BA01288G/00/EN/07.24-00
71659385
2024-05-15

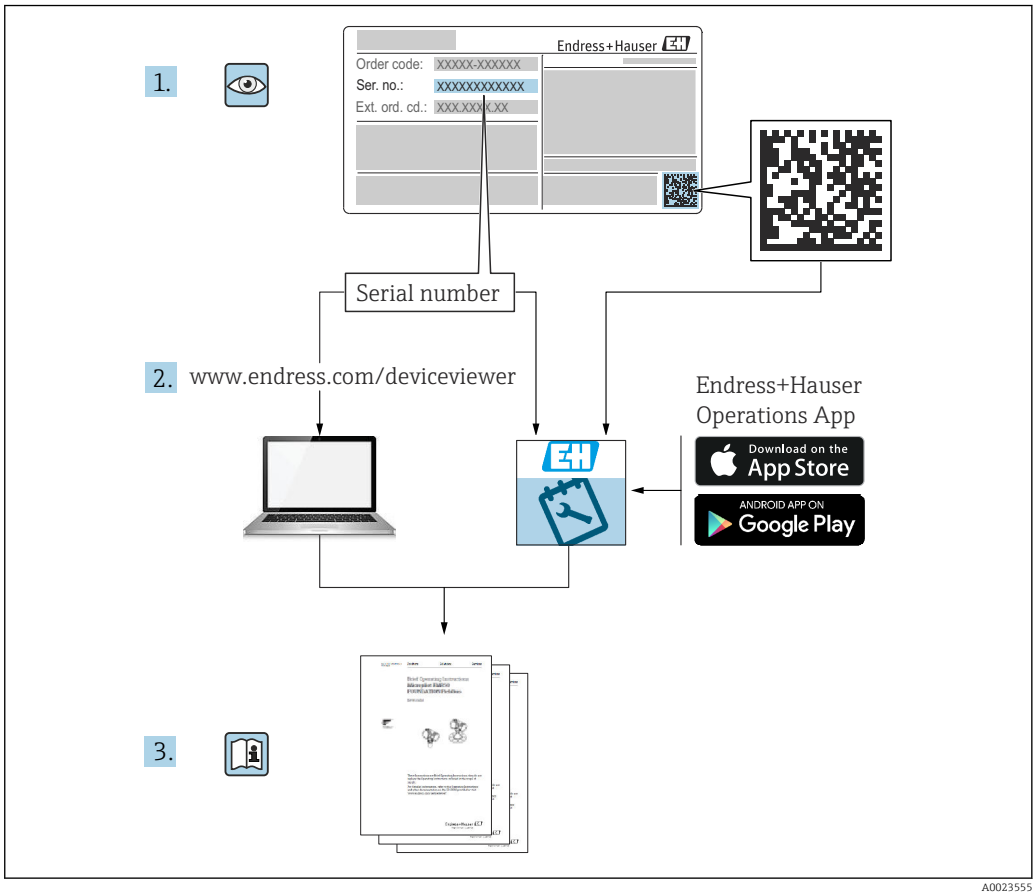
Valid as of version
5.1.0

Operating Instructions
Tankvision Multi Scan NXA83B

Local display Operation manual

Endress+Hauser
People for Process Automation

- Make sure the document is stored in a safe place such that it is always available when working on or with the device.
- To avoid danger to individuals or the facility, read the "Basic safety instructions" section carefully, as well as all other safety instructions in the document that are specific to working procedures.
- The manufacturer reserves the right to modify technical data without prior notice. Your Endress+Hauser sales organization will supply you with current information and updates to this manual.


1.
Endress+Hauser
Order code: XXXXX-XXXXXX
Ser. no.: XXXXXXXXXXX
Ext. ord. cd.: XXX.XXXX XX
Serial number
2. www.endress.com/deviceviewer
Endress+Hauser
Operations App
Download on the App Store
ANDROID APP ON Google Play
3.
A0023555

Change history

BA01288G/01.14
- Valid for software version: 3.0.10
- Initial version

BA01288G/02.15
- Valid for software version: 3.0.12
- Changes to the previous version:
  Change of order code structure

BA01288G/03.16
- Valid for software version: 3.1.0 and 4.0.0
- Changes to the previous version:
  Old V1 support and simplified configuration

BA01288G/04.18
- Valid for software version: 3.4.0 and 4.4.0
- Changes to the previous version:
  Changes to V1 Driver and GBT calculations

BA01288G/05.21
- Valid for software version: 5.0.0
- Changes to the previous version:
  Migration to Windows 10 IoT operating system

BA01288G/06.23
- Valid for software version: 5.1.0
- Changes to the previous version:
  Introduction of a new Webserver

BA01288G/07.24
- Valid for software version: 5.1.0
- Changes to the previous version:
  No changes to content. New version due to data migration.

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1 About this document

1.1 Document function

This manual is giving detailed information on the system capabilities and architecture. It supports project and sales engineers in designing the system architecture during acquisition and execution phase. Furthermore during operation time of the system all servicing personnel in need of detailed knowledge about the system capabilities.

1.2 Symbols

1.2.1 Safety symbols

DANGER
This symbol alerts you to a dangerous situation. Failure to avoid this situation will result in serious or fatal injury.

WARNING
This symbol alerts you to a potentially dangerous situation. Failure to avoid this situation can result in serious or fatal injury.

CAUTION
This symbol alerts you to a potentially dangerous situation. Failure to avoid this situation can result in minor or medium injury.

NOTICE
This symbol alerts you to a potentially harmful situation. Failure to avoid this situation can result in damage to the product or something in its vicinity.

1.2.2 Symbols for certain types of information and graphics

Tip
Indicates additional information

Reference to documentation

Reference to graphic

▶
Notice or individual step to be observed

1., 2., 3.
Series of steps

Result of a step

1, 2, 3, ...
Item numbers

A, B, C, ...
Views

→ Safety instructions
Observe the safety instructions contained in the associated Operating Instructions

1.3 Documentation

For an overview of the scope of the associated Technical Documentation, refer to the following:
- *Device Viewer* (www.endress.com/deviceviewer): Enter the serial number from the nameplate
- *Endress+Hauser Operations app*: Enter serial number from nameplate or scan matrix code on nameplate.

1.4 Registered trademarks

1.4.1 Microsoft®, Windows®

Microsoft and Windows are registered trademarks of the Microsoft Corporation

1.4.2 Modbus™

Modbus is a registered trademark of Schneider Electric USA, Inc.

1.4.3 Java®

Java is a registered trademark of Sun Microsystems, Inc.

1.4.4 Mozilla® Firefox®

Mozilla and Firefox are registered trademarks of the Mozilla Foundation

1.4.5 Legal notice concerning trademarks

All company/product names and/or all company logos may be trade names, trademarks and/or registered trademarks of Endress+Hauser, its affiliates or of their respective owners with which they are associated.

2 Basic safety instructions

2.1 Requirements for the personnel

The personnel for installation, commissioning, diagnostics and maintenance must fulfill the following requirements:

- Trained, qualified specialists must have a relevant qualification for this specific function and task.
- Are authorized by the plant owner/operator.
- Are familiar with federal/national regulations.
- Before starting work, read and understand the instructions in the manual and supplementary documentation as well as the certificates (depending on the application).
- Follow instructions and comply with basic conditions.

The operating personnel must fulfill the following requirements:

- Are instructed and authorized according to the requirements of the task by the facility's owner-operator.
- Follow the instructions in this manual.

2.2 Intended use

Tankvision Multi Scan is designed to act as gateway for legacy tank instrumentation into recent Tank Inventory software (e.g. Tankvision Professional) or control systems (DCS or PLC). Where required also the redundant collection and distribution of tank parameters is managed by Tankvision Multi Scan.

2.2.1 Applications

Inventory control

By using Tankvision Multi Scan to monitor the tank level and stored volume of valuable liquids remotely, owners or operators of tank farms or terminals for petroleum products and chemicals (liquids) can visualize the volume of the stored medium in real time. The data can be used to plan the inventory and distribution. The data can also be used to manage tank farm operations like pumping or transferring products. Tankvision has its unique concept using network technology. Without using proprietary software, the users can visualize and manage their valuable liquids stored in the tanks by a web browser. Tankvision Multi Scan is a flexible and cost effective solution due to its scalable architecture. The application coverage goes from small depots with only a few tanks up to refineries.

Inventory Calculations

Tankvision Multi Scan calculates based on measured variables and tank capacity tables:

- Observed or gross volumes
- Net volumes and
- Mass

of products like

- Hydrocarbons, Liquefied gases,
- Asphalt.

They are corrected according to international standards, including API/ASTM tables 5A, 5B/6, 53A, 53B/54, 23/24, LPG.

This includes temperature corrections at 15 °C (60 °F) and alternative temperatures. Additionally, available pump able volumes and water volume are calculated.

Remote configuration of measuring equipment

Some on-site operations can be avoided using remote configuration of measuring equipment during commissioning or maintenance (the availability of this feature may depend on the system configuration).

