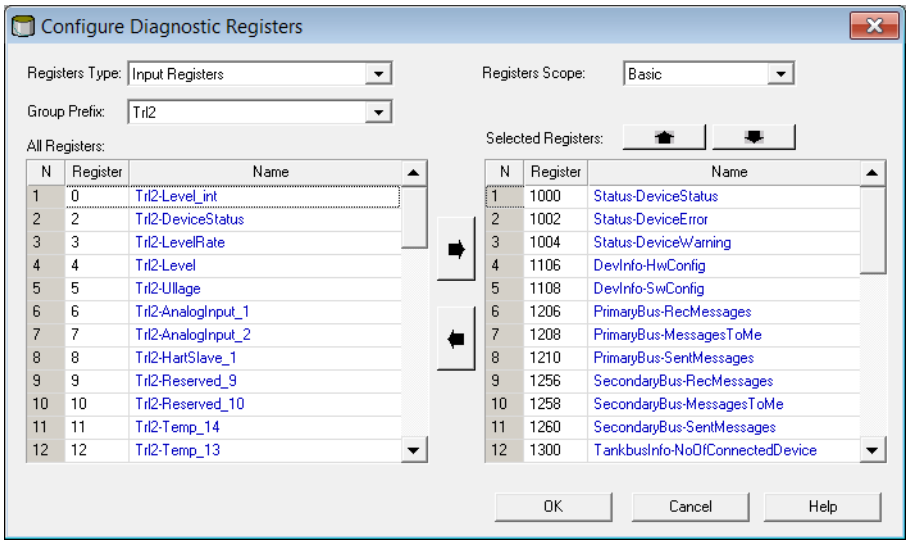
The **Print** button lets you print the current register information.

Related information

Configure
Logging measurement data

5.6.1 Configure

The **Configure** button in the ***View Diagnostic Registers*** window opens the ***Configure Diagnostic Registers*** window which allows you to change the default selection of diagnostic registers. You can use this option to setup the ***View Diagnostic Registers*** window for the selected device type.



Procedure

1. In the **Registers Type** pull down menu, choose **Holding** or **Input** registers. Input Registers are displayed in blue, Holding Registers in black.
2. The **Group Prefix** drop down menu lets you filter the list in the left pane.

   Note
   The Group Prefix feature is not supported for all device types.

3. A standard selection appears automatically in the ***Selected Registers*** pane on the right-hand side of the ***Configure Diagnostic Registers*** window. To add a register to the list, select it in the left pane and press the button.

To remove a register from the right pane, select it and press the  button.

4. The order in which registers are displayed in the ***View Diagnostic Registers*** window can be configured. Select a register in the right pane and press  to move it upwards, or  to move it downwards in the list.
5. Press **OK** to store the current configuration.

5.6.2 Restore to default setting

In case you wish to restore the ***View Diagnostic Registers*** window to the default setup, you need to remove the file that contains the current configuration data for the ***View Diagnostic Registers*** window.

Procedure

1. In Windows Explorer open the following folder:
   C:\Rosemount\TankMaster\Setup\Data, where C:\ is the drive letter associated with the hard disk on which TankMaster is installed.
2. Locate the configuration file for the device whose diagnostic register setup you wish to restore:

Device	Configuration file
2410 Tank Hub	R2410_diag.ini
5900S Radar Level Gauge	R5900_diag.ini
2240 Multi-Input Temperature Transmitter and Auxiliary Tank Devices (ATD)	R22XX_diag.ini

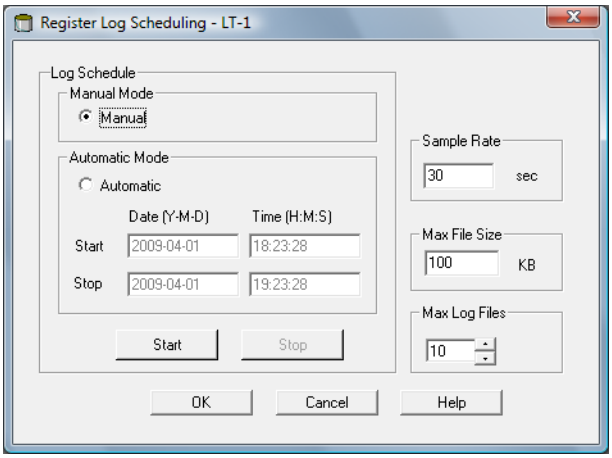
3. Remove the *.ini file, or rename it in case you wish to store the file for future use (for example R2410.old).
4. Start TankMaster WinSetup and open the ***View Diagnostic Registers*** window to verify that the ***View Diagnostic Registers*** window shows the default setting of diagnostic registers.

5.7 Logging measurement data

Logging of diagnostic registers can be a useful tool for verifying that a gauge works properly. The logging function can be accessed by using the TankMaster WinSetup program.

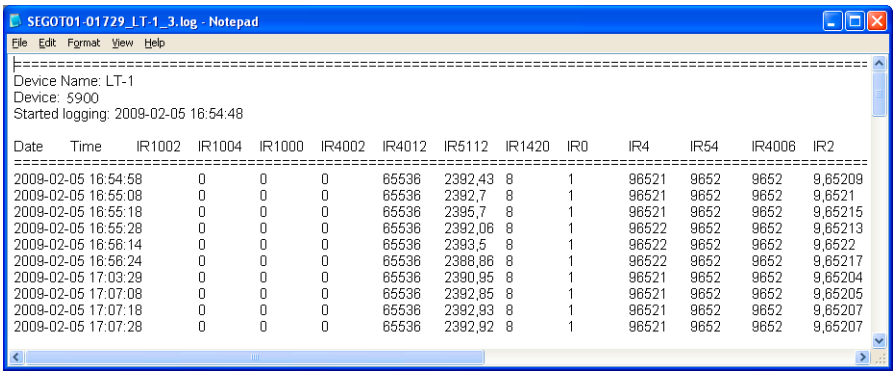
Procedure

1. Start the TankMaster WinSetup program.
2. Select the device icon in the WinSetup workspace.
3. Click the right mouse button and choose **Logging**.



4. The **Manual** mode lets you start logging at any time. In **Automatic** mode you have to specify a Start and Stop time.
5. The resulting log file(s) will not exceed the size specified by the Max File Size parameter.
   - In **Automatic** mode logging will proceed until the Stop Date and Time is reached.
   - In **Manual** mode logging will proceed until the Stop button is pressed.
   - Logging will stop automatically when the number of log files is equal to the number given by the Max Log Files parameter.

6. The log file is stored as a plain text file and can be viewed in any word processing program. It is stored in the following folder: **C:\Rosemount\Tankmaster\Log**, where **C** is the disk drive where the TankMaster software is installed. The log file contains the same input registers as the ***View Diagnostic Registers*** window. You can change which input registers to be included in the log file by configuring the ***View Diagnostic Registers*** window, see “Viewing diagnostic registers” on page 65 for more information.



Related information

Viewing diagnostic registers

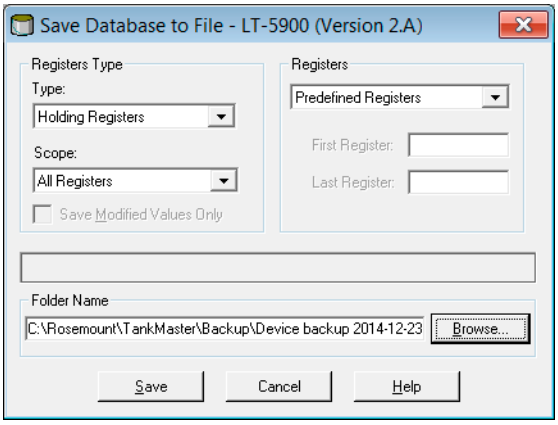
5.8 Saving and loading database registers

Input Registers and Holding Registers of the Rosemount 5900 and the Rosemount 2410 can be stored on disk. This can be useful for backup purposes and troubleshooting. Input and Holding registers can be saved for a single device or several devices simultaneously.

5.8.1 To save device registers for a single device

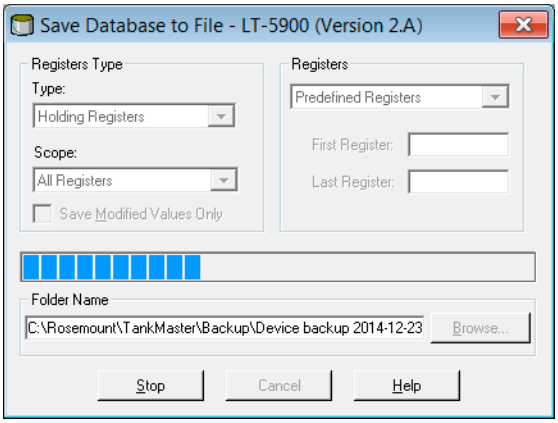
Procedure

1. Start the TankMaster WinSetup program.
2. In the ***TankMaster WinSetup*** workspace window, click the right mouse button on the device icon.
3. Choose the **Save Database to File** option, or from the **Service** menu choose **Devices** → **Save Database to File**.



4. Select **Holding/Input** registers (the Holding Register options is shown in the example above for demonstration).
5. Choose the **Predefined Registers** or the **User-Defined** option.
   - The Predefined option stores the most frequently used registers.
   - The User-defined option stores a specified range of Holding registers and should only be used for advanced service.
6. For the **Predefined Registers** option you may choose the desired **Scope**; **All Registers** or **Basic Registers**. Basic is a limited number of registers mostly related to configuration parameters for the device.
7. Optional: The **Save Modified Values Only** check box lets you save only those registers that have been modified. It will be shown if the function is supported for the device type, but may remain disabled if the device version is not supported.
8. Click the **Browse** button, select a folder and type a file name.

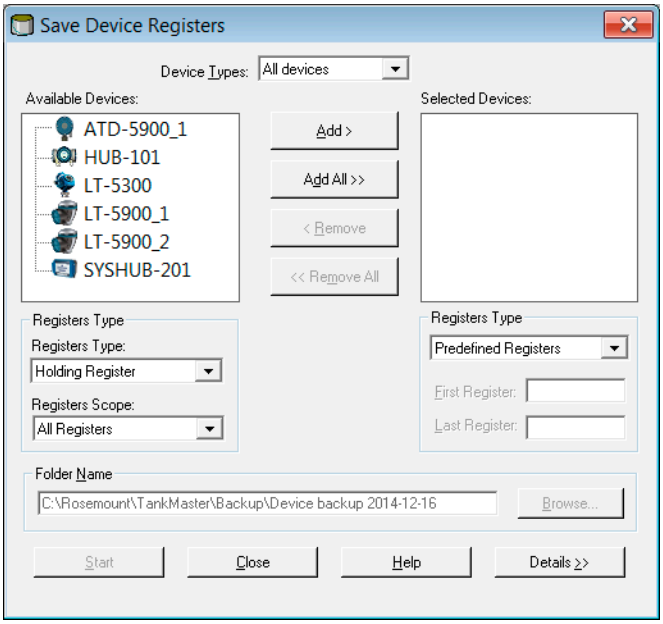
9. Click the **Save** button to start saving the configuration database to file.



5.8.2 To save device registers for multiple devices

Procedure

1. In the TankMaster WinSetup workspace, select the Devices folder.
2. Click the right mouse button and choose the **Save Database of All to Files** option, or from the ***Service*** menu choose **Devices** → **Save Database of All to Files**.



3. Select a device from the ***Available Devices*** pane and click the **Add** button in order to move it to the ***Selected Devices*** pane. Repeat for all devices you would like to include.
4. Select register type: **Holding** or **Input** registers.

