

USER MANUAL

HUISMAN SCADA



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REVISION HISTORY

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Table 1: Revision history

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PREFACE

The Huisman SCADA manual describes The use of the Huisman SCADA platform for crane operators. Where the term "Huisman" is used, reference is made to Huisman Equipment B.V.

CONTACT DETAILS

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SAFETY SYMBOLS

In this manual, the symbols and indications are used to highlight important parts of information. Below you find the explanation of the indication types.

WARNING



Indicates a hazardous or potentially hazardous situation which, if not avoided, could result in serious injury or death and considerable mechanical damage.

CAUTION



Indicates a potentially hazardous situation which, if not avoided, could result in minor injury or mechanical damage.

NOTE

Indicates important information of the system or the documentation which requires special attention.

LIST OF ABBREVIATIONS AND GLOSSARY

Abbreviation	Meaning
SCADA	Supervisory Control And Data Acquisition
PLC	Programmable Logic Controller
HMI	Human Machine Interface
OPC UA	OPC Unified Architecture

Table 1: List of abbreviations

1 GENERAL DESCRIPTION

1.1 INTRODUCTION

The Huisman SCADA framework is used to design the Human Machine Interface (HMI) of the equipment. The Huisman SCADA framework offers great scalability and flexibility and it is based on the newest technologies and standards. The visualization is in pure web technology as well as object oriented. Communication between PLC and SCADA is done by the OPC-UA standards that offers secured and excellent connectivity.

1.1.1 ARCHITECTURE

The SCADA server runs on a PC and connects to the PLCs in the project. A SCADA client runs on any type of hardware that can run a supported web browser. The SCADA server connects to Siemens PLCs running an instance of an OPC UA Server.

1.1.2 TECHNOLOGY

- Latest generation SCADA / HMI system
- Client-server architecture (multi-clients)
- Device and operating system independent running on PC/Mac/Unix, tablet, smartphone, iPad due to HTML5 and SVG Technology
- Process connection OPC UA and OPC DA
- User management & access security
- OPC UA Data Access and Alarms & Conditions interface superior systems
- As safe as your bank – thanks to approved safety standards
- Multi-language (optional, not standard in Huisman project scope)
- Aggregates - OPC UA compliant

1.1.3 LAYOUT

The Huisman standard HMI screen consists of three main parts:

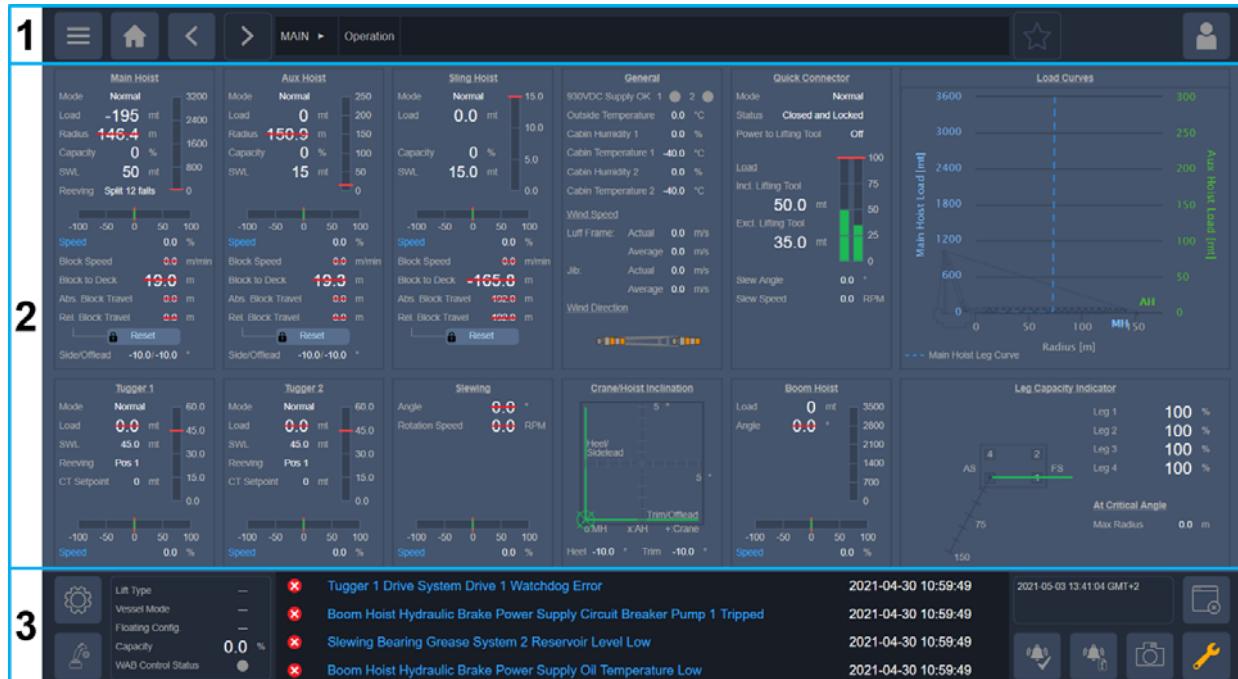


Figure 1-1: Huisman standard HMI layout

No:	Part:	Description:
1	Top row	This part is mainly for navigation. It has the menu, home, back/forward button, breadcrumbs, and favourites. The top right corner shows the currently logged in user and the button to log in/log out.
2	Main area	This part shows the display of the currently selected page. Most recent alarms and alarm acknowledge button in the middle part.
3	Bottom row	On the left part, it shows the most important information for the project.

Table 1-1: HMI screen main parts

2 TOP ROW

The top row consists of two main parts.



Figure 2-1: Top row

No	Description
1	Navigation
2	Log-in

Table 2-1: Top row navigation

2.1 LOG IN

A SCADA user must log-in to be able to perform actions in SCADA other than navigating and viewing. Each user can be given a log-in name with a password. Settings like Favourites are stored and viewable for each log-in name separately.

2.1.1 USER GROUP

Each name is assigned to a user group. The user group determines the privileges granted to the user within SCADA.

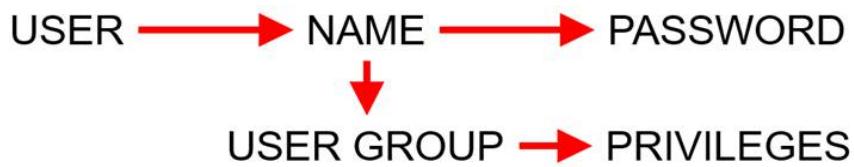


Figure 2-2: Top row

Defined user groups and privileges:

User group	Privileges:
Viewer (or not logged in)	View and navigate only.
Operator	View, navigate, operate, acknowledge alarms and make operator settings like joystick selections and equipment set-up.
Engineer	View, navigate, operate, acknowledge alarms and basic engineering settings such as changing certain parameters, calibrate sensors and overrule inputs.

Table 2-2: User groups and privileges

User group Privileges:

Supervisor	View, navigate, operate, acknowledge alarms and advanced engineering settings such as changing all parameters, overrule inputs and outputs, overrule load cells, calibrations, adding users and changing passwords.
Huisman	Restricted to Huisman personnel only.

Table 2-2: User groups and privileges

To delete users, add users or change privileges See section ‘User Management’ on page 77.

2.1.2 LOG IN/OUT

The Log-in part of the top row consists of:



Figure 2-3: Log in/out section

No Description

- 1 Indication area that shows the name of the currently active log-in.
- 2 Button to log-in, log-out or change log-in settings.

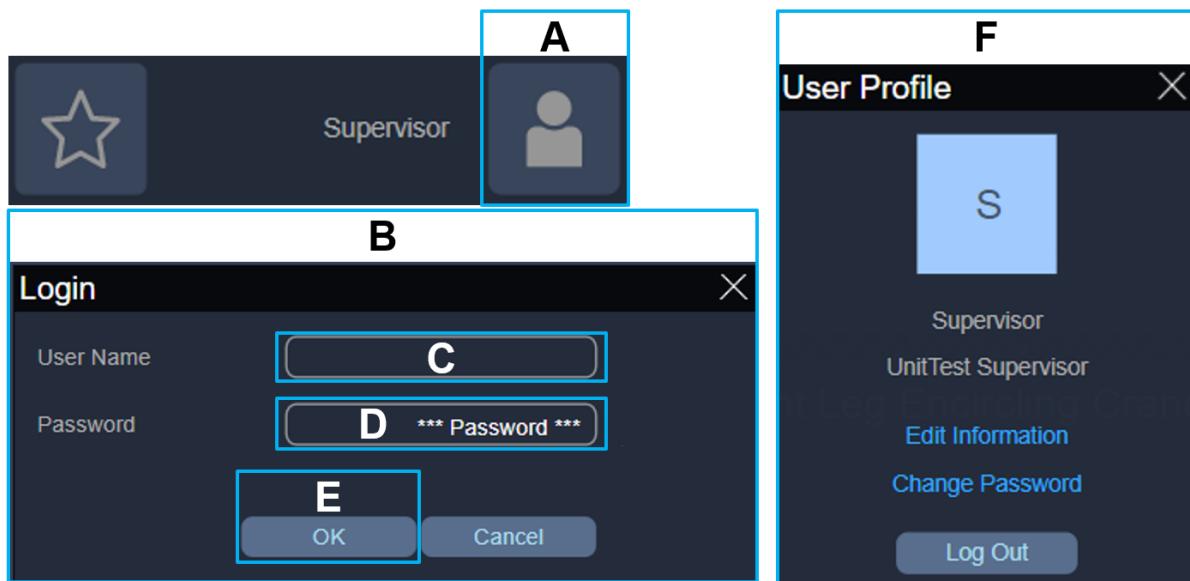


Figure 2-4: Log in procedure

If nobody is logged in already:

1. Log-in by clicking the User button (A) in the right top corner.

2. Enter your User Name (C) in the popup screen (B).
3. Input your Password (D) and click on OK (E).
4. Click the User button (A). After logging in, a popup will appear (F) where you can change your information or password or log back out again.

2.2 NAVIGATION

There are five navigation components used in the Huisman SCADA HMI.



Figure 2-5: Navigation

No	Description
1	Main Menu
2	Home
3	Back/Forward
4	Breadcrumbs
5	Favourites

2.2.1 MAIN MENU

The main menu button is located in the top left corner.



Figure 2-6: Menu operation

Left example

No	Description
1	Title of the currently selected menu.
2	Menu items, which can be links to pages or sub-menus.
3	Menu items without arrows are direct links to pages. Once clicked the menu will disappear.
4	Menu items with an arrow will open a sub menu.

Right example

No	Description
1	Title of the currently selected sub menu.
2	This sub menu has a back arrow to return to the parent menu.

Menu items without arrows are direct links to pages. A green border around a menu item indicates the currently displayed page.

2.2.1.1 Next/Previous

As the menu can extend beyond available screen space available, Next/Previous buttons are used to expand/minimize hidden menu items.

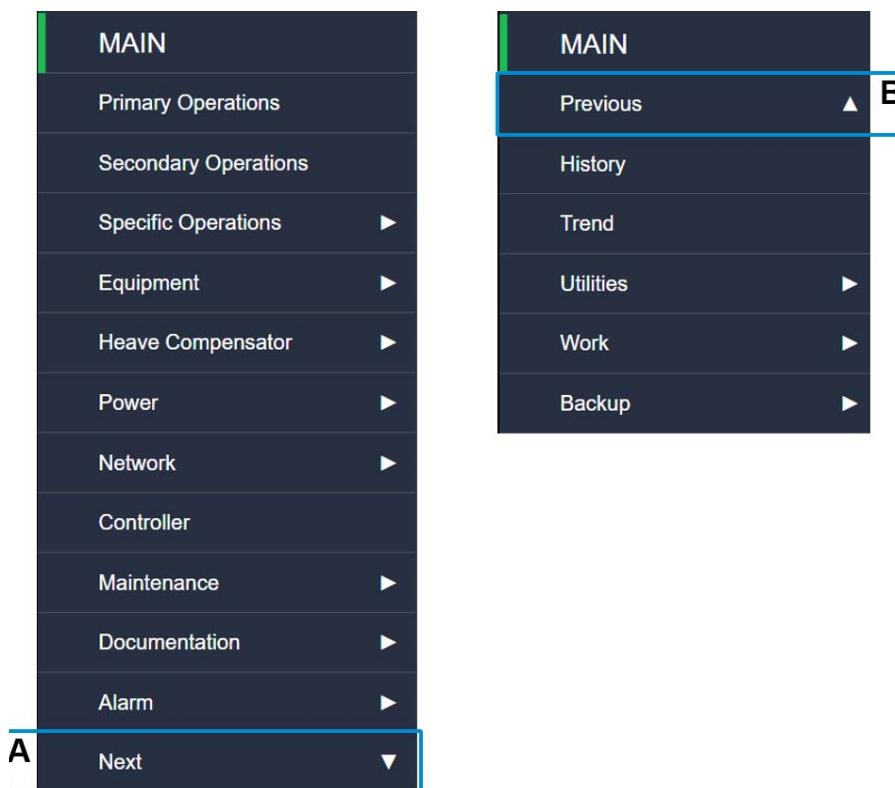


Figure 2-7: Next/Previous buttons

1. Click on "Next" (A) to expand hidden menu items.
2. Click on "Previous" (B) to hide expanded menu items.

NOTE Check your equipment specific user manual for set-up of menus and pages.

2.2.2 HOME

The home button is located next to the main menu button. This button is used to open the home page.

2.2.3 BACK/FORWARD

Back and forward buttons are located next to the home button. Use the buttons to go back to the previous page visited or forward to the next one.



Figure 2-8: Previously visited pages menu

TIP: Pressing and holding the back/forward button for more than 1 second will open a list of visited pages.

2.2.4 BREADCRUMBS

The breadcrumbs is located in the middle of the top row. It provides a location path and allows easy navigation within the structure.

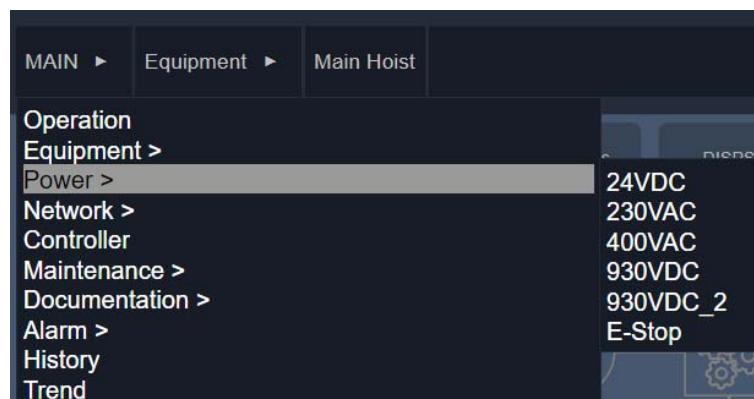


Figure 2-9: Breadcrumbs menu and sub menus

Clicking on the menu or sub-menu will open the menu showing pages and sub-menus available. If the item in the menu is a sub-menu, it will show the sub menu list.

2.2.5 FAVOURITES

Each user can individually store pages as favourites for quick access.

The favourites button is located to the right of the breadcrumbs. The button will be highlighted if the currently visited page is already marked as a favourite.

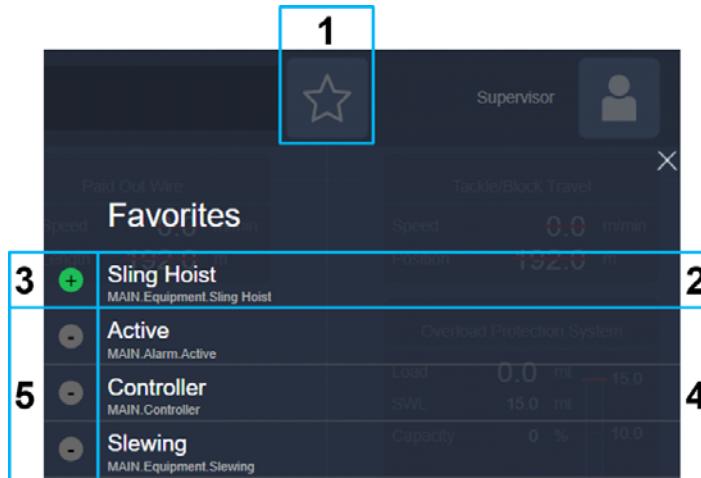


Figure 2-10: Favourites

1. Click on the favourites button to show all pages marked as favourites.
2. The first list item is the currently visited page (if not already marked as a favourite).
3. Click the green plus to add the currently visited page to favourites (if not already marked as a favourite).
4. Click on any favourite to navigate to the indicated page.
5. Click on the minus to remove the selected favourite from the list.