Application areas

- Tank farms in refineries
- Ship loading terminals
- Marketing and distribution terminals
- Pipeline terminals
- Logistic terminals for tanks storing products like crude oils, refined white and black products, chemicals, LPG

2.3 Workplace safety

For work on and with the device:
- ▶ Wear the required personal protective equipment according to federal/national regulations.

Before connecting or disconnecting the device:
- ▶ Switch off the supply voltage.

2.4 Operational safety

Damage to the device!
- ▶ Operate the device in proper technical condition and fail-safe condition only.
- ▶ The operator is responsible for the interference-free operation of the device.

Modifications to the device

Unauthorized modifications to the device are not permitted and can lead to unforeseeable dangers!
- ▶ If modifications are nevertheless required, consult with the manufacturer.

Repair

To ensure continued operational safety and reliability:
- ▶ Carry out repairs on the device only if they are expressly permitted.
- ▶ Observe federal/national regulations pertaining to the repair of an electrical device.
- ▶ Use only original spare parts and accessories.

2.5 Product safety

This measuring device is designed in accordance with good engineering practice to meet state-of-the-art safety requirements, has been tested, and left the factory in a condition in which it is safe to operate.

It meets general safety standards and legal requirements. It also complies with the EU directives listed in the device-specific EU Declaration of Conformity. The manufacturer confirms this by affixing the CE mark to the device.

2.6 IT security

Our warranty is valid only if the product is installed and used as described in the Operating Instructions. The product is equipped with security mechanisms to protect it against any inadvertent changes to the settings.

IT security measures, which provide additional protection for the product and associated data transfer, must be implemented by the operators themselves in line with their security standards.

3 Incoming acceptance and product identification

3.1 Incoming acceptance

On receipt of the delivery:

1. Check the packaging for damage.
   ↳ Report all damage immediately to the manufacturer.
   Do not install damaged components.
2. Check the scope of delivery using the delivery note.
3. Compare the data on the nameplate with the order specifications on the delivery note.
4. Check the technical documentation and all other necessary documents, e.g. certificates, to ensure they are complete.

If one of the conditions is not satisfied, contact the manufacturer.

3.2 Product identification

The following options are available for identification of the device:
- Nameplate specifications
- Enter the serial number from the nameplate in the *Device Viewer* (www.endress.com/deviceviewer): all the information about the device and an overview of the Technical Documentation supplied with the device are displayed.
- Enter the serial number on the nameplate into the *Endress+Hauser Operations App* or scan the 2-D matrix code (QR code) on the nameplate with the *Endress+Hauser Operations App*: all the information about the device and the technical documentation pertaining to the device is displayed.

3.2.1 Nameplate

Do you have the correct device?

The nameplate provides you with the following information on the device:
- Manufacturer identification, device designation
- Order code
- Extended order code
- Serial number
- Tag name (TAG) (optional)
- Technical values, e.g. supply voltage, current consumption, ambient temperature, communication-specific data (optional)
- Degree of protection
- Approvals with symbols
- Reference to Safety Instructions (XA) (optional)

▶ Compare the information on the nameplate with the order.

3.2.2 Manufacturer address

Endress+Hauser SE+Co. KG
Hauptstraße 1
79689 Maulburg, Germany

Place of manufacture: See nameplate.

4 Introduction

The Multi Scan NXA83B is a configurable system designed for tank gauging and tank inventory management systems. It has been designed to fulfil a number of requirements some of which are listed below:

- Act as a foreign device gateway allowing old legacy equipment and devices with proprietary interfaces to interface with modern devices using OPC and Ethernet Technology.
- To provide a complete tank gauging and tank inventory management system for small sites. It can interface directly with a wide variety of tank gauging devices and provide a number of communication links to host devices. The Multi Scan NXA83B polls the field instruments maintaining an in-memory database of live and calculated data whilst also being able to service host computers for data.
- Up to 20 serial interfaces can be provided, capable of supporting a range of different electrical interfaces such as RS232, RS485, BPM, Current Loop etc. An Ethernet port and two USB ports are also provided.

The Multi Scan NXA83B is available as 19 in Rack Mount version. An option is to have a 7 in touch screen built into the front of the device to view and navigate through the different display options.

A0052569

1 19 in Rack Mount

The Multi Scan is available in the following versions:

- 1 to 4 serial ports
- 1 to 12 serial ports
- 1 to 20 serial ports (16 in or outputs and 4 outputs)

The ports can be configured to be either inputs (from the field or host ports) or outputs (to host systems or slave ports). For the version 1 to 20 serial ports, 4 ports are reserved for outputs only.

5 Operation

This section will describe the normal operation of the Multi Scan NXA83B and the interactions with the user screens.

The screens shown on the LCD display are highly configurable. Whilst those shown in this section are only examples of what can be displayed, the basic navigation between screens will remain the same.

For more information on configuring the displays refer to the Multi Scan NXA83B Configuration manual (BA01291G).

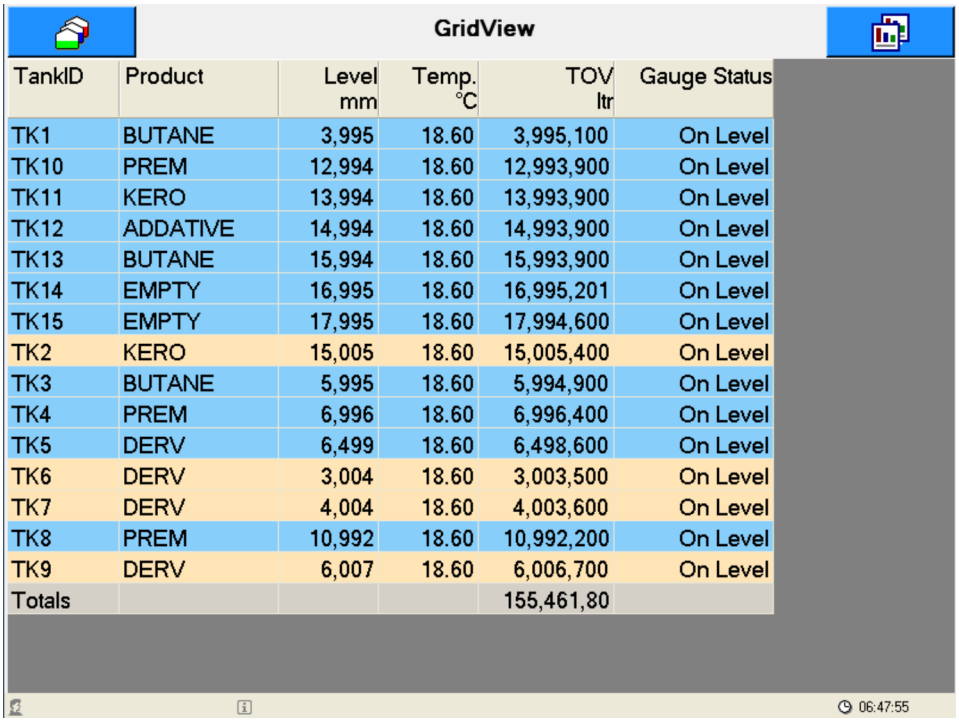
5.1 Starting and Stopping

When power is applied to the Multi Scan NXA83B the Green power LED will be illuminated and the Windows operating system will start to boot.

This will take approximately 2 minutes, during which time a number of windows boot messages will be displayed before automatically logging into the user account, at which point the Endress+Hauser wait message will be displayed.

Depending on the firmware version of the Multi Scan NXA83B, the top line of the splash screen will display a range of information, including:
- The Network Name of the Multi Scan NXA83B
- If the system is currently connected to network it will show the IP address
- The firmware version

The boot will be complete when the **GridView** display is shown. At this point the system is fully operational, with all interfaces active (master and slaves).



TankID	Product	Level mm	Temp. °C	TOV ltr	Gauge Status
TK1	BUTANE	3,995	18.60	3,995,100	On Level
TK10	PREM	12,994	18.60	12,993,900	On Level
TK11	KERO	13,994	18.60	13,993,900	On Level
TK12	ADDATIVE	14,994	18.60	14,993,900	On Level
TK13	BUTANE	15,994	18.60	15,993,900	On Level
TK14	EMPTY	16,995	18.60	16,995,201	On Level
TK15	EMPTY	17,995	18.60	17,994,600	On Level
TK2	KERO	15,005	18.60	15,005,400	On Level
TK3	BUTANE	5,995	18.60	5,994,900	On Level
TK4	PREM	6,996	18.60	6,996,400	On Level
TK5	DERV	6,499	18.60	6,498,600	On Level
TK6	DERV	3,004	18.60	3,003,500	On Level
TK7	DERV	4,004	18.60	4,003,600	On Level
TK8	PREM	10,992	18.60	10,992,200	On Level
TK9	DERV	6,007	18.60	6,006,700	On Level
Totals				155,461,80	

It is perfectly safe to switch off the power without shutting down the operating system. The Multi Scan NXA83B contains an Enhanced Write Filter which protects the system from being corrupted due to a loss of power (see configuration document for description).

