PREFACE

About this Guide
This manual describes how to operate the ENTIS system. It has been written for operators, as well as system supervisors, to provide them with all the information required to operate the system.

For installation details refer also to the ENTIS Installation Guide.

Safety and prevention of damage
‘Cautions’, and ‘Notes’ have been used throughout this manual to bring special matters to the immediate attention of the reader.

A Caution draws attention to an action which may damage the equipment.

A Note points out a statement deserving more emphasis than the general text, but does not deserve a “Warning” or a “Caution”.

Additional information
Contact Honeywell, or its representative, if you require additional information. Also, refer to the list of related documents in Appendix for more information.

Legal aspects
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- Deviation from any of the prescribed procedures
- Execution of activities that are not clearly documented

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For support, contact your local Honeywell Process Solutions Customer Contact Centre (CCC). To find your local CCC visit the website, https://www.honeywellprocess.com/en-US/contactus/pages/default.aspx

Revision History

ENTIS Installation and Configuration Guide (This document)

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<thead>
<tr>
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</table>

Documentation References

The following list identifies publications that may contain information relevant to the information in this document.

<table>
<thead>
<tr>
<th>Document Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETDOC-X612-en-101A</td>
<td>ENTIS Quick Start Guide</td>
</tr>
<tr>
<td>ETDOC-X613-en-101A</td>
<td>ENTIS Installation and Configuration Guide</td>
</tr>
<tr>
<td>EHDOC-X136-en-510A</td>
<td>Experion HS Software Installation Users Guide</td>
</tr>
</tbody>
</table>


Contacts

See back page for details
Contents

PREFACE ........................................................................................................................................ ii
INTRODUCTION ............................................................................................................................. 1
  Real Time Inventory ...................................................................................................................... 1
  Numerical & Graphical Display .................................................................................................... 1
  Networking .................................................................................................................................. 1
  Alarm System ............................................................................................................................. 1
  Hot Standby & CIU Redundancy Support .................................................................................... 1
  ENTIS Redundancy Support ....................................................................................................... 2
  Dual Gauges Support .................................................................................................................. 2
  954 Servo Test Alarm Support .................................................................................................... 2
  50 Point Density Profile Support ............................................................................................... 2
  Reporting Enhancements ........................................................................................................... 2

INTERFACE GUIDELINES .............................................................................................................. 3
  Help ........................................................................................................................................ 3
  Data Status ............................................................................................................................... 3

SECURITY CONSIDERATIONS .................................................................................................... 4
  General Guidelines .................................................................................................................... 4
  Signed Assemblies ..................................................................................................................... 4
  Network Shares ......................................................................................................................... 5
  Access Control List ................................................................................................................... 5
  Backup & Restore ..................................................................................................................... 5
  User Accounts and Roles .......................................................................................................... 6
  Physical and Environmental Considerations .............................................................................. 6
  System Monitoring ................................................................................................................... 6
  Vulnerability Reporting ............................................................................................................ 6
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOOLBAR</td>
<td>7</td>
</tr>
<tr>
<td>Toolbar</td>
<td>7</td>
</tr>
<tr>
<td>Status bar</td>
<td>7</td>
</tr>
<tr>
<td>Language</td>
<td>8</td>
</tr>
<tr>
<td>MANAGE DISPLAYS</td>
<td>9</td>
</tr>
<tr>
<td>Manage Group</td>
<td>9</td>
</tr>
<tr>
<td>Manage Views</td>
<td>11</td>
</tr>
<tr>
<td>Manage Filters</td>
<td>14</td>
</tr>
<tr>
<td>GROUP VIEW</td>
<td>16</td>
</tr>
<tr>
<td>GROUP DETAIL</td>
<td>17</td>
</tr>
<tr>
<td>Delta column</td>
<td>19</td>
</tr>
<tr>
<td>Critical / Operation PAL Column</td>
<td>22</td>
</tr>
<tr>
<td>Remark Column</td>
<td>27</td>
</tr>
<tr>
<td>TANK DETAIL</td>
<td>30</td>
</tr>
<tr>
<td>GAUGE COMMANDS</td>
<td>35</td>
</tr>
<tr>
<td>Running Dipping Commands</td>
<td>39</td>
</tr>
<tr>
<td>Running Displacer Commands</td>
<td>40</td>
</tr>
<tr>
<td>Scheduling Gauge Command</td>
<td>41</td>
</tr>
<tr>
<td>MANUAL OVERWRITE</td>
<td>43</td>
</tr>
<tr>
<td>Performing a Manual Overwrite</td>
<td>44</td>
</tr>
<tr>
<td>PROFILES</td>
<td>47</td>
</tr>
<tr>
<td>Profile screen examples</td>
<td>50</td>
</tr>
<tr>
<td>TOTALIZER</td>
<td>53</td>
</tr>
<tr>
<td>WHAT IF</td>
<td>55</td>
</tr>
<tr>
<td>REPORTS</td>
<td>59</td>
</tr>
<tr>
<td>Report Printing</td>
<td>59</td>
</tr>
<tr>
<td>Report Scheduling</td>
<td>63</td>
</tr>
<tr>
<td>Templates</td>
<td>65</td>
</tr>
<tr>
<td>MANAGE TASKS</td>
<td>70</td>
</tr>
<tr>
<td>HELP</td>
<td>72</td>
</tr>
<tr>
<td>SETTINGS</td>
<td>73</td>
</tr>
</tbody>
</table>
Table of Tables

Table 1: Data Status ................................................................. 3
Table 2: Displacer Commands .............................................. 37
Table 3: Entity Fields ............................................................. 44
Table 4: Configuration Alarms .............................................. 82
# Table of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1: Tool bar</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Figure 2: Status bar</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Figure 3: Language Selection</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Figure 4: Manage Groups</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Figure 5: Reset Views</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Figure 6: Manage Views</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Figure 7: Manage Filters</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Figure 8: Group View</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Figure 9: Group Detail</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Figure 10: Delta Column</td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>Figure 11: Delta Column Group</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Figure 12: Delta Column Report</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>Figure 13: Alarm Column</td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>Figure 14: Alarm Column Views</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>Figure 15: Group Detail Alarm Column</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Figure 16: Alarm Column HA</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Figure 17: Alarm Column HA Ack</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Figure 18: Alarm Column LA</td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>Figure 19: Remarks Column</td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>Figure 20: Remarks Views</td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Figure 21: Remarks Views edit</td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>Figure 22: Remarks Views with history</td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>Figure 23: Tank Detail</td>
<td></td>
<td>31</td>
</tr>
<tr>
<td>Figure 24: Tank Detail Floating</td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>Figure 25: Tank Detail Sphere</td>
<td></td>
<td>33</td>
</tr>
<tr>
<td>Figure 26: Tank Detail Icon</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Figure 27: Gauge Commands</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Figure 28: Dipping Command</td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Figure 29: Displacer command</td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>Figure 30: Tank Gauge Alarm</td>
<td></td>
<td>38</td>
</tr>
<tr>
<td>Figure 31: Displacer</td>
<td></td>
<td>39</td>
</tr>
<tr>
<td>Figure 32: Displacer</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>Figure 33: Schedule Command Screen</td>
<td></td>
<td>41</td>
</tr>
<tr>
<td>Figure 34: Scheduling screens</td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>Figure 35: Manual Overwrite</td>
<td></td>
<td>43</td>
</tr>
<tr>
<td>Figure 36: Manual Overwrite Parameter</td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>Figure 37: Create Profile</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>Figure 38: Profile ready</td>
<td></td>
<td>49</td>
</tr>
<tr>
<td>Figure 39: Temperature profile</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Figure 40: Density Profile</td>
<td></td>
<td>51</td>
</tr>
<tr>
<td>Figure 41: Interface Profile</td>
<td></td>
<td>51</td>
</tr>
<tr>
<td>Figure 42: Density and Temperature profile</td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>Figure 43: Totalizer</td>
<td></td>
<td>53</td>
</tr>
<tr>
<td>Figure 44: Totalizer_All</td>
<td></td>
<td>53</td>
</tr>
<tr>
<td>Figure 45: Totalizer Icon</td>
<td></td>
<td>54</td>
</tr>
<tr>
<td>Figure 46: What If</td>
<td></td>
<td>55</td>
</tr>
<tr>
<td>Figure 47: What – If layout</td>
<td></td>
<td>56</td>
</tr>
<tr>
<td>Figure 48: What – If Start</td>
<td></td>
<td>57</td>
</tr>
<tr>
<td>Figure 49: What – If Reload</td>
<td></td>
<td>58</td>
</tr>
</tbody>
</table>
INTRODUCTION

ENTIS is a unique Tank Inventory Management System developed for Windows 10 Enterprise, and powered by the Experion platform, to display Tank inventory data.

Real Time Inventory
ENTIS is a Windows 10 Enterprise application. Data is retrieved via dedicated Communication Interface Units (CIU’s) and processed through to the open ENTIS database. Various displays are available for inventory management. These displays include bar graphs, tabular data, iconized tanks, and a whole range of modules such as trending, report printing, and a “what if” tank calculator.

Numerical & Graphical Display
The graphical displays provide a quick overview of tank data. The numerical displays can be customized to suit your own particular needs. These displays can be either tank or group related. Several graphical displays are also available, and tank images can be customized per tank if required.

Networking
The network facilities of the Experion system allow you to integrate ENTIS into your plant’s networks.

Alarm System
ENTIS provides you with an array of programmable alarm set points. Privileged users can create their own alarms for all measured and calculated data. During inactive periods, tanks can be put into a leak detection mode. Alarms and acknowledgements, together with all tank information, are stored and recorded for future review and traceability.