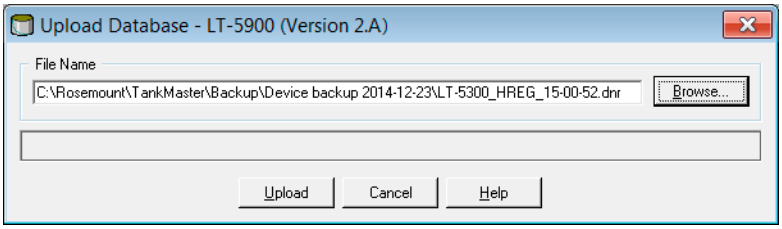
5. Choose the **Predefined Registers** or the **User-Defined** option.
   - The **Predefined** option stores the most frequently used registers.
   - The **User-defined** option stores a specified range of Holding registers and should only be used for advanced service.
6. Click the **Browse** button, select a folder and type a file name.
7. Click the **Start** button to save the database backup.

5.8.3 To recover a device database

TankMaster WinSetup offers the option to replace the current holding register database with a backup database stored on disk. This can be useful, for example, when recovering configuration data.

Procedure

1. Select the device icon in the WinSetup workspace.
2. Click the right mouse button and choose the **Upload Database** option, or from the**Service** menu choose **Devices** → **Upload Database**.



3. Type a file path and file name, or click the **Browse** button and choose a backup database file to be uploaded.
4. Click the **Upload** button to start uploading the recovery database.

5.9 Upgrading device firmware

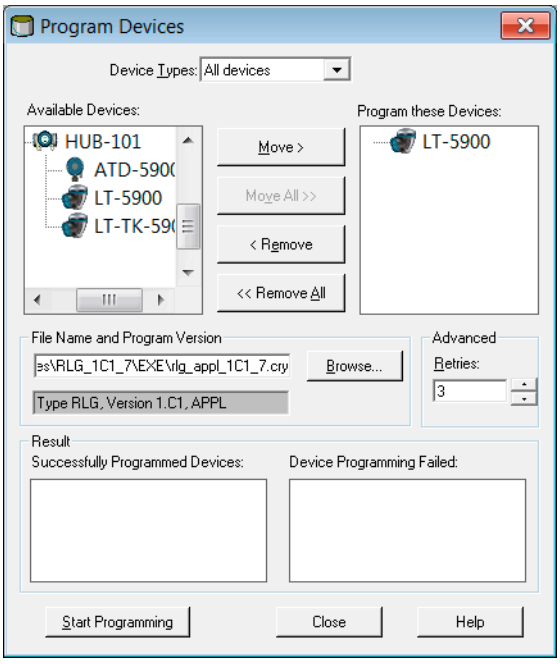
TankMaster WinSetup supports firmware upgrade for Rosemount Tank Gauging level gauges and temperature transmitters.

Note
In case the current program version is significantly older than the new one, it is recommended that you load the default configuration database once the device is reprogrammed. Contact Emerson if you need further advice.

Procedure

1. Make sure the devices are properly prepared for reprogramming (normal operation and no warnings or errors).
2. In the ***WinSetup Workspace***, select the **Devices** folder. (For a single device, select the device in the Devices folder).
3. Click the right mouse button and choose the **Program All** option, or from the **Service** menu, choose **Devices** → **Program All**.

   (For a single device, choose the **Program** option, or from the **Service** menu, choose the **Devices** → **Program** option).

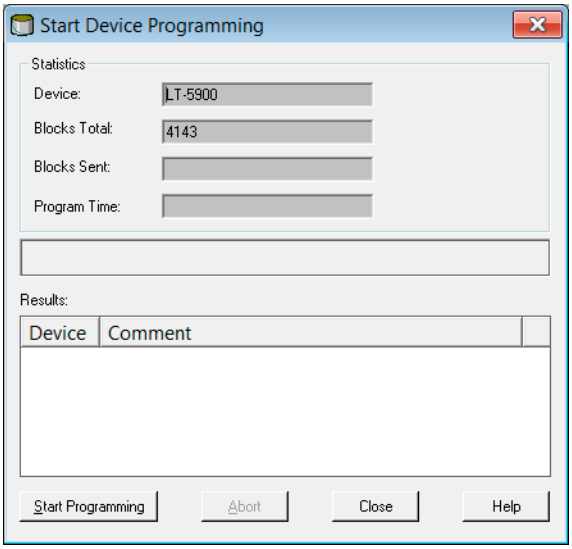


4. Select the device to be programmed from the ***Available Devices*** pane and click the **Move** button. Repeat for each device of the same type to be programmed. Note that if a single device was selected in the ***Workspace*** window, it will appear automatically in the ***Program These Devices*** pane.

   Use the **Remove** button if you would like to change the list of devices to be programmed.

5. Click the **Browse** button to locate the appropriate software file.

6. Click the **Start Programming** button to open the ***Start Device Programming*** window.



7. Click the **Start Programming** button to activate device programming.

Related information

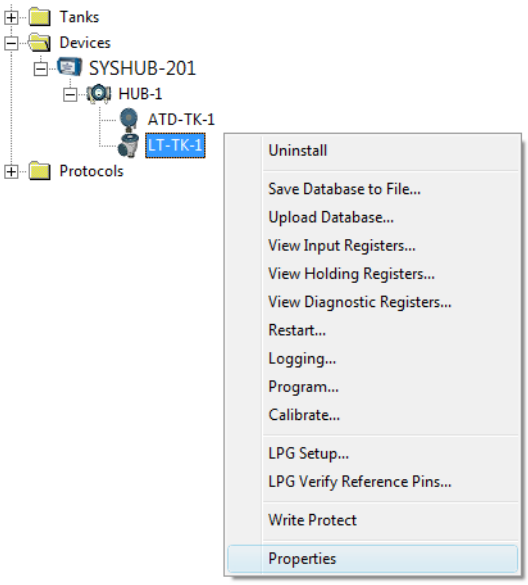
Rosemount 5900S Reference Manual
Rosemount 2410 Reference Manual

5.10 Tank Scan

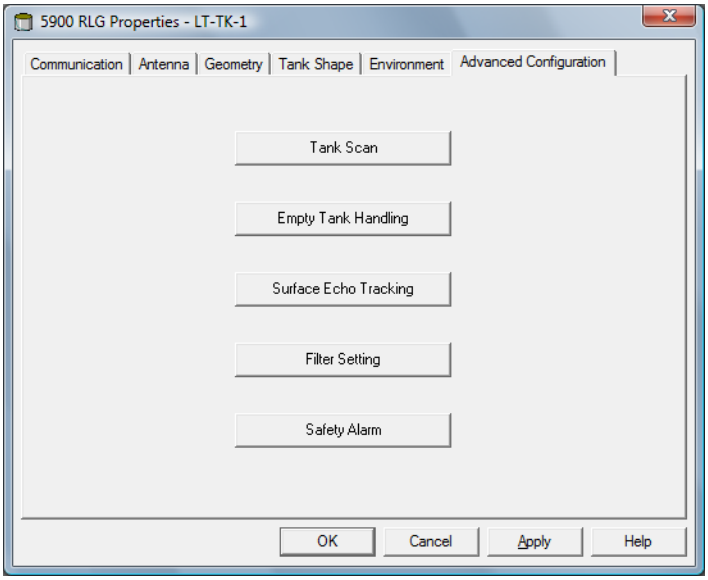
The ***Tank Scan*** window allows you to view tank echoes. Then you may setup the most important parameters to enable separating surface echoes from disturbing echoes and noise.

Procedure

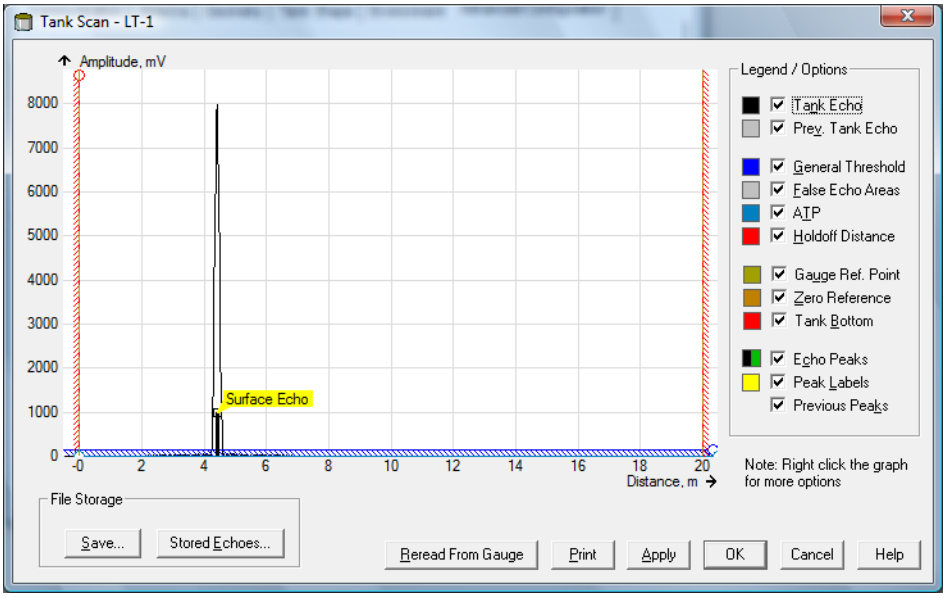
1. In the ***WinSetup*** workspace, select the **gauge** icon.



2. Click the right mouse button and choose the **Properties** option.
3. Select the ***Advanced Configuration*** tab and click the **Tank Scan** button.

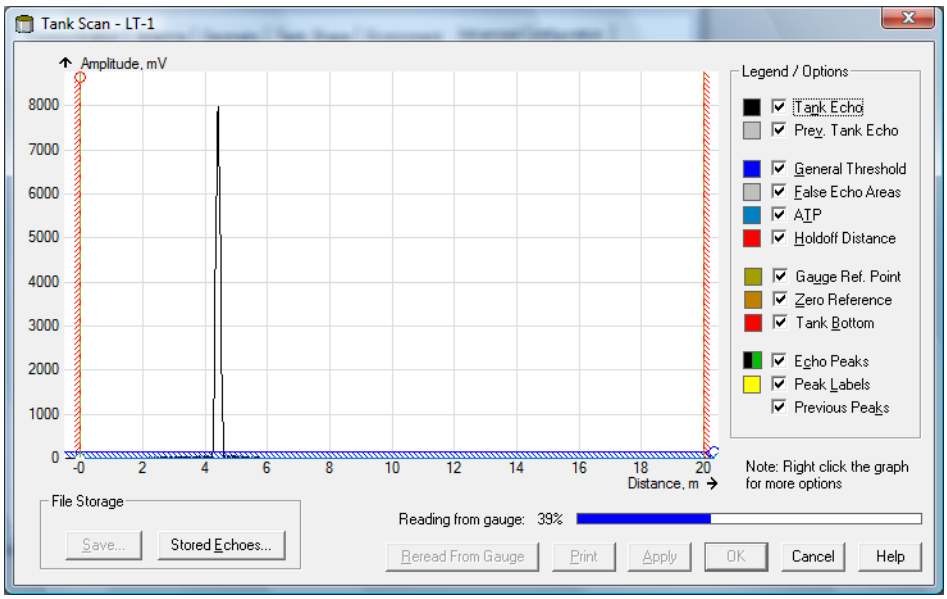


4. The ***Tank Scan*** window contains the Graph Area, Legend/Options area, File Storage buttons, and various action buttons.



5.10.1 Graph area

When the ***Tank Scan*** window opens, WinSetup reads tank data from the gauge. The process is indicated by a progress bar in the lower right corner of the **Tank Scan** window.



Once the reading process is finished, a tank scan graph is displayed that shows a peak referring to the product surface. The Tank Scan graph may also contain other peaks. In addition to the surface echo, there might be echoes from agitators or other obstacles in the tank.

The Tank Scan function includes tools that allows you to configure the level gauge to distinguish between the surface peak and peaks from disturbing objects. See the following chapters for details.

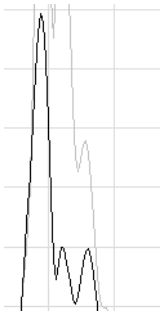
The Tank Scan graph can be refreshed at any time with the **Reread From Gauge** button. The new echo curve will appear as a black line and the previous curve as a grey line. The graph may show up to two old echo curves. An old echo peak will be marked by a small cross symbol. This can be used to compare the existing tank signal with previous signals.