5.2 Status Bar

At the bottom of the Multi Scan NXA83B display screen is a status bar which will display the following information:

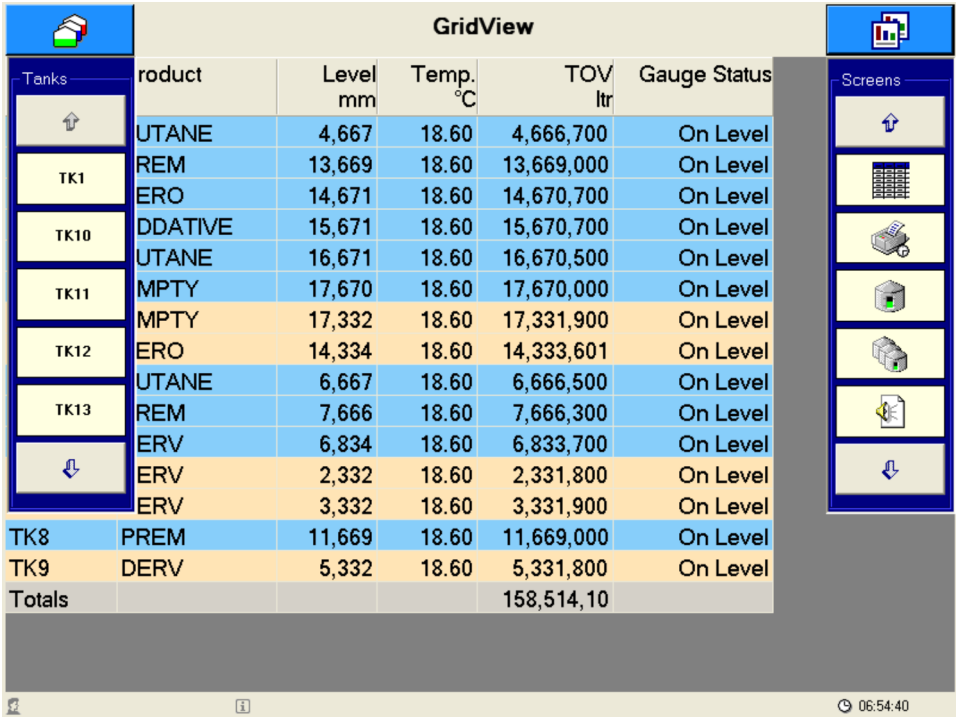
Field	Description
	This field will show the currently logged in user account
	This field shows any information that is current to the system. This could include such messages as: ▪ Watchdog Disabled ▪ W&M Approved ▪ W&M Unsealed (i.e. no longer approved)
	This shows the current time

5.3 Display Navigation

There are a number of screen types that may be displayed:
- Grid View
- Single Tank
- Multi Tank
- Report

Navigation between these screens is via two buttons, in the top left of the screen will open the **Tanks** menu and in the top right of the screen will open the **Screens** menu.

Click on a button to display the menu list. Clicking on the button again will remove the list.



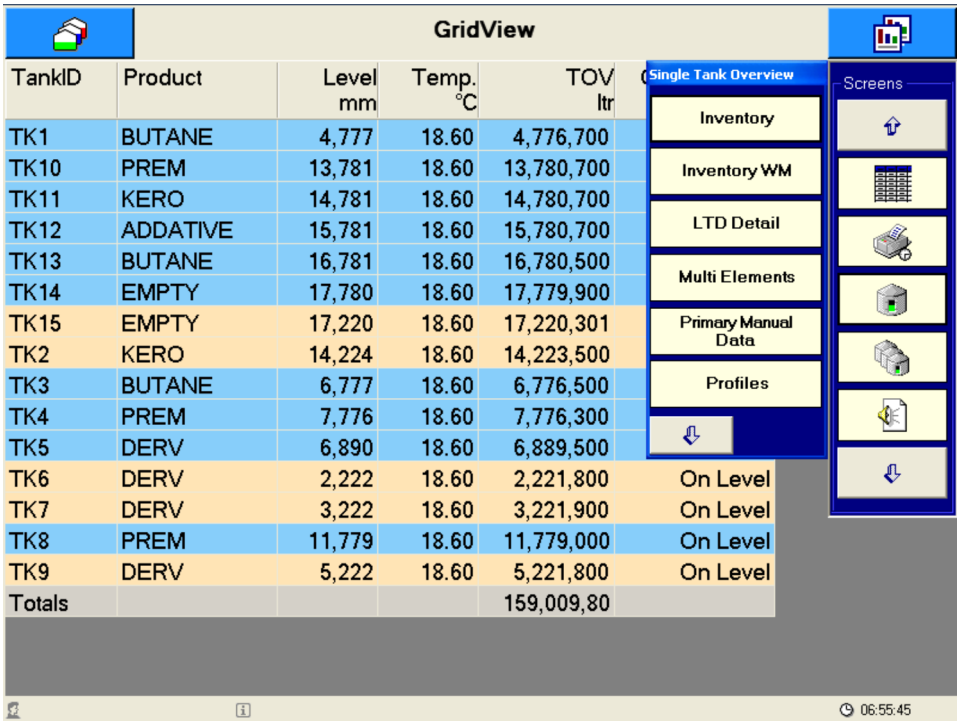
Each drop down list will display up to five items.

Clicking on the ⇧ or ⇩ button will display the next five items, if any more are available.

The right hand list allows user to select a different display. Clicking on one of the items will display a pop-up menu with all displays of that type that have been configured for the Multi Scan NXA83B.

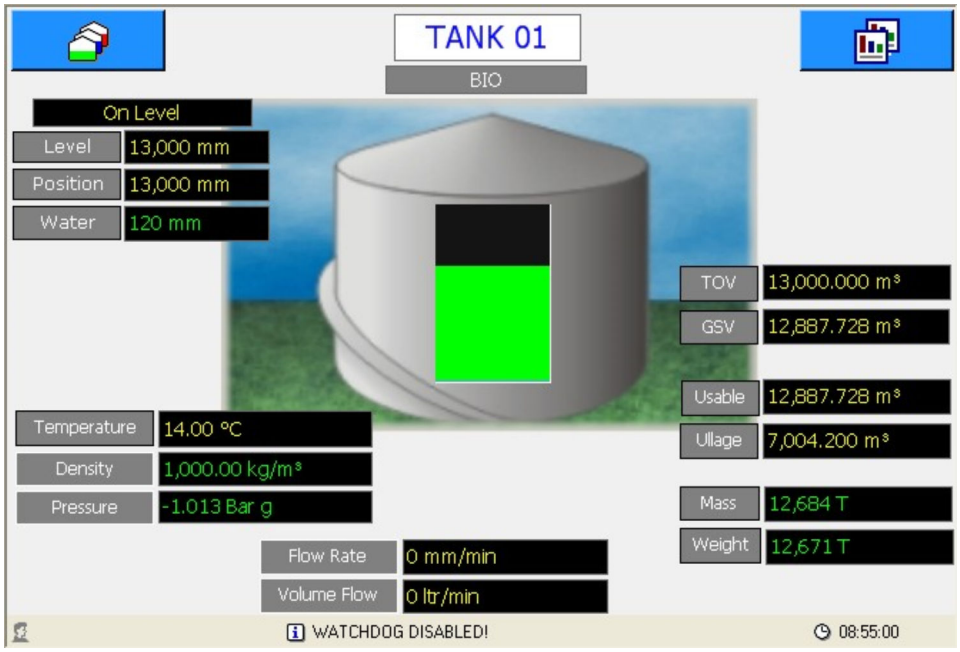
Various different displays can be configured.

For example clicking on the Single Tank screens button will display a list of all configured single tank screens available.