Hot Standby & CIU Redundancy Support
The ENTIS system can be enhanced for use in critical applications with hot standby and CIU redundancy support. CIU redundancy support can cover the unlikely event of a network failure, providing sustained and reliable data to your management system. After the occurrence of an error, the second CIU will automatically start and take over the lost functionality. Following the switch over, all gauge data will be rescanned and recalculated to ensure data reliability.
ENTIS Redundancy Support

The ENTIS system can now be used in a redundant server mode, with automatic failover capabilities.

Dual Gauges Support

ENTIS can now work with the CIU to support dual gauge systems, allowing for two product levels to be used to generate a difference alarm.

954 Servo Test Alarm Support

ENTIS can be used to generate test alarms for the 954 servo.

50 Point Density Profile Support

ENTIS can now work with the 954 servo to support 50 point density profiles.

Reporting Enhancements

ENTIS reporting now allows for the use of customized customer name, sites and logos, on the standard and Legal Metrology-approved report set.
INTERFACE GUIDELINES

The ENTIS user interface consists of a set of inter-related graphical objects together with a set of rules governing their deployment, such as windows, dialog boxes, task icons, colours and others.

Although ENTIS is a Windows application, there are certain additional conventions used in ENTIS that will be described in this chapter. This chapter also describes a basic set of rules to help the user learn how to use ENTIS.

Help

ENTIS supports the displaying of the PDF of the User’s Manual. Navigating to the Help menu item will open the pdf version of the ENTIS User’s Manual.

Data Status

Measured and calculated data is indicated by a status sign. The statuses are shown in the following table:

Table 1: Data Status

<table>
<thead>
<tr>
<th>Sign</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp;</td>
<td>Data is actual and approved</td>
</tr>
<tr>
<td>S</td>
<td>Data is manually overwritten</td>
</tr>
<tr>
<td>#</td>
<td>Data is stored and not approved</td>
</tr>
<tr>
<td>?</td>
<td>Data is not approved for Legal Metrology use</td>
</tr>
<tr>
<td>F</td>
<td>Data has reduced accuracy and is not approved</td>
</tr>
<tr>
<td>K</td>
<td>Data is in fail</td>
</tr>
<tr>
<td>^</td>
<td>Data is not being scanned (formerly called 'killed')</td>
</tr>
<tr>
<td>v</td>
<td>Data is over range</td>
</tr>
<tr>
<td>U</td>
<td>Data is under range</td>
</tr>
<tr>
<td>S&amp;W</td>
<td>Data is uninitialized</td>
</tr>
</tbody>
</table>

S&W, Liq/Vol Ratio and Molar Weight are always manually entered
SECURITY CONSIDERATIONS

General Guidelines

ENTIS runs on the Experion HS platform; therefore, Experion’s security guidelines / recommendations should be followed in any ENTIS deployment.

Experion HS provides a comprehensive Network and Security Guide (ID: EHDOC-XX75-en-510A) that should be reviewed prior to an ENTIS deployment. It contains numerous guidelines to help ensure a secure deployment.

In addition to the information provided in that manual, this section provides some additional security-related details.

This information is ENTIS-specific and is meant only to augment the Experion documentation.

Signed Assemblies

Digitally signing files allows users to confirm that those files were provided by Honeywell.

Honeywell has digitally signed the assemblies that it provides with ENTIS. Note that this does not include third-party assemblies that are not maintained as a part of the ENTIS product line.

Users can confirm that their ENTIS assemblies are signed by bringing up the assembly properties via Windows Explorer.

Users can check for signing by right-clicking on the dll/exe, and selecting Properties from the context menu.

If the ensuing dialog has a Digital Signatures tab, and there is a “Honeywell Limited” signer listed, then your assembly has been properly signed by Honeywell.
Network Shares

ENTIS creates the following network shares beyond what Experion configures, and documents, in their Network and Security Guide.

Shares created by Server-Client install are as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Nodes</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTISRepository</td>
<td>C:\ProgramData\Honeywell\ENTIS</td>
<td>Server</td>
<td>Used by File Replication to replicate contents to a redundant server</td>
</tr>
<tr>
<td>Broker</td>
<td>C:\Program Files\x86\Mosquito</td>
<td>Server</td>
<td>Used to exchange the certificate and configuration file with a redundant server.</td>
</tr>
</tbody>
</table>

Access to the shares is limited to users of the groups Administrators, Product Administrators and Local servers.

Access Control List

ENTIS will set up the appropriate access controls on its files for the application to run securely.

This ACL configuration step is run automatically as a part of the installation process.

In addition to the ENTIS-specific ACL settings, ENTIS also relies on the standard Experion ACL implementation, as is described in the Experion Network and Security Guide.

Backup & Restore

For the backup and restoration process for the node, please refer to the following sections of the Experion PKS Backup and Restore User’s Guide, EPDOC-X111-en-431K on Honeywellprocess.com. Backups on a physical node.

1. Backups on a virtual node.
2. Restoring Physical Nodes.
3. Restoring Virtual Nodes.
Security Considerations

User Accounts and Roles
User roles define the set of operations that a user is allowed to perform. ENTIS leverages the Experion platform and its user roles. For information on the roles, please refer to the “User accounts and Experion user roles” section in the Network and Security Guide (ID: EHDOC-XX75-en-510A). Note that the Legal Metrology user roles are ENTIS specific and explained in more detail in the ENTIS Sealing guide.

Physical and Environmental Considerations
While the security issues for ENTIS on Experion are largely the same as for any IT server, the physical access of a tank information system can be particularly important. For physical and environmental considerations, please see the Physical and Environmental Considerations section in the Network and Security Guide (ID: EHDOC-XX75-en-510A).

System Monitoring
ENTIS and Experion provide a number of ways to detect potential evidence of intrusion. The System Monitoring section of the Network and Security Guide (ID: EHDOC-XX75-en-510A) provides details on this subject. In addition to the information in that guide, it should be added that ENTIS will write events into the ENTIS event log, which is available through the Windows event viewer.

Vulnerability Reporting
In the previously mentioned Network and Security Guide (ID: EHDOC-XX75-en-510A), please refer to the section titled “How to report a security vulnerability” for information pertaining to reporting potential security vulnerabilities against Honeywell products.
TOOLBAR

Toolbar
The toolbar is present in Experion Station. It offers a fast navigation tool for ENTIS displays. Based on their access level, users can navigate to ENTIS screens by clicking on the associated menu icons.

![Image of toolbar](image1.png)

Figure 1: Tool bar

Status bar
The status bar includes the following display areas:

**DateTime**
Displays the current system date and time.

**Alarms**
Whenever an alarm is raised, the alarm icon will start blinking in red. Clicking on the icon will open the Alarm display.

**System**
If it is blinking in blue, the system status is ok. If any system related issues come up, it will start blinking in red. Click on it to open the system status view.

**Message, Alert**
Any message or alert logged by Experion will be available here.

![Image of status bar](image2.png)

Figure 2: Status bar
**Toolbar**

*Server Name*
Server to which Experion Station is connected. Click on the icon to view details.

*Station Name*
The connected Station name will be displayed here.

*Role*
Displays the logged-in user role. Click on it to enter the credentials and change the role.

*Language*
The user can choose either English or Dutch by clicking on the language selection button on the top right corner of the display.

![Language Option]

*Figure 3: Language Selection*
MANAGE DISPLAYS

Manage Group

Tank groups can be defined to allow for easier navigation between subsets of tanks.

The Manage Groups dialog can be opened from the Group View, Group Detail, or Totalizers screen.

![Manage Groups dialog]

**Figure 4: Manage Groups**

This dialog displays the following main sections:

- On the left side, all created tank groups are displayed.
- In the middle part, the available tanks to be added to the tank group are shown.
- At the right side, the tanks which are a member of the selected tank group are displayed.
Creating a Group

1. Log on as a user with SUPV permissions (or higher).
2. Click the Manage Groups icon from either the Group View or the Group Detail display. The Manage Groups dialog opens.
3. Click on Create:
   An edit field opens where you can enter the tank group name.
4. Enter the tank group name and click Create.
   The tank group is added to the list of created Tank Groups.
5. In the middle part of the screen, select the tanks that you want to add to the group.
6. Click on
   The selected tanks are moved from the middle panel to the right part of the dialog.
7. Click OK
   The dialog closes.
   The newly created group can be selected in the Group selector dropdown box on the various UI screens.
8. Similarly, to remove tanks from a group, select the tanks in the right part of the screen and click on

Note that the “All” group is available by default and cannot be removed or altered.
Manage Views

The Group Detail task displays tank inventory data for multiple tanks in a tabular format. Tanks are organized in rows, while the entities are displayed in columns.

This dialog enables the user to customize the view that defines the columns to be displayed in Group Detail. The first column (Tank name) is fixed.

A number of predefined views are available; it is also possible to create new views.

The predefined views can be altered, but not deleted. However, they can be reset as shown below:

![Manage Views](image)

**Figure 5: Reset Views**

Newly created views can be altered and deleted.

The Manage Views dialog can be launched from the Group Detail screen.
Figure 6: Manage Views

This dialog displays the following main sections:

- At the left side, all available views are shown.
- In the middle part, the available entities to be added to the view are displayed.
- At the right side, the entities which are available in the selected view are shown.
Creating a view

1. Log on as a user with SUPV level permissions (or higher).

2. Click the Manage Views icon from the Group Detail display.
   The Manage Views dialog opens.

3. Click on Create
   An edit field opens where you can enter the view name.

4. Enter the view name and click Create
   The view is added to the list of available views.

5. In the middle pane of the dialog, select the entities that you want to add to the view.

6. Click on >
   The selected entities are moved from the middle pane to the right side of the dialog.

7. Click OK
   The window closes. The newly created view can be selected in the View selector dropdown box on Group detail.

8. Similarly, to remove entities from a view, select the entities in the right part of the screen and click on <

Note: the order of the entities can be changed by dragging and dropping them on the right part of the Manage Views dialog.
Manage Displays

Manage Filters

This dialog offers the possibility to define filters on tanks to be displayed in a Tank Group.