3 BOTTOM ROW

The bottom row consists of information fields and buttons for quick access and utilities functions.

1	3	4	5	6	7
	System On Lift Type Vessel Mode Sea State Capacity	● — — — 0.0 %	Version Indication Any Checksum Mismatch; Check PLC Communication 2022-07-01 08:16:26 Slewing Bearing Grease System 2 Valve Failed to Move to Position M 2022-06-28 15:25:27 Slewing Bearing Grease System 1 Valve Failed to Move to Position M 2022-06-28 15:25:27 Main Hoist Tackle 2 Winch 1 Drive System Drive 2 Watchdog Error 2022-06-28 15:25:16	2022-07-01 10:23:55 A20-24050	
2					
		8	9	10	11

Figure 3-1: Bottom row

1. Equipment set-up button: See [Section 3.1: "Equipment set-up" on page 24](#)
2. Controller set-up button: Click here to go to the page Main>Controller directly.
3. Equipment set-up information field.
4. Alarm Banner: See [Section 3.2: "Alarm handling" on page 25](#)
5. Time and date information field. It may also include the project number.
6. Settings button: Click on this button to open a popup with SCADA settings and software version information.
7. Close Popup button: Click on this button to close all popups that do not need confirmation.
8. Alarm acknowledge button: See [Section 3.2: "Alarm handling" on page 25](#)
9. Alarm list button: See [Section 3.2: "Alarm handling" on page 25](#)
10. Screenshot button: Click on this button to make a screenshot and save it on the server.
11. Maintenance button: Click on this button to get a list of all active by-passes and over-rules.

3.1 EQUIPMENT SET-UP

The equipment set-up button opens a popup containing all settings that must be done prior to operating the equipment. Possible settings can be lift types, modes, factors, reeving, etc. Once confirmed, these values are shown in the equipment set-up information field.

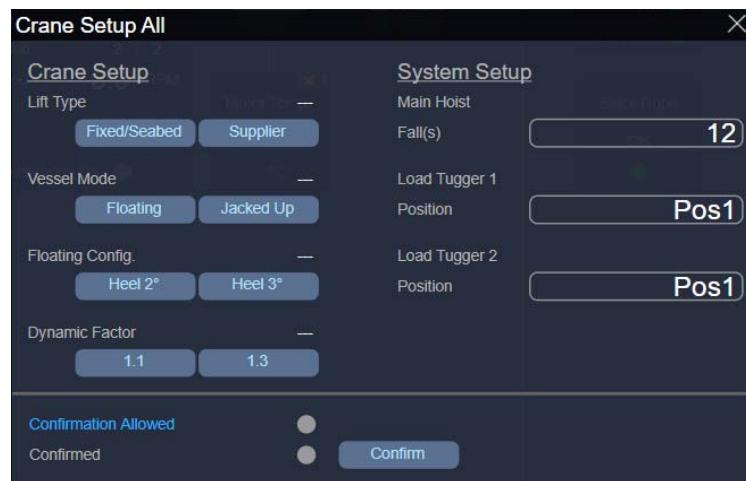


Figure 3-2: Equipment set-up

NOTE Check your equipment specific user manual for applicable settings.

3.2 ALARM HANDLING

Alarms are shown in the centre section of the bottom row.

 Tugger 1 Drive System Drive 1 Watchdog Error	2021-04-30 10:59:49	2021-05-03 14:57:37 GM
 Boom Hoist Hydraulic Brake Power Supply Circuit Breaker Pump 1 Tripped	2021-04-30 10:59:49	
 Slewing Bearing Grease System 2 Reservoir Level Low	2021-04-30 10:59:49	
 Boom Hoist Hydraulic Brake Power Supply Oil Temperature Low	2021-04-30 10:59:49	
	1	2 3

Figure 3-3: Alarms

- | No | Description |
|----|--|
| 1 | Top 4 alarms |
| 2 | Acknowledge alarm |
| 3 | Opens the page Main>Alarm>Active
Full list of active alarms, see section
Section 5.10: "Alarm Pages" on page 61. |

3.2.1 ALARM CATEGORIES

Type	Visual indication	Description
Warning	 Main Hoist Motor 1 Temperature High	An exclamation mark in a yellow circle indicates a warning. An undesired or hazardous situation is imminent. Rectification must be done to avoid interruption of the operation.
Error	 Boom Hoist Motor Brake Low	X in a red circle indicates an error. An undesired or hazardous situation is present. The operation will be interrupted (i.e. any related movement will be stopped by the PLC). Operation cannot continue before the situation is rectified.
Critical	 Main Hoist Slipping Brake	A red banner indicates a critical alarm. A dangerous situation is present. Operation will be interrupted (i.e. any related movement will be stopped by the PLC). Rectification must be done immediately.

NOTE Alarm cause must be rectified and acknowledged before disappearing from the Alarm list

NOTE Critical alarms may require a specific action before they disappear.

Check your equipment specific user manual for which critical alarms this applies.

3.2.1.1 Additional alarm information/indication

Type	Visual indication	Description
Active acknowledged alarm	Slewing VFD Not Control	When an alarm is acknowledged but still active, a green tic is shown in front of the text.
Alarm with additional information	E-Stop Direct Channel	Blue text indicates a link with additional information.

For more information on alarms, see section ‘Alarm Pages’ on page 61.

3.2.2 NOTIFICATIONS

Potential notifications are shown above the active alarm list. Notifications contain important information that is not classified as an alarm.

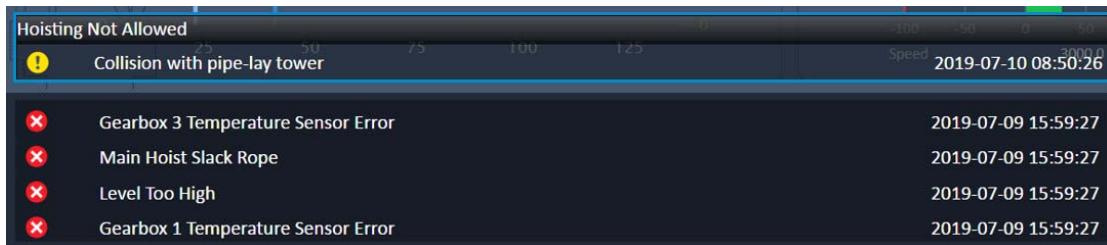


Figure 3-4: Notifications

NOTE Notifications cannot be acknowledged and will disappear shortly after the cause is rectified.

4 MAIN AREA

The main area is the part of the screen where the selected page is displayed.

4.1 HMI COMPONENTS

Each page consists of HMI components that have different attributes and behaviors. This chapter describes the main components. The images used are examples only and are provided for context only.

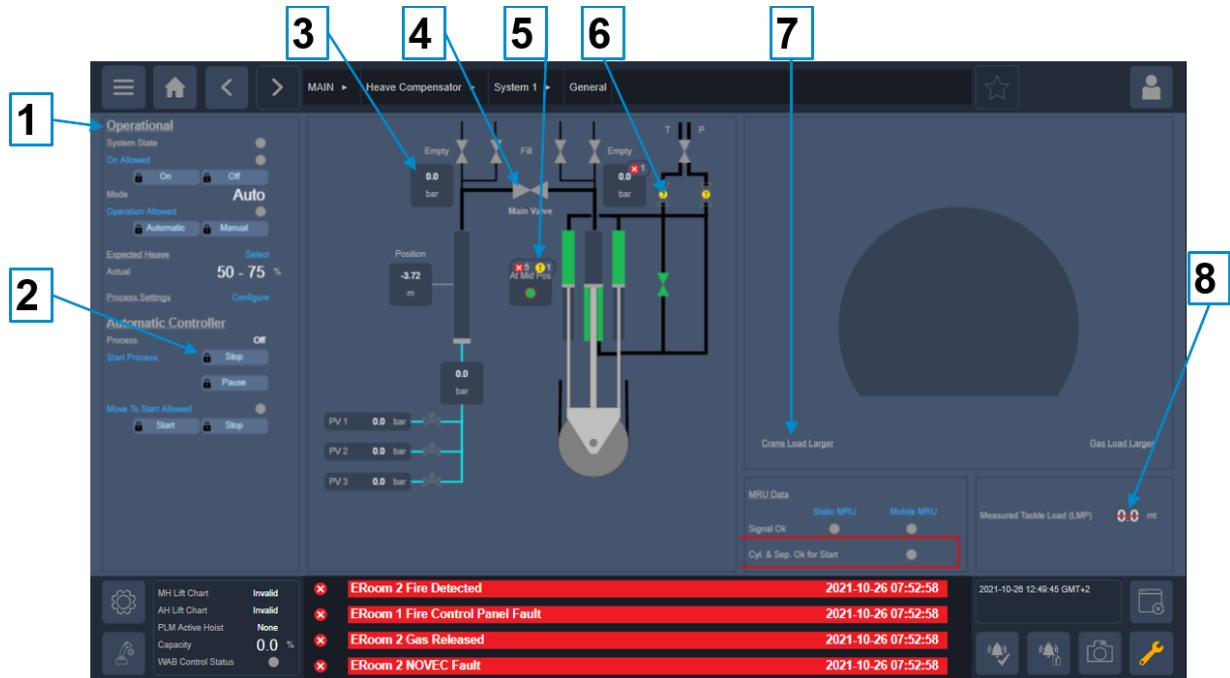


Figure 4-1: HMI components

Type	Visual indication	Description
1. Information	Information sections have square corners	Specific function information
2. Push button	Rounded button with descriptive text	Works as a regular button to regulate specific functions. The lock symbol will appear if sufficient user privileges are not present.
3. Widget tile	Dark coloured section with rounded corners	These tiles represent a function, system or component. The tiles show the most important information. More information, settings etc is accessed by clicking on the widget tile.
4. Component	Visual icon depends on the component.	The example shows a valve.
5. Alarm icons	Tile with Alarm icons	If there are any alarms present, they will be shown on the relevant tile. Alarms can be displayed in each alarm category. See 'Alarm Categories' on page 25
6. Question mark	Question marks are shown in place of values, conditions or dots	Question marks represent situations where values are unknown. For example when communication with the PLC is lost.
7. Static text	Grey text	Grey text is static and will not change.

Type	Visual indication	Description
8. White text	White text	White text show information derived from PLC or other sensors. If the text has a red strike-through, the value is deemed unreliable. For example a broken wire, broken sensor or broken remote IO

4.1.1 WIDGET TILES

Widget tiles provides information about specific functions and can be changed by the user by clicking on the widget tile as shown below.

NOTE Check your equipment specific user manual for relevant information on Operation pages.

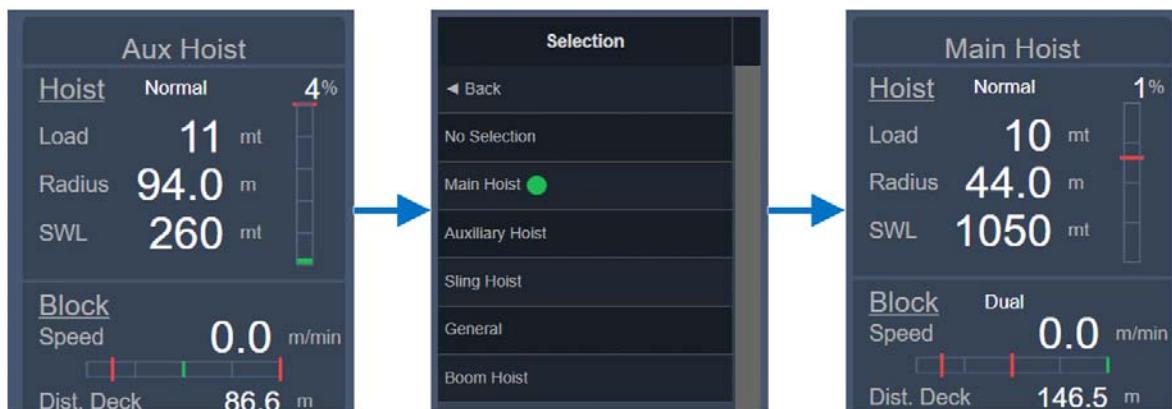


Figure 4-2: Widget tiles on Operation page

The information/settings and options the widget provide can vary widely depending on the function it represents.

Examples of widget tiles with different features:

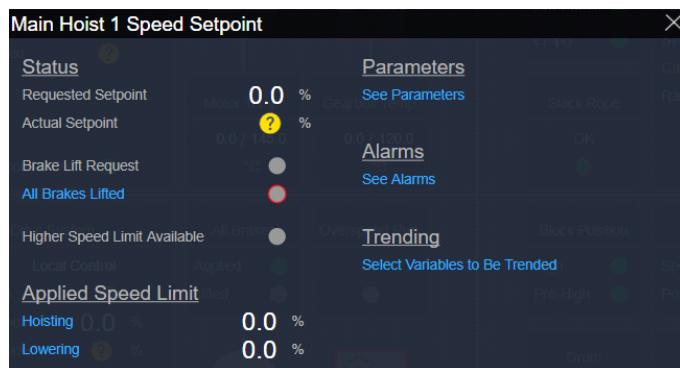


Figure 4-3: Example1: widget tile popup

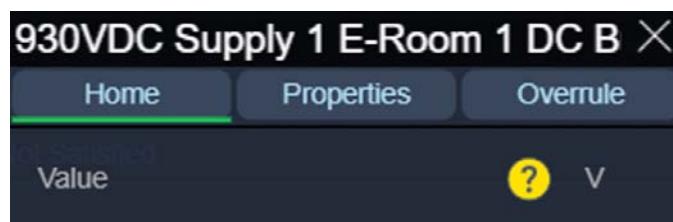


Figure 4-4: Example2: widget tile popup with tabs

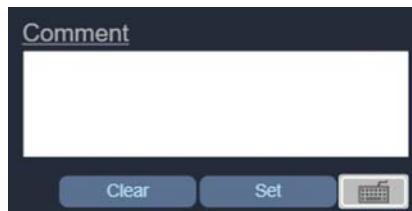


Figure 4-5: Example3: widget tile popup with commenting field

4.1.2 DOTS (DIGITAL VALUES)



Figure 4-6: Digital values

Dots are used to show digital values.

Color	Description
Green	Active/On
Gray	Not active/Off
Red Circle	Unreliable value. For example a broken wire, broken sensor or broken remote IO.
Red	Blocking

4.1.3 BAR GRAPHS



Figure 4-7: Bar graphs

Color	Description
Red line	Value limit
Green	Value well below limit.
Orange	Value limit almost reached
Red	Value past limit

4.1.4 LOAD CHART

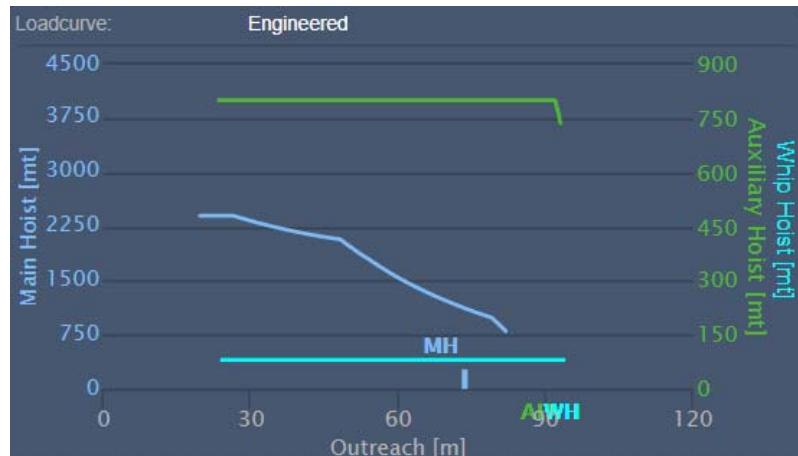


Figure 4-8: Load chart

If applicable, Load charts can be shown. The load chart will contain:

- SWL as a line with a different colour for each hoist.