5.10.2 Legend/Options

The following items can be shown in the graph area (check the appropriate box for each Legend/Option to show):

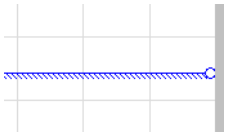
Tank Echo

The black line shows the latest Tank Echo curve, and the grey lines show previous Tank Echo curves (maximum two).



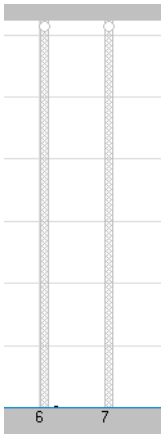
General Threshold

The **General Amplitude Threshold** is shown in blue. Echoes with an amplitude below the **General Amplitude Threshold** will be filtered out by the level gauge.



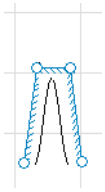
False Echo Areas

The False Echo function is used to improve the performance of the gauge when the surface is close to a horizontal surface of a stationary object in the tank. The object causes an echo when it is above the surface. Added False Echo Areas are shown in grey.



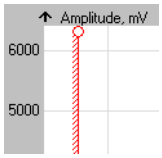
ATP (Amplitude Threshold Points)

A weak disturbing echo can be filtered out by creating a curve of **Amplitude Threshold Points**.



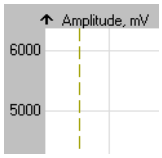
Holdoff Distance

The **Holdoff Distance** defines how close to the Gauge Reference Point a level value is accepted. The Holdoff Distance is shown in red.



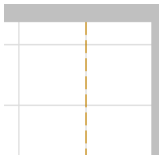
Gauge Ref. Point (Gauge Reference Point)

The **Gauge Reference Point** is shown as a dashed (olive colored) line.



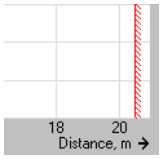
Zero Reference

The **Zero Reference** (zero level; dipping datum point) close to the bottom of the tank, is defined by the Tank Reference Height (R). It is shown as a dashed (sand colored) line.



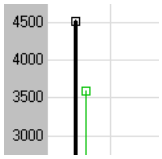
Tank Bottom

The **Tank Bottom** is shown in red.



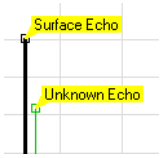
Echo Peaks

Echo Peaks are shown in black for the Surface Echo and in green for unknown echoes.



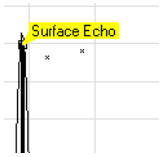
Peak Labels

Peak Labels are shown for the Surface Echo and for unknown echoes.



Previous Peaks

Previous Peaks are shown for the Surface Echo and for unknown echoes.

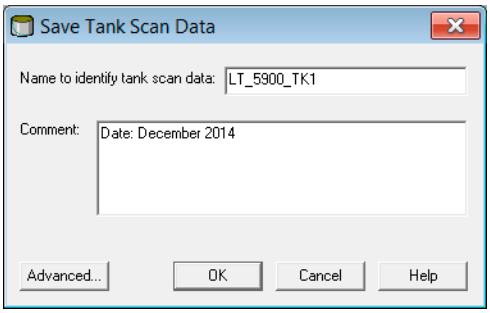


5.10.3 Tank Scan file storage

The ***Tank Scan*** window supports saving on disk the tank scan data that is displayed in the graph area.

Procedure

1. In the ***Tank Scan*** window click the **Save** button.



2. Enter a name to identify the tank scan data. You may also type a comment in the Comment field (not required). This can for example be used to describe any special circumstances under which the Tank scan data was obtained.
3. Press the **OK** button.

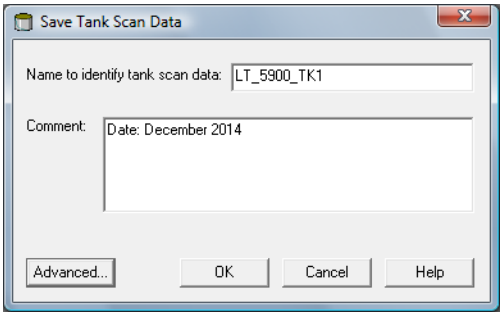
Note
The default data storage file is named **StrTankScanII.dat**. The file is stored in the following folder: **C:\Rosemount\TankMaster\Lib\Data**.

Export tank scan data to an external file

Tank scan data can be saved to file for viewing with the **Tank Echo Viewer** (Tools>Tank Echo Viewer).

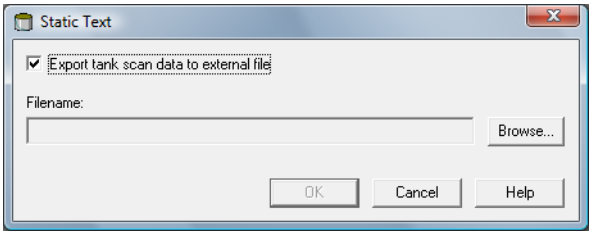
Procedure

1. In the ***Tank Scan*** window click the **Save** button to open the ***Save Tank Scan Data*** window.
2. Enter a name to identify the tank scan data. You may also type a comment to describe any special circumstances when the Tank scan data was obtained.
3. Press the **Advanced** button.

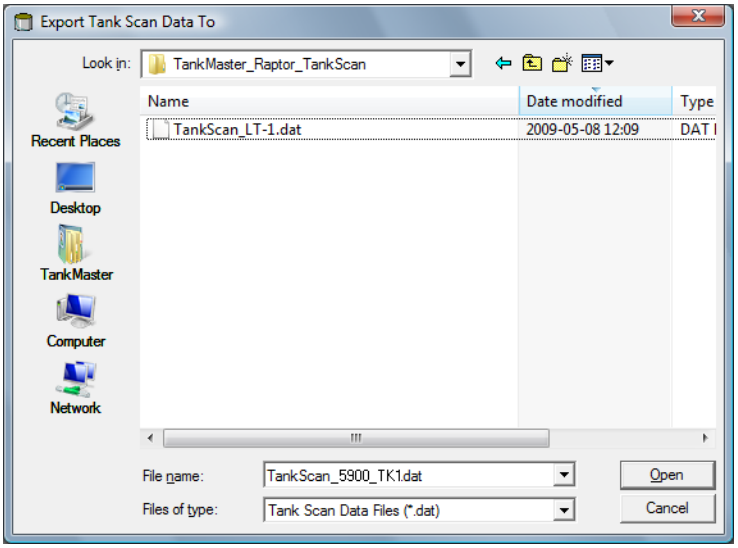


4. Select the **Export tank scan data to external file** check box.

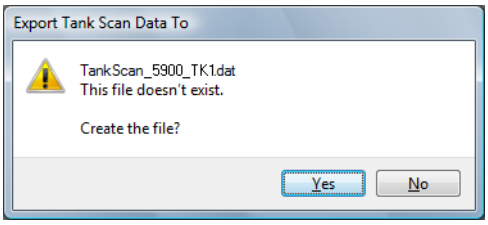
5. Press the **Browse** button.



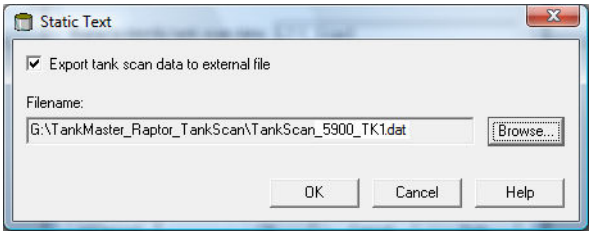
6. Browse to a destination folder and type a name in the **File name** input field.
7. Press the **Open** button.



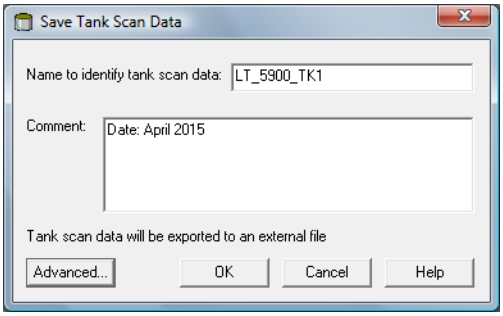
8. Press **Yes** to create the file.



9. Press **OK**.



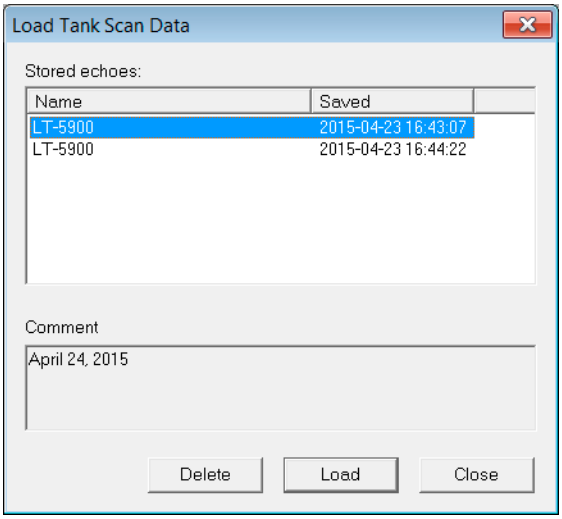
10. Press **OK** to export tank scan data to the file.



To load tank scan data from file

Procedure

1. In the ***Tank Scan*** window press the **Stored Echoes** button.
2. Select the file to be loaded.



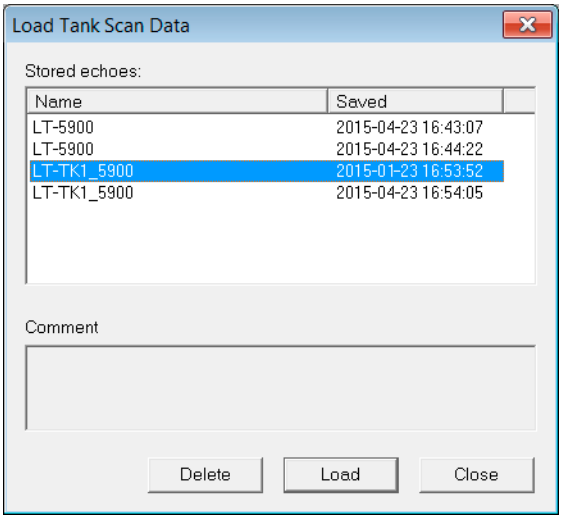
3. Press the **Load** button.

To delete a saved file

Procedure

1. In the ***Tank Scan*** window press the **Stored Echoes** button.

2. Select the file you want to delete.



3. Press the **Delete** button.

5.10.4 Action buttons

The following buttons can be found in the ***Tank Scan*** window.

Save	Lets you save current tank scan data.
Stored Echoes	Lets you load stored tank scan data that was stored with the Save command.
Reread From Gauge	At any time, you can refresh tank echo and echo peaks with the Reread From Gauge button. The Tank Scan will display the new echo curve as a black line, and up to two previous echo curves in grey color. The previous echo peaks will appear with small crosses.
Print	Opens the print dialogue and prints the Tank Scan window.
Apply	When changing a parameter that affects echo peak detection (e.g. General Amplitude Threshold), you will have to press the Apply button to write these settings to the internal memory of gauge. It takes a few seconds for the gauge to update the echo peak data (up to 30 seconds due to the echo peak filtering function in the gauge). Finally, press the Reread from Gauge button to update the echo peak information in the graph area.
OK	Applies changes and closes the window.
Cancel	Cancels all changes.
Help	Opens the online help for the current window.