A few examples of filters:

- Show tanks with a certain Product name.
- Show tanks with a Product temperature above a certain value.
- Show tanks with a Product level between 2 values.

The Manage Filter dialog can be launched from the Group Detail display.

Window layout

This window displays the following main sections:

- At the left side, all created filters are shown.
- In the middle part, the entities that can be used in a filter are displayed.
- At the right side, the configured parameters (Operation, Value) for the selected filter are shown.

![Figure 7: Manage Filters](image-url)
Creating a filter:

1. Log on as a user with SUPV level permissions (or higher - see note below)
2. Click the Filter icon from the Group Detail display. Then click Manage Filters.
3. Click on Create
   An edit field opens where you can enter the filter name.
4. Enter the filter name and click Create
   The filter is added to the list of created filters.
5. In the middle part of the dialog, select the entity that you want to be used in the filter.
6. In the right part of the dialog, select the Operation and the Value.
7. Click OK
   The window closes. The newly created filter can be selected in Group detail by clicking on Filter, then selecting the required filter.

Notes:

When logged on as Operator, a filter can be selected to be viewed, but not created or changed.
GROUP VIEW

The Group View display shows a group of Tanks with smaller images. All of the images include a bar graph in which the height is an indication of the amount of product in the tank, and the % level beside the tank is the product level available in the tank. The color of the bar graph is per the product's configured color.

The Tank icons are configurable by Tank. (that configuration is done in the CIU888 Service tool)

The TOV value is displayed by default, with other entity selections available from the second selector from the left (above the tank panels).

How to select the Group View display

1. Group View is the default display when ENTIS is started. You can also access the Group view display from the menu, or from the icon in the toolbar.

2. Select the desired group from the Group selection dropdown box.

3. Select the desired entity. The default entities are: TOV, Product Level, Product Temperature and Water Volume.

Figure 8: Group View
GROUP DETAIL

The Group Detail display show tank inventory data for multiple Tanks in a tabular format. Tanks are organized in rows, while the entities are displayed in columns.

In addition, this display enables the user to make use of additional functionality such as the Delta column (licensed option). Dimensions are user-definable and displayed in the column header.

The user can create their preferred views via the Manage Views dialog.

Display layout

The display presents Tank data in a tabular format. The data displayed on the grid depends on the selected view. Both values and - if applicable - statuses, are displayed. Clicking the mouse on the column header will sort the selected column. Multi column sorting is available by holding the Shift button and selecting multiple column headers. A blue line on the column header will indicate that it is sorted, with the blue line position indicating if the sort is ascending (top) or descending (bottom).

A user definable number of columns, measured from the first column, can be identified as fixed columns. Fixed columns do not scroll horizontally. The user can select the number of rows they want to view on a page and toggle between them via 'Previous' and 'Next' buttons.

The user can also filter the rows by using ‘Filter’ button where they can select the column where filter should be applied and set the parameters of filtering accordingly.
Figure 9: Group Detail

Opening the Group Detail Display

1. Click on the ‘Group Detail’ menu item, or the ‘Group Detail’ icon in the tool bar

2. The ‘Group/Tank’ display will appear

3. Select a Group from the dropdown combobox

4. Tank data will appear in the table

5. ‘All’ indicates that all the tanks will be shown

6. Change the View from the the view dropdown

Column width: The current size is stored whenever the user selects another view, or the window is closed.
Delta column

The Delta column displays the difference between the actual value and the start value. This feature enables an operator to verify tank operations with real-time data. Delta values are available for GOV, TGSV, Total Mass, NSV, Level, GSV and TOV.

The Delta column is only available in the Group Detail display. The column can be enabled via the Define View dialog.

When the Delta column is available in Group Detail, a click on the Delta column header (the horizontal ellipses) gives the following context menu:

Figure 10: Delta Column
Selecting a Delta Column

Clicking on the horizontal ellipses on the delta tank entity gives the following menu:

- **Start Tank** When clicked, the delta calculation for the selected tank (row) will be started or restarted
- **Stop Tank** When clicked, the delta calculation for the selected tank (row) will be stopped and cleared
- **Start Group** When clicked, the calculation for a group of tanks is started
- **Stop Group** When clicked, the calculation for a group of tanks is stopped and blanked
- **Delta Report** The delta values will be printed in form of report
### Delta Column Report

<table>
<thead>
<tr>
<th>TANK NAME</th>
<th>PRODUCT NAME</th>
<th>Start Level</th>
<th>Delta Level</th>
<th>Start TOV</th>
<th>Delta TOV</th>
<th>Start GSV</th>
<th>Delta GSV</th>
<th>Start Total Mass</th>
<th>Delta Total Mass</th>
<th>Start Date &amp; Time</th>
<th>Delta Date &amp; Time</th>
<th>Delta Abs Time</th>
<th>Delta Rail Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTZMK1</td>
<td>Panel</td>
<td>10.000</td>
<td>5</td>
<td>0.000</td>
<td>10000.000</td>
<td>5</td>
<td>0.000</td>
<td>U</td>
<td>U</td>
<td>03-Dec-2010</td>
<td>4:01:57PM</td>
<td>3 days, 0 hours, 5 mins</td>
<td>04:01:57PM</td>
</tr>
<tr>
<td>CTZMK2</td>
<td>Diesel</td>
<td>10.000</td>
<td>5</td>
<td>0.000</td>
<td>10000.000</td>
<td>5</td>
<td>0.000</td>
<td>U</td>
<td>U</td>
<td>03-Dec-2010</td>
<td>4:01:57PM</td>
<td>3 days, 0 hours, 5 mins</td>
<td>04:01:57PM</td>
</tr>
<tr>
<td>CTZMK3</td>
<td>Panel</td>
<td>10.000</td>
<td>5</td>
<td>0.000</td>
<td>10000.000</td>
<td>5</td>
<td>0.000</td>
<td>U</td>
<td>U</td>
<td>03-Dec-2010</td>
<td>4:01:57PM</td>
<td>3 days, 0 hours, 5 mins</td>
<td>04:01:57PM</td>
</tr>
<tr>
<td>CTZMK4</td>
<td>Diesel</td>
<td>10.5470</td>
<td>5</td>
<td>0.0500</td>
<td>10547.000</td>
<td>5</td>
<td>0.0500</td>
<td>U</td>
<td>U</td>
<td>03-Dec-2010</td>
<td>4:04:57PM</td>
<td>3 days, 0 hours, 3 mins</td>
<td>04:04:57PM</td>
</tr>
<tr>
<td>CTZMK5</td>
<td>Diesel</td>
<td>20.7600</td>
<td>-2.5470</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>U</td>
<td>U</td>
<td>03-Dec-2010</td>
<td>4:06:57PM</td>
<td>3 days, 0 hours, 3 mins</td>
<td>04:06:57PM</td>
</tr>
</tbody>
</table>

Report name: Delta Column-1.0.2012.0

**Figure 12: Delta Column Report**
Critical / Operation PAL Column

This column can be used to display PAL statuses in the Group Detail display.

A Critical PAL corresponds with Urgent priority alarms and an Operational PAL with High and Low priority alarms.

Figure 13: Alarm Column
Selecting an Alarm column from Group Detail

To view an alarm, the columns must be added through the “Manage View” dialog in Group Detail.

1. Go to ‘Manage View’ from Group Detail
2. Select Critical PAL and Operational PAL columns from the Available Entity list.
3. Click on the Ok button

Figure 14: Alarm Column Views
4. When the View is selected in Group detail, the selected columns will be available in the display.

![Figure 15: Group Detail Alarm Column](image)

- Hi and HiHi alarms with Urgent priority are indicated in the Up arrow from the Critical PAL field.
- Lo and LoLo alarms with Urgent priority are shown in the Down arrow from Critical PAL.
- Hi and HiHi alarms with High or Low priority are shown in the Up arrow from Operational PAL.
- Lo and LoLo alarms with High or Low priority are shown in the Down arrow from Operational PAL.
The next screenshot shows an example in Group Detail when a High alarm is active.

![Figure 16: Alarm Column HA](image)

When the alarm is acknowledged, the tooltip is updated.

![Figure 17: Alarm Column HA Ack](image)
Low alarms are indicated with the “down” arrow; in the next screenshot an active Low alarm with Low priority and one with Urgent priority is shown.

The number indicates the number of alarms for this type.

Figure 18: Alarm Column LA
Remark Column

This column allows the user to enter additional text in the Remarks field. The text can be entered by a left mouse click on the edit icon. See example below. This field is only available on the Group Detail display.

Figure 19: Remarks Column
Selecting the remark column from Group Detail

The remark columns must be added through the “Manage View” option in Group Detail.

1. Select Manage View from Group Detail
2. Select the Remark column from the Available Entity list.
3. Click on the Ok button
4. Select the View in Group detail screen
5. Left mouse click on remark field edit icon for selected tank
6. Enter user name and save remarks
7. Remark will be available for the selected view in Group Detail
**Adding a remark from group detail**

1. Remark can be edited by a left mouse click on the edit icon.

2. Upon clicking, the remarks column is expanded as shown in the screenshot below.

![Figure 21: Remarks Views edit](image1)

3. The user can add their username and remarks, and click Ok. The remark is saved as history with username, date, time and the remark.

![Figure 22: Remarks Views with history](image2)
TANK DETAIL

Tank Detail is a display that shows all measured and inventory data for one particular tank.

The screen provides an excellent overview of all relevant data and is updated continuously. It also displays the product level in % occupancy, and second level in the case where dual gauges are connected.

To change the tank being viewed, a combo box is available to change tank selection. This combo box shows all the tanks available in the selected group.