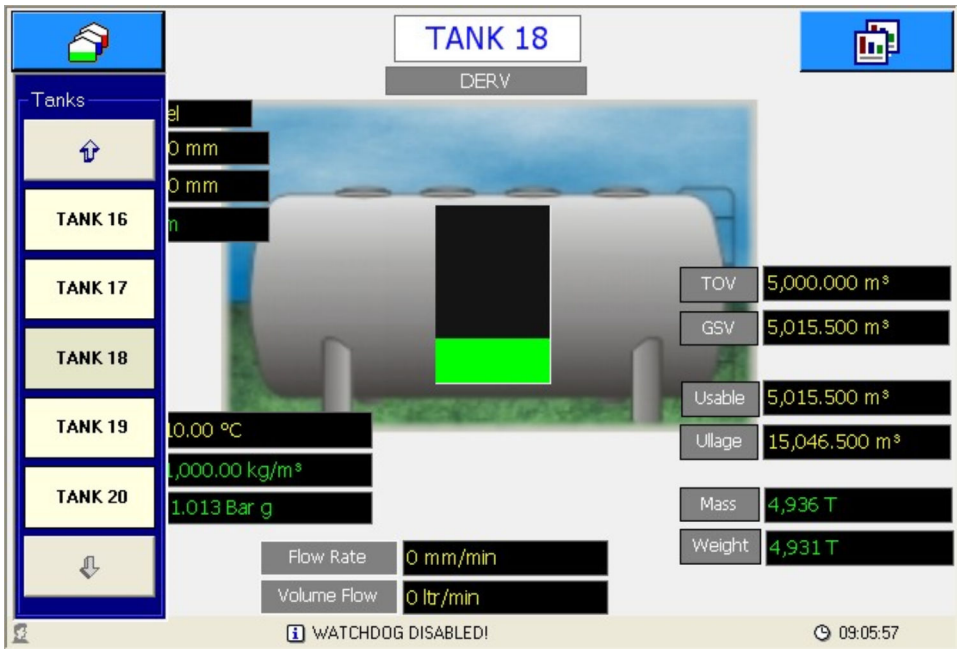


Click on the ⇧ or ⇩ buttons to select more display items.

Click on the item in the pop-up menu to change the main display.



The left hand drop down list displays all tanks in the database, and allows the user to select a tank to show in the single tank display.



5.4 Grid View

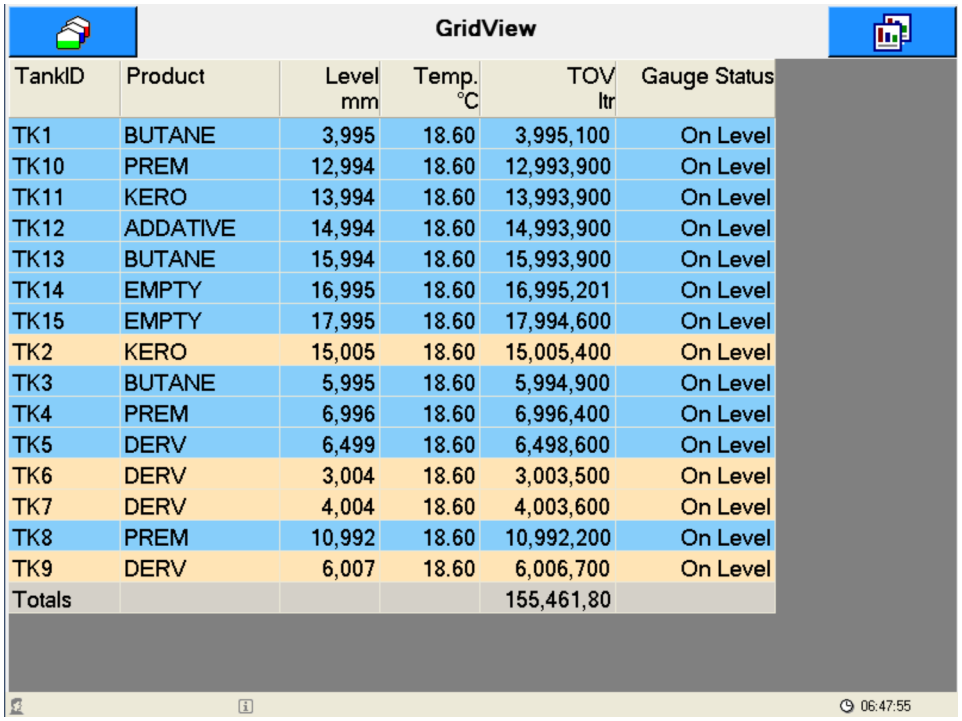
The **GridView** screens display data in a tabular format. The layout of the grid is fully configurable using the Tankvision Multi Scan Configurator tool, but cannot be changed by the user during normal operation.

The configurator can be used to set such things as:
- Title
- Data columns
- Column widths
- Column Header text
- Font Units

Grid views can also be configured for functions such as:
- Totalize all columns that contain volume, mass or weight values
- Show moving tanks with a coloured background
- Show only tanks with a defined product
- Show only selected tanks

A default grid view is supplied as standard with the Multi Scan NXA83B, called **GridView** in the pop-up list of Grid View Screens.

Various different **GridView** screens may be defined, so for instance a grid view may be configured for each product in the Multi Scan NXA83B, or for different views of the data.



TankID	Product	Level mm	Temp. °C	TOV ltr	Gauge Status
TK1	BUTANE	3,995	18.60	3,995,100	On Level
TK10	PREM	12,994	18.60	12,993,900	On Level
TK11	KERO	13,994	18.60	13,993,900	On Level
TK12	ADDATIVE	14,994	18.60	14,993,900	On Level
TK13	BUTANE	15,994	18.60	15,993,900	On Level
TK14	EMPTY	16,995	18.60	16,995,201	On Level
TK15	EMPTY	17,995	18.60	17,994,600	On Level
TK2	KERO	15,005	18.60	15,005,400	On Level
TK3	BUTANE	5,995	18.60	5,994,900	On Level
TK4	PREM	6,996	18.60	6,996,400	On Level
TK5	DERV	6,499	18.60	6,498,600	On Level
TK6	DERV	3,004	18.60	3,003,500	On Level
TK7	DERV	4,004	18.60	4,003,600	On Level
TK8	PREM	10,992	18.60	10,992,200	On Level
TK9	DERV	6,007	18.60	6,006,700	On Level
Totals				155,461,80	

A single tank display can be selected by clicking on the row for that tank in the grid. This will immediately display the single tank details for the selected tank.

The **GridView** may be optionally set to display any moving tanks with a different background colour. These colours will be:
- Brown: For those tanks that have a falling level
- Blue: For those tanks that have a rising level

The **GridView** may also be configured to display column totals for certain field types. The fields totalized will be:
- Volume fields
- Mass fields
- Weight fields

Remember that the moving colours and totals features are optional and may not always be configured for every grid view.

If the displayed **GridView** is larger than the screen size, scroll bars will be automatically enabled.

The tank data displayed in each field in the grid will have the following formatting:
- **Valid Data**: Will be displayed on a white background
- **Invalid Data**: Will be displayed on a red background. The appropriate diagnostic number will be shown preceded by "DN"
- **Manual Data**: Will be displayed on a white background. An "M" will be displayed after the data value

If the data value is too long to be displayed in the column it will be replaced by "#" characters.

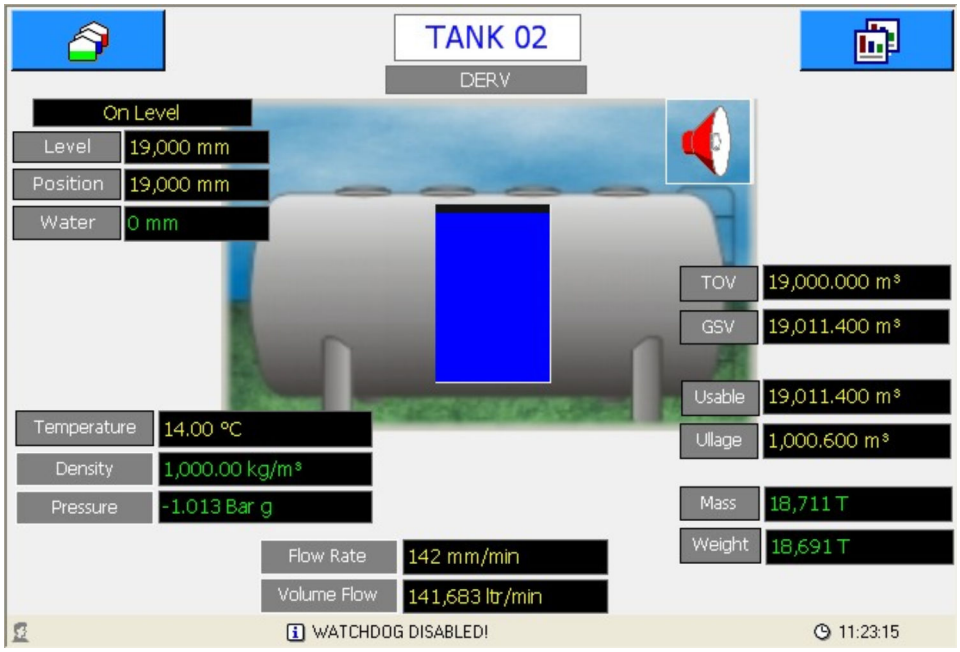
5.5 Single Tank

The Single Tank screens display the data for one tank only and can show an extensive range of data for the selected tank. The layout of the screen is fully configurable using the Tankvision Multi Scan Configurator tool, but cannot be changed by the user during normal operation.

The configuration details for single tank screens are extremely extensive and are covered in the Multi Scan NXA83B Configuration Manual. However certain features will be shown in this section.

A Single Tank screen is a template for the data to be displayed. The user may select the actual tank to be shown in that screen using the drop down list on the left of the screen.