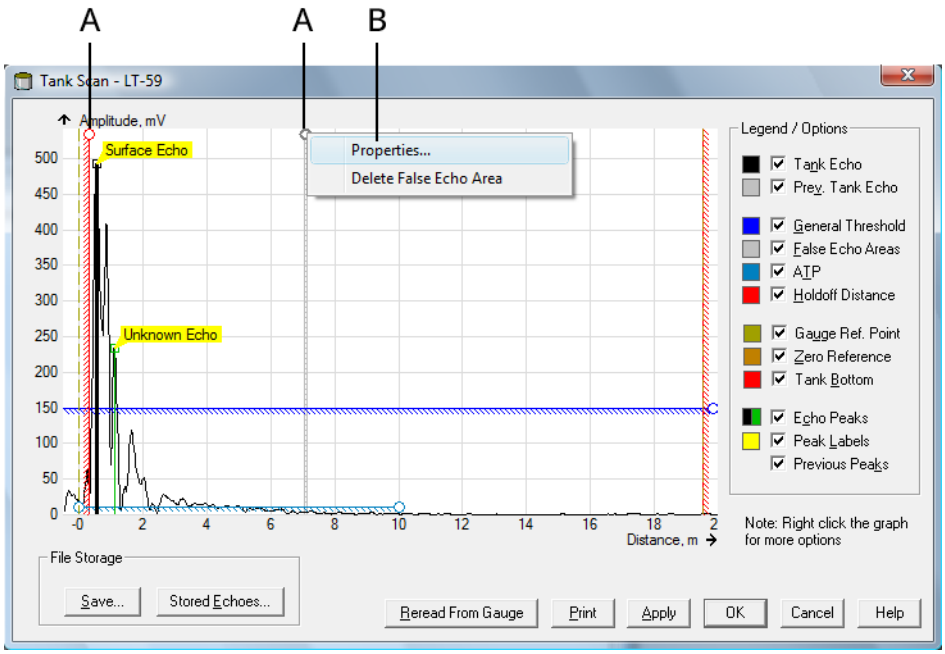
Related information

Tank Scan file storage

5.10.5 Tank Scan editing

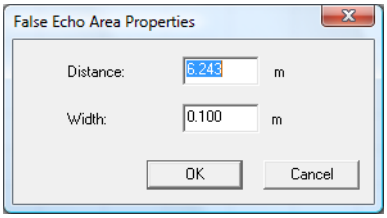
All the elements having handles can be edited. Each handle may be moved by using the mouse pointer

Figure 5-1: Editing the Tank Scan window



A. Handles for moving or right-click editing

*B. **Properties** window*



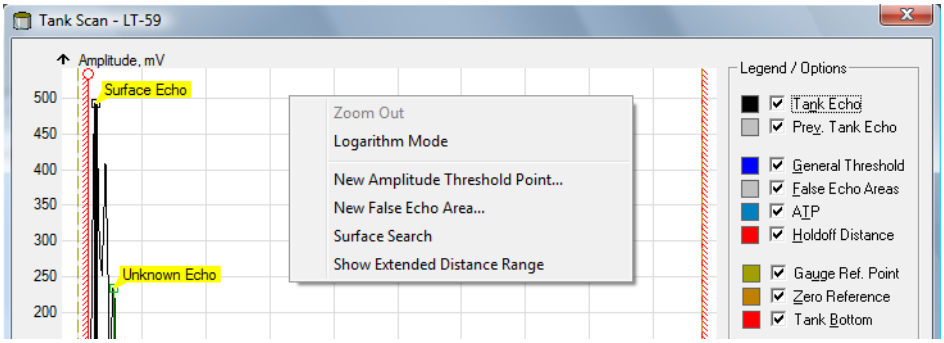
Clicking the right mouse button on a handle opens a dialog window. The Properties option allows you to review or change parameter values. The following parameters can be edited via moving or right-clicking a handle:

- General Amplitude Threshold
- Amplitude Threshold Point
- False Echo Area
- Hold Off Distance

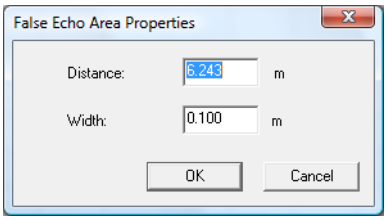
To add a False Echo Area or an Amplitude Threshold Point

Procedure

1. Click the right mouse button in the graph area where you would like to add a **False Echo Area or an Amplitude Threshold Point**:



2. Select a menu item in the popup menu. In the example above, the **New False Echo Area** option was chosen:

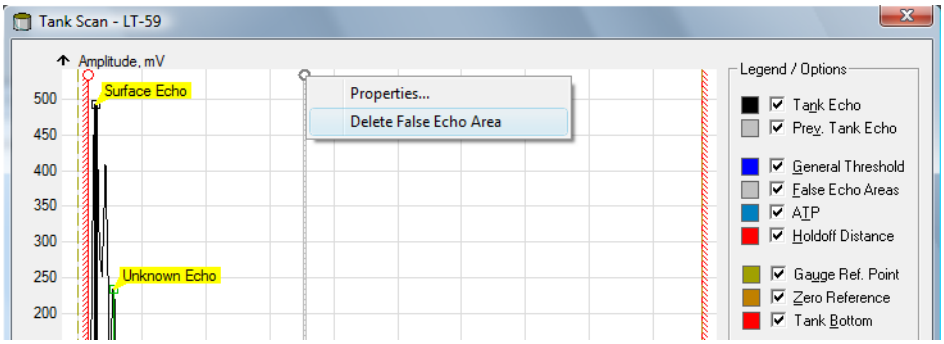


3. Enter the new data and click the **OK** button.

To delete a False Echo Area or Amplitude Threshold Point

Procedure

1. Right-click the handle of the **False Echo Area** or **Amplitude Threshold Point** to be deleted:



2. Select the **Delete False Echo Area** (or Delete Amplitude Threshold Point) option.

5.11 Viewing tank data

TankMaster WinSetup offers the option to view data from a single tank or a group of tanks. Various parameters such as Level, Level Rate, and Average Temperature can be displayed. The ***Setup Tank View*** window lets you specify the desired set of parameters.

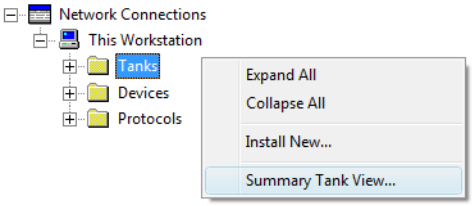
Related information

Tank view layout

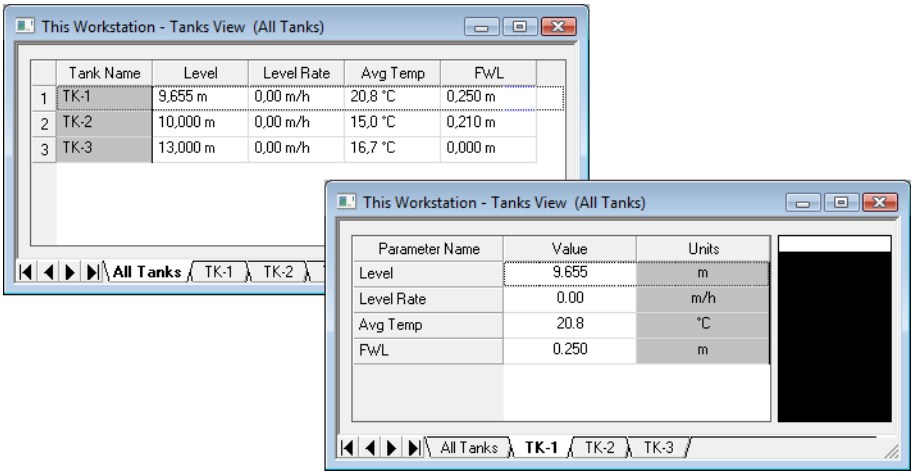
5.11.1 Viewing data for all tanks

Procedure

1. In the WinSetup workspace, select the **Tanks** folder.
2. Click the right mouse button and choose **Summary Tank View**, or from the **Service** menu choose **Tanks/Summary Tank View**.



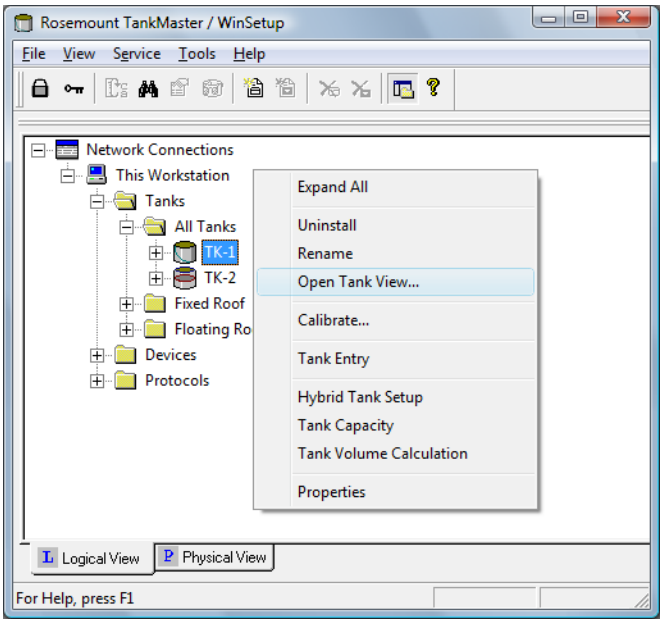
3. Select the **All Tanks** tab for a complete list of all tanks, or select a view that includes a bar graph for one tank at a time by selecting the appropriate tab.



5.11.2 Viewing data for a single tank

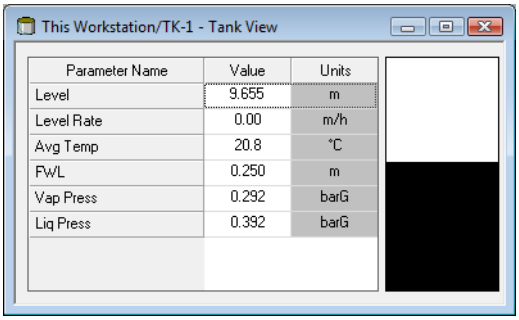
Procedure

1. In the WinSetup workspace, select the desired tank icon.



2. Click the right mouse button and choose the **Open Tank View** option, or from the **Service** menu choose **Tanks/Open Tank View**.

   Measurement data for the selected tank is displayed in the ***Tank View*** window.



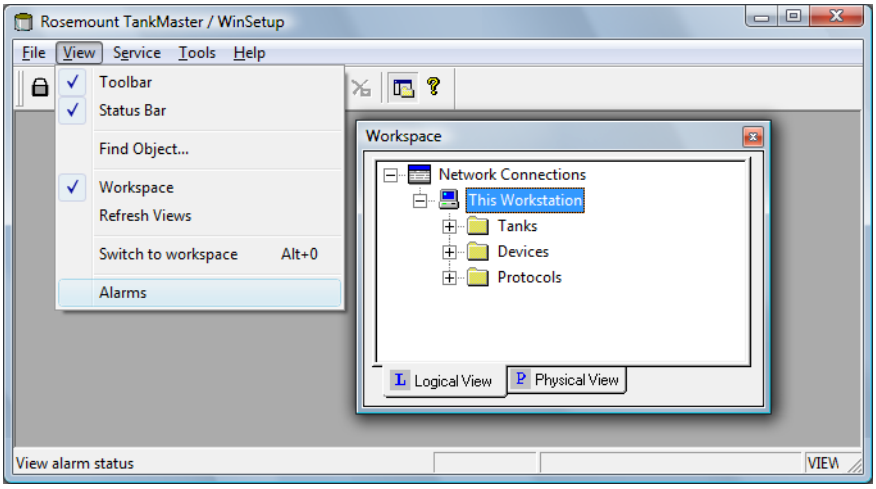
5.12 Viewing alarm status

TankMaster WinSetup lets you view alarm status for all tanks, a certain tank group, or a single tank.