Data presentation

1. Measured data is always presented as green text.
2. Calculated data, such as inventory data is presented as black text.
3. Status and Validity information is available in circular indicators.
4. Units are shown in black after the status and validity symbols.

Display layout

The tank detail window consists of two main parts:

Toolbar
The toolbar shows a ‘Tank Detail’ icon at the left-hand side. The dropdown box allows you to choose and view another tank in the same group. Tooltips are available for tank oriented tasks.

Graphical pane
Display of entities (measured and calculated) belonging to the selected tank.
The time to fill is calculated from available TOV/flow TOV. The time to empty is calculated from available room/flow TOV.
**Tank detail window for fixed roof tanks**

This window selection is based on tanks with no corrections.

![Figure 23: Tank Detail](image-url)
**Tank detail window for fixed & floating roof tanks**

The window selection is based on tanks with S&W and floating roof corrections.

![Tank Detail Floating](Figure 24: Tank Detail Floating)
**Tank detail window for spheres**

The window selection is based on tanks with vapour room corrections (gas volume calculations).

![Tank Detail Sphere](image)

**Figure 25: Tank Detail Sphere**
**Selecting the Tank Detail display**

Proceed as follows:

1. Click on the ‘Tank Detail’ option from the tool bar.

2. You can also click on the ‘Tank Details’ option available on the left side menu.

3. The ‘Tank details’ window will appear.

4. Select a group from the tree view. The selected group will be displayed in the tool bar.

5. Individual tanks can be selected from the drop down combo box in the tool bar, or from the ‘Group/Tank’ window.
GAUGE COMMANDS

Modern gauges often support special commands and/or functions. These commands can be used, for example, to ‘Block’ the displacer at a certain level, or for testing alarm contacts remotely.

The available command and function can be dependent on the type of gauge or the application.

The Gauge Command display for ENTIS is ‘gauge aware’. It shows the user an icon corresponding to the gauge type, and shows which functions are enabled for that particular gauge.

**Tab layout**

1. Select the group
2. Select the tank
3. Select one of the available command tab
4. Click on the desired function and press Apply

![Figure 27: Gauge Commands](image)
How to issue a Dipping Command

Proceed as follows:

1. Click on the ‘Gauge Commands’ tab.
   The Dipping section will be displayed by default
2. Select a group from the dropdown.
   The selected group will be displayed in the tool bar
3. Individual tanks can be selected from dropdown.
4. Select the command you want to issue from the check boxes:
   - Density dip   Select to execute a density dip. This command only applies to 854 type gauges with the density option. Select one of the two radio buttons. Density can be executed in two ways:
     - Downwards
     - Upwards
   - Water dip    Select to execute a water dip
How to issue a Displacer Command

Two different displacer commands can be issued:

1. Go to the ‘Displacer’ panel of the ‘Gauge Commands’ tab
2. Select a group from the dropdown. The selected group will be displayed in the tool bar
3. Individual tanks can be selected from dropdown.
4. Select the command you want to issue by means of the radio buttons

<table>
<thead>
<tr>
<th>Radio Button</th>
<th>Command Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test</td>
<td>The level gauge will be set in lock test for approx. 1 minute, followed by an unlock command</td>
</tr>
<tr>
<td>Lock Test</td>
<td>When selecting this radio button, a data entry field will be enabled</td>
</tr>
<tr>
<td>Lock Test at</td>
<td>Enter the Lock test value</td>
</tr>
<tr>
<td>Auto Unlock</td>
<td>When selecting this check box, the displacer will be lowered automatically after reaching the value entered in the data entry field.</td>
</tr>
<tr>
<td>Verify Calibration</td>
<td>When selecting this radio button, the displacer will be raised until the CA setting in the servo gauge is reached</td>
</tr>
</tbody>
</table>


How to issue a Test Gauge Alarm

Figure 30: Tank Gauge Alarm

Proceed as follows:

1. Go to the ‘Test gauge alarm’ section of the ‘Gauge Commands’ tab
2. Select a group from the dropdown. The selected group will be displayed in the tool bar
3. Individual tanks can be selected from dropdown.
   - Alarm tests: Click on one or more alarms you want to test

This command can be used to test the alarm settings in the radar gauge. The alarm settings to be tested are HiHi, Hi, Lo, LoLo in any combination
**How to cancel commands**

An unlock command can be sent to the level gauge in order to cancel the command in progress.

**Running Dipping Commands**

This window shows the progress of a dipping command. The progress indicator is used to show the percentage of completion of the issued command.

The progress of the following dipping commands can be monitored:

- Density dip
- Water dip

**Tab layout**

At start-up, the Tank name, dipping command and original displacer position are shown. After start-up, the actual displacer position is displayed.

![Displacer](image)

**Figure 31: Displacer**

*Title bar* Displays the selected tank name and the issued command

*Displacer Position* This group box shows the displacer position:

- **Original** - The level at start up
- **Actual** - The actual position of the displacer
Gauge Commands

Running Displacer Commands

This window shows the actual displacer position during a Lock test or Verify calibration test command. These commands can only be issued for servo level gauges.

Tab layout

At start-up, the window shows the tank name and the displacer command in the title bar.

The group box shows the ‘Original’ displacer position (level at start-up) and the ‘Actual’ position. In addition to the level values the status and the dimension are displayed.

![Figure 32: Displacer](image)

Original Displacer Position

18.0000 m

○

Actual Displacer Position

18.0000 m

○
Scheduling Gauge Command

This option is displayed at the bottom of left hand panel on the ‘Gauge Commands’ screen. This feature allows the user to send automated commands to gauges at a given time.

The user can create a task and schedule gauge commands for different intervals like daily, weekly, monthly etc., starting at a specific time. The tasks created here are shown on ‘Manage Tasks’ screen.

Once the gauge command is scheduled, it will be executed at the scheduled time.

![Schedule Command Screen](image.png)

Figure 33: Schedule Command Screen
How to schedule a gauge command

- Choose the specifications of the gauge command that needs to be scheduled. Then click on Schedule button.
- **Task Name**: This is user defined field which defines name of the task.
- **Starts at**: User can choose when the task execution will start.
- **Repeat**: If the task has to be executed only once, ‘Never’ should be selected. If is a repeated task, ‘Always’ should be chosen.
- **Select Cycle**: User can choose the frequency of the task from below available 3 options. The option will only be enabled when ‘Repeat’ is ‘Always’.
  1. **Interval**: User can give any interval in hh:mm. After the ‘start at’ time, this task will be executed continuously at the given interval.
  2. **Weekly**: The user can choose the days. Every week this task will be executed on the selected days, and the time provided in ‘start at’.
  3. **Monthly**: The user can choose the dates in a month. Every month this task will be executed on the provided dates, and the time provided in ‘start at’.
- **Never**: User can opt for scheduling the gauge command only once without repeating it.

Figure 34: Scheduling screens
MANUAL OVERWRITE

This display allows the user to manually overwrite tank data. The ‘Manual Overwrite’ display can, for example, be used to overwrite an invalid entity, or to enter the value of an entity that is not being scanned or for which automatic measurement has stopped scanning (formerly known as ‘killed’).

This display supports basically three actions:

- Entity is not being scanned (formerly known as ‘killed’)
- Stop scanning an entity (formerly known as ‘kill’)
- Resume scanning an entity (formerly known as ‘resurrect’)

Enter manual data for an entity

Display Layout

The ‘Manual Overwrite’ window consists of two main parts:

- The entity selection pane (left)
- The entity overwrite area (right)

All Entities

This panel shows a tree with all available entities.

Figure 35: Manual Overwrite
**Entity Pane**

The entity overwrite area consists of four fields.

**Table 3: Entity Fields**

<table>
<thead>
<tr>
<th>Entity Name</th>
<th>This fields shows the selected entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop Scan</td>
<td>This check box indicated whether the entity is not scanning. Marked means not scanning (or stopped). This check box is not present by every tank entity.</td>
</tr>
<tr>
<td>Current Value</td>
<td>This column may contain a mix of data entry fields, combo boxes and check boxes depending on the entity being displayed. The entity value will be shown if:</td>
</tr>
<tr>
<td></td>
<td>- the entity status is set to manual</td>
</tr>
<tr>
<td></td>
<td>- the entity has no status</td>
</tr>
<tr>
<td></td>
<td>In all other cases the entity value will be blanked</td>
</tr>
<tr>
<td>Dimension</td>
<td>Shows the current dimension</td>
</tr>
</tbody>
</table>

**Performing a Manual Overwrite**

2. Click on the tree icon at the left site in the tool bar. The ‘Group/Tank’ window will appear.
3. Select a group from the tree view.
4. Select the tank you want to overwrite.
5. Select the entity you want to overwrite from the ‘All Entities’ pane.
6. Click on the ‘Stop Scan’ check box of the selected entity in the right pane means killed. The ‘Current value’ field will be enabled.
7. Click on the ‘Current value’ field.
8. Clear the field.
9. Enter the manual value.
10. Click on apply.

![Figure 36: Manual Overwrite Parameter](image)

Before you begin entering data into the currently selected entity field, the field background will be white. After entering the value the background changes to yellow to indicate that you have made a change and not yet saved it.

If you want to save the entered values click on the Apply button.

The entities Dobs, Tobs and Hydro correction have a close relation. In the entity tree they are put on one line. In the data area they are always shown together (3 lines) but can be edited individually. However Dobs and Tobs must be edited as a pair.

When data of an entity has been changed but not saved (Apply) and another entity or tank is being selected then a popup window requests the user what is required: either cancel the changed data or apply it.
The GSV calculation type combo box only shows the calculation types that support the Product Reference Temperature that has been configured for the selected tank. The Product Reference Temperature cannot be overwritten manually but must be configured in the CIU 888 with ENTIS.