A default screen will be supplied as standard with the Multi Scan NXA83B, called **Inventory** in the pop-up list of Single Tank Screens. Various additional screens may be configured.



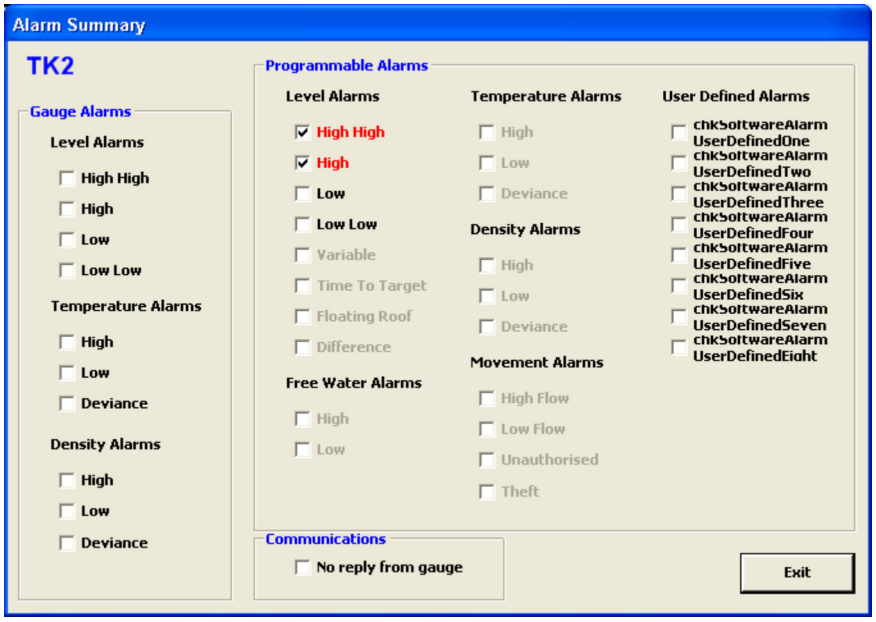
The formatting of the data displayed in a Single Tank display, with regard to validity of data or manual data, has no fixed format, and can be configured to suit any site requirement.

The default formatting in the screens as shipped from Endress+Hauser is as follows:
- **Invalid Data**: The appropriate diagnostic number will be shown preceded by "DN" and will be displayed with a red background
- **Manual Data**: The data will be displayed in green, with a black background
- **Valid Data**: The data is displayed in yellow with a black background

It is recommended that these formatting styles are maintained for all user configured Single Tank screens.

If an alarm item has been configured for a Single Tank screen the alarm icon will be displayed on any tanks that have one or more currently active alarms.

Clicking on the icon will display the **Alarm Summary** screen.



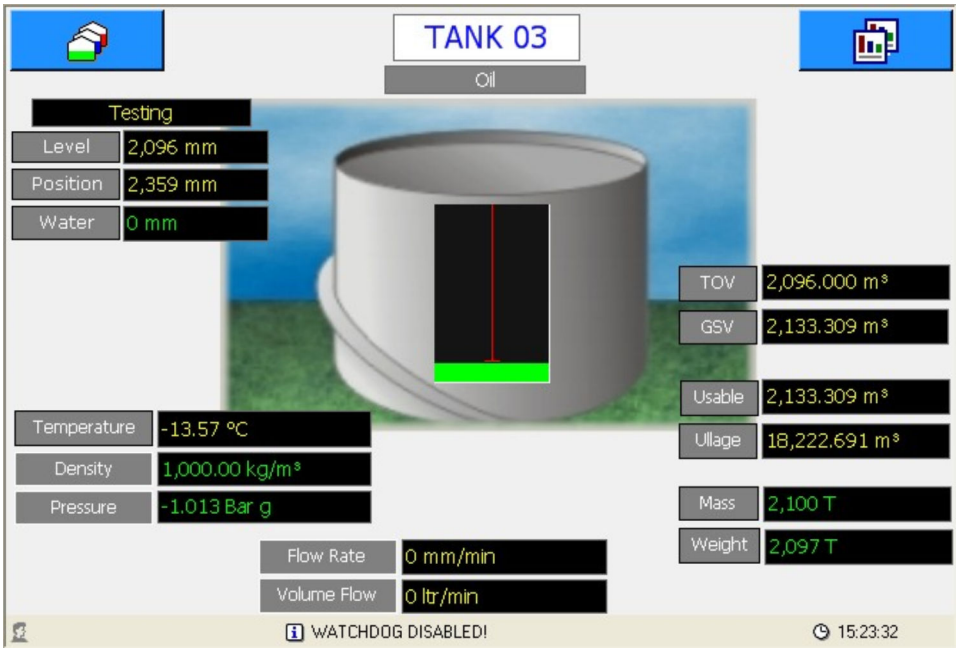
Any alarms that are active will be ticked and be displayed in red. Click on the **Exit** button to close the screen.

5.5.1 Commands

Certain data fields may be configured so that clicking on the displayed value will show the **Gauge Commands** pop-up menu. These fields are usually items such as **Level**, **Position**, **Temperature** etc.

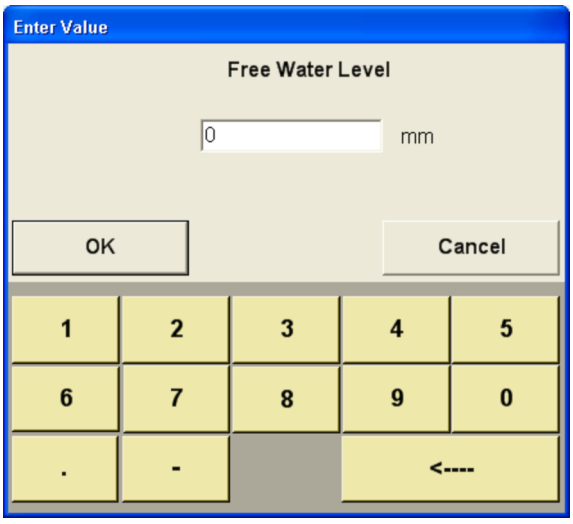
Click on the and buttons to select more commands.

Click on the command to send it to the connected gauge. Gauges that are not following level are shown in the tank mimic with a red line representing the Displacer position.



5.5.2 Manual Data

Certain data fields may be configured so that they are in manual mode (i.e. displayed with the green colour). Clicking on the displayed value will reveal the manual entry window.

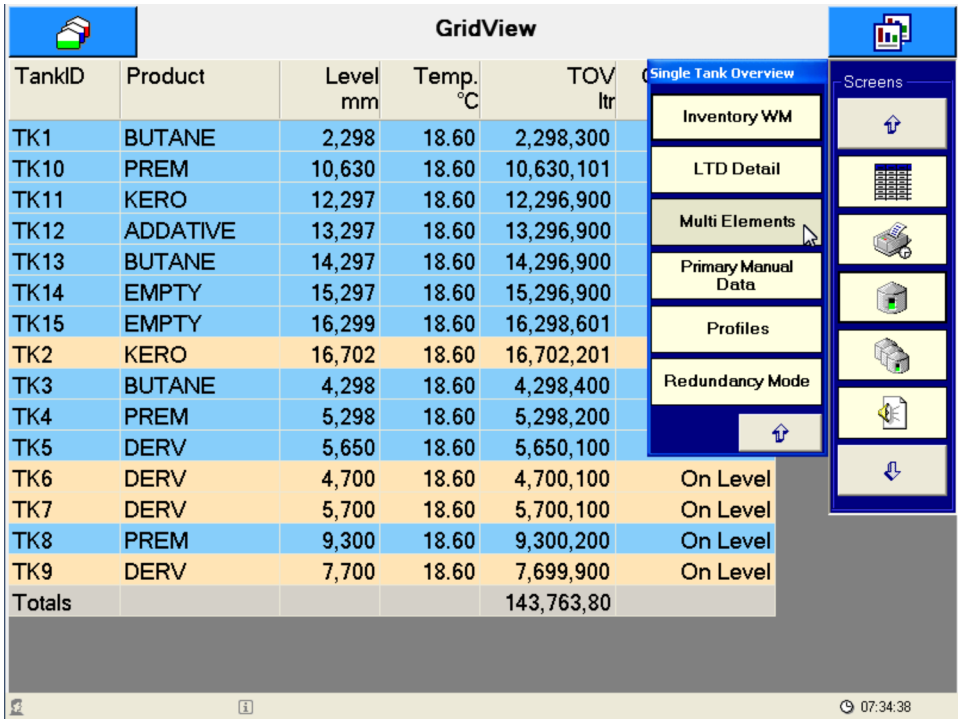


This allows a new value to be entered via the touchscreen. When the **OK** button is touched, the window will close and the value will be updated on the screen in a few seconds. The value is permanently saved, so that if the NXA83B is rebooted the new value will remain.