- Actual loads and outreaches as a vertical bar in the colour of each hoist.

NOTE The bars will change color to orange when close to SWL and red if SWL is exceeded.

4.1.5 SELECTION FIELDS



Figure 4-9: Selection fields

Selection fields allow you to select options from a list. Selecting an empty row is equal to no selection.

4.1.6 ADJUSTABLE VALUES



Figure 4-10: Adjustable values

Type	Visual indication	Description
Adjustable value	Field with white text and rounded corners.	Adjustable value fields are opened by clicking on it (a popup will appear) and inserting a new value.

4.1.7 HYPERLINKS



Figure 4-11: Hyperlinks

Blue colored text indicates a hyperlink.

4.1.8 SLIDERS



Figure 4-12: Digital values

Color	Description
Green	On, Enabled or selected
Gray	Off, disabled or not selected

The slider will be a dot, when the user does not have the privilege to change this value.

4.1.9 FREE TEXT FIELDS



Figure 4-13: Free text fields

Free text fields are open to enter any text and can be used for inputting filters or making comments.

4.1.10 TIME/DATE FIELD

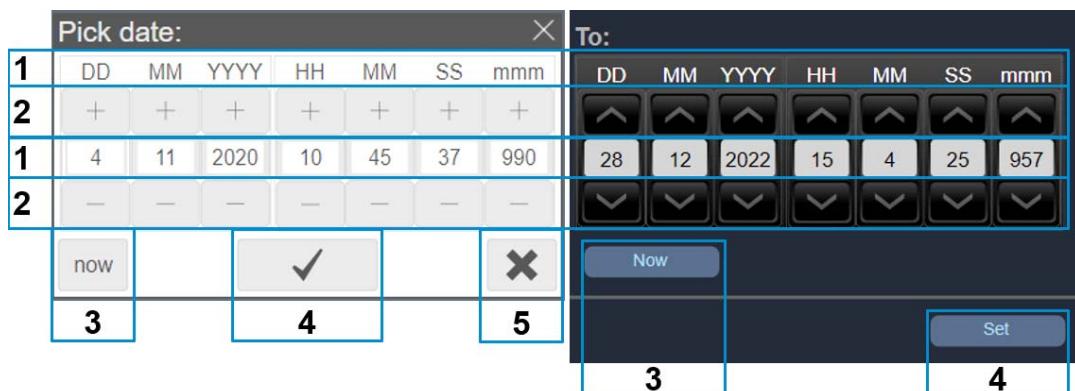


Figure 4-14: Time filter popups (2 versions shown)

No Description

- 1 Day, month, year, hour, minute, second and Millisecond
- 2 Plus/Minus buttons to change corresponding value
- 3 Set time/date to current time/date
- 4 Apply settings
- 5 Sets date to 1-1-1970 and clock to 1:00 (only older version)

4.1.11 LISTS

The information on the Maintenance, Alarms and History pages and in some popups comes in the form of a list.

9	1	2	3	4
8	Description	Value	Type Definition	Editable
<input type="checkbox"/>	WAB Received Signal Strength Indicator (RSSI) Level Low	15.0	ObjectTypes.PROJECT.HcsStd.Param_Real	
<input checked="" type="checkbox"/>	WAB Battery Level Empty	5.0 %	ObjectTypes.PROJECT.HcsStd.Param_Real	
<input checked="" type="checkbox"/>	WAB Battery Level Pre-Empty	10.0 %	ObjectTypes.PROJECT.HcsStd.Param_Real	
<input type="checkbox"/>	Crane Anti-Collision Leg 1 Boom Height Speed Limit Near Restricted Zone	30.0 %	ObjectTypes.PROJECT.HcsStd.Param_Real	
7	6	5		

Figure 4-15: Lists

No Description

- 1 Selection fields used for filtering
- 2 Column headers
- 3 Free text filtering (Search)
- 4 List menu
- 5 Scroll bar

No	Description
6	List items (Hyperlinked items contain additional information)
7	Select Items (Tickbox)
8	Select all/Undo selection (when the button is not available, the functionality is integrated in the action menu)
9	Action menu

4.1.12 LIST MENU

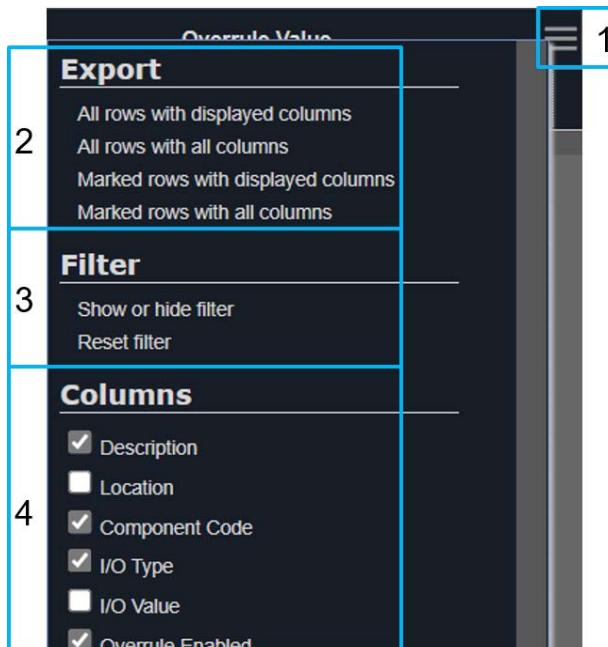


Figure 4-16: Time/Date field (popup)

No	Description
1	Menu Button (List View)
2	Export Data
3	Filter
4	Show/Hide selected columns

4.1.13 ACTION MENU

The Action menu is available on all list pages and some list popups. The action menu contains actions particular to the list that you are in and depend on selections (single or multiple) and filters. Some actions are page specific. For additional information on page specific actions, See Section ‘Pages’ on page 39

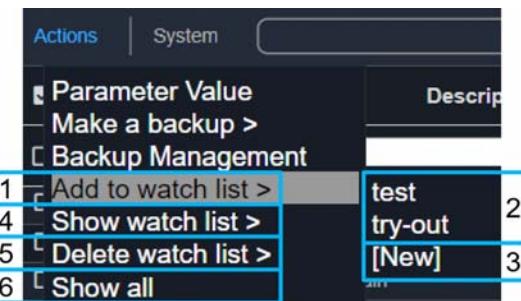


Figure 4-17: Action menu

No	Description
1	"Add to watch list" in the Action menu, gives a list of existing watch lists.
2	Add selection to an existing watch list.
3	Create a new watch list for the current selection.
4	Show available watch lists.
5	Delete watch list shows a complete list of watch lists that can be deleted.
6	Return to normal watch list view

The option to select all or none is in the action menu when the list page does not have a select all or none check box.

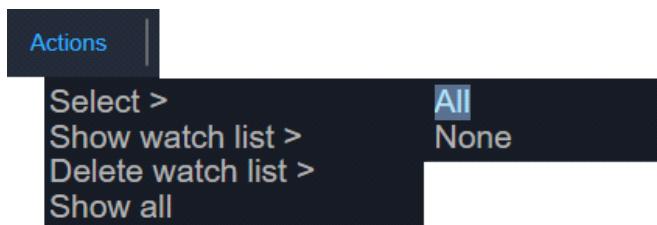


Figure 4-18: Action menu Select

4.1.14 EXPORT

List data can be exported in multiple ways. Filters and selections can be used to define the export content.

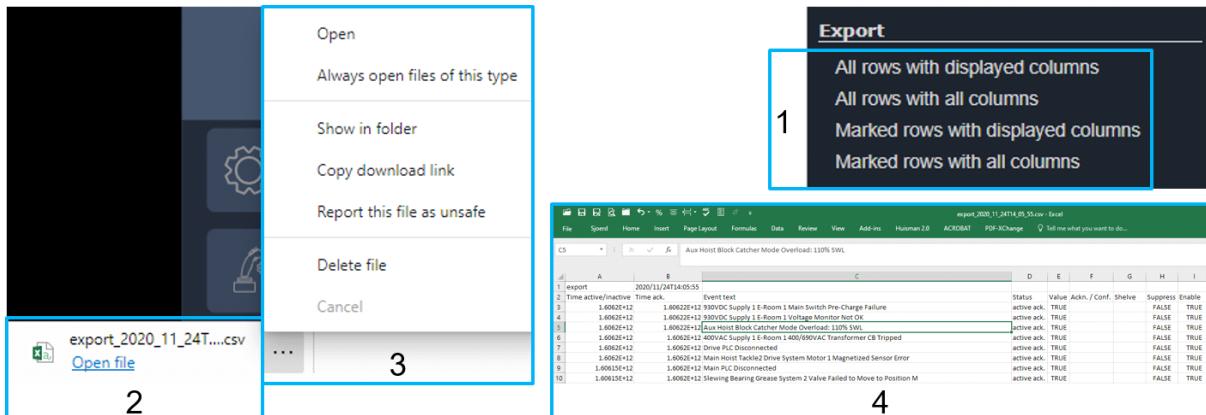


Figure 4-19: Export

No Description

- 1 Select content to export.
- 2 A file called "Export.csv" is created.
- 3 Example of file options in browser once downloaded.
- 4 Example of file opened in Excel (Can be opened in any program/database that supports the CSV file format.)

5 PAGES

The SCADA interface consists of a collection of pages components and lists. These pages are dynamic and can be changed/re-arranged by the users. Pages shown in this chapter may not correspond to your particular equipment.

In the pages described, sections is a used term to categorize information. These sections may differ from the categorization in your equipment specific SCADA implementation.

NOTE Check your equipment specific user manual for more in-depth information.

5.1 OPERATION PAGES

An operation page is a page dedicated for normal operation. This page contains all the relevant information and settings for the operator.

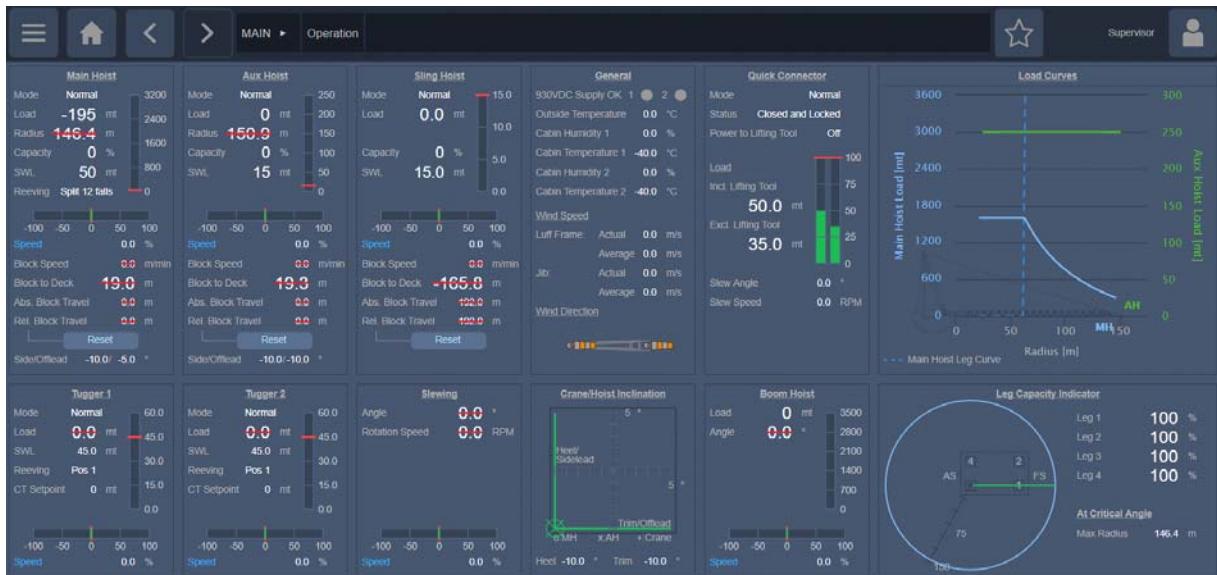


Figure 5-1: Operation Page

The page consists of sections for each main movement and general information. If applicable, each section can show:

- Selected Mode
- Load
- Radius
- SWL
- Angles
- Capacity
- Speed
- Block Position
- Load Curve
- Heel and Trim
- Available Power
- System Status
- Value reset buttons
- Speed set point links

5.1.1 WIDGET TILES ON OPERATION PAGES

Widget tiles provide information about specific functions and can be changed by the user by clicking on the widget tile as shown below.

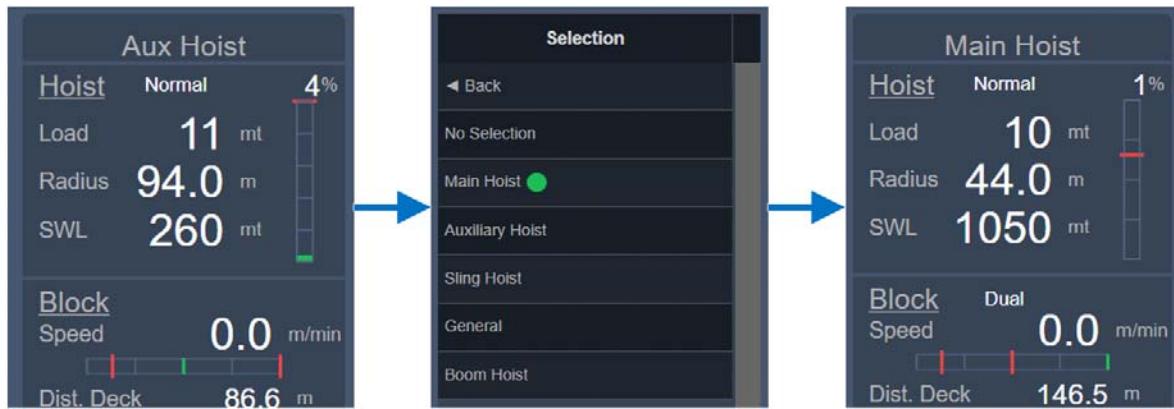


Figure 5-2: Widget tiles on Operation page

NOTE Check your equipment specific user manual for relevant information on Operation pages.

5.2 EQUIPMENT PAGES

The Equipment pages provides additional detail about the equipment and its components.

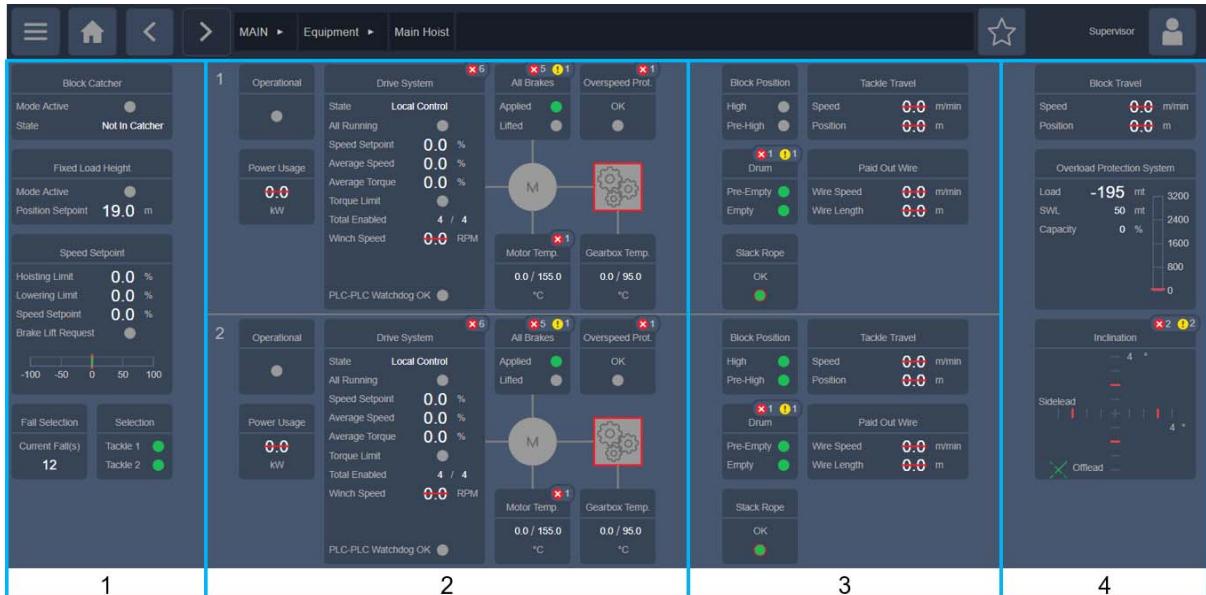


Figure 5-3: Equipment page

All information for each function, component and system is shown on the Widget Tiles. The Equipment pages are divided in sections.