The entities GSV Calc type and Product Code have a close relation. When a GSV Calc type is selected that does not support the currently selected Product Code, a pop-up message will advise other valid choices for the Product Code. The other way around, when a Product Code is selected that does not support the currently selected GSV calculation type, a pop-up message will advise other valid choices for the GSV Calculation type. If the advice is ignored, the GSV calculation type will change to “Undefined” after applying the manual overwrite. For diagnostic purpose, a tooltip text on the GSV Calculation type column in the Group Detail task reveals the GSV calculation type code when an “Undefined” combination of GSV Calculation type, Product Code and Product Reference Temperature has been configured.

**How to cancel a Manual Overwrite**

1. Click on the ‘Manual Overwrite’ icon
2. Click on the tree icon at the left site in the tool bar. The ‘Group/Tank’ window will appear
3. Select a group from the tree view
4. Select the tank you want to cancel a manual overwrite
5. Select the entity from the ‘All Entities’ pane
6. Click on the ‘Resume Scan’ check box of the selected entity in the right pane. Unchecked means not scanning
PROFILES

The primary Profiles usage is to create profiles for a selected tank and to show a graphical display of the density and/or temperature variation of the product in a tank.

The user has a number of options to generate profiles such as:

**Density profile:**
Used to measure the observed density.

The 854 or 954 servo gauge is commanded to start a density measurement.

The density measurement moves the displacer through the product in the tank, and determines the density at 10 equidistant points if a 854 gauge is connected, and up to 50 equidistant points if a 954 gauge is connected.

**Temperature profile:**
VITO probe connected to Radar or servo gauges will allow user to have temperature profiles on ENTIS, Number of temperature points configured in VITO associated at different level's will decide Average temperature in profile graph.

**Density and temperature profile:**
Determines a density and temperature profile for different product types in the tank.

**Combined profile:**
Measures the water interface, and determines a density profile.

**Combined profile (Incl. Temperature)**
Measures the water interface and determines a density and temperature profile.

**Interface Profile**
An Interface profile command starts a density measurement between two specified levels.

The interface profile measurement moves the displacer through the product in the tank and determines the density at 10 equidistant points if an 854 gauge is connected, and up to 50 equidistant points if the 954 gauge is connected between the two specified levels.
Display layout

Figure 37: Create Profile

This display has the following sections:

- At the upper part, tank data is displayed.
- In the middle part, the selection can be made for the type of profile to be created.
- At the bottom part, a progress window is displayed for each profile currently in progress.

How to create a profile:

1. Select Profiles | Create Profile
   This opens the Create Profile screen.

2. When using a user defined filename, uncheck the checkbox “Automatic Filename Generation”. This gives you the opportunity to enter your own filename in the edit box. By default, the checkbox is checked.
   In that case the filename is:
   [tankname]_yyyy-mm-ddThh-mm-ss.json
3. Select the required profile type (Density, Combined, Temperature, Interface); For an Interface profile, enter the Highest and Lowest level.

4. Select advanced data Upwards or Downwards (only for Density and Interface profile) and “Temperature profile included” (for Density, Combined and Interface)

5. Select advanced data Upwards or Downwards (only for Density and Interface profile) and “Temperature profile included” (for Density, Combined and Interface)

6. Click on Start. The profile command will be sent to the CIU888;

7. When the profile is ready, this will be indicated by a popup dialog:

![Figure 38: Profile ready](image)
Viewing a profile:
1. Select Profiles | View Profiles
   This opens the View Profiles screen
2. Click on Browse Profiles
3. In Filters, select whether you want to see all profiles, or only certain types (Density, Combined, Temperature, Interface)
4. In Filters, update the date range as required
   (by default, it shows the profiles from the last week)
5. From the list of profiles, select the profiles you want to view.
6. Click Open:
   The selected profiles are displayed.

Profile screen examples

Temperature Profile

Figure 39: Temperature profile
Density Profile

Figure 40: Density Profile

Interface Profile

Figure 41: Interface Profile
**Density + Temperature Profile**

Figure 42: Density and Temperature profile

**Density Profile (50 Density points)**

Figure 38: Density profile
TOTALIZER

Totalizers offer an easy way to totalize and view the contents of a group of tanks. It totalizes the different parameters of the available tanks in a group, such as GOV, GSV, TGSV, Total Mass, TOV and Available GOV.

Figure 43: Totalizer

Figure 44: Totalizer_All
How to select the Group Totalizer

Proceed as follows:

1. Click on the ‘Group Totalizer’ icon.

    ![Totalizer Icon](image)

    Figure 45: Totalizer Icon

2. Click on the tree icon at the left site in the tool bar.

3. The ‘Group/Tank’ window will appear.

4. Select a group from the tree view. The selected group will be displayed in the tool bar.

5. Other groups can be selected from the combo box in the tool bar or from the ‘Group/Tank’ window.
WHAT IF

What if (tank calculator) is a predictor tool that calculates and tells us values of other parameters, based on the custom input values of points.

1. Click on What If icon from menu toolbar

![Figure 46: What If](image-url)
**Tab layout**

On What-If screen, choose the desired group and tank from the drop down.

![Figure 47: What – If layout](image-url)
**How to use the calculator**

1. Start the Tank Calculator from the toolbar of the ENTIS
2. Select a Group/Tank
3. The Tank Calculator always starts up with the actual inventory data at that moment
4. The Start screen will pop up
5. All white fields are data entry fields and their contents can be modified.

![Figure 48: What – If Start](image)

6. The system will calculate other values and display them.
7. To restore values to real time values coming from CIU, click on Reload Data.
Figure 49: What – If Reload
REPORTS

The Reports display makes it possible to print out reports in pre-defined templates. A user can preview and print Tank Detail and Group Detail reports from this display. The tank data displayed in the reports consists of the last available measured and inventory data received from the gauge. It also displays the second level when dual gauges are connected.

![Figure 50: Reports](image)

**Report Printing**

The Report printing window consists of four main parts:

- The Browse Reports
- The type of report combo box
- The tank/group combo boxes
- The template combo box
Type of Reports

Select one of the report types from the combo box. The following Options are enabled depending of the selected report:

**Group/Tank**  Two combo boxes used to select a group or a tank name

**Template**  Depending on the selected type of report, the 'Template' combo box will list the available templates

How to select Reporting

1. Click on the ‘Reporting’ icon.

2. You can also select ‘Reports’ from the options available on left side of the screen.

3. Select Tank Details or Group Details from the combo box.

4. Select a Template.

5. Click on Preview.
Reports

**Command buttons**

- **Print**
  Prints the selected report
- **Preview**
  Shows a preview of the selected report type on screen

**Browse Reports**

This option will be displayed on the top of the ‘Reports’ screen. All the saved PDF files can be selected for viewing again.
Reports

**Filters**

A combo box is available to select the report type, listing only the reports belonging to that report type. The calendar option allows the user to select the date range.

![Browse Reports](image)

*Figure 53: Browse Reports*
Report Scheduling

This option is displayed at the bottom of the ‘Reports’ screen. This feature allows the user to schedule automated reports.

![Schedule Report](image)

**Figure 54: Schedule report**

The user can create a task and schedule reports for different intervals like daily, weekly, monthly. The tasks created here are shown on ‘Manage Tasks’ screen. Once the report is scheduled, it will get automatically generated (and saved) at the Reports path at the scheduled time.
How to schedule a report

- Choose the specifications of the report that needs to scheduled then click on Schedule button.

- Make the following selections for the scheduled report.

- **Task Name**: This is user defined field which defines name of the task.

- **Starts at**: User can choose when the task execution will start.

- **Repeat**: If the task has to be executed only once, ‘Never’ should be selected. If it is a repeated task, ‘Always’ should be chosen.

- **Select Cycle**: User can choose the frequency of the task from below available 3 options. It will be enabled only when repeat is chosen as ‘Always’

  1. **Never**: User can opt for scheduling the reports only once without repeating it.

  2. **Interval**: User can give any interval in hh:mm, after ‘start at’ time this task will be executed continuously after the given interval.

  3. **Weekly**: User can choose the days, every week this task will be executed on the provided days and time provided in ‘start at’.

  4. **Monthly**: User can choose the dates in a month, every month this task will be executed on the provided dates and time provided in ‘start at’.

**Figure 55: Schedule report screens**
Templates

The format of a printout is defined by templates. ENTIS supports following templates:

- Tank Detail
- Group Detail – Crudes, CTL, General Product, Inventory, Measured
- What If
- Delta Column

Report Templates

Example of a group detail printout.

![Figure 56: Group detail report](image-url)
**Tank Details**

Example of a tank detail printout.