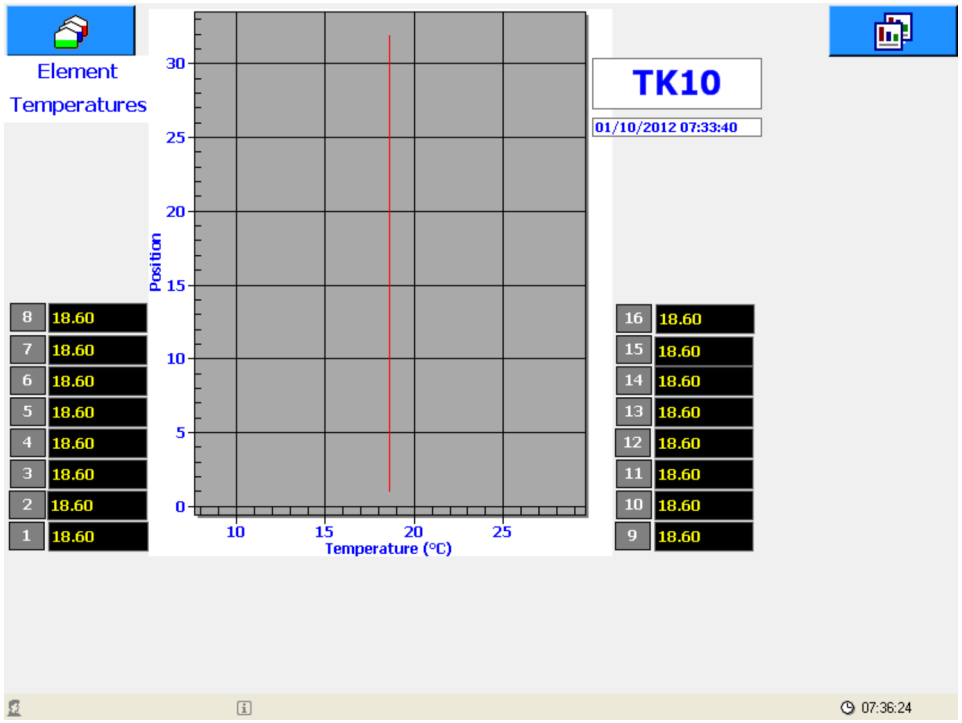
Calculated fields, such as Volumes, Mass etc., cannot be manually entered. If they are displayed in green it is because one (or more) of the calculation parameters is in manual mode.

5.5.3 Multi-Element Display

In the default configuration there is a second Single Tank screen available, called **Multi Elements**, which can be used to view multi-element temperatures from gauges that support that function.



TankID	Product	Level mm	Temp. °C	TOV ltr	
TK1	BUTANE	2,298	18.60	2,298,300	
TK10	PREM	10,630	18.60	10,630,101	
TK11	KERO	12,297	18.60	12,296,900	
TK12	ADDATIVE	13,297	18.60	13,296,900	
TK13	BUTANE	14,297	18.60	14,296,900	
TK14	EMPTY	15,297	18.60	15,296,900	
TK15	EMPTY	16,299	18.60	16,298,601	
TK2	KERO	16,702	18.60	16,702,201	
TK3	BUTANE	4,298	18.60	4,298,400	
TK4	PREM	5,298	18.60	5,298,200	
TK5	DERV	5,650	18.60	5,650,100	
TK6	DERV	4,700	18.60	4,700,100	On Level
TK7	DERV	5,700	18.60	5,700,100	On Level
TK8	PREM	9,300	18.60	9,300,200	On Level
TK9	DERV	7,700	18.60	7,699,900	On Level
Totals				143,763,80	



5.6 Reports

A range of reports may be configured using the Tankvision Multi Scan Configurator tool, which are then available to be viewed or printed on demand by a user during normal operation.

The reports are fully configurable using the same layout as grid views, refer to the Multi Scan NXA83B Configuration Manual (BA01291G) for details.

There are some extra configuration items that apply only to reports, such as:
- Select Orientation as Landscape or Portrait
- Set the Margins for the printed document

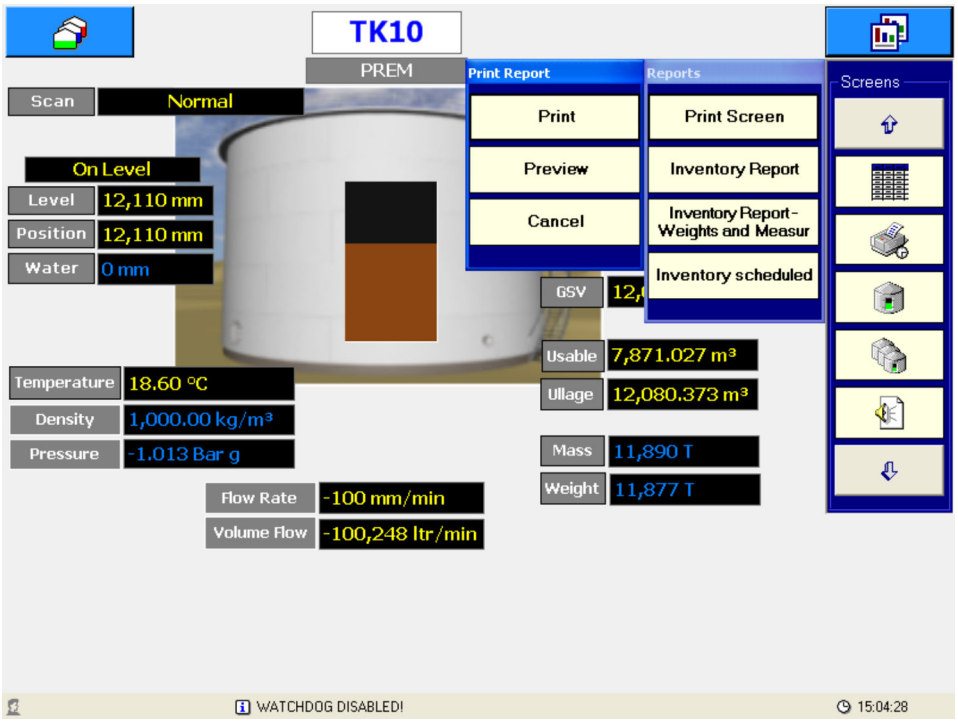
Reports can be manually printed or viewed by clicking on the icon. This will display a pop-up menu containing all configured Reports. Various different reports may be created, however by default the Multi Scan NXA83B will have one report called **Inventory Report** and a screen print facility.

If there is no printer configured for the Multi Scan NXA83B, the **Reports** menu item will be greyed out and reports may not be printed.

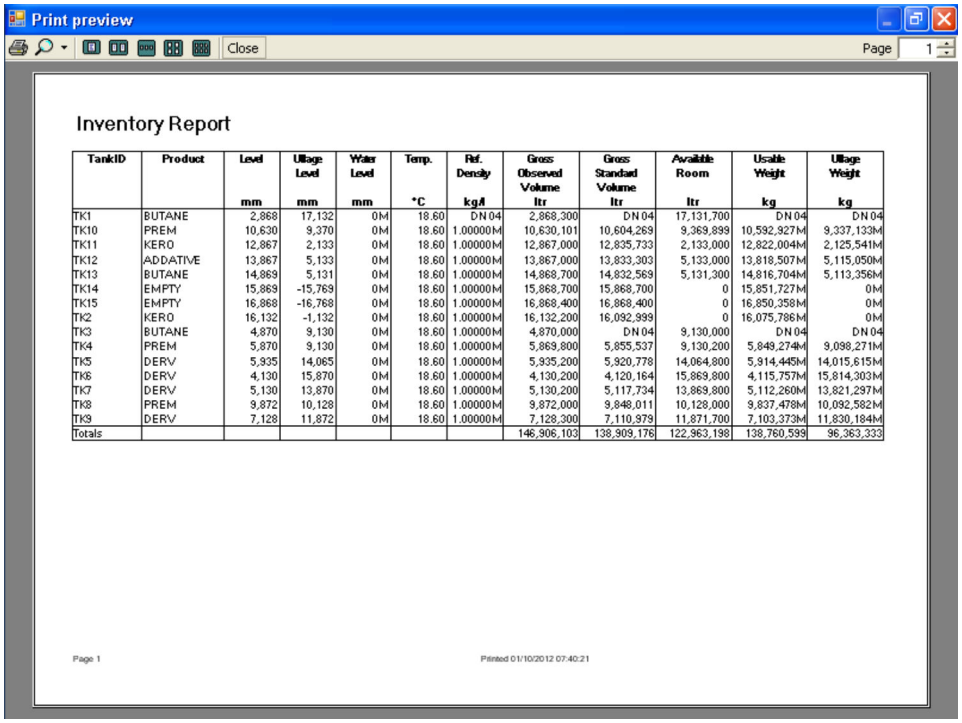
If a printer has been installed and configured in the Multi Scan NXA83B the report may be printed. The printer must be set as the default printer within the operating system.

Otherwise a report may be viewed on screen using the **Preview** option.

Clicking on a report will display the **Print Report** menu.