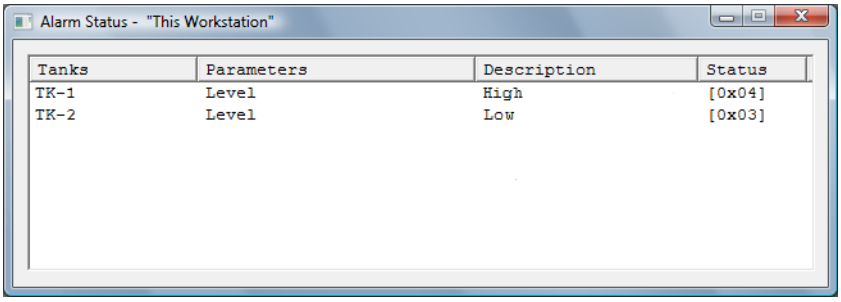
5.12.1 Alarm status for all tanks

Procedure

1. In the WinSetup workspace, select the TankMaster workstation (or the **Tanks** folder) where the tanks are installed.



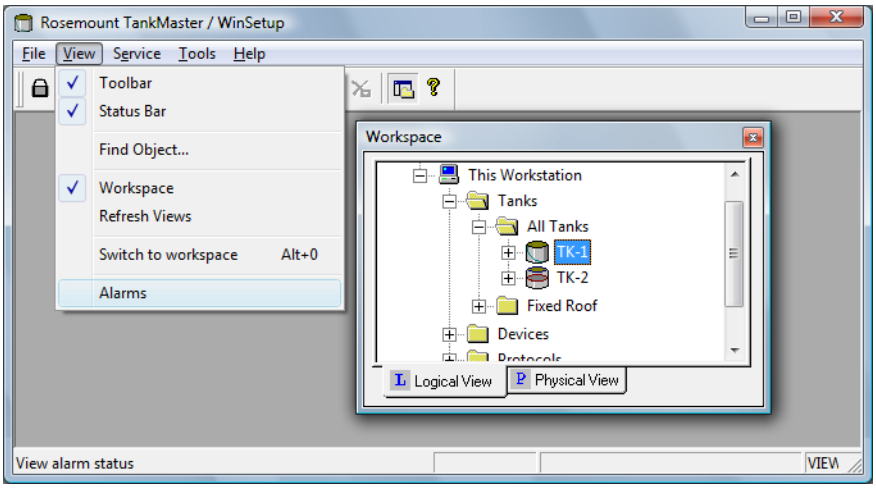
2. From the **View** menu, choose **Alarms**. The ***Alarm Status*** window presents a list of alarms for all the tanks connected to the selected TankMaster workstation.



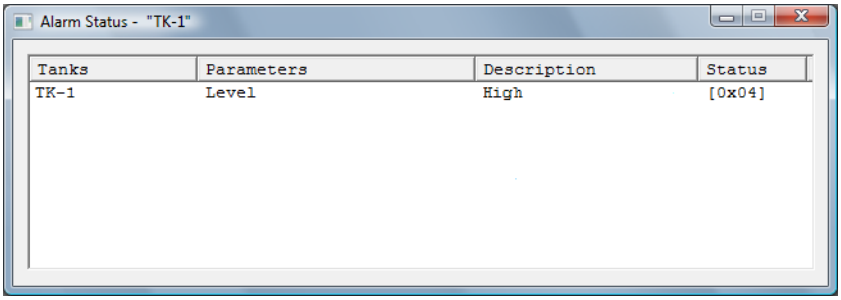
5.12.2 Alarm status for a single tank

Procedure

1. Open the **Tanks** folder and select the desired tank.



2. From the **View** menu choose **Alarms**. The ***Alarm Status*** window presents the current alarms for the selected tank.



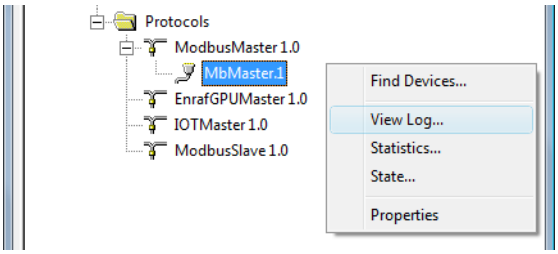
5.13 Protocol handling

5.13.1 Logging the channel communication

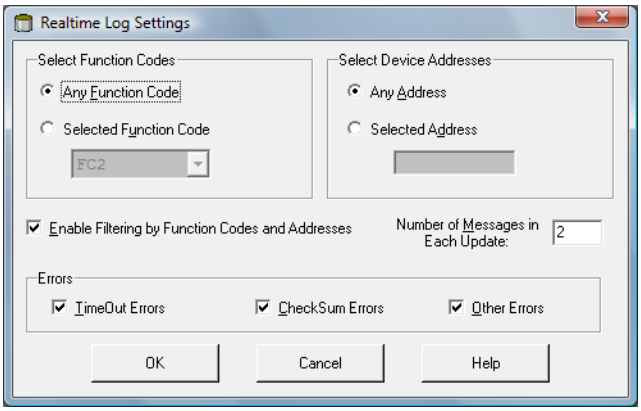
WinSetup allows you to log communication on the various communication protocol channels. You can log specific devices, as well as filter out certain function codes and error types.

Procedure

1. In the WinSetup workspace, select the protocol channel icon.
2. Click the right mouse button and choose the **View Log** option, or from the **Service** menu, choose **Channels/View Log**.



3. Specify a log profile. You can filter out certain function codes and devices as well as error types as shown in Table 5-1.



Note
This window lets you setup a profile for realtime logging. However, each time the ***Realtime Log Settings*** window is opened, it is configured as specified in the ***Properties/File log*** window which lets you setup a profile for saving the log to file.

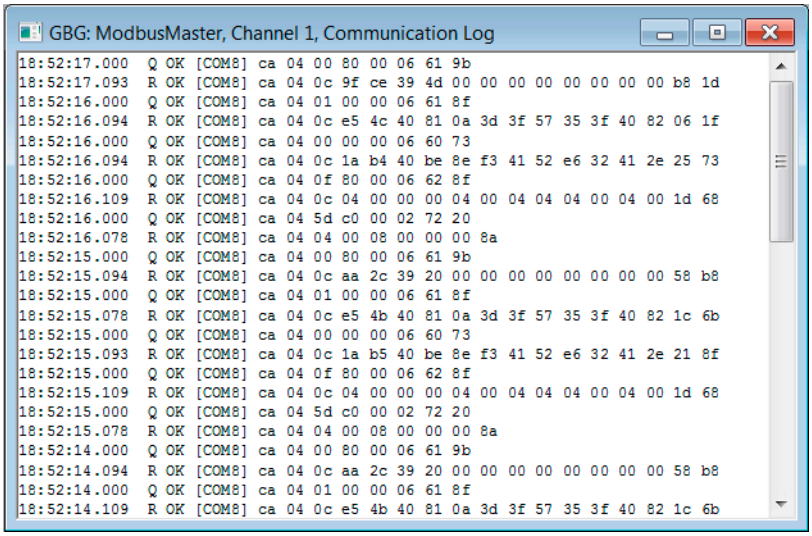
Table 5-1: Realtime log settings

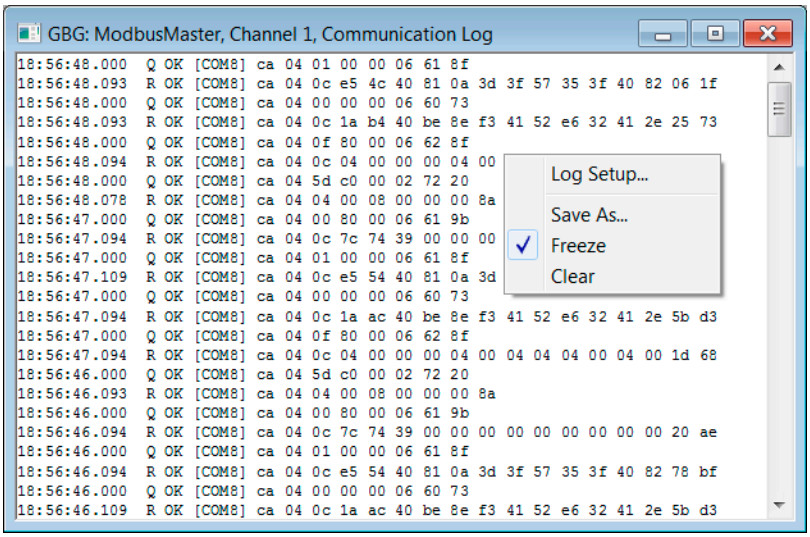
Filter setting	Description
Function Code	A **Function Code** defines a specific action or type of data. You can log all function codes or a specific code.

Table 5-1: Realtime log settings *(continued)*

Filter setting	Description
Device Address	You can log all devices or a device with a certain address by your own choice. **Note** The device address is automatically copied from the current settings in the ***File Log Settings*** window. You can change this address to any other address that you want to log.
Enable Filtering	Mark this check box to enable filtering by function codes and addresses.
Errors	Select the check box for the type of error you like to record: **Time-out Errors**, **Check Sum Errors**, or **Other Errors**. You can select one or more check boxes.
Number of messages	Specify the number of messages that will be added each time the ***Communication Log*** window is updated. If the log is updated too quickly, you may increase the number of messages value to reduce the update speed.

4. Click the **OK** button to open the ***Communication Log*** window.

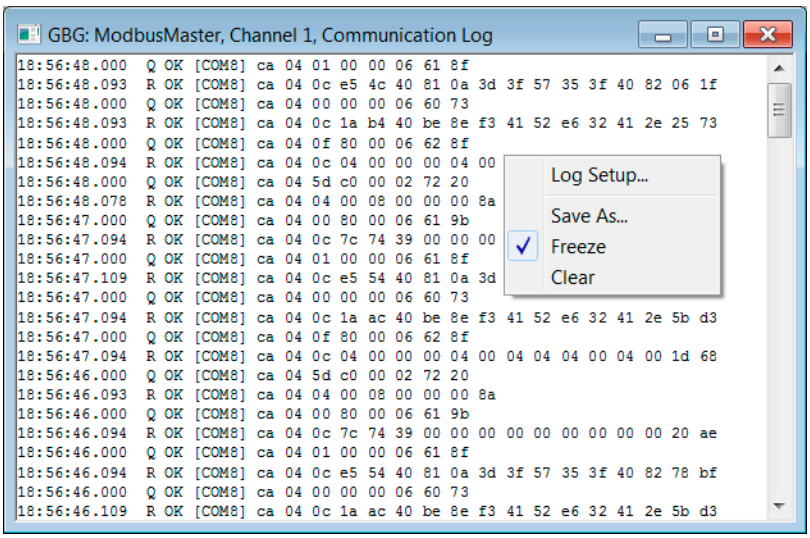




5. By clicking the right mouse button in the ***Channel Communication Log*** window you will get access to a number of useful options:

   The **Save As** option lets you save the current log to file.

   Choose the **Log Setup** option if you want to change the filtering settings.



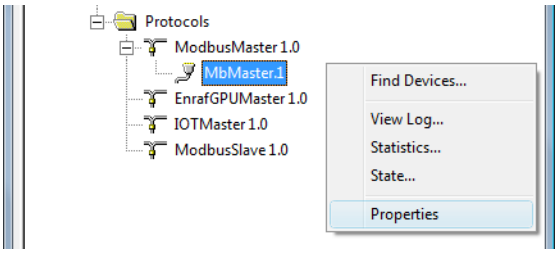
Related information

Saving the communication log to file

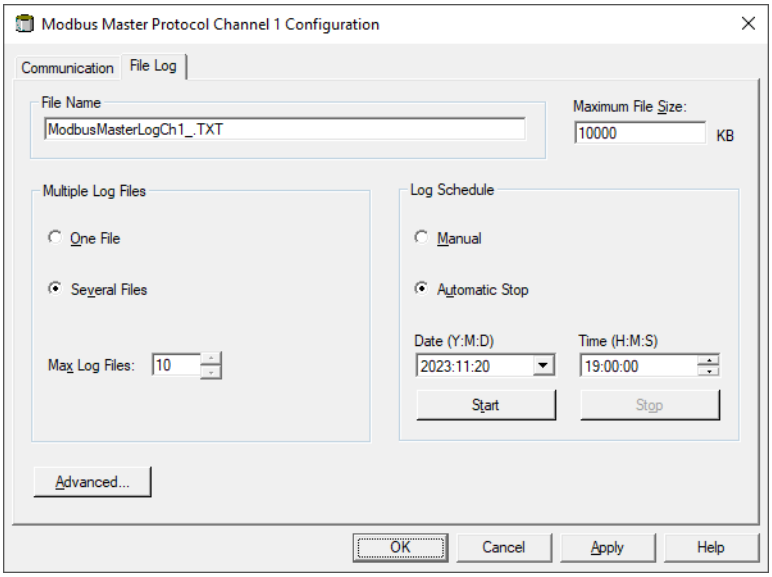
5.13.2 Saving the communication log to file

Procedure

1. Select the protocol channel icon.



2. Click the right mouse button and choose **Properties**, or from the **Service** menu choose **Channels/Properties**.



3. Select the **File Log** tab.
4. Type a name of the log file in the **File Name** field and set the **Maximum File Size** to limit the amount of disk space required for storing log files.