No	Section	Description
1	Requests	mode selection, reeving and set points
2	Actuators	power, drives, motors, brakes and gearboxes
3	Sensors	Sensors such as, geared cam switch, slack rope switch, speed and paid out wire encoders
4	Results	Results such as, overload protection and block position

NOTE Check your equipment specific user manual for relevant information on Equipment pages.

5.2.1 WIDGET TILES ON EQUIPMENT PAGES

Widget tiles provide information about specific functions/settings and can be changed by the user by clicking on the widget tile. Different types of widget tiles will have different attributes.

5.3 POWER PAGES

The power pages contains information and setting for:

- Electrical
- Hydraulic
- Lighting

The components are shown as widget tiles on the power pages.

NOTE Check your equipment specific user manual for relevant information on Power pages.

5.3.1 ELECTRICAL

The electrical power pages show the electric power distribution and the status of its main components. The pages are separated per voltage level. The lines and components will be green when power is on and grey when off.

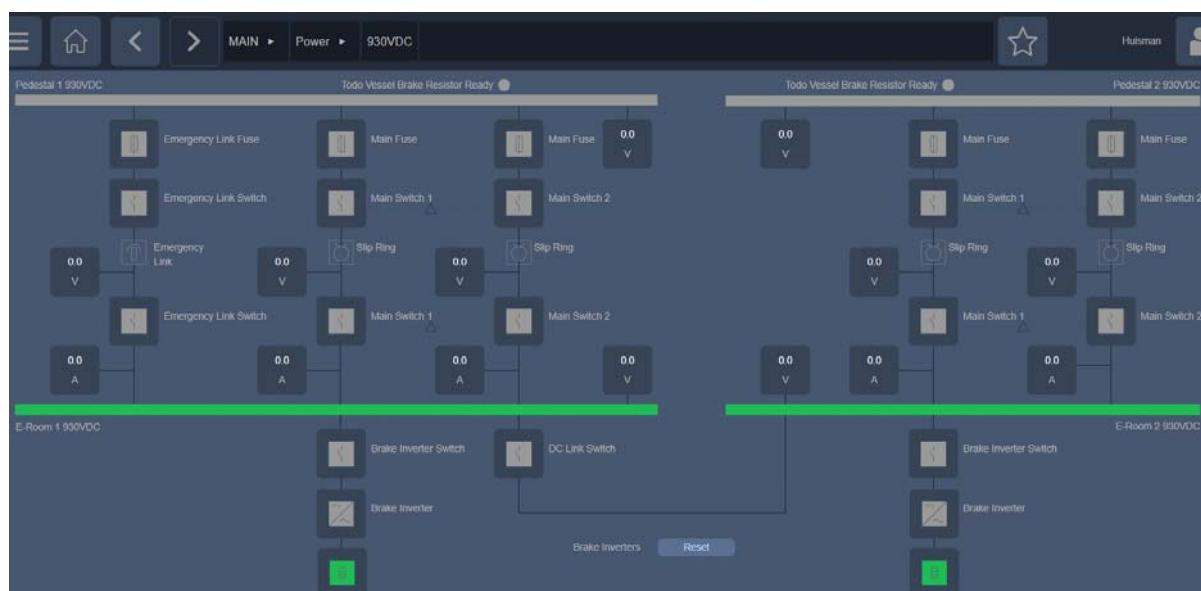


Figure 5-4: Electrical power page

This Switch popup indicates if closing and opening is allowed. You can click on the blue text links to get a popup of the allowed conditions.



Figure 5-5: Switch popup

5.3.2 HYDRAULIC

The hydraulic power pages show the hydraulic power units (HPU) and the status of its main components. The components will be green when active, grey when inactive and red when faulty.

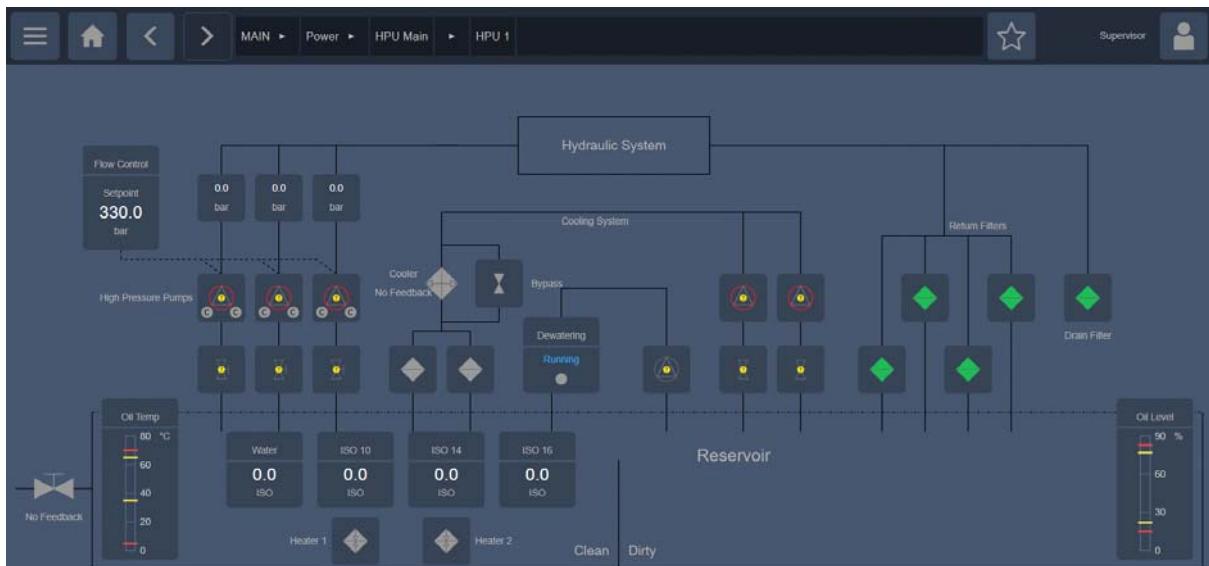


Figure 5-6: Hydraulic power page

This pump popup indicates if stopping and starting is allowed. You can click on the blue text links to get a popup of the allowed conditions.

5.4 E-STOP PAGE

The components on the emergency stop (e-stop) page are shown as widget tiles.

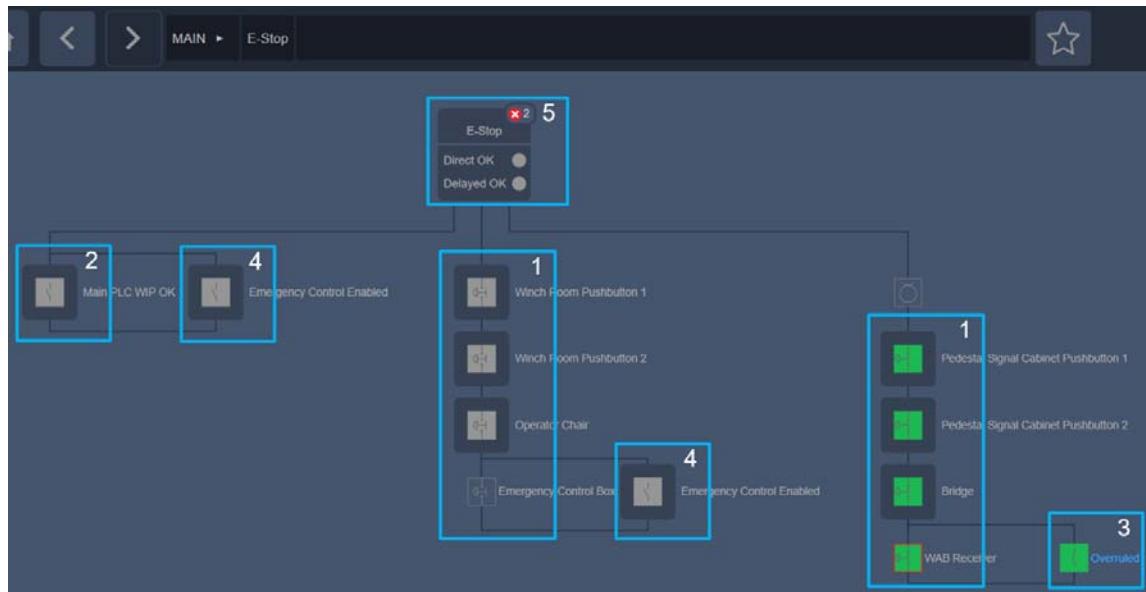


Figure 5-7: E-stop page

The emergency stop page shows the status of (if applicable):

No: Description

- 1 E-stop buttons
- 2 PLC watchdogs
- 3 WAB overrule switch
- 4 ECB enable switches
- 5 E-Stop relays

The widget tiles will show different colors depending on component status:

Color Description

- Green Working within parameters
- Grey Status unknown/faulty

Components without a feed-back signal are not shown as tiles and do not have a fill colour to indicate their status.

5.5 NETWORK PAGES

The Network pages provide information on components and connections of the Ethernet, ProfiNet and Profinet networks. They are split in Switches and PLC pages. The components are shown as widget tiles.

The widget tiles will show different colors depending on component status:

Color	Description
Green	Working within parameters
Grey	Status unknown/faulty

Components without a feed-back signal are not shown as tiles and do not have a colour to indicate their status.

5.5.1 SWITCHES

The Switches pages show the switches and their connection loops.

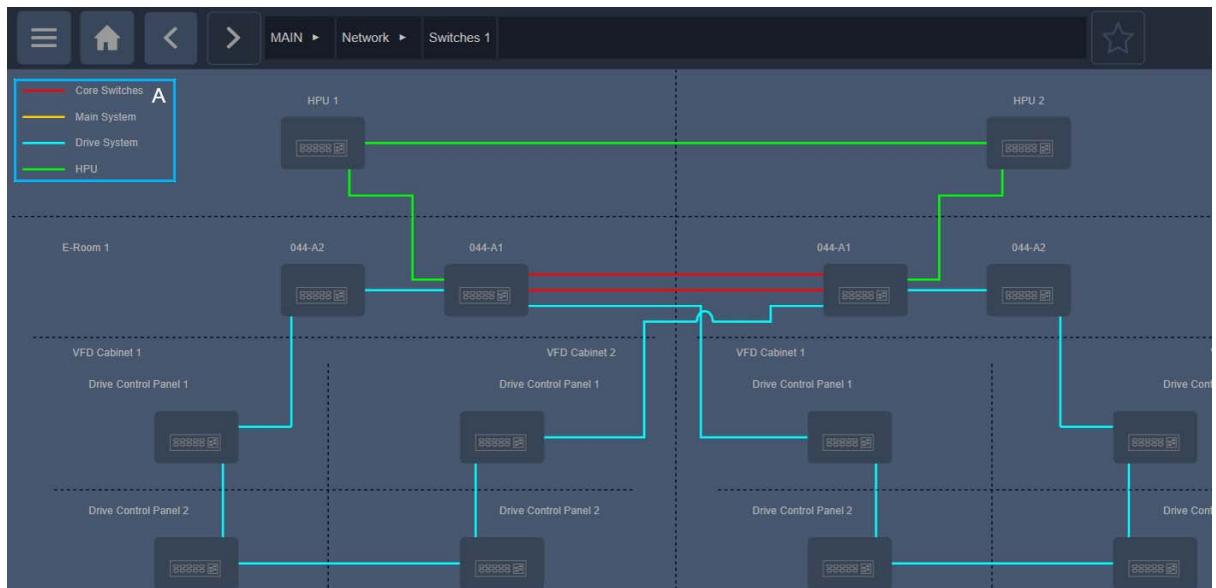


Figure 5-8: Network switches page

The connections are colour coded by their function as can be seen on the legend (A) on each page.

5.5.2 PLC

The PLC pages show each PLC and the slaves it controls.

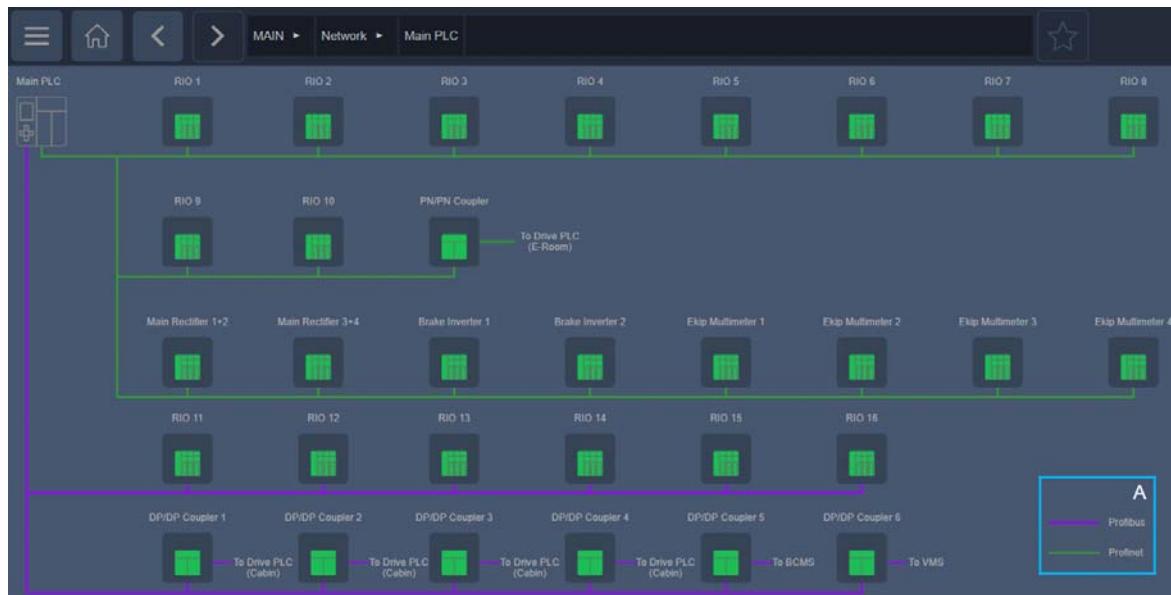


Figure 5-9: Network PLC page

Slaves can consist of:

- Remote IO modules
- Inverters
- Rectifiers
- WAB receivers
- Sensors
- Encoders
- Couplers (to other PLCs)

The shown connections are virtual and not a wiring diagram. The connections are colour coded by their communication type as can be seen on the legend (A) on each page.

5.6 CONTROLLER PAGE

The Controller page show each controller (joystick, thumbwheel, foot pedal) and the selection that is made for it.