Clicking the **Preview** button will display the report on the Multi Scan NXA83B screen whereas clicking the **Print** button will send the report directly to the printer.

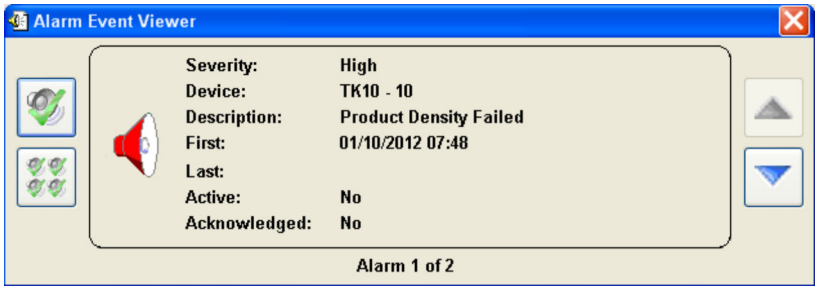


TankID	Product	Level mm	Ullage Level mm	Water Level mm	Temp. °C	Ref. Density kg/l	Gross Observed Volume ltr	Gross Standard Volume ltr	Available Room ltr	Usable Weight kg	Ullage Weight kg
TK1	BUTANE	2,868	17,132	0M	18.60	DN 04	2,868,300	DN 04	17,131,700	DN 04	DN 04
TK10	PREM	10,630	9,370	0M	18.60	1.00000M	10,630,101	10,604,269	9,369,899	10,592,927M	9,337,133M
TK11	KERO	12,867	2,133	0M	18.60	1.00000M	12,867,000	12,835,733	2,133,000	12,822,004M	2,125,541M
TK12	ADDATIVE	13,867	5,133	0M	18.60	1.00000M	13,867,000	13,833,303	5,133,000	13,818,507M	5,115,050M
TK13	BUTANE	14,869	5,131	0M	18.60	1.00000M	14,868,700	14,832,569	5,131,300	14,816,704M	5,113,356M
TK14	EMPTY	15,869	-15,769	0M	18.60	1.00000M	15,868,700	15,868,700	0	15,851,727M	0M
TK15	EMPTY	16,868	-16,768	0M	18.60	1.00000M	16,868,400	16,868,400	0	16,850,358M	0M
TK2	KERO	16,132	-1,132	0M	18.60	1.00000M	16,132,200	16,092,999	0	16,075,786M	0M
TK3	BUTANE	4,870	9,130	0M	18.60	1.00000M	4,870,000	DN 04	9,130,000	DN 04	DN 04
TK4	PREM	5,870	9,130	0M	18.60	1.00000M	5,869,800	5,855,537	9,130,200	5,849,274M	9,098,271M
TK5	DERV	5,935	14,065	0M	18.60	1.00000M	5,935,200	5,920,778	14,064,800	5,914,445M	14,015,615M
TK6	DERV	4,130	15,870	0M	18.60	1.00000M	4,130,200	4,120,164	15,869,800	4,115,757M	15,814,303M
TK7	DERV	5,130	13,870	0M	18.60	1.00000M	5,130,200	5,117,734	13,869,800	5,112,260M	13,821,297M
TK8	PREM	9,872	10,128	0M	18.60	1.00000M	9,872,000	9,848,011	10,128,000	9,837,478M	10,092,582M
TK9	DERV	7,128	11,872	0M	18.60	1.00000M	7,128,300	7,110,979	11,871,700	7,103,373M	11,830,184M
Totals							146,906,103	138,909,176	122,963,198	138,760,599	96,363,333

Reports may also be configured to be printed automatically (refer to section "Scheduling").

5.7 Alarms

When an alarm occurs in the system a pop-up window will be displayed. Where multiple alarms are active they are displayed in order of severity, Critical first then High and finally Low level alarms. Within the severity groupings the alarms are arranged in the order that they occurred with the oldest unacknowledged alarm first.



This window will remain in front of the other screens and cannot be closed until all active alarms have been acknowledged. After all active alarms have been acknowledged the window can be closed by clicking on the button.

To acknowledge the currently displayed alarm click .

To acknowledge all alarms click .

To scroll through all active alarms, use the and buttons.

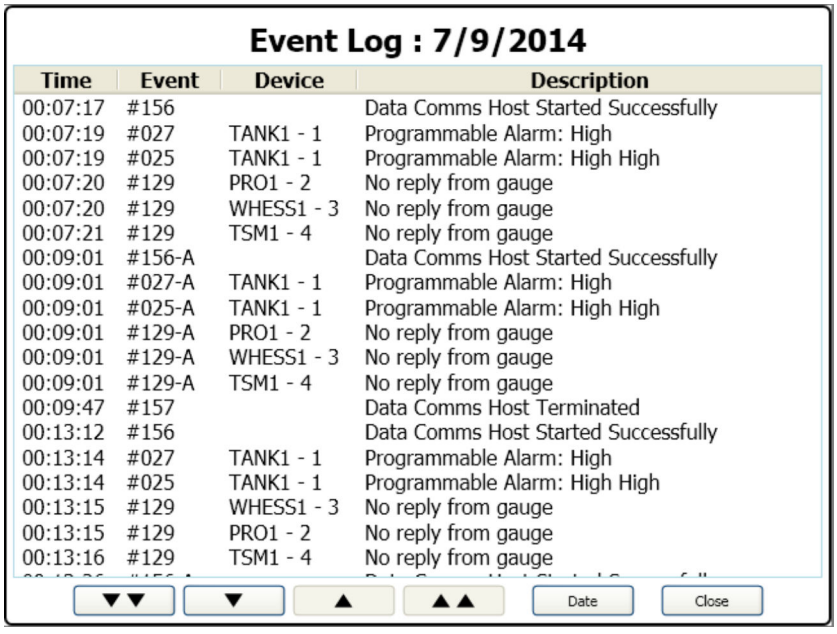
The alarm buffer holds a maximum of 100 active alarms. If this is exceeded the oldest alarms will be lost.

To display the alarm window at any time, click on the icon in the **Screens** menu.

5.7.1 Event Log

A historical log of all alarms and events is saved on disk. To view these events click on the arrow on the right hand **Screens** menu, then click on the icon.

Select a date, those days in bold contain historical alarms/events.



5.8 Scheduling

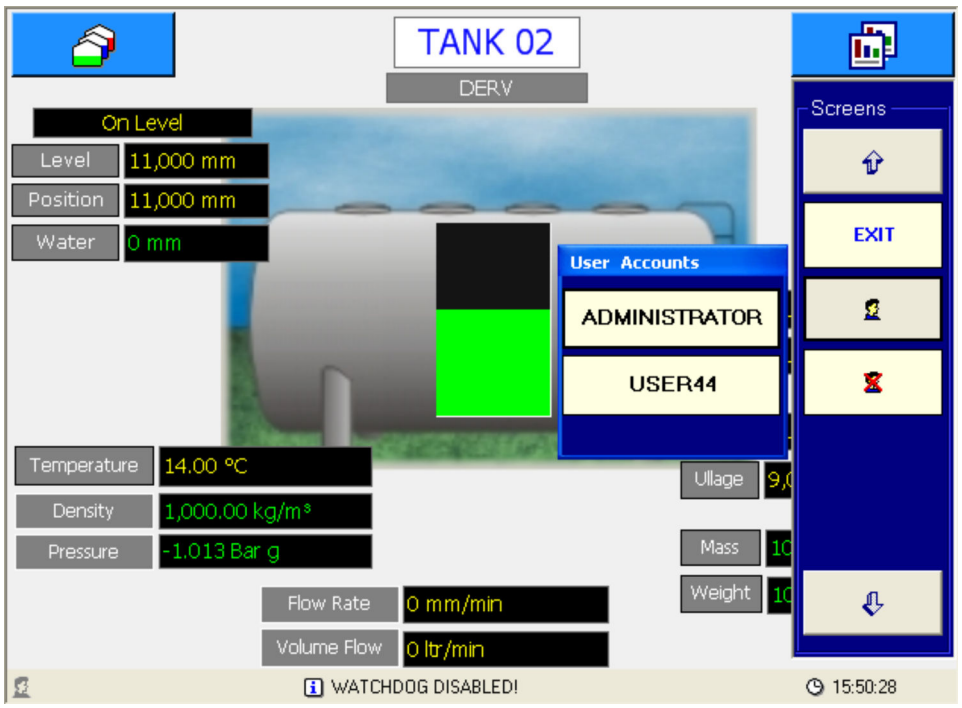
The following items may be configured to be auto scheduled:
- Gauge Commands
- Reports Printing

Scheduled gauge commands and report are configured using the Tankvision Multi Scan Configurator tool, refer to Multi Scan NXA83B Configuration Manual (BA01291G) for details.