   The **Maximum File Size** option can be used in combination with the **Multiple Log Files** option in order to store the log files on a number of floppy disks.

   The log file will be stored in the following folder:

PC Operating System	Log file folder
MS Windows 7 and higher versions	C:\Rosemount\TankMaster\Log

Note
If the maximum number of files is reached, TankMaster will replace existing log files.

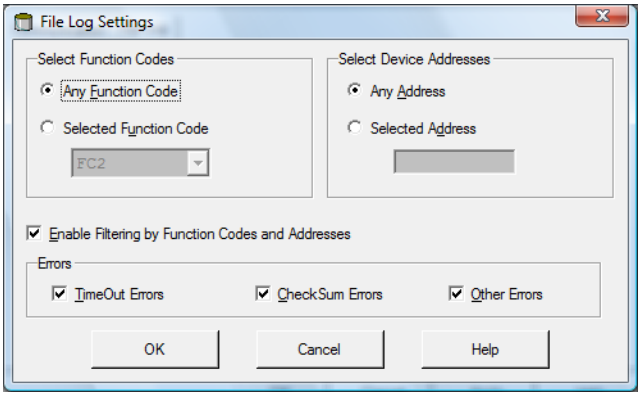
5. The **Multiple Log Files** section allows you to optimize file size for storing on floppy disk. Choose the **One File** option if you prefer the log to be stored in a single file.

By choosing the **Several Files** radio button, logging continues by creating new files whenever the size of the current log file reaches the **Maximum File Size** value. When using the **Several Files** option, also set the **Max Log Files** parameter to define the maximum number of log files to be created.

6. Set the **Log Schedule**.

Manual	Select **Manual** and click the **Start** button to start logging. The logging will stop when the **Stop** button is pressed, or the **Maximum File Size** is reached.
Automatic Stop	Set the **Date** and **Time** at which you want the logging to stop. Press the **Start** button to start the logging. The logging will stop when the set Date and Time is reached, the **Stop** button is pressed, or the **Maximum File Size** is reached.

7. Click the **Advanced** button if you would like to specify filtering options.



8. To restrict logging to a certain function code and/or a certain device address, select the **Enable Filtering by Function Codes and Addresses** check box.
9. Choose the **Selected Function Code** option if you would like to log a specific function.

FC2	Read Inputs
FC3	Read Holding Registers
FC4	Read Input Registers
FC6	Write Single Register
FC8	Diagnostics
FC13	Program
FC14	Poll program complete
FC16	Write Multiple Registers
FC17	Report Slave ID
FC65	Change address

10. Choose one of the device address options; **Any Address** or **Selected Address**. Choose **Selected Address** if you want to log communication to a certain device.
11. Specify what type of errors to be logged by selecting the appropriate check boxes. You can choose one or more error types to be logged simultaneously.

12. Click the **OK** button.

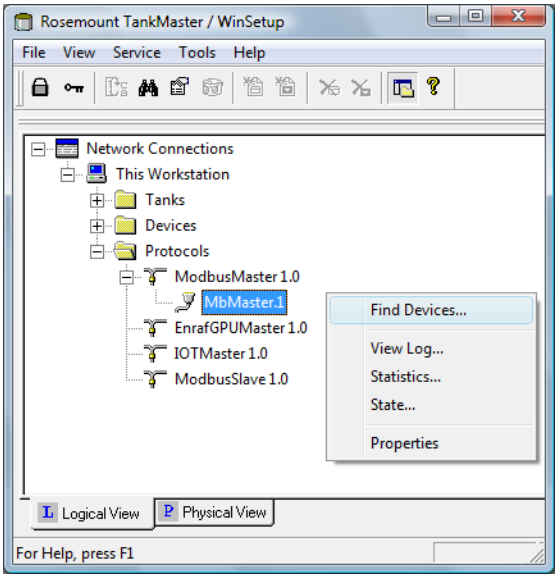
Related information

Logging the channel communication

5.13.3 Searching for connected devices

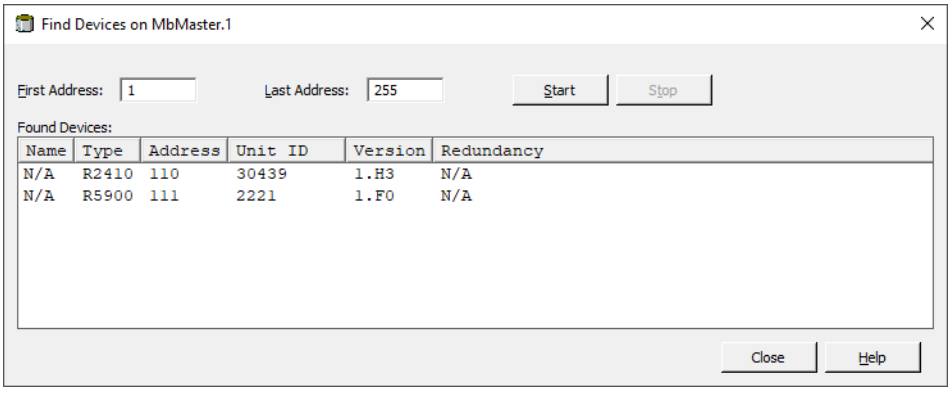
Procedure

1. In the WinSetup workspace, open the **Protocols** folder and the appropriate protocol sub folder.
2. Select the desired protocol channel.
3. Click the right mouse button and choose the **Find Devices** option, or from the **Service** menu choose **Channels/Find Devices**.



4. Type the desired values in the **First** and **Last** address input fields in order to restrict the search to a certain range of addresses (maximum range is 1-255).
5. Click the **Start** button. Now the fieldbus is scanned for devices within the specified address range.

   The search result is a list of name, type, address, unit id and application software version of each device that was found.



Related information

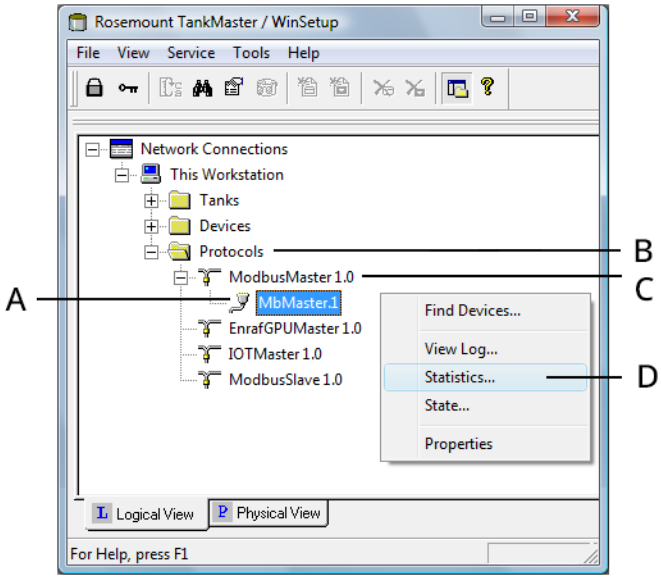
Communication protocol setup

5.13.4 Channel statistics

The Protocol Statistics function is a tool which can be used to check the quality of communication between the TankMaster workstation and the connected field devices.

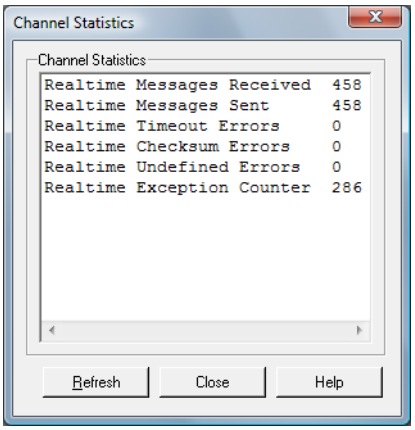
Procedure

1. In the WinSetup workspace, open the **Protocols** folder and the appropriate protocol sub folder.
2. Select the desired channel.
3. Click the right mouse button and choose the **Statistics** option, or from the **Service** menu choose **Channels** → **Statistics**.



A. Channel
B. Protocols folder
C. Protocols subfolder
D. Statistics

4. The ***Channel Statistics*** window lets you view a summary of messages and various error types.


Channel Statistics
Channel Statistics
Realtime Messages Received 458
Realtime Messages Sent 458
Realtime Timeout Errors 0
Realtime Checksum Errors 0
Realtime Undefined Errors 0
Realtime Exception Counter 286
Refresh
Close
Help

5.14 TankMaster Administrator

The **TankMaster Administrator** program lets you select which TankMaster programs that will start automatically when the PC is turned on. It also allows you to check which TankMaster processes that are currently running.

By using the backup option, copies of the current WinOpi, WinSetup and Tank Server configurations can be stored. In the event of a PC operating system crash, resulting in corrupt TankMaster files, these backup files can be used to restore the TankMaster settings and the registry of the Windows operating system.

To open the **TankMaster Administrator**, click the icon on the right-hand side of the MS Windows taskbar:

Figure 5-2: TankMaster Administrator icon in the Windows taskbar.

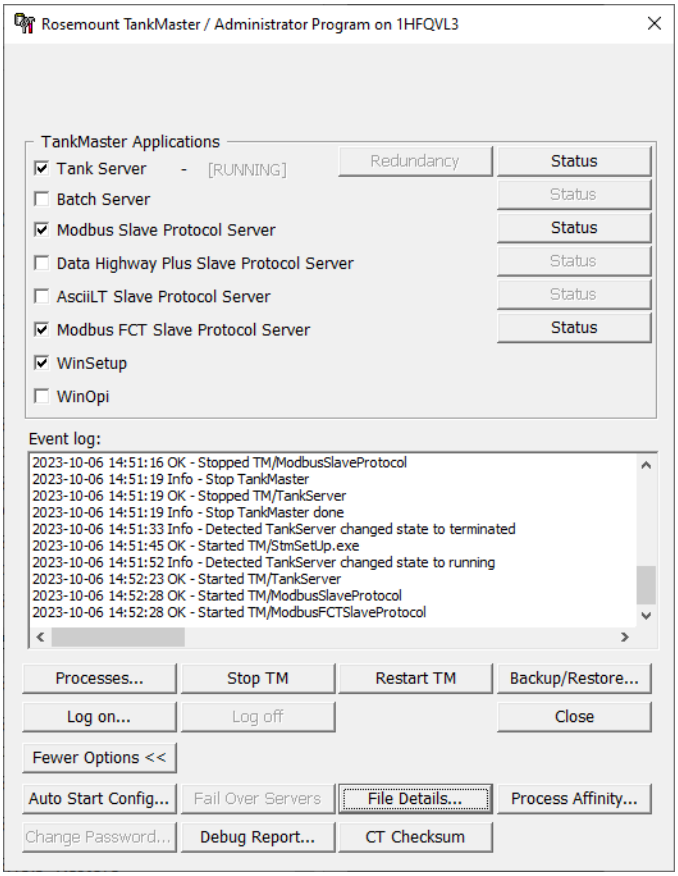
5.14.1 Log on

The **Log on** function allows you to make changes in the ***TankMaster Administrator*** window.

Procedure

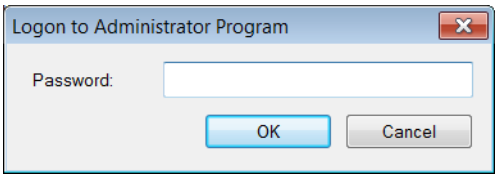
1. Open the ***TankMaster Administrator*** window by clicking the **Administrator** icon on the right-hand side of the MS Windows Taskbar.