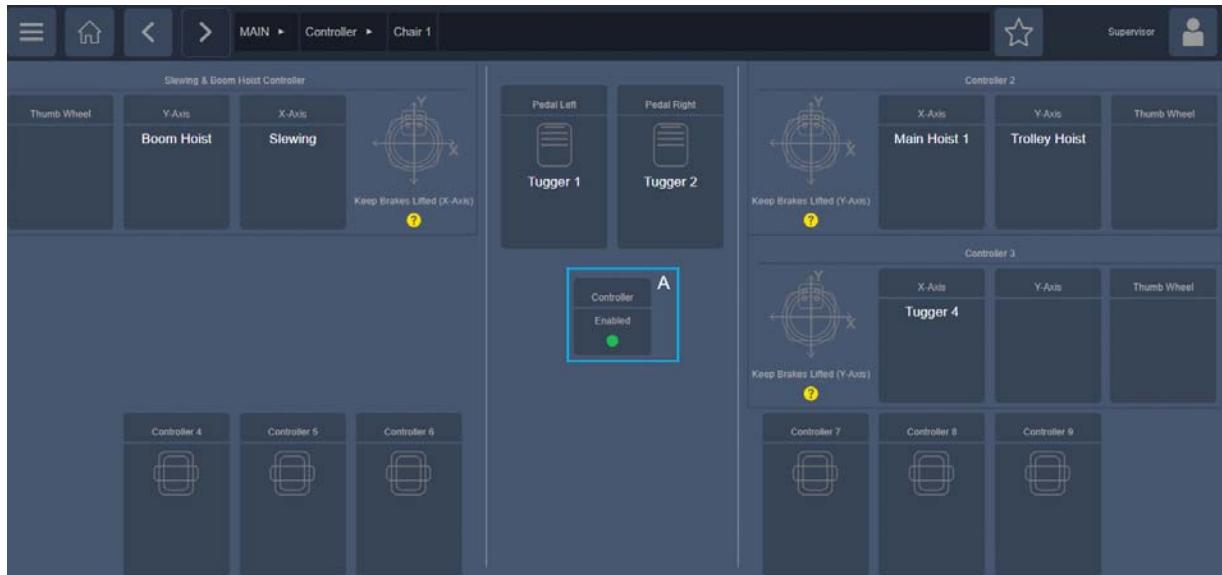


Figure 5-10: Controller page

The components are shown as widget tiles. The popup from the Controller tile (A) provide a popup where controls can be enabled or disabled.

The other tiles provide a popup with two tabs. On the function tab page (shown below), you can enable/disable functions for that specific controller. The properties tab provides detailed information about that controller.



Figure 5-11: Controller selection popup

NOTE Check your equipment specific user manual for relevant information on Controller pages.

5.7 IO PAGES

The IO page is located in the maintenance menu. It shows all Inputs and Outputs to/from the PLC. This page comes in the form of a list.

The screenshot shows a table with columns: Description, Location, Component Code, I/O Type, I/O Value, Overrule Enabled, Overrule Value, and Program Value. The table lists various IO points, such as Main Hoist Tackle 1 Brake HPU Pressure Switch 1 On, Main Hoist Tackle 1 Brake HPU Oil Heater On Command, Main Hoist Tackle 1 Brake HPU Oil Level Low, Main Hoist Tackle 1 Drive 2 Motor Temperature 2, Main Hoist Tackle 1 Brake HPU Oil Heater On, Main Hoist Tackle 1 Brake HPU Oil Temperature, and Main Hoist Tackle 1 Drive 2 Switch On. The I/O Type column includes DI, DO, AI, and AO. The I/O Value column shows actual sensor values like 0.0 °C or 0.0. The Overrule Enabled and Overrule Value columns show whether overrules are active and their programmed values. The Program Value column shows the PLC's input/output value. Row numbers 2 through 8 are visible at the bottom of the table.

Description	Location	Component Code	I/O Type	I/O Value	Overrule Enabled	Overrule Value	Program Value
Main Hoist Tackle 1 Brake HPU Pressure Switch 1 On	+C10	115-21B40.4	DI	●	●	●	●
Main Hoist Tackle 1 Brake HPU Oil Heater On Command	+E10 090-U31	115-23K1	DO	●	●	●	●
Main Hoist Tackle 1 Brake HPU Oil Level Low	+C10	115-23B72	DI	●	●	●	●
Main Hoist Tackle 1 Drive 2 Motor Temperature 2	+W10	115-2M1-852	AI	0.0 °C	●	0.0 °C	0.0 °C
Main Hoist Tackle 1 Brake HPU Oil Heater On	+E10 090-U31	115-23Q1	DI	●	●	●	●
Main Hoist Tackle 1 Brake HPU Oil Temperature	+C10	115-23050	AI	0.0 °C	●	0.0 °C	0.0 °C
Main Hoist Tackle 1 Drive 2 Switch On	+E10 090-U11.20	115-2K2	DI	●	●	●	●

Figure 5-12: IO page

Description

1. Columns show/hide settings
2. IO Description
3. Physical location acc. to electric schematic
4. Component code acc. to electric schematic
5. IO type
 - DI, Digital Input
 - DO, Digital Output
 - AI, Analogue Input
 - AO, Analogue Output
6. IO value, shows the actual input/output value from a sensor, switch or contact etc.
7. Overrule Enabled, See below for further information.
8. Program value, shows the input/output value used by the PLC program. The Program Value (8) and the I/O Value (6) are the same when no overrules are present.

5.7.1 OVERRULING INPUTS

A bypass is recommended before attempting to overrule IO values. See [Section 6.1.2: "Bypass" on page 81](#)

WARNING



When you overrule an input, the PLC will now see what you have set the input to be and no longer the actual input.

If a sensor, switch or contact that is connected to a PLC input is broken and cannot be repaired, an input overrule may be needed to continue operation until it can be repaired or replaced. A bypass attempt is recommended before overruling IO values.

NOTE Overruling inputs is only possible when logged-in as Engineer or higher.

5.7.1.1 Overruling a DI (Digital Input)

I/O Type	I/O Value	Overrule Enabled	Overrule Value	Program Value
3 DI	●	<input checked="" type="checkbox"/>	<input type="checkbox"/>	●
4 DI	●	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	●

Figure 5-13: DI overrules

1. Set the slider in the column Overrule Value to ON to make an overrule so the PLC program will see the input as ON or set the slider to OFF to make an overrule so the PLC program will see the input as OFF.
2. Set the slider in the column Overrule Enable to ON to make that overrule active or to OFF to disable the overrule.
3. PLC to read the input as OFF. The actual I/O Value is ON but the overrule will make the PLC program use it as OFF as indicated in the Program Value column. This will remain no matter any changes on the I/O Value until the overrule is removed.
4. PLC to read the input as ON. The actual I/O Value is OFF but the overrule will make the PLC program use it as ON as indicated in the Program Value column. This will remain no matter any changes on the I/O Value until the overrule is removed.

5.7.1.2 Overruling an AI (Analogue Input)

I/O Type	I/O Value	Overrule Enabled	Overrule Value	Program Value
3 AI	10.00 kΩ	<input checked="" type="checkbox"/>	0.00 kΩ	0.00 kΩ
4 AI	0.00 %	<input checked="" type="checkbox"/>	20.00 %	20.00 %

Figure 5-14: AI overrules

1. Click on the value in the column Overrule Value to get a popup where you can enter the value that you need the PLC program to use as the input value.
2. Set the slider in the column Overrule Enable to ON to make that overrule active or to OFF to disable the overrule.
3. We want the PLC to believe the input is 0.00kΩ. The actual I/O Value is 10.00kΩ but the overrule will make the PLC program use it as 0.00kΩ as indicated in the Program Value column. This will remain so, no matter any changes on the I/O Value until the overrule is removed.
4. We want the PLC to believe the input is 20.00%. The actual I/O Value is 0.00% but the overrule will make the PLC program use it as 20.00% as indicated in the Program Value column. This will remain so, no matter any changes on the I/O Value until the overrule is removed.

5.7.2 OVERRULING OUTPUTS

If you need to test something, make something happen or prevent something from happening on a components that is connected to a PLC output without the PLC programs' involvement, an output overrule may be needed.

WARNING



When you overrule an output, the output will now do what you have set the output to do or not do without the PLC being able to influence that.

NOTE

Overruling inputs is only possible when logged-in as Engineer or higher.

5.7.2.1 Overruling a DO (Digital output)

I/O Type	I/O Value	Overrule Enabled	Overrule Value	Program Value
3 DO	●	●	●	●
4 DO	●	●	●	●
		2	1	

Figure 5-15: DO overrules

1. Set the slider in the column Overrule Value to ON to make an overrule that will activate that output or set the slider to OFF to make an overrule that will de-activate that output.
2. Set the slider in the column Overrule Enable to ON to make that overrule active or to OFF to disable the overrule.
3. In this example we want to activate this output. The output value from the PLC program is OFF as indicated in the Program Value column, but the overrule will make the actual output ON as indicated in the I/O Value column. This will remain so, no matter any changes on the Program Value until the overrule is removed.
4. In this example we want this output to be prevented from being activated. The output value from the PLC program is ON as indicated in the Program Value column, but the overrule will make the actual output OFF as indicated in the I/O Value column. This will remain so, no matter any changes on the Program Value until the overrule is removed.

5.7.2.2 Overruling an AO (Analogue output)

I/O Type	I/O Value	Overrule Enabled	Overrule Value	Program Value
3 AO	0.00 %	●	0.00 %	50.00 %
4 AO	10.00 %	●	10.00 %	0.00 %
		2	1	

Figure 5-16: AO overrules

1. Click on the value in the column Overrule Value to get a popup where you can enter the value that will activate that output at this set value or enter the value 0 to make an overrule that will de-activate that output.
2. Set the slider in the column Overrule Enable to ON to make that overrule active or to OFF to disable the overrule.
3. In this example we want to de-activate this output. The output value from the PLC program is 50% as indicated in the Program Value column, but the overrule will make the actual output 0% as indicated in the I/O Value column. This will remain so, no matter any changes on the Program Value until the overrule is removed.
4. In this example we want to activate this output at 10%. The output value from the PLC program is 0% as indicated in the Program Value column, but the overrule will make the

actual output 10% as indicated in the I/O Value column. This will remain so, no matter any changes on the Program Value until the overrule is removed.

5.7.3 LOCATING ACTIVE OVERRULES AND BYPASSED ITEMS

You will get a list popup of all overruled and by-passed items, when you click on the button with the wrench icon in the right bottom corner of the bottom row.

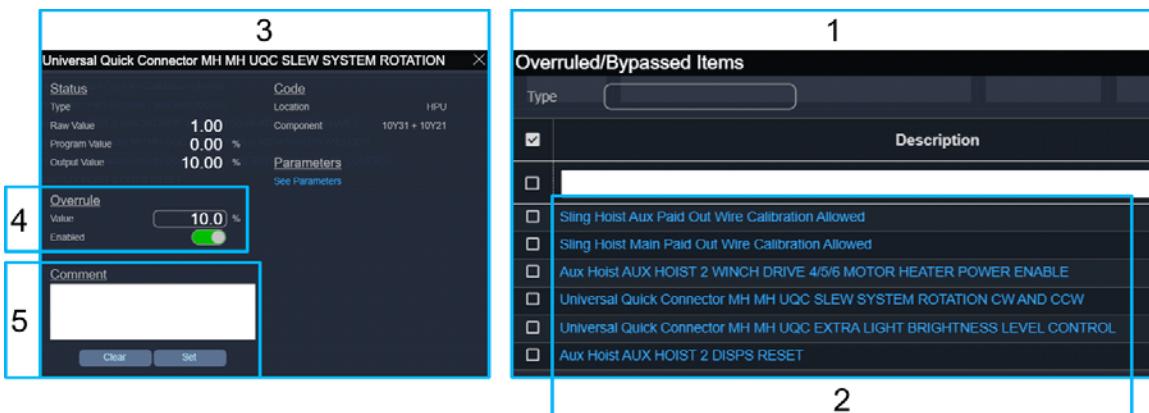


Figure 5-17: Overruled and bypassed items

1. Overruled and by-passed items list popup
2. Click on the blue text line of an item to open the popup that will show the details of the component that is connected to a PLC in or output.\
3. Component detail popup.
4. In this example you see the output to this component has an enabled overrule with a value set at 10%. You can remove or change the overrule here.
5. You can add a comment about the component or the overrule here.

5.7.4 ACTIONS

Most options in the actions menu for the IO page are only available when items from the list have been selected.

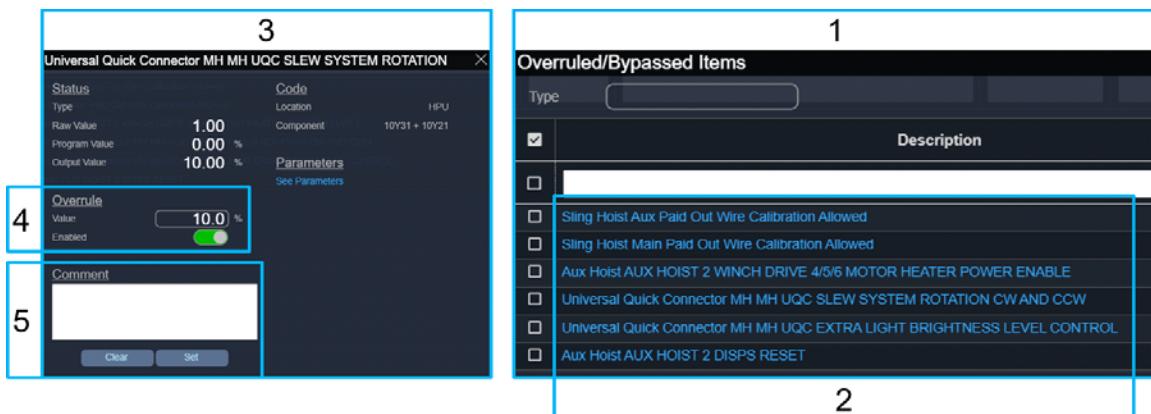


Figure 5-18: Overruled and bypassed items

Possible actions in the menu of the IO page are:

- Set overrule enable to on or off.
- Set overrule value by entering the new value.
- Set a comment.
- Adding the selected item(s) to be shown in Trend.
- Add to, show or delete a Watch list or Show all.

5.8 PARAMETER PAGE

The Parameter page is found in the maintenance menu. It shows all parameters used by the PLC program. This page comes in the form of a list.

The screenshot shows a software interface for managing parameters. At the top, there are navigation icons (menu, home, back, forward) and a breadcrumb path: MAIN > Maintenance > Parameter. Below this is a toolbar with buttons for Actions, System, and Editable. The main area is titled "Sling Hoist". A table lists seven parameters:

	Description	Value	Editable
5	Sling Hoist Drive System Global Parameter Nominal Speed	1500 RPM	●
6	Sling Hoist Drive System Global Parameter Relays Timeout	2000 ms	●
7	Sling Hoist Drive System Global Parameter Torque Balance Disabled	●	●
	Sling Hoist Drive System Global Parameter Torque Error Gain	1	●
	Sling Hoist Drive System Global Parameter Torque Limit	160 %	●
		2	3
		3	4

Figure 5-19: Parameter page

1. The columns shown in this example are the most useful, but other choices can be made.
2. Column Description gives the name of the parameter. You can click on the text to get a list popup with related parameters when the text is blue (see chapter below).
3. Column Value shows the parameter value. Analogue values have a border around them, when it is possible to edit them. Digital values are shown as sliders when it is possible to edit them or dots when not. Editing parameters can only be done with supervisor or higher privileges.
4. Column Editable shows a green coloured dot when it is possible to edit that item or a grey coloured dot when not. The dot does not show whether your log-in privileges are high enough. You can filter this quickly with the Editable selection box.
5. This example shows an editable analogue value. You can change the value by clicking on the field in the Value column.
6. This example shows an editable digital value. You can change the value by clicking the slider in the Value column.
7. This example shows an analogue value that cannot be changed. (see chapter below)

5.8.1 AFFECTED PARAMETERS

The screenshot shows a parameter configuration interface. At the top, there are navigation icons (list, home, back, forward) and a breadcrumb path: MAIN > Maintenance > Parameter. Below this is a toolbar with tabs: Actions, System, Sling Hoist (which is selected), and Editable. The main area is a table with three columns: Description, Value, and Editable. The table has 7 rows, indexed from 1 to 7. Row 1 is a header row with columns for Description, Value, and Editable. Rows 2 through 6 are data rows, and Row 7 is a summary row. Row 2 is empty. Row 3 contains the parameter 'Sling Hoist Drive System Global Parameter Nominal Speed' with a value of '1500 RPM'. Row 4 contains 'Relays Timeout' with a value of '2000 ms'. Row 5 contains 'Torque Balance Disabled' with a toggle switch. Row 6 contains 'Torque Error Gain' with a value of '1'. Row 7 contains 'Torque Limit' with a value of '160 %'. The 'Editable' column for all rows contains a green circular icon.