---

**Inventory**

<table>
<thead>
<tr>
<th>Product Level</th>
<th>TOV</th>
</tr>
</thead>
<tbody>
<tr>
<td>18,000</td>
<td>18,000,000</td>
</tr>
</tbody>
</table>

**Water Level**

<table>
<thead>
<tr>
<th>Water Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000 m³</td>
</tr>
</tbody>
</table>

**GOV**

<table>
<thead>
<tr>
<th>GOV</th>
</tr>
</thead>
<tbody>
<tr>
<td>18,000,000 m³</td>
</tr>
</tbody>
</table>

**Obs. density**

<table>
<thead>
<tr>
<th>Product Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.40 °C</td>
</tr>
</tbody>
</table>

**Ref. density**

<table>
<thead>
<tr>
<th>CTL</th>
</tr>
</thead>
<tbody>
<tr>
<td>U g/m³</td>
</tr>
</tbody>
</table>

**GSV**

<table>
<thead>
<tr>
<th>Available Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>17,900,000 m³</td>
</tr>
</tbody>
</table>

**Low TOV**

<table>
<thead>
<tr>
<th>High TOV</th>
</tr>
</thead>
<tbody>
<tr>
<td>50,000 m³</td>
</tr>
</tbody>
</table>

**Observed Temp.**

<table>
<thead>
<tr>
<th>Air Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.226 kg/m³</td>
</tr>
</tbody>
</table>

**Shrinkage Capacity**

| 10,000,000 m³ |

---

**Mass (in vacuum)**

**Flow**

<table>
<thead>
<tr>
<th>Total</th>
<th>kg</th>
</tr>
</thead>
</table>

Liquid mass directly calculated from GSV × Reference Density

**Time to Fill / Empty**

| 0.00 m³/min |

---

**Legal Metrology Key**

<table>
<thead>
<tr>
<th><strong>t</strong></th>
<th>Data is actual and approved</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>s</strong></td>
<td>Data is manually overridden</td>
</tr>
<tr>
<td><strong>u</strong></td>
<td>Data is rejected and not approved</td>
</tr>
<tr>
<td><strong>y</strong></td>
<td>Data is under range</td>
</tr>
<tr>
<td><strong>T</strong></td>
<td>Data is not approved</td>
</tr>
<tr>
<td><strong>o</strong></td>
<td>Data has reduced accuracy and is not approved</td>
</tr>
</tbody>
</table>

---

**Not Legal Metrology Approved Printout**

**Valid**
## Delta Column

**Honeywell**  

### Delta Column Report

<table>
<thead>
<tr>
<th>TANK NAME</th>
<th>PRODUCT NAME</th>
<th>Start Date</th>
<th>Delta Level</th>
<th>Start Level</th>
<th>Start TOV</th>
<th>Delta TOV</th>
<th>Start GSV</th>
<th>Delta GSV</th>
<th>Start Total Mass</th>
<th>Delta Total Mass</th>
<th>Start Time</th>
<th>Done &amp; Time</th>
<th>Delta</th>
<th>Done &amp; Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT355W1</td>
<td>Ferul</td>
<td>08 Dec 2019</td>
<td>0.000</td>
<td>0.000</td>
<td>15338.000</td>
<td>0.000</td>
<td>15338.000</td>
<td>0.000</td>
<td>15338.000</td>
<td>0.000</td>
<td>09 Dec 2019</td>
<td>2:51:45:99</td>
<td>P</td>
<td>2:51:45:99</td>
</tr>
<tr>
<td>CT355W2</td>
<td>FMOZ</td>
<td>08 Dec 2019</td>
<td>0.000</td>
<td>0.000</td>
<td>15338.000</td>
<td>0.000</td>
<td>15338.000</td>
<td>0.000</td>
<td>15338.000</td>
<td>0.000</td>
<td>09 Dec 2019</td>
<td>2:51:45:99</td>
<td>P</td>
<td>2:51:45:99</td>
</tr>
<tr>
<td>CT355W3</td>
<td>Ferul</td>
<td>08 Dec 2019</td>
<td>0.000</td>
<td>0.000</td>
<td>15338.000</td>
<td>0.000</td>
<td>15338.000</td>
<td>0.000</td>
<td>15338.000</td>
<td>0.000</td>
<td>09 Dec 2019</td>
<td>2:51:45:99</td>
<td>P</td>
<td>2:51:45:99</td>
</tr>
</tbody>
</table>

---

Figure 57: Delta column Report
### What If

Example of a What If printout.

<table>
<thead>
<tr>
<th>Tank: C2TK1</th>
<th>What If</th>
<th>Print time: 20 Nov 2019 2:18 PM UTC+00:00 (GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer: Honeywell</td>
<td>Product: Curde</td>
<td>Page 1 of 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Start Tank</th>
<th>Delta Tank</th>
<th>Stop Tank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Level</td>
<td>0.7650</td>
<td>0.0000</td>
<td>0.7650 m³</td>
</tr>
<tr>
<td>TOV</td>
<td>8768.000</td>
<td>0.000</td>
<td>8768.000 m³</td>
</tr>
<tr>
<td>Water Level</td>
<td>0.1000</td>
<td>0.0000</td>
<td>0.1000 m</td>
</tr>
<tr>
<td>Water Volume</td>
<td>100.000</td>
<td>0.000</td>
<td>100.000 m³</td>
</tr>
<tr>
<td>Tamb.</td>
<td>°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTSh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOV</td>
<td>8668.000</td>
<td>0.000</td>
<td>8668.000 m³</td>
</tr>
<tr>
<td>Obs. Density</td>
<td>745.00</td>
<td>745.00 kg/m³</td>
<td></td>
</tr>
<tr>
<td>Obs. Temperature</td>
<td>15.00</td>
<td>15.00 °C</td>
<td></td>
</tr>
<tr>
<td>Hydrometer Corr.</td>
<td>On</td>
<td>On</td>
<td></td>
</tr>
<tr>
<td>Product Temp.</td>
<td>15.00</td>
<td>15.00 °C</td>
<td></td>
</tr>
<tr>
<td>Ref. Density</td>
<td>744.30</td>
<td>744.30 kg/m³</td>
<td></td>
</tr>
<tr>
<td>CTL</td>
<td>1.00000</td>
<td></td>
<td>1.00000</td>
</tr>
<tr>
<td>Available Room</td>
<td>*****</td>
<td>*****</td>
<td>m³</td>
</tr>
<tr>
<td>Available GOV</td>
<td>8668.000</td>
<td>8668.000 m³</td>
<td></td>
</tr>
<tr>
<td>GSV</td>
<td>8673.201</td>
<td>0.000</td>
<td>8673.201 m³</td>
</tr>
<tr>
<td>S&amp;W</td>
<td>0.00</td>
<td>0.00</td>
<td>%</td>
</tr>
<tr>
<td>NSV</td>
<td>0.00</td>
<td></td>
<td>m³</td>
</tr>
<tr>
<td>Vapour Temp.</td>
<td></td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>Vapour Press.</td>
<td>53.5</td>
<td>53.5 kPa</td>
<td></td>
</tr>
<tr>
<td>Liquid Mass</td>
<td>645760</td>
<td>645760 kg</td>
<td></td>
</tr>
<tr>
<td>Vapour Mass</td>
<td>****</td>
<td>**** kg</td>
<td></td>
</tr>
<tr>
<td>Total Mass</td>
<td>****</td>
<td>**** kg</td>
<td></td>
</tr>
</tbody>
</table>

Report name: What-If-1.0.0.7012.0
## What If

<table>
<thead>
<tr>
<th>Flow</th>
<th>358.31</th>
<th>358.31</th>
<th>358.31</th>
<th>m³/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to fill/empty</td>
<td>*****</td>
<td>*****</td>
<td></td>
<td>hh:mm:ss</td>
</tr>
<tr>
<td>Time to transfer</td>
<td>00:00:00</td>
<td></td>
<td></td>
<td>hh:mm:ss</td>
</tr>
</tbody>
</table>

## Product Details

<table>
<thead>
<tr>
<th>Reference Temperature</th>
<th>Start Tank</th>
<th>Stop Tank</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCM</td>
<td>15.55</td>
<td>15.55</td>
</tr>
<tr>
<td>ASTM D1290-89</td>
<td>ASTM D1290-89</td>
<td></td>
</tr>
<tr>
<td>ASTM D2562-96</td>
<td>ASTM D2562-96</td>
<td></td>
</tr>
<tr>
<td>VCM Product Code</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Range Checking</td>
<td>On</td>
<td>On</td>
</tr>
<tr>
<td>Correction Factor</td>
<td>CTL 1.00060</td>
<td>CTL 1.00060</td>
</tr>
<tr>
<td>Volume Corr. Type</td>
<td>Vapour Correction</td>
<td>Vapour Correction</td>
</tr>
<tr>
<td>Vapour Correction</td>
<td>Acc. to Muller (ISO/TC28/SC 3 N)</td>
<td>Acc. to Muller (ISO/TC28/SC 3 N)</td>
</tr>
<tr>
<td>Mass Calculation</td>
<td>in vacuum</td>
<td>in vacuum</td>
</tr>
<tr>
<td>Air Density</td>
<td>1.226</td>
<td>1.226</td>
</tr>
<tr>
<td>Insulation ratio</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Report name: What If **v 1.0.0912.0**
MANAGE TASKS

Once a Gauge Command/Reporting task is scheduled, users can view the list of tasks on this window.

Users can edit the schedule of the tasks and - if needed - tasks can also be deleted from here.

![Figure 58: Manage Tasks](image)

- User can open the Manage Tasks screen by clicking on ‘Manage Tasks’ icon from the experion toolbar or by clicking on the navigation menu on the left.

- The display will show the list of tasks scheduled, with their task name, type (Reporting/Gauge Commands), and Edit and Delete buttons.
Manage tasks

How to edit/delete a task

1. Click on the edit button in front of the task. A scheduling screen will popup.

![Figure 59: Scheduling screen](image)

2. Change the details of the schedule and click ok. The task will be updated.

3. To delete, click on the delete button in front of the task. A confirmation dialog will pop up.

![Figure 60: Confirmation Dialog](image)

4. Click on ‘Yes’ to delete the task.
HELP

This Display opens the ‘ENTIS User Guide’.

How to select Help

1. Click on the ‘Help’ icon from the toolbar.

2. You can also select ‘Help’ from the options available on left side of the screen.

3. On clicking either of the 2 options, the ‘ENTIS User Guide’ opens on the right panel of the ENTIS screen.
ALARMS

Age Alarms
The system periodically checks the tank record time stamps against the system clock. If the difference exceeds a predefined value, an AGE alarm is generated. Aging values are checked on a per tank basis, so AAL’s are generated for each tank separately.

Foreground
A foreground age alarm is generated

Background
A background age alarm is generated

Deviation Alarms
The deviation alarm is an alarm that will be raised when Product level 1 and Product Level 2 on a tank deviates from each other. The deviation alarm is only applicable on tanks with dual gauges. With the switch on the Alarm Setting display, you can enable or disable the deviation alarm for all tanks that have dual gauges.