2. Select the **Log on** button.



3. Enter the password and select **OK**.

Note
The default password is **admin**.

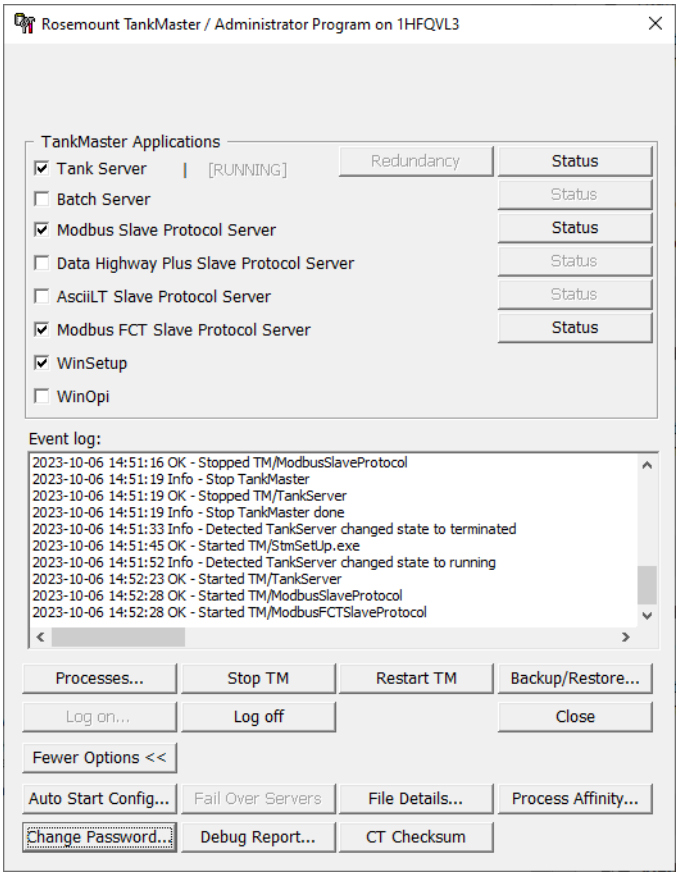


5.14.2 Changing the Administrator program password

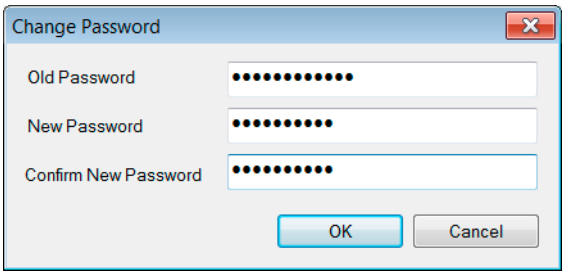
Procedure

1. Open the ***TankMaster Administrator*** window by clicking the **Administrator** icon on the right-hand side of the MS Windows taskbar.
2. Log on to TankMaster Administrator.

3. Click the **Change Password** button.



4. Enter the old and new passwords. Confirm the new password and select **OK**.



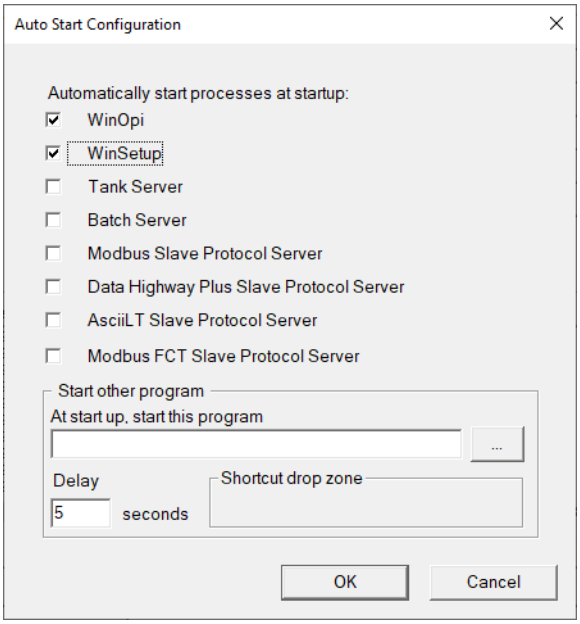
5.14.3 Autostart

The **Autostart** function lets you specify programs to start automatically when the TankMaster computer is started.

Procedure

1. Open the ***TankMaster Administrator*** window by clicking the **Administrator** icon on the right-hand side of the MS Windows taskbar.
2. Select the **Auto Start Config** button to open the ***Auto Start Configuration*** window.

3. Select check boxes for the programs you want to start automatically. Then select the **OK** button.



4. The **Autostart** function will be activated next time the TankMaster PC is started.

5.14.4 Backup

The **Backup** function can be used to save configuration data for devices and tanks as well as workspace settings for WinSetup and WinOpi.

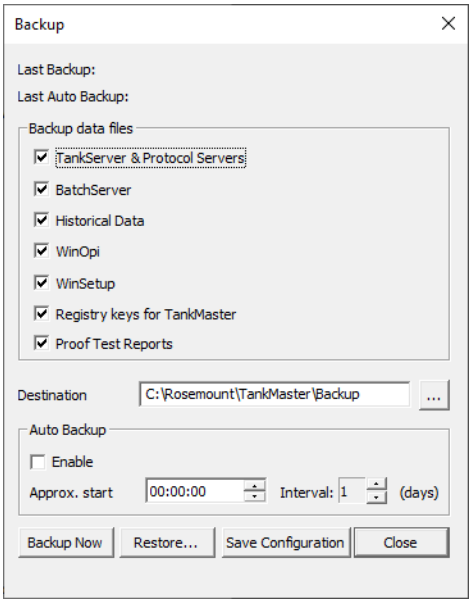
Procedure

1. Open the ***TankMaster Administrator*** window by clicking the **Administrator** icon on the right-hand side of the MS Windows Taskbar.

2. Select the **Backup/Restore** button.

   The ***Backup*** window contains the following:

   - Information on when the **Last Backup** and **Last Auto Backup** were performed
   - Backup data files to create
   - File path to destination folder for the backup files
   - Auto Backup settings

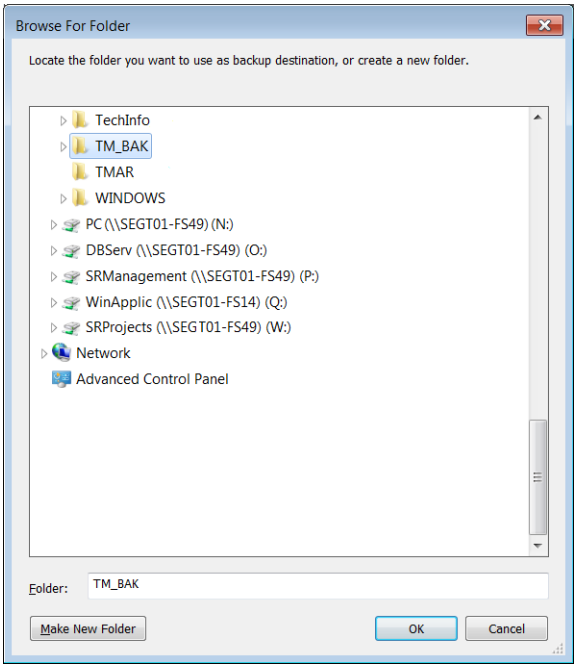


3. Select which backup data files to create in the ***Backup data files*** pane.

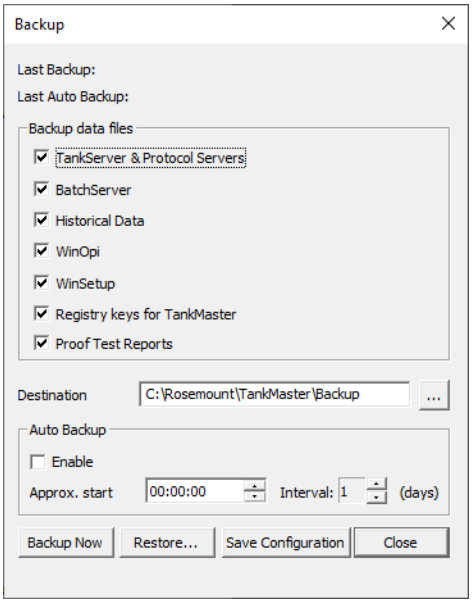
   - The **TankServer** option lets you backup tank and device configurations (the Tank server must be running).
   - The **Batch Server** option lets you backup the batch database files (the Batch server must be running). Note that the Batch server automatically removes a batch from the database after a certain number of days, see the TankMaster Batch Handling Reference Manual for more information.
   - The **Historical Data** option lets you backup any previously created Historical Data, see the WinOpi User´s Guide for more information.
   - The **WinOpi** and **WinSetup** options allows you to save the workspace configuration such as groups, colors, network settings etc.
   - The **Registry keys for TankMaster** option lets you save the TankMaster settings of the MS Windows registry.

4. In the ***Backup*** window, select the desired destination folder by pressing the **Browse** button.

5. In the ***Browse For Folder*** window, select the desired file destination. TankMaster automatically creates subdirectories for WinOpi, WinSetup, and Tankserver files.



6. Select the **OK** button to close the ***Browse for Folder*** window and return to the ***Backup*** window.



7. In the **Auto Backup** pane, select the **Enable** check box to enable automatic backup. Also set **Start time** and **Interval** (1-30 days). This will automatically backup the selected backup data files at the specified start time and interval.
8. Select the **Save Configuration** button to save the current ***Backup*** window settings.
9. Select the **Backup Now** button if you like to make a manual backup of the selected items in the **Backup data files** pane.

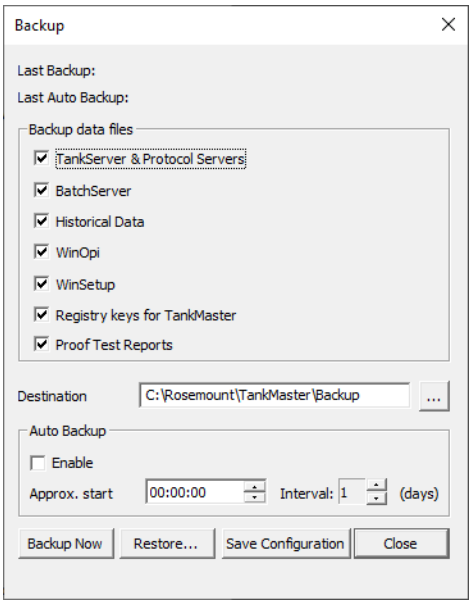
10. Select the **Close** button.

5.14.5 Restore

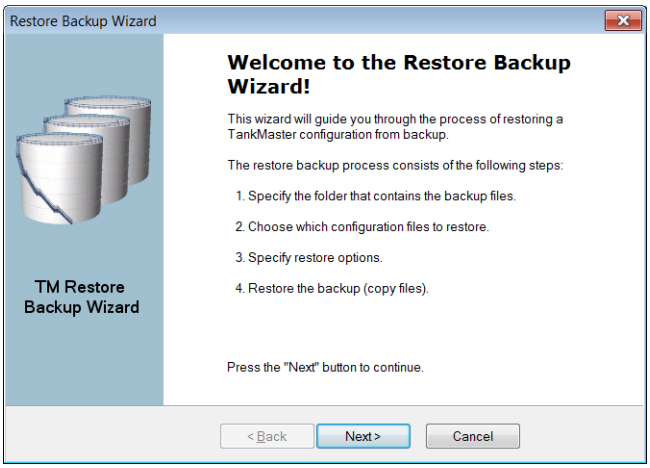
If the PC operating system has crashed resulting in corrupt TankMaster files, the TankMaster settings can be restored by using backup files. The **Restore Backup Wizard** lets you restore tank and device configuration, BatchServer data, and Historical data. You may also restore WinOpi and WinSetup configurations such as groups, color, network settings etc.