	Description	Value	Editable
1			
2			
3	Sling Hoist Drive System Global Parameter Nominal Speed	1500 RPM	
4	Sling Hoist Drive System Global Parameter Relays Timeout	2000 ms	
5	Sling Hoist Drive System Global Parameter Torque Balance Disabled		
6	Sling Hoist Drive System Global Parameter Torque Error Gain	1	
7	Sling Hoist Drive System Global Parameter Torque Limit	160 %	
	2	3	4

Figure 5-20: Parameter page

1. This example shows a parameter that cannot be changed.
2. After clicking on the blue text line we see a popup from another parameter.
3. The example parameter is one of the two affected parameters.
4. In this example you can change the value here. This will change all three parameters

5.8.2 ACTIONS

Some options in the actions menu for the Parameter page are only available when items from the list have been selected.

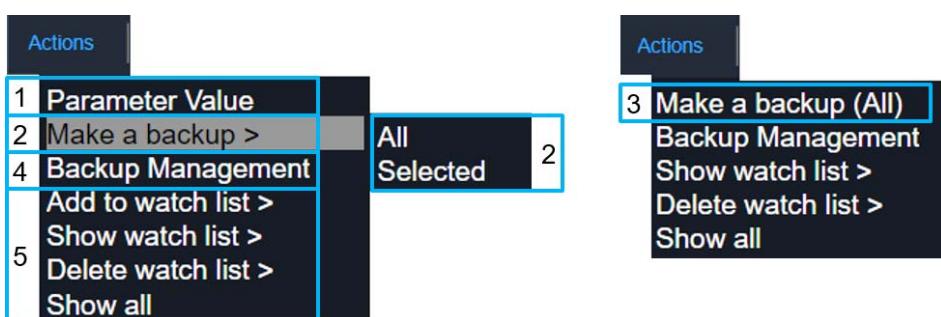


Figure 5-21: Parameter actions

Possible actions in the menu of the Parameter page are:

1. Select “Parameter Value” from the menu to set the parameter value of one or more selected items by entering a new value.
2. When items are selected the selection “Make a backup>” has a sub menu where you can choose between “All” or “Selected” to make a back-up of these parameters.
3. When no items are selected, select “Make a backup (All)” to make a back-up of all parameters.
4. Select “Backup management” from the menu to performing back-up management.

5. Select any of these menu options to add to, show or delete a Watch list or Show all.

5.8.3 BACK-UP

A keyboard popup will appear, when the action “Make a backup” is selected.

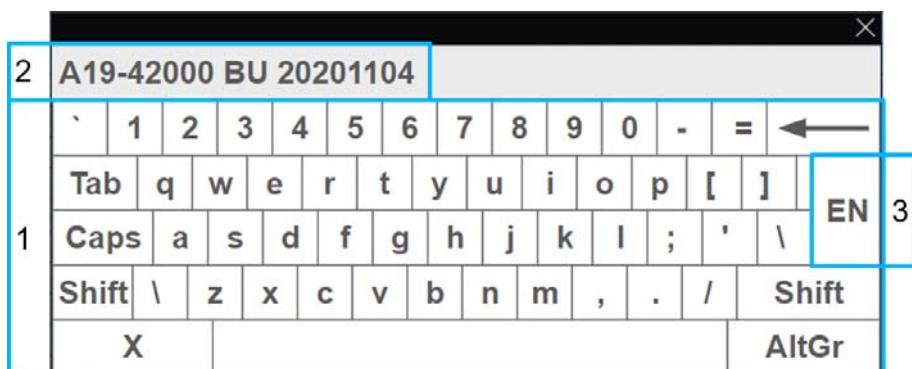


Figure 5-22: Keyboard popup

1. Type a name for the new back-up you want to create, by using the keyboard popup.
2. Include the Huisman project number and the date in the file name.
3. Click on “EN” to enter and the back-up file will be created.

5.8.4 BACK-UP MANAGEMENT

A list popup will appear, when the action “Backup management” is selected.

- 1.

Parameter Backup Management		
	Name	Date
<input type="checkbox"/>		
<input type="checkbox"/>	A19-42000 BU 20201104	2021-05-10 12:44:06
1	Auto Backup 2021-05-10 12:00:00	2021-05-10 12:00:00
	Auto Backup 2021-05-10 11:00:00	2021-05-10 11:00:00

2	Automatic Backup <input checked="" type="checkbox"/> 1 hour	Compare	Remove	Open
4	3	5		

Figure 5-23: Back-up management popup

1. The list will contain all previously created back-ups. Automatically created back-ups will be deleted when they are more than 1 month old.
2. Automatic back-ups will only be created when this slider is switched ON. You can select how often this will be done, by changing the amount of hours in the selection field.
3. When a back-up has been selected, you can remove it by clicking the “Remove” button.

4. When multiple back-ups have been selected, you can compare them by clicking the “Compare” button.
5. When a single back-up has been selected, you can restore it or compare it with the currently used parameters by clicking the “Open” button.

5.8.4.1 File Compare

A list popup will appear, when the button “Compare” is used.

The screenshot shows a 'Comparing Parameters' window with three columns labeled 1, 2, and 3. Column 1 lists parameter addresses, column 2 lists values from 'Backup 2021-05-10 12:00', column 3 lists values from 'A19-42000 BU 2020110'. A 'Show Only Difference' toggle switch is at the bottom left. The table includes rows for various crane parameters like speed limits, torque limits, and PID gains.

Address	Backup 2021-05-10 12:00	A19-42000 BU 2020110	Error/Warning
Crane.Aux-Hoist.BlockCatcher.standard.parameter.speedLimit.whenBypass	10.0 %	10.0 %	
Crane.Aux-Hoist.BlockCatcher.standard.parameter.speedLimit.whenBypass	10.0 %	10.0 %	
Crane.Aux-Hoist.BlockCatcher.standard.parameter.speedLimit.whenModeA	10.0 %	10.0 %	
Crane.Aux-Hoist.BlockCatcher.standard.parameter.torqueLimit	16.0 %	16.0 %	
Crane.Aux-Hoist.FixedLoadHeight.standard.parameter.pid.deadband	0.1 m	0.1 m	
Crane.Aux-Hoist.FixedLoadHeight.standard.parameter.pid.deadbandTime	1 s	1 s	
Crane.Aux-Hoist.FixedLoadHeight.standard.parameter.pid.feedforwardEnab	●	●	
Crane.Aux-Hoist.FixedLoadHeight.standard.parameter.pid.gain	0.5	0.5	
Crane.Aux-Hoist.FixedLoadHeight.standard.parameter.pid.gainEnable	●	●	
Crane.Aux-Hoist.OverloadProtection.standard.parameter.hook.speedLimit	10.0 %	10.0 %	

Figure 5-24: Compare popup

1. The parameters are shown by their Address.
2. Each selected back-up file shows its values in its own column. The current parameters will also be shown, when only one file was selected.
3. The column “Error/Warning” will show if there is a problem in comparing the parameters.
4. You can switch this slider to ON, to only see the parameters that are not the same.

5.8.4.2 Back-up restore

A list popup will appear, when the button “Open” is used.

The screenshot shows a 'Comparing Parameters' window with three columns labeled 1, 2, and 3. Column 1 lists parameter addresses and descriptions, column 2 lists values from 'Backup 2021-05-10 12:00', column 3 lists values from 'A19-42000 BU 2020110'. A 'Show Only Difference' toggle switch is at the bottom left. The table includes rows for various crane parameters like speed limits, torque limits, and PID gains.

Address	Backup 2021-05-10 12:00	A19-42000 BU 2020110	Error/Warning
Crane.Aux-Hoist.BlockCatcher.standard.parameter.speedLimit.whenBypass	10.0 %	10.0 %	
Crane.Aux-Hoist.BlockCatcher.standard.parameter.speedLimit.whenBypass	10.0 %	10.0 %	
Crane.Aux-Hoist.BlockCatcher.standard.parameter.speedLimit.whenModeA	10.0 %	10.0 %	
Crane.Aux-Hoist.BlockCatcher.standard.parameter.torqueLimit	16.0 %	16.0 %	
Crane.Aux-Hoist.FixedLoadHeight.standard.parameter.pid.deadband	0.1 m	0.1 m	
Crane.Aux-Hoist.FixedLoadHeight.standard.parameter.pid.deadbandTime	1 s	1 s	
Crane.Aux-Hoist.FixedLoadHeight.standard.parameter.pid.feedforwardEnab	●	●	
Crane.Aux-Hoist.FixedLoadHeight.standard.parameter.pid.gain	0.5	0.5	
Crane.Aux-Hoist.FixedLoadHeight.standard.parameter.pid.gainEnable	●	●	
Crane.Aux-Hoist.OverloadProtection.standard.parameter.hook.speedLimit	10.0 %	10.0 %	

Figure 5-25: Open popup

1. The parameters are shown by their Address and Description, depending on which columns you have chosen.
2. The selected back-up file and actual parameters show their values in their own column.

3. The columns “Diff. Relative” and “Diff. Absolute” will show if the differences between the file and actual parameters.
4. You can switch this slider to ON, to only see the parameters that are not the same.
5. You can select one or more parameters and then click on the button “Selected” to only restore those parameters from the file to the PLC.
6. Click on the button “All” to restore all parameters from the file to the PLC.

5.8.5 PARAMETER POPUPS

Another way to find parameters is from widget tile popups through the blue text link. The Parameter popup that will appear works the same as the Parameter page, but only the parameters related to that components widget tile are shown and the action menu is not available.

5.9 DOCUMENTATION PAGES

The documentation menu has pages to view documents like the user manual and the electrical schematic. Please check your user manual to see which documents are available on your equipment.

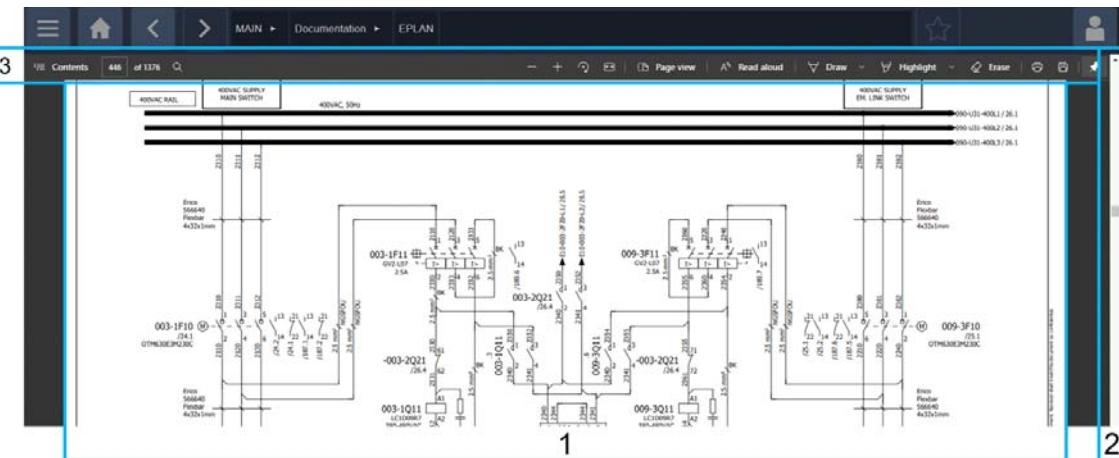


Figure 5-26: Documentation page

1. These pages are pdf files, opened in a browser specific pdf reader.
2. The application includes a scrollbar.
3. The application includes a tool bar with options to search, zoom, make notes, print, etc.

5.10 ALARM PAGES

The Alarm pages show all alarms. The alarms that are inactive and have been acknowledged are not shown here, but on the history page (see [Section 5.11: "History page \(version up to 0.9\)" on page 64](#)). The page comes in the form of a list (see [Section 4.1.11: "Lists" on page 35](#))

Event text				Status	Time active/inactive	Time ack.	Actions
Heave 1 Automatic Controller Entrapped Volume Control Requires Oper...	active ack.	2022-07-01 09:06:32.606	2022-07-01 09:24:55.667				
Motion Sequencer Aux Hoist Points Not Valid	INACTIVE!	2022-07-01 05:03:40.921					
Crane Overload Protection Overload	INACTIVE!	2022-06-30 15:16:54.516					
Crane Overload Protection Pre-Overload	INACTIVE!	2022-06-30 15:16:54.518					
Three Point Lift Radius Out Of Load Curve Range	ACTIVE!	2022-06-30 15:16:54.517					

5 6 7+8 9 10 11 12

Figure 5-27: Alarm page (version up to 9)

Select	Cat.	ID	Description	State	Active Time	Inactive Time	Ack. Time	Acknowledged	Enabled	Shelved
<input type="checkbox"/>	✖	284551895	Main Hoist Block Caught Sensor Error	Active Acknowledged	2022-06-01 14:25:01		2022-06-09 08:35:50	Acknowledged	Disable	OneShot Timed
<input type="checkbox"/>	⚠	1294408762	Crane Inclination Heel Angle Pre-High	Active Acknowledged	2022-06-01 14:25:01		2022-06-09 08:46:54	Acknowledged	Disable	OneShot Timed
<input type="checkbox"/>	✖	2731550956	Crane Setup Lift Type Invalid Selection	Active Unacknowledged	2022-06-01 14:25:01			Acknowledge	Disable	OneShot Timed
<input type="checkbox"/>	✖	1590588616	Version Indication Any Checksum Mismatch; Check PLC Comm	Active Acknowledged	2022-06-01 14:25:02		2022-06-09 08:46:58	Acknowledged	Disable	OneShot Timed
<input type="checkbox"/>	✖	1820355751	Main Hoist Overload Protection System Invalid Condition Type	Active Unacknowledged	2022-06-01 14:25:02			Acknowledge	Disable	OneShot Timed

3 4 5 6 7 8 9 10 11 12

Figure 5-28: Alarm page (version 10 and up)

1. The Alarm menu has 4 pages: Active, Shelved, Disabled and All.
2. The columns shown in this example are the most useful, but other choices can be made.
3. This column shows the alarm category: Warning, Error or Critical Alarm
4. This column shows the alarm identification number
5. This column shows the alarm descriptions. More detail can be found by clicking on the blue text line.
6. This column shows the alarm state: Active Acknowledged, Active Unacknowledged or Inactive Unacknowledged.
7. This column shows the time when the alarm became active.
8. This column shows the time when the alarm became inactive.
9. This column shows the time when the alarm was acknowledged.
10. This column has buttons to acknowledge the alarm in that list line. The button disappears when it is acknowledged. The buttons are not available unless logged in with Operator privileges or higher.
11. This column has buttons for disabling an alarm (see [Section 5.10.2: "Disabling" on page 62](#)). Log-in privileges may be required. See your operation manual for details.

12. This column has buttons for shelving an alarm (see [Section 5.10.1: "Shelving" on page 62](#)). Log-in privileges may be required. See your operation manual for details.
13. The Action menu is explained in [Section 5.10.3: "Actions" on page 62](#).

5.10.1 SHELVING

Shelving removes an alarm from the Active page and moves it to the Shelved page in the Alarm menu.

- When you click on the “One shot shelve” button on the active page, the alarm is removed as long as it remains active, but it returns when it triggers again or when you click on the button “Unshelve” on the Shelved page.
- When you click on the "Timed" button on the Active page, you get a popup where you need to enter a duration. The alarm is removed, but it returns when the duration is passed and it is still active or when you click on the button "Unshelve" on the Shelved page.

5.10.2 DISABLING

Disabling removes an alarm from the Active page and moves it to the Disabled page in the Alarm menu.

- When you click on the "Disable" button on the Active page, the alarm is removed until you click on the button "Enable" on the Disabled page.