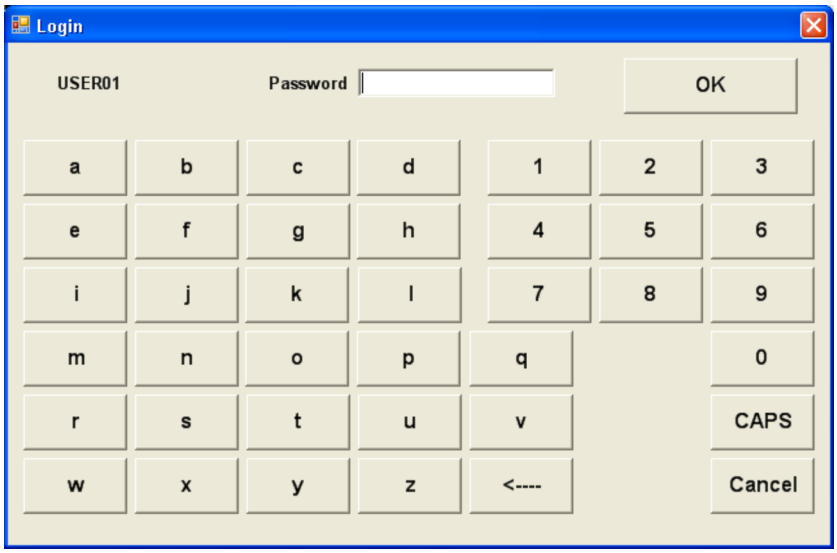
5.9 Security

If security has been enabled in the Multi Scan NXA83B database (by default it is disabled) the user may be required to login to perform certain actions, such as gauge commands or manual data entry.

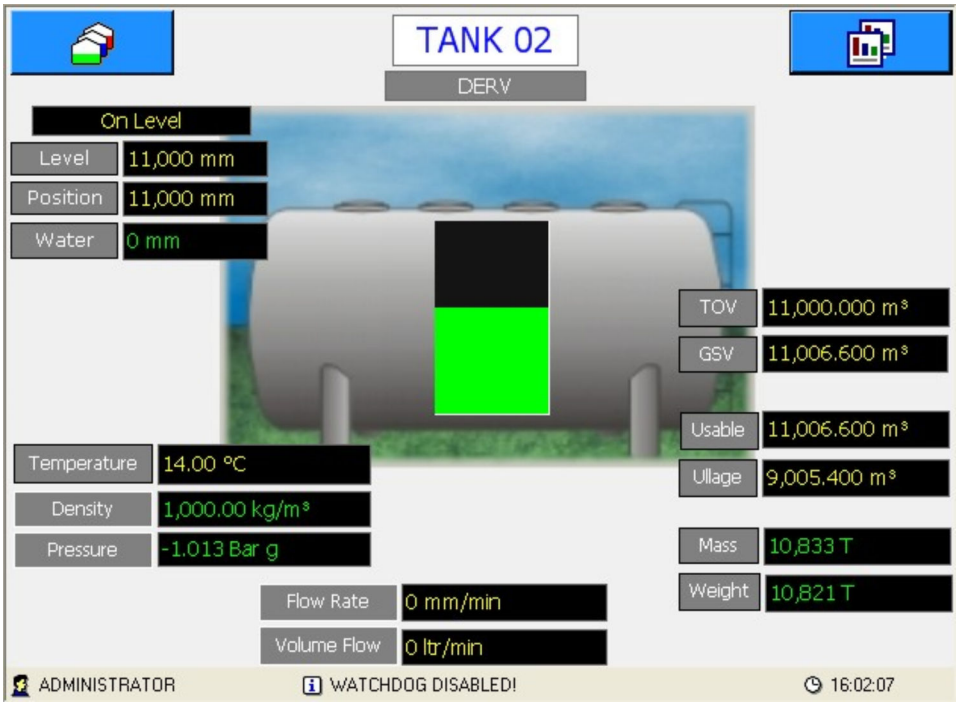
To login, click on the button (right hand button) then click on . Select the option and select the user account from the list.



The password entry screen will be displayed.



Enter the correct password using the onscreen keyboard and click **OK**. The current login account will be displayed on the status bar at the bottom of the screen.



Select the button from the **Screens** menu to log out.

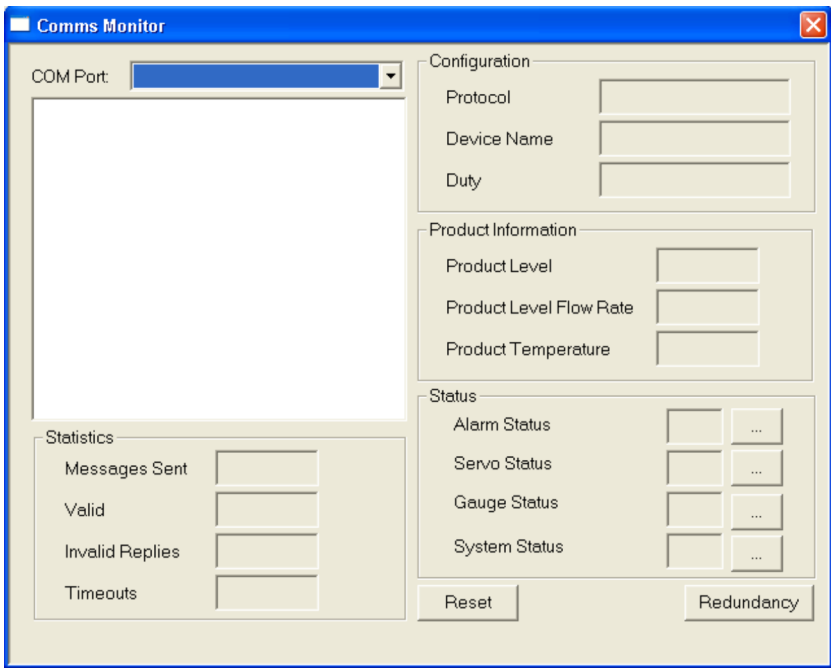
5.10 Communications Monitor

The Communications Monitor is available to be viewed from the Operator touch screen, which can be used to view diagnostic data on the field ports. This utility is similar to the full Communications Monitor available when remotely logged in, but with limited functionality. Therefore certain features will not be available from the Operator screen version, including such items as Raw Data viewing/logging, modem log and Connect details.

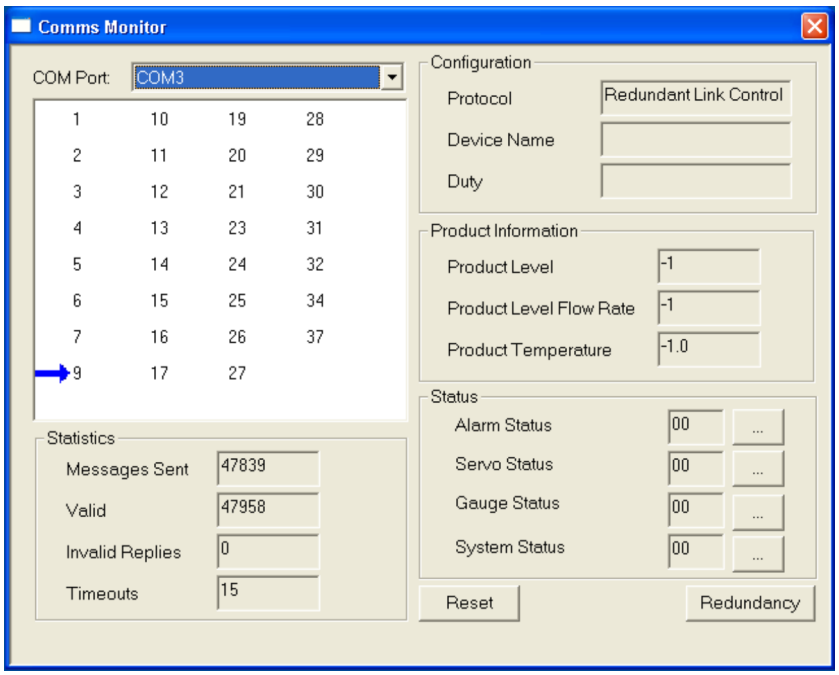
This feature is only available from firmware versions 3.2.0/4.2.0 onwards.

To view the Communications Monitor from the Operator screen click on the **Comms Monitor** icon in the right hand drop down menu.

A version of the Communications monitor that is formatted for use on a touch screen will be displayed.



This screen operates in a similar way to the full Communications Monitor, in that a **COM port** can be selected from the drop down list. The screen will then show the details of that port.



The redundancy details can be viewed by clicking on the **Redundancy** button. This screen functions in exactly the same way as the full Communications Monitor.

Refer to the separate DCC Communications Configuration manual BA01292G for more details on the operation of these screens.

6 Return

The requirements for safe device return can vary depending on the device type and national legislation.

1. Refer to the web page for information:
   https://www.endress.com/support/return-material
   ↳ Select the region.
2. If returning the device, pack the device in such a way that it is reliably protected against impact and external influences. The original packaging offers the best protection.

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