Procedure

1. Check that WinSetup and WinOpi are closed. You may click the **Processes** button in the TM Administrator program to check if any TankMaster programs are running. Note that the TankMaster Administrator program itself also appears in the ***Processes*** window. You may also open the ***Windows Task Manager*** to make sure that TankMaster servers, such as **TankServer.exe**, are closed.
2. Open the ***TankMaster Administrator*** window.
3. Select the **Backup/Restore** button. The ***Backup*** window appears.



4. In the ***Backup*** window, click the **Restore** button to start the **Restore Backup Wizard**.
5. Click the **Next** button and follow the instructions. You will be guided through a step-by-step instruction that lets you specify a folder to store backup files and data to be restored. You may also create a backup of the current configuration.



Note
The additional option **Create a backup of the current configuration** should not be used if the restore function is used to replace corrupt configuration files.

Note
The additional option **Delete old configuration files** clears all configuration files which are not replaced by the Restore function. If this option will be used, it may be a good idea to backup the current configuration files first, in case you need to recover the current TankMaster configuration at a later point of time.

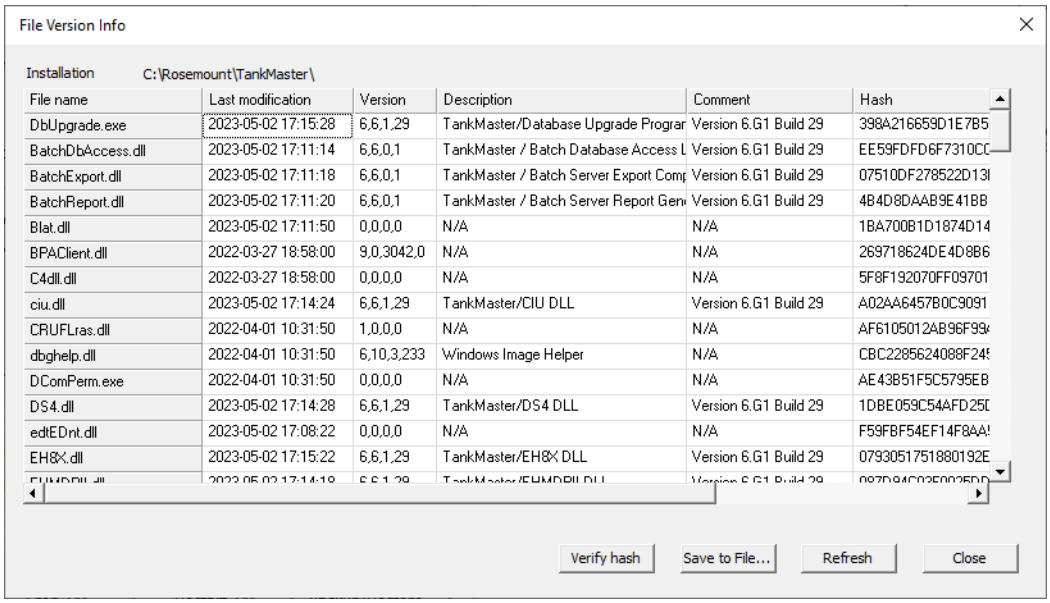
Related information

Processes

5.14.6 File version information

The **File Details** option allows you to view a list of all the files included in the TankMaster software package. The list presents file versions and brief descriptions.

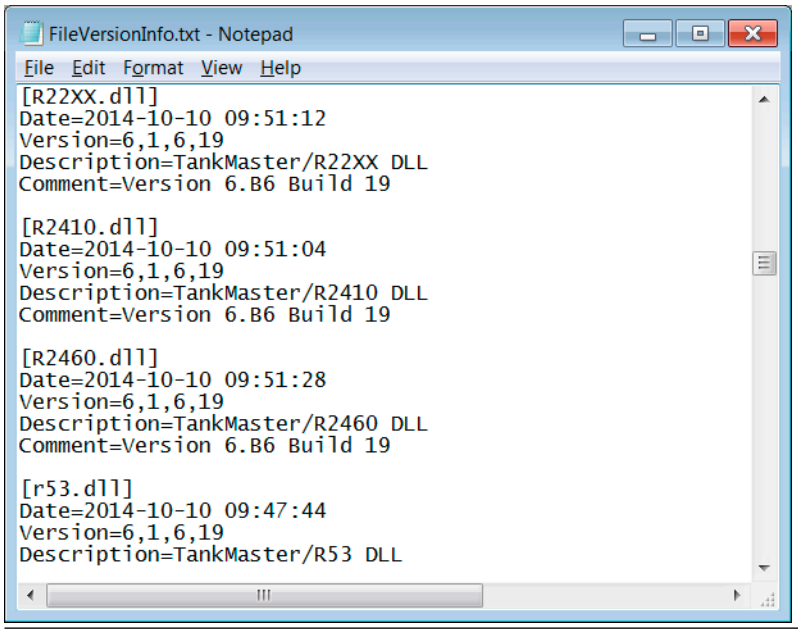
Figure 5-3: List of files in TankMaster package



Saving the list of files

The list can be stored by using the **Save to File** button. The file is stored in text format which can be opened by any word processing program.

Figure 5-4: List of TankMaster files stored in text file

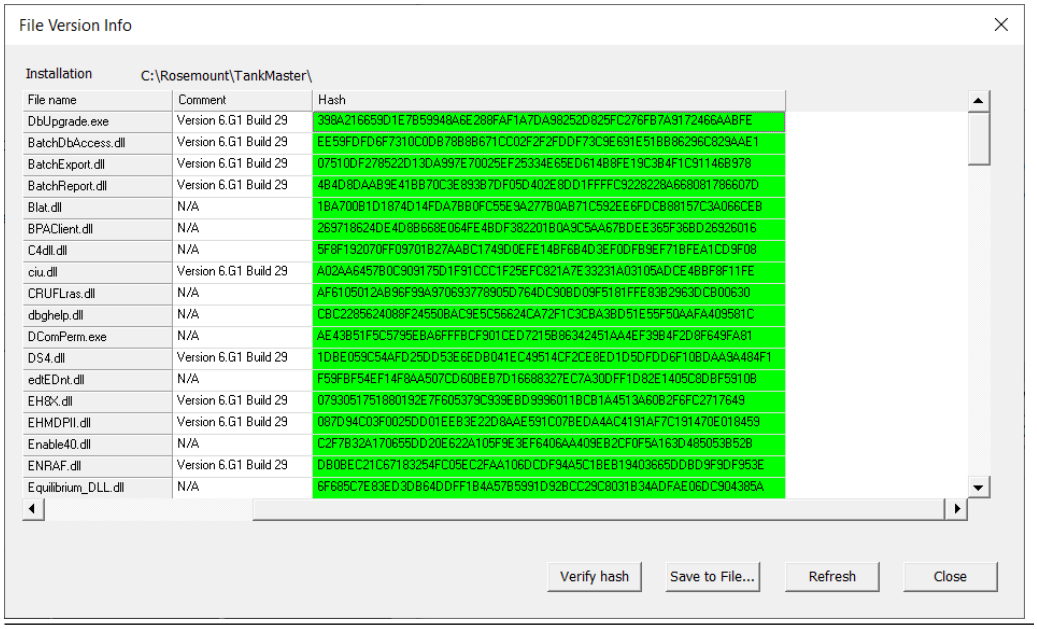


Note
When entering the filename in the Save to File dialogue, also enter file type **txt**, e.g. enter File_Version.**txt**.

Verify hash

The **Verify hash** button lets you check the integrity of the TankMaster files.

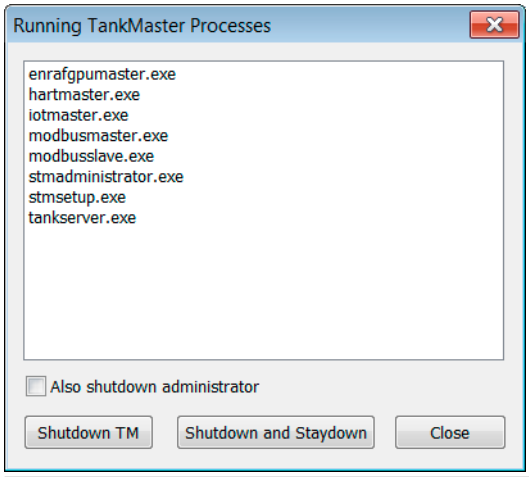
Figure 5-5: Example of hash verification



5.14.7 Processes

To view the running TankMaster programs, click the **Processes** button in the TankMaster Administrator window:

Figure 5-6: List of running TankMaster processes



The **Shutdown TM** button lets you close all TankMaster programs except the TankMaster Administrator. In case a TankMaster client requests data, the TankServer starts up again.

By using the **Shutdown TM and Staydown** button, the TankServer stays down regardless of any requests.

If the **Also shutdown administrator** check box is selected, the TMAdministrator program is shut down as well.

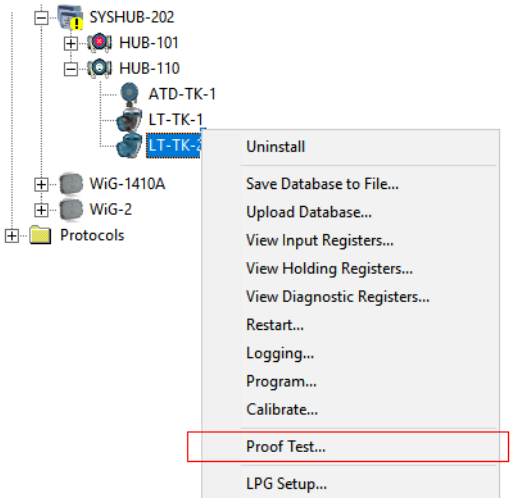
Click the **Update** button to update the contents of the ***Processes*** window.

5.15 Proof test

TankMaster WinSetup has built-in functionality to support proof testing of high level alarms. You may combine continuous product level monitoring with proof testing at regular intervals. A step by step proof test guide helps you through selected tests, and summarizes the result in a test report.

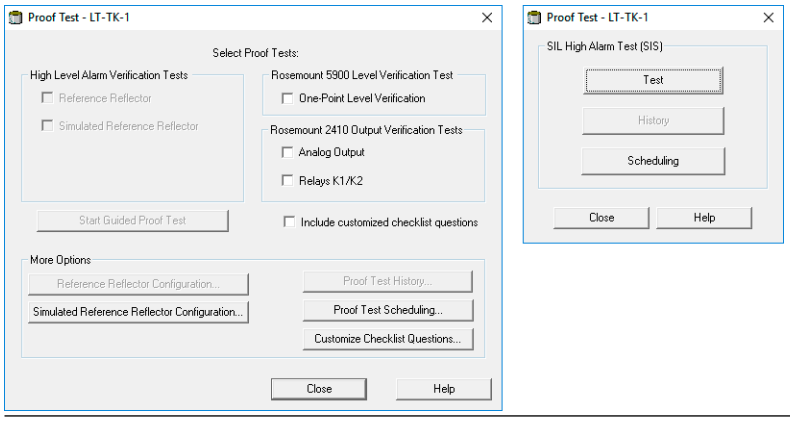
Full high level alarm proof tests using a reference reflector as well as partial proof test such as analog output/relay output is supported. Depending on tank gauging system different options are available.

Figure 5-7: Proof Test Menu option in WinSetup



Depending on the particular model code option that is ordered, the ***Proof Test*** window may look different as shown in Figure 5-8.

Figure 5-8: Proof Test windows



5.15.1 Proof test functions

The ***Proof Test*** window lets you perform a number of different tests:

- high level alarm verification using a reference reflector
- high level alarm verification with simulated reference reflector
- One-point level verification by hand dipping to verify automatic level measurements
- analog output verification
- relay output verification

Multiple tests can be performed in a sequence by selecting serveral check boxes in the Proof Test window. You may for example do a High Level Alarm test with a reference reflector, followed by a test of the analog outputs of a connected tank hub.

Related information

Rosemount 5900 and 2410 Safety Manual SIL 2
Rosemount 5900 Proof Test Reference Manual

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Rev. AC
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For more information: **Emerson.com/global**

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