5.10.3 ACTIONS

Some options in the actions menu for the Alarm page are only available when items from the list have been selected. There are no watch list options

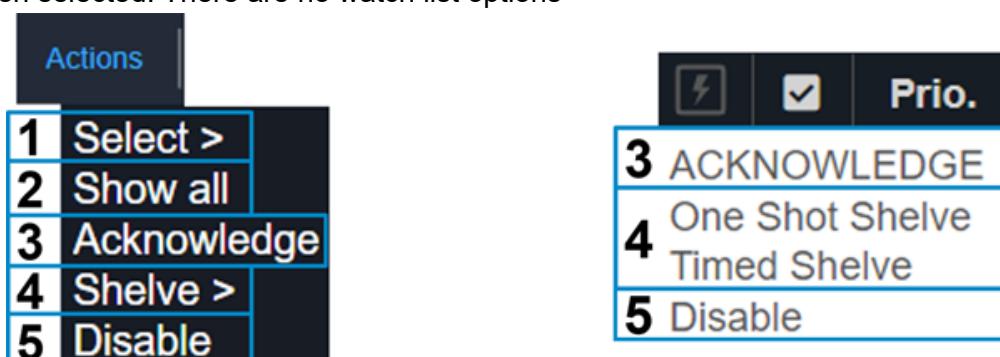


Figure 5-29: Alarm page actions (version 10 and up left, version up to 9 right)

Possible actions in the menu of the Alarm page are:

1. "Select >" has a sub menu where you can choose between "All" to tick all boxes in the Select column or "None" to remove all ticks from the boxes in the Select column.
2. Select "Show all" from the menu to remove all filters.
3. Select "Acknowledge" from the menu to acknowledge all selected alarms.

4. "Shelve >" has a sub menu where you can choose between "One Shot" or "Timed" to perform this action on all selected alarms.
5. Select "Disable" from the menu to perform this action on all selected alarms.

5.10.4 ALARM POPUPS

Another way to find alarms is from widget tile popups through the blue text hyperlink "See alarms". The alarm popup that will appear works the same as the alarm page, but only the alarms related to that components widget tile are shown

5.11 HISTORY PAGE (VERSION UP TO 0.9)

This section only applies for SCADA up to version 0.9. If your SCADA is of a later version, see [Section 5.12: "History page \(version 1.0 and up\)" on page 67.](#)

The History page shows the logs stored by the server. The page comes in the form of a list, but it does not have an action menu.



The screenshot shows a table-based history log. The columns are labeled: Prio., Time, Address, Event text, Value, State, and User. Two rows of data are visible:

Prio.	Time	Address	Event text	Value	State	User
51	2021-05-11 15:30:48	WebAccessCallScriptEventType	BrowseNodes			Supervisor
54	2021-05-11 15:30:46	WebAccessCallScriptEventType	HesStdReadNode			Supervisor

At the bottom, there is a message: Received 46482 of 46482 items. On the right side, there are buttons for 'DONE' and a page number '5'. The entire interface is framed by a blue border with numbered callouts:

- 1: Top left corner of the header area.
- 2: Top center of the header area.
- 3: Top right corner of the header area.
- 4: Top right corner of the header area.
- 5: Bottom right corner of the page.
- 6: Bottom left corner of the page.
- 7: Top right corner of the header area.

Figure 5-30: History page

1. Time filter
2. Type filter. You can choose between Value, Event, Alarm or all three. Do not choose Aggregate, as it does not work.
3. Click on the button “Advanced” to reveal more filters.
4. Click on “Apply filter” after setting or changing a filter to activate it.
5. It may take some time for the log to be loaded, when a large time period is selected. This area will show “DONE” when it is ready.
6. These buttons can be used to scroll through the pages or enter a page number to go there directly.
7. The most useful columns are depending on the filtered type. They will be explained in the chapters about each type (see step 2).

5.11.1 TIME/DATE FILTERS

When you arrive on this page, the time/date filter is already set. At “To” it is set to now and at “From” it is set at 1 minute before now. Click on the value field of “To” or “From”, to change that time/date filter.

5.11.2 VALUE

Filter on the type Value to see into what the value changed on Program values and when. These can be input, output, parameter or calculated values.

Time	Address	Type	Value
2020-10-29 18:16:46	Crane.BoomHoist.IO.PivotGrease.pumpOn.output.value	V	false
2020-10-29 18:16:46	Crane.BoomHoist.IO.ParkMode.request.output.value	V	false
2020-10-29 18:16:46	Crane.BoomHoist.IO.PivotGrease.reservoirEmpty.output.value	V	true
2020-10-29 18:16:46	Crane.AuxHoist.Tackle.IO.loadB.output.value	V	0
2020-10-29 18:16:46	Crane.MainHoist.Tackle2.IO.loadB.output.value	V	50.000
2020-10-29 18:16:46	Crane.Slewing.IO.pinionGreaseSystem.2.pumpOnCommand.output	V	false

Figure 5-31: History page filtered for value

1. The columns shown in this example are the most useful when filtered for value, but other choices can be made.
2. The value names are shown in the “Address” column. They are not easy to read as they are all called “output value”.
3. The “Type” column shows all as “V”, as we have filtered for Value.
4. The “Value” column shows a number for analogue values, “true” for digital ON and “false” for digital OFF.

5.11.3 EVENT

Filter on the type Event to see which action done by the user in SCADA and when. These can be log-in change, page selection, SCADA button pushed, value entered or filter applied.

Time	Address	Type	Event text	Value	User
2020-11-04 11:38:54	WebAccessCallScriptEventType	E	BrowseNodes		Huisman
2020-11-04 11:33:36	Crane.EnvironmentCondition.Parameter.windSpeedHighLevel.value	E	Server/WebAccess/httpWrite	3.000	Huisman
2020-11-04 11:33:19	WebAccessCallScriptEventType	E	HcsStdGetParameterBackupNodeAddressList		Huisman
2020-11-04 10:46:27	Crane.MainHoist.Tackle1.IO.loadA.override.enabled	E	Server/WebAccess/httpWrite	false	Huisman
2020-11-04 10:46:20	Crane.MainHoist.IO.blockCatcherModeRequest.override.value	E	Server/WebAccess/httpWrite	true	Huisman

Figure 5-32: History page filtered for event

1. The columns shown in this example are the most useful when filtered for event, but other choices can be made.
2. The event locations are shown in the “Address” column.
3. The “Type” column shows all as “E”, as we have filtered for Event.
4. The event actions are shown in the “Event text” column.
5. The “Value” column shows a number for analogue values, “true” for digital ON, “false” for digital OFF and blank for actions without a value.
6. The “User” column shows which user was logged-in when the action was done.

5.11.4 ALARMS

Filter on the type Alarm to see what has changed on an alarm and when. These can be alarm states, acknowledgement, shelving or disabling.

History list		From:	11.05.2021 11:34:58	To:	12.05.2021 11:35:58	Type:	Alarm	<input checked="" type="checkbox"/>	Advanced filters	Apply filter	Reset filter	<input type="checkbox"/> Live
		Time active	Time inactive	Time ack.	Type	Event text						≡ 1
<input type="checkbox"/>					A	Boom Hoist Boom Position Low/Pre-Low Sensors Inconsistent	ACTIVE!					
<input type="checkbox"/>		2021-05-12 07:30:47.8...			A	Boom Hoist Boom Position Low/Pre-Low Sensors Inconsistent	ACTIVE!					Supervisor
<input type="checkbox"/>		2021-05-12 07:30:47.8...			A	Boom Hoist Boom Position Low/Pre-Low Sensors Inconsistent	ACTIVE!					Supervisor
<input type="checkbox"/>		2021-05-12 07:30:47.8...			A	Boom Hoist Gearcam Switch Position Lowest Operational Switch Activated Sensor Error	INACTIVE!					
<input type="checkbox"/>		2021-05-12 07:30:34.8...			A	Boom Hoist Gearcam Switch Position Lowest Operational Switch Activated Sensor Error	ACTIVE!					
<input type="checkbox"/>		2021-05-12 07:30:24.7...	2021-05-12 07:30:34.843	2021-05-12 07:30:25...	A	Boom Hoist Boom Position Low/Pre-Low Sensors Inconsistent	inactiv ack.					test
<input type="checkbox"/>		2021-05-12 03:17:23.8...	2021-05-12 04:20:23.652		A	Tugger 1 Drive System Control Location VFD Not Controlled by PLC or Emergency Box	INACTIVE!					
		Received 537 of 537 items										DONE ✓
		2	3	4	5	6						

Figure 5-33: History page filtered for alarm

1. The columns shown in this example are the most useful when filtered for alarm, but other choices can be made.
2. The times columns shown when an alarm became active, inactive, acknowledged.
3. The “Type” column shows all as “A”, as we have filtered for Alarm.
4. The “Event text” column shows the description of the alarm.
5. The “State” column shows the state the alarm became at that time. This can be active, active and acknowledged, inactive or inactive and acknowledged.
6. The “User” column shows which user was logged-in when the alarm changed its status.

5.12 HISTORY PAGE (VERSION 1.0 AND UP)

This section only applies for SCADA version 1.0 an up. If your SCADA is of an earlier version, see [Section 5.11: "History page \(version up to 0.9\)" on page 64](#).

The History page shows the logs stored by the server. The page comes in the form of a list (see [Section 4.1.11: "Lists" on page 35](#)), but it does not have an action menu.

The screenshot shows a SCADA application window with the following components labeled:

- 1**: Top navigation bar with icons for Home, Back, Forward, MAIN, and History. Below it is a date range filter "From/To" set to "2022-12-26 09:57:39 - 2022-12-29 09:39:54".
- 2**: A dropdown menu labeled "Type" currently set to "All".
- 3**: A table header row with columns: Select, Timestamp, Event, Source, and Type.
- 4**: The first column of the table, containing checkmarks for each log entry.
- 5**: The second column, showing timestamps for each event.
- 6**: The third column, listing the events themselves.
- 7**: The fourth and fifth columns, showing the source and type of each event respectively.

Select	Timestamp	Event	Source	Type
<input type="checkbox"/>	2022-12-28 09:01:35	User Logout	Midas	Authentication
<input type="checkbox"/>	2022-12-28 09:01:35	EStop Pushbutton Deck Level SB Pressed Disabled	Midas	Alarm State
<input type="checkbox"/>	2022-12-28 09:01:35	EStop Pushbutton Chair Pressed Disabled	Midas	Alarm State
<input type="checkbox"/>	2022-12-28 08:59:31	User Login	Midas	Authentication
<input type="checkbox"/>	2022-12-28 08:59:24	User Logout	Supervisor	Authentication
<input type="checkbox"/>	2022-12-28 08:49:32	EStop Pushbutton Chair Pressed Active Acknowledged One Shot Unshelved	Supervisor	Alarm State

Figure 5-34: History page (version 1.0 an up)

1. Time/Date filter. Click on the value field of "From/To" to change the time/date filter (see [Section 4.1.10: "Time/Date field" on page 35](#)).
It may take some time for the log to be loaded when a large period is selected.
2. Type filter. You can select Authentication, User Command, Alarm state, Notification or any combination of these types. More detail at point 7.
3. The columns shown in this example are the most useful, but other choices can be made.
4. The "Timestamp" column shows the date and time when the event happened.
5. The "Event" column shows what has changed and into what it has changed.
6. The "Source" column shows the user name of the logged in person when the change was made.
7. The "Type" column shows the type of event. How to filter on type is described at point 2.
 - The event type Authentication shows who logged in or out and when.
 - The event type User Command shows which action was done by the user in SCADA and when. These can be setting made, value changed or calibration done.
 - The event type Alarm State shows what has changed on an alarm and when. These can be activation, inactivation, acknowledgement, shelving or disabling.
 - The event type Notification shows which notifications were shown and when. These can be invalid commands, blocking conditions or messages.

5.13 TREND PAGE (VERSION UP TO 0.9)

This section only applies for SCADA up to version 0.9. If your SCADA is of a later version, please see [Section 5.14: "Trend Pages \(version 1.0 and up\)" on page 72](#)

The Trend page is used to display analogue values over time in a graph format. It shows both live and historic data.

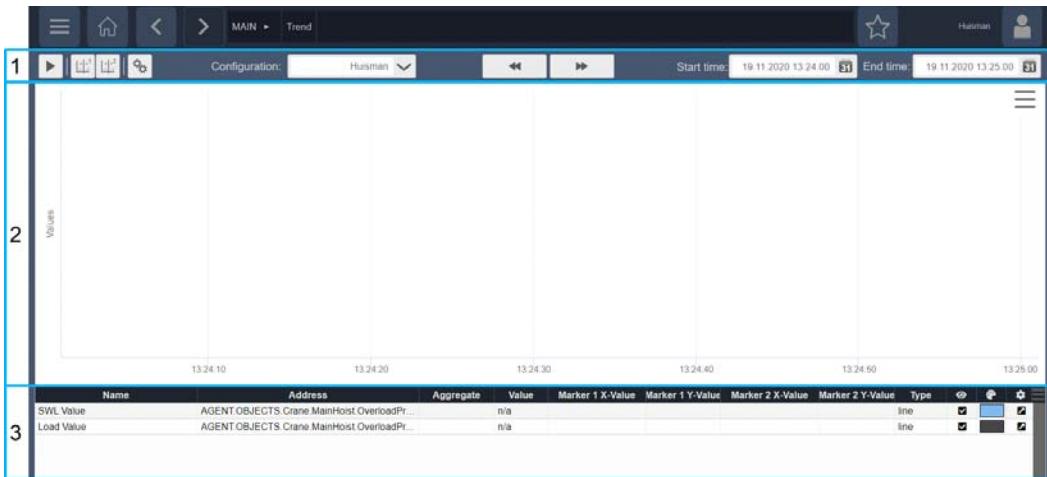


Figure 5-35: Trend page

1. Tool bar see [Section 5.13.1: "Tool bar" on page 68](#)
2. Graph area see [Section 5.13.3: "Graph Area" on page 70](#)
3. Value legend see [Section 5.13.4: "Value legend" on page 70](#)

5.13.1 TOOL BAR



Figure 5-36: Trend page tool bar

1. Start/Stop button. When you arrive on this page, the graph will be live (moving time line) and this button will be the stop button.
 - The graph will stop moving on the time-line when the stop button is activated. The stop button will then become the start button.
 - The graph will become live (moving time line) and the end time will be now, when the start button is pressed. The start button will then become the stop button.
2. Marker buttons. With these buttons you can add or remove marker 1 and/or 2 from the graph.
3. Configuration button. With this button you will open the configuration popup. see [Section 5.13.2: "Configuration popup" on page 69](#)
4. Configuration selection field. Make a selection here to activate a pre-saved configuration set-up or create a new set-up.

5. Back/Forwards buttons. With these buttons you can move the graph back or forwards on the time line. The graph will stop moving on the time-line when one of these buttons is activated.
6. Start/End time fields: Click on the value field of “End time” (right side of the graph) or “Start time” (left side of the graph), to change that time and/or date (see [Section 4.1.10: "Time/Date field" on page 35](#)). The graph will stop moving on the time-line when one of these fields is changed.