Difference value
The difference value is the absolute value difference between Product Level 1 and Product Level 2. The difference alarm will only occur if both gauges are measuring level, and are not in a failed state.
Figure 63: Alarm Settings
Settings

Product Color Code

Each product will have an associated color which can be customized. The product names for color coding are not case-sensitive.

![Figure 64: Product Color Code]

The user can also set the RGB color for that product by clicking on the ‘+’ as shown below.
Settings

Clock Sync

The master clock feature synchronizes the ENTIS application and CIU clocks, with the ENTIS clock serving as the master.

Having the ENTIS and the CIU clocks be synchronized helps ensure that timestamps on alarms, events and operational data are consistent.

![Clock Synchronization](image)

Manage Files

ENTIS generated files can be cleaned up/deleted after a defined number of days in the below configuration. The Disable/Enable auto clean up can be applied for auto cleanup of files.

![File Cleanup Configuration](image)
Settings

Reporting

User can set the customized ‘Customer Name’, ‘Site Name’, and upload a ‘Customer Logo’ here. This information will be reflected in the Reports header.

Figure 67: Reporting Settings
HOT STANDBY & REDUNDANCY SUPPORT ENTIS

When ENTIS is licensed and configured for redundancy, after the occurrence of a server failure, the second system will automatically take over the lost functionality of its counterpart to become the primary.

The user can also perform a manual switch over using the Server Redundancy display in Station.

How to perform a manual switch over

Proceed as follows:

1. Login with an account with mngr role access.

![Station Login](image)

2. Select: View | System status | Server redundancy

![Server Redundancy](image)

3. Make sure the Primary and Secondary are synchronized(1).

4. Press Failover

---

(1) Ensure that the synchronization status is shown as synchronized or near synchronization.
5. Press the ‘Yes’ button (top right)

1) The redundant failover function is provided by Experio. Please refer to the Experion manual for all details related to this function.
**Hot Standby & Redundancy Support**

**Hot Standby & Redundancy Support (CIU 888)**

ENTIS can be enhanced for use in critical applications with hot standby and redundancy support. Redundancy support can cover the unlikely event of a network failure, providing sustained and reliable data to your management system. After the occurrence of an error, the second system will take over the lost functionality. Following the switchover, all gauge data will be rescanned and recalculated to ensure the reliability of data.

The operator can also perform the switch over manually, after reviewing on the health status of the CIU 888.

![CIU Status Table](image)
Hot Standby & Redundancy Support

How to Perform Manual Switch Over

Proceed as follows:

1. Click on the ‘Settings tab.
   The ‘CIU Status’ tab will appear

2. Click on the ‘CIU Status’ tool bar.
   The ‘CIU Status’ window will appear

3. The CIU Status window will show the status of the CIU888 with the following fields:
   - CIU Name  Name of the CIU 888
   - Type  Primary/Secondary
   - Health  Green if CIU is up and healthy, Red if CIU is own/
             network failure
   - IP Address  The IP Address of the CIU
   - Status  Active/Passive

4. Select hot standby pair of CIUs.
   The ‘Switch Over’ button will be enabled.

5. Click on the ‘Switch Over’ button.
   The Passive member will become Active and the Active member will become Passive.
ALARMS

CONFIGURE ALARMS

Alarms are primarily used to notify operators of conditions that might call for intervention. Alarms for standard points are specified when you configure your points in Quick Builder. The standard points of tanks for which alarms can be configured are given in the table below.

<table>
<thead>
<tr>
<th>Point</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>_CDObs</td>
<td>The Product Density</td>
</tr>
<tr>
<td>_cProductLevel</td>
<td>The Product Level in the tank.</td>
</tr>
<tr>
<td>_ProductLevel2</td>
<td>The Product Level 2 in the tank.</td>
</tr>
<tr>
<td>_cProductTemp</td>
<td>The Product Temperature</td>
</tr>
<tr>
<td>_cVapRoomPress</td>
<td>The product vapor pressure</td>
</tr>
<tr>
<td>_cVapRoomTemp</td>
<td>The product vapor temperature</td>
</tr>
<tr>
<td>_cWaterLevel</td>
<td>The Water Level in the tank</td>
</tr>
<tr>
<td>_cWaterVol</td>
<td>The Water Volume</td>
</tr>
<tr>
<td>_cProductDRef</td>
<td>The reference density for the Product in the tank.</td>
</tr>
<tr>
<td>_FlowTOV</td>
<td>The Total Observed Volume(TOV) of the product per time unit.</td>
</tr>
<tr>
<td>_GOV</td>
<td>The Gross Observed Volume(GOV). The GOV is the total volume of all petroleum</td>
</tr>
<tr>
<td></td>
<td>liquids and sediment and water, excluding free water, at observed</td>
</tr>
<tr>
<td></td>
<td>temperature and pressure</td>
</tr>
<tr>
<td>_GSV</td>
<td>The Gross Standard Volume(GSV). The GSV is the total volume of all petroleum</td>
</tr>
<tr>
<td></td>
<td>liquids and sediment and water, excluding free water, corrected by the</td>
</tr>
<tr>
<td></td>
<td>appropriate volume correction factor (VCF = CTL) for the observed</td>
</tr>
<tr>
<td></td>
<td>temperature and API gravity, relative density, or density to a standard</td>
</tr>
<tr>
<td></td>
<td>temperature, and corrected by the applicable pressure correction factor</td>
</tr>
<tr>
<td></td>
<td>(Cpl) and meter factor.</td>
</tr>
<tr>
<td>_MassLiq</td>
<td>The product volume weight</td>
</tr>
<tr>
<td>_TGSV</td>
<td>The Total Gross Standard Volume(TGSV).</td>
</tr>
<tr>
<td>_TotalMass</td>
<td>The product plus vapor volume weight.</td>
</tr>
<tr>
<td>_TOV</td>
<td>The Total Observed Volume(TOV)</td>
</tr>
<tr>
<td>_GAL</td>
<td>Gauge Alarm</td>
</tr>
<tr>
<td>_AALB</td>
<td>Age Alarm Background</td>
</tr>
<tr>
<td>_AALF</td>
<td>Age Alarm Fore ground</td>
</tr>
<tr>
<td>_MovingStatus</td>
<td>The level moving Status</td>
</tr>
<tr>
<td>_TCAL</td>
<td>Tank CRC Alarm</td>
</tr>
<tr>
<td>_DAL</td>
<td>Deviation Alarm between Product Level 1 and Product Level 2 on a tank</td>
</tr>
</tbody>
</table>
How to configure Alarms

To configure an alarm for a point of a tank, follow the steps given below.

1. Type the point name prefixed with the tank name in the Command text box on top right corner of the station. For example, if an alarm must be configured for the _cProductLevel for tank T811, the tank name should be prefixed with the tank name as shown below.

Press F12. This opens the point configuration screen as shown below.

Figure 68: Configuration screen

3. Click on the Alarms Tab.
The Alarms configuration screen opens.

Figure 69: Alarm Configuration screen

Fill in the details of the alarm for the selected point of the tank.

For more details on how to configure alarms, and to understand the parameters such as Type, Limit, On Delay etc. please refer to the “About alarms and events for standard points” section in the Experion Server and Client configuration guide, EHDOC-X127-en-510A.
VIEW ALARMS

The Alarms View in Station provides details about each alarm, such as the Date and time when it has occurred, the asset location, source, condition, priority etc.

Display Layout

Figure 70: View Alarms
**How to view Alarms**

To view the Alarms page, go to the View menu and click on the Alarms item.

Alternatively, it can be accessed by clicking the Alarms icon on the tool bar or the Display Alarm Summary icon flashing in red on the status bar.

**Understanding the Alarms View**

This screen has the following columns.

1. **Priority of the Alarm with a visual icon.**  
   This column shows the alarm’s state in symbolic way with a Yellow triangle or Red square with an asterisk in it. This represents the priority of the alarm, whether it is a critical, a high, a medium or a low alarm.

2. **Date & Time**  
   Date and Time when the alarm was raised.

3. **Location Tag**  
   Location of the Alarm. For ENTIS, it is generally ENTISAsset. Alarms can be filtered based on location. This location filter is available above Date & Time column.

4. **Source**  
   The point or device that caused the alarm. If the point ID is too long to be fully displayed in the alarm summary, it will be truncated. To see the full name, place the mouse pointer over the partial point ID to display the full point ID.

5. **Condition**  
   The alarm condition.
6. Priority
The priority of the alarm as listed below. The prefix letter indicates the general priority as listed below.
- Critical
- Urgent
- High
- Low

If a number follows the letter, it represents the relative priority within the general priority. For example, Urgent alarms can vary from U15 (most urgent) to U00 (least urgent).

7. Description
A description of the alarm. If the description is too long to be fully displayed in the alarm summary, it is truncated. To see the full description place the mouse pointer over the partial description to display the full description.

8. Trip value
The value that triggered the alarm.

9. Live value
The current value. This value is continually updated. If the Format live value in Alarm Summary using PV Format setting in the Summary Displays tab of Server Wide Settings is enabled, live values in the Alarm Summary will be shown in the format configured for point parameter values. For information, see “Configuring precision values for point parameters.” Alternatively, two decimal places will be shown.

10. Units
The unit that the value represents, for example ml/s. Please refer Operators guide available in Help menu or Server and Client configuration guide in Experion HS in Start Menu for more details on viewing the Alarms and understanding them in detail.
EVENTS

Viewing Events

Every event, such as a point status change or an operator action, is stored in an event database. The event database stores events for a specified period. Using Event archiving, you can archive these events to a network file server or to a disk where they can be stored for future retrieval and reporting. For information on archiving events or restoring events from archive, see the Experion Operator's Guide, EHDOC-XX80-en-510A.
**How to view events**

To view the events summary in Experion station, navigate to View ->Events->Event Summary menu option on Experion Station as shown in the picture below.