5.13.2 CONFIGURATION POPUP

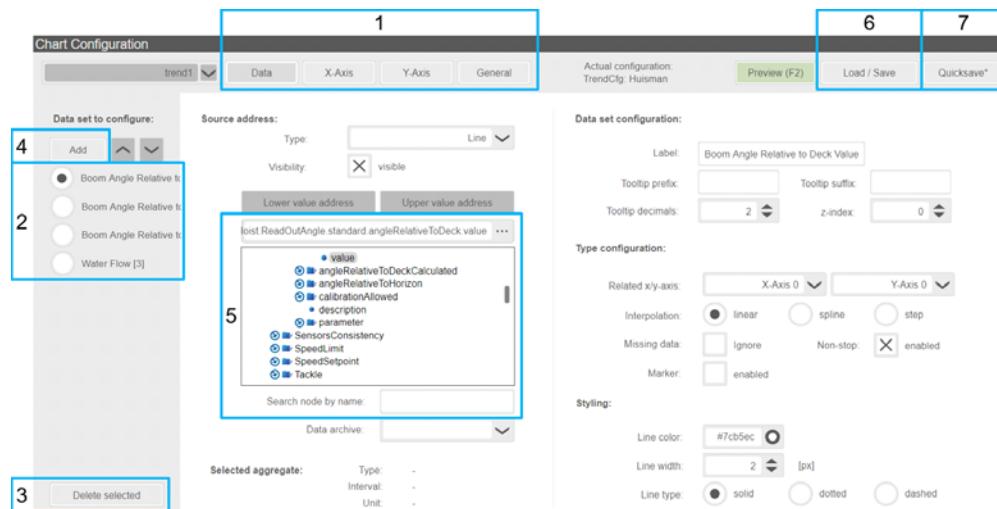


Figure 5-37: Configuration popup

1. The configuration can be made for Data (shown), X-axis, Y axis and General. Click on any of these buttons to show the settings for that subject. At the next points only the Data selection is explained.
2. Make a selection from this list for the data set (value name) that needs to be configured.
3. Click this button to remove the selected data set from the graph.
4. Click this button to add new (empty) data set to the list.
5. With these fields you can change the selected data set or make a selection for the new (empty) data set that was created at point 4.
6. Click this button to go to the page where you can name and save your current configuration so it can be opened again later by using the selection field explained in [Section 5.13.1: "Tool bar" on page 68](#) at point 4.
7. Click this button to save your current configuration under the currently selected name so it can be opened again later.

5.13.3 GRAPH AREA

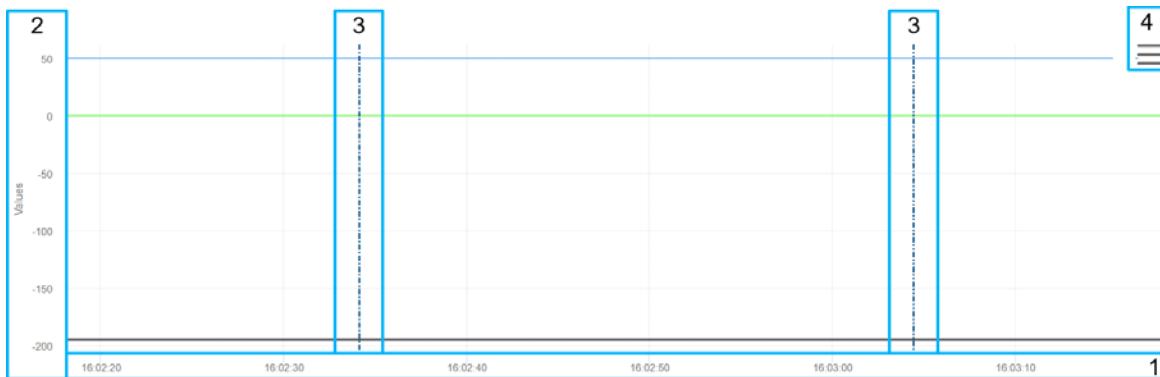


Figure 5-38: Trend page value legend

1. Timeline (X-axis)
2. Values (Y-axis)
3. Markers
4. Click on this menu button to open a menu to save or print the data from the graph.

5.13.4 VALUE LEGEND

Name	Value	Marker 1 X-Value	Marker 1 Y-Value	Marker 2 X-Value	Marker 2 Y-Value	Marker Y-Delta	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1
SWL Value	50	2038-01-01 01:00:00	50	2038-01-01 01:00:00	50	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2
Load Value	-195	2038-01-01 01:00:00	-195	2038-01-01 01:00:00	-195	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3
Setpoint Value	0	2038-01-01 01:00:00	0	2038-01-01 01:00:00	0	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4

Figure 5-39: Trend page value legend

1. Click on this menu button to select or deselect the columns of the value legend.
2. Select the columns Name and Value. The value stated here is the value now.
3. When marker 1 is active, you can see the time (X-value) and the value (Y-value) at the time of this marker in these columns.
4. When marker 2 is active, you can see the time (X-value) and the value (Y-value) at the time of this marker in these columns.
5. Column Marker Y-delta shows the difference in value between the markers.
6. Click on a check box here to hide or show the line shown on the graph.
7. Click on a colour box to change the line colour.
8. Click on a symbol here to open the configuration popup. This is the same as explained in [Section 5.13.2: "Configuration popup" on page 69](#)

5.13.5 ADD VALUES TO TREND

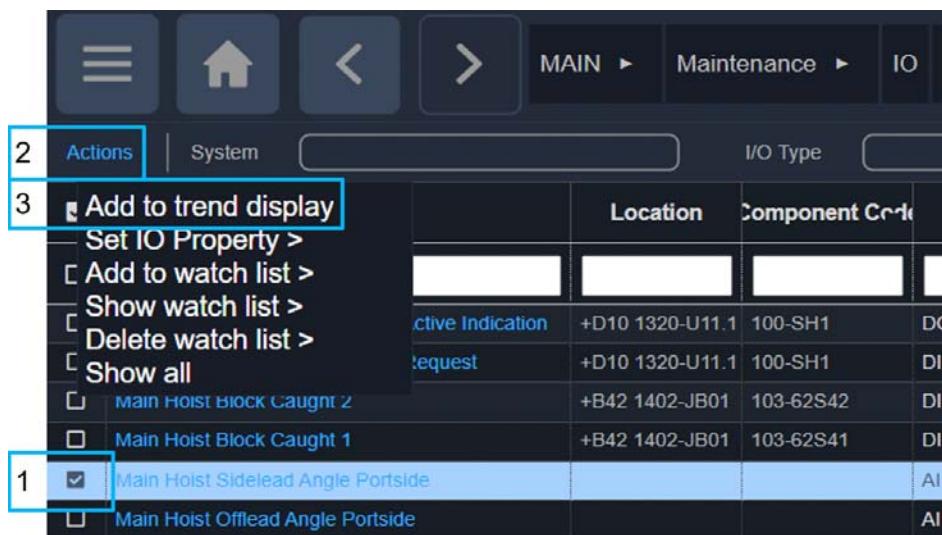


Figure 5-40: IO page add to trend

If you want to trend an Input or Output, you can go to the page Main>Maintenance>IO.

1. Select your Input or Output
2. Click Action to open this menu
3. Select Add to trend display. The Input or Output will now be shown in the trend of your chosen configuration set-up.

Some widget tile popups will have a blue text link to add variables to a trend.

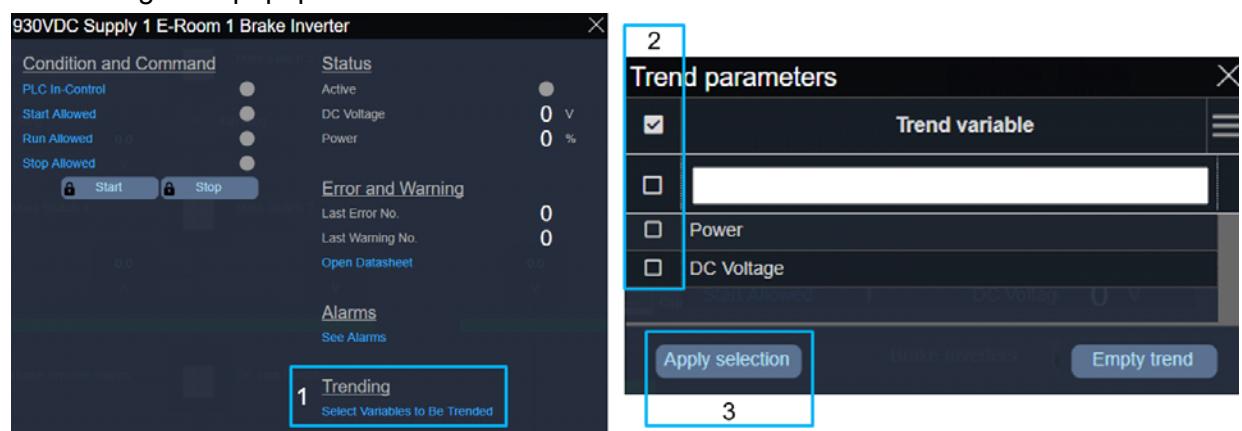


Figure 5-41: Popup add to trend

1. Click on the blue text link “Select variables to be trended”.
2. Select a variable from the list with the tick boxes in the next popup.
3. Then click “Apply selection” to place this variable on the trend page of your chosen configuration set-up.

5.14 TREND PAGES (VERSION 1.0 AND UP)

This section only applies for SCADA version 1.0 and up. If your SCADA is of an earlier version, please see [Section 5.13: "Trend page \(version up to 0.9\)" on page 68.](#)

The Trend menu has pages for History and Live. Both pages show values in a graph format.

5.14.1 HISTORY

The Trend History page shows values in a graph within a time period. The values to be shown can be selected by the user from a list of the values that were stored by the SCADA server.

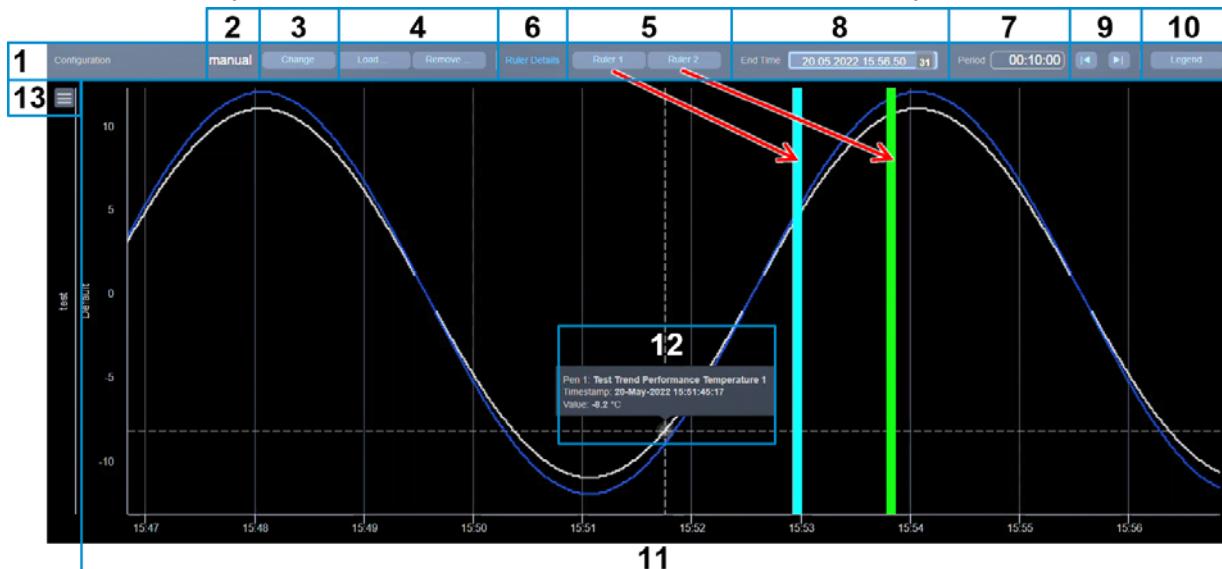


Figure 5-42: Trend History page

1. Configuration bar: The components on the bar are explained below
2. Trend Configuration name
3. Trend Configuration Change button (see [Section 5.14.1.1: "Trend Configuration Change" on page 73](#))
4. Trend Configuration Load and Remove buttons (see [Section 5.14.1.2: "Trend Configuration Load and Remove" on page 74](#))
5. Rulers 1+2 buttons: Clicking these will add or remove the rulers from the graph. The ruler positions can be changed by dragging them.
6. Rulers details link (see [Section 5.14.1.3: "Rulers details" on page 74](#))
7. Period length of the X-axis of the graph. Clicking on the period box will open a set period time set popup.
8. Indication and setting option for the time on the right side of the X-axis of the graph. Clicking on the calendar symbol will open a set date and time selection popup.
9. Buttons to move through time on the graph.
10. Clicking on the "Legend" button will open a small legend showing each pen's description, colour and unit.
11. Graph area

12. Mouse indicator. When moving the mouse over a part of a line on the graph, crosshairs and a detail value popup will be shown.
13. Download button. Click this button to save a CSV file of the currently displayed graph

5.14.1.1 Trend Configuration Change

The Trend Configuration Change popup comes in the form of 2 lists with additional buttons.

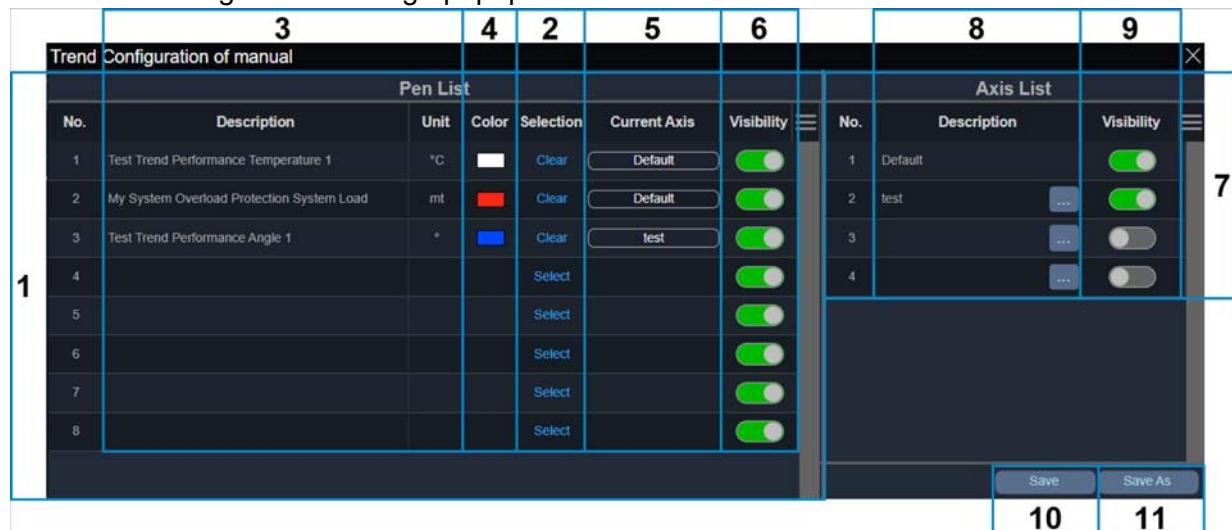


Figure 5-43: Trend Configuration Change pop-up

1. Pen list part of the pop-up.
2. In this column, Click "Select" to open a list popup where you can select a value for this pen to be shown in the graph or click "Clear" to remove a previously selected value.
3. This column shows the description of the selected pen values.
4. Click on the colour to change this pen to the desired colour.
5. Click on the selection box in this column to select the Y-axis scaling for this pen. The scaling will be adjusted automatically between the highest and lowest value of all pens that use the same scale. To prevent some values from being unreadable, put values that differ a lot in separate Y-axis scaling.
6. Click the slider in this column to make this pen visible or invisible on the graph.
7. Axis list part of the pop-up.
8. This column shows the description of the available Y-axis scales. The Default scale is always there. Three more scales can be added, changed or deleted through a popup by clicking on the button with the three dots (see point 5).
9. Click the slider in this column to make this scale visible or invisible on the graph
10. Click on the "Save" button to save the changes to this current configuration. Closing this popup without saving would ignore any changes.
11. Click on the "Save As" button to save the changes to a new configuration. A keyboard popup will come where the new configuration name can be made.

5.14.1.2 Trend Configuration Load and Remove

The Trend Configuration Load and Remove buttons will open the popup as explained below

Name	Assigned Pen(s)	Load Config.
empty	1	<button>Load</button>
Default	2	<button>Load</button>
TEST PERFORMANCE	5	<button>Load</button>
ppp	8	<button>Load</button>
manual	3	<button>Load</button>

Figure 5-44: Trend Configuration Load popup

1. These columns show the description and assigned pens of the available trend configurations.
2. In the Load popup in this column you can click on the “Load” button to load that configuration to the graph. In the Remove popup in this column you can click on the “Remove” button to remove that configuration from this list of available configurations. The Default and the active configuration can not be removed

5.14.1.3 Rulers details

The Trend rulers details popup shows the details of each pen at the times of each ruler and shows the value difference between the 2 rulers times for each pen.