![Figure 71: View Events](image)

**Understanding Events View**

The Events summary is shown in tabular format with the following columns.

1. Date & Time
   The time and date at which the event was received.

2. Location
   The tag name of the asset to which the point or device belongs.

3. Source
   The point or device that caused the event. If the point ID is too long to be fully displayed in the event summary, it is truncated. To see the full name, place the mouse pointer over the partial point ID to display the full point ID.
4. Condition
   The event condition.

5. Action
   The action, either operator or system generated.

6. Priority
   The priority of the event. The prefix letter indicates the general priority:
   - Urgent
   - High
   - Low
   - Journal

   If a number follows the letter, it represents the relative priority within the general priority. For example, Urgent events can vary from U15 (most urgent) to U00 (least urgent).

7. Description
   A description of the event.

   If the description is too long to be fully displayed in the event summary, it is truncated. To see the full description, place the mouse pointer over the partial description to display the full description.

8. Value
   The value of the event.

9. Units
   The unit that the value represents, for example ml/s.

10. Operator
    The logged in Operator.

    Please refer Operators guide available in Help menu or Server and Client configuration guide in Experion HS Pdf collection in Start Menu for more details on viewing the Events and understanding them in detail.
HISTORICAL AND REALTIME TRENDING

Using Experion trends, a user can view the historical or real-time value trends of points. A trend display shows changes in point parameter values over time.

Trends can display data in several ways, including:

- Line graphs (the default)
- Bar graphs
- Numerical list of historical data
- X-Y plot of the value of one point against another (that is, one point on the x-axis and the other on the y-axis).

Each trend is identified by a number, and generally has a descriptive title.

How to create/view Trends

1. Click on View then go to Trends.

2. Make sure that the logged-in user has the MNGR or ENGR security level.
3. Click on Configure Trends.

![Configure Trends](image1)

Figure 73: Configure Trends

4. Fill in the custom details, click on options. Select color scheme Point Id (via the Point Browser window).

![Select the point](image2)

Figure 74: Select the point
Choose the parameter to be displayed in the trend from the dropdown. Then click on view trend.

**Figure 75: Select the parameter**

**Historical and Realtime Trending**

View the current value of the point in the Current value column. The trend will be available on the graph screen.

**Figure 76: View Trend**
**View historical trends**

Users can view historical trend by changing the date and time. The display will show historical trends if the trend was created and was running at the selected times.

To change the period on the trend you are viewing

1. In the Period box, select the period you want to see on your trend.
2. Click the Time selector and choose the required position of the selector.
3. In the Date box, type or select the desired date.
4. In the Time box, type the desired time and press ENTER.
### INDEX

<table>
<thead>
<tr>
<th>5</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 Point Density Profile Support ............................... 12</td>
<td>954 Servo Test Alarm Support ................................... 12</td>
</tr>
<tr>
<td>A</td>
<td>C</td>
</tr>
<tr>
<td>Alarm system.................................................................. 11</td>
<td>CLOCK SYNC ................................................................ 86</td>
</tr>
<tr>
<td>ALARMS ........................................................................ 92</td>
<td>CRITICAL / OPERATION PAL COLUMN ............................ 32</td>
</tr>
<tr>
<td>CONFIGURE ALARMS .................................................... 92</td>
<td>D</td>
</tr>
<tr>
<td>VIEW ALARMS.................................................................. 95</td>
<td>Data Status ............................................................. 13</td>
</tr>
<tr>
<td>B</td>
<td>E</td>
</tr>
<tr>
<td>Dual Gauges Support .................................................. 12</td>
<td>ENTIS Redundancy Support ....................................... 12</td>
</tr>
<tr>
<td>C</td>
<td>G</td>
</tr>
<tr>
<td>CRITICAL / OPERATION PAL COLUMN ............................ 32</td>
<td>GAUGE COMMANDS .................................................... 45</td>
</tr>
<tr>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>Data Status .................................................................... 13</td>
<td>Dipping Command ..................................................... 46</td>
</tr>
<tr>
<td>Dual Gauges Support .................................................. 12</td>
<td>Displacer Command ................................................... 47</td>
</tr>
<tr>
<td>E</td>
<td>F</td>
</tr>
<tr>
<td>ENTIS Redundancy Support ....................................... 12</td>
<td>Running Dipping ........................................................ 49</td>
</tr>
<tr>
<td>EVENTS ......................................................................... 98</td>
<td>Running Displacer .................................................... 50</td>
</tr>
<tr>
<td>Viewing Events........................................................... 98</td>
<td>Scheduling Gauge Command ..................................... 51</td>
</tr>
<tr>
<td>G</td>
<td>H</td>
</tr>
<tr>
<td>GAUGE COMMANDS .................................................... 45</td>
<td>HELP ......................................................................... 82</td>
</tr>
<tr>
<td>Dipping Command ..................................................... 46</td>
<td>HISTORICAL AND REALTIME TRENDING ..................... 101</td>
</tr>
<tr>
<td>Displacer Command ................................................... 47</td>
<td>HOT STANDBY &amp; REDUNDANCY SUPPORT (CIU 888) ....... 90</td>
</tr>
<tr>
<td>Running Dipping ........................................................ 49</td>
<td>Hot Standby &amp; Redundancy Support ............................ 11</td>
</tr>
<tr>
<td>Running Displacer .................................................... 50</td>
<td>HOT STANDBY &amp; REDUNDANCY SUPPORT ENTIS ............ 88</td>
</tr>
<tr>
<td>Scheduling Gauge Command ..................................... 51</td>
<td>I</td>
</tr>
<tr>
<td>Test Gauge Alarm ....................................................... 48</td>
<td>INTERFACE GUIDELINES ........................................... 13</td>
</tr>
<tr>
<td>GROUP DETAIL ............................................................ 27</td>
<td>Data Status ............................................................. 13</td>
</tr>
<tr>
<td>CRITICAL / OPERATION PAL COLUMN ........................ 32</td>
<td>INTRODUCTION ......................................................... 11</td>
</tr>
<tr>
<td>REMARK COLUMN ....................................................... 37</td>
<td>LANGUAGE ................................................................... 18</td>
</tr>
<tr>
<td>GROUP TOTALIZER ....................................................... 63</td>
<td>M</td>
</tr>
<tr>
<td>GROUP VIEW .................................................................. 26</td>
<td>MANAGE DISPLAYS .................................................... 19</td>
</tr>
<tr>
<td>MANAGE FILTER ........................................................... 24</td>
<td>MANAGE GROUP ........................................................ 19</td>
</tr>
<tr>
<td>MANAGE GROUP ........................................................... 19</td>
<td>MANAGE VIEW .......................................................... 21</td>
</tr>
<tr>
<td>MANAGE TASKS ............................................................ 80</td>
<td>MANUAL OVERWRITE .................................................. 53</td>
</tr>
<tr>
<td>MANAGE VIEW ............................................................. 21</td>
<td>Networking ............................................................. 11</td>
</tr>
<tr>
<td>PRODUCT COLOR CODE .................................................. 85</td>
<td>Numerical &amp; Graphical Display ................................... 11</td>
</tr>
<tr>
<td>PROFILES ...................................................................... 57</td>
<td>P</td>
</tr>
<tr>
<td>PRODUCT COLOR CODE .................................................. 85</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>S</td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Real Time Inventory ..................................................... 11</td>
<td>SECURITY CONSIDERATIONS ........................................ 14</td>
</tr>
<tr>
<td>References .............................................................. iv</td>
<td>SETTINGS ...................................................................... 83</td>
</tr>
<tr>
<td>REMARK COLUMN ............................................................. 37</td>
<td>Support .......................................................................... iii</td>
</tr>
<tr>
<td>REPORT PRINTING</td>
<td>T</td>
</tr>
<tr>
<td>Command buttons ............................................................. 71</td>
<td>TANK DETAIL ................................................................ 40</td>
</tr>
<tr>
<td>Report Templates ............................................................. 75</td>
<td>TOOLBAR ...................................................................... 17</td>
</tr>
<tr>
<td>Reporting Enhancements .................................................... 12</td>
<td>W</td>
</tr>
<tr>
<td>REPORTS ................................................................. 69</td>
<td>WHAT IF ........................................................................ 65</td>
</tr>
<tr>
<td>Delta Column ..................................................................... 77</td>
<td></td>
</tr>
<tr>
<td>How to schedule a report ................................................... 74</td>
<td></td>
</tr>
<tr>
<td>Report Printing ............................................................. 69</td>
<td></td>
</tr>
<tr>
<td>Report Scheduling ............................................................. 73</td>
<td></td>
</tr>
<tr>
<td>Tank Details ................................................................. 76</td>
<td></td>
</tr>
<tr>
<td>Templates ......................................................................... 75</td>
<td></td>
</tr>
<tr>
<td>Type of Reports ............................................................. 70</td>
<td></td>
</tr>
<tr>
<td>What If ................................................................. 78</td>
<td></td>
</tr>
<tr>
<td>Wasserscheibe ................................................................... 92</td>
<td></td>
</tr>
</tbody>
</table>
For more information
To learn more about ENTIS, 
visit www.honeywellprocess.com
Or contact your Honeywell Account Manager

Americas
Honeywell Enraf Americas, Inc.
1250 West Sam Houston Pkwy S.
Houston, TX 77042
USA
Phone: +1 (480) 293-2042
Email: enraf-us@honeywell.com

Europe, Middle East and Africa
Honeywell Enraf
Delftechpark 39
2628 XJ Delft
The Netherlands
Phone: +31 (0)15 2701 100
Email: enraf-nl@honeywell.com

Asia Pacific
Honeywell Pte Ltd.
17 Changi Business Park Central 1
Singapore 486073
Phone: +65 6355 2828
Email: enraf-sg@honeywell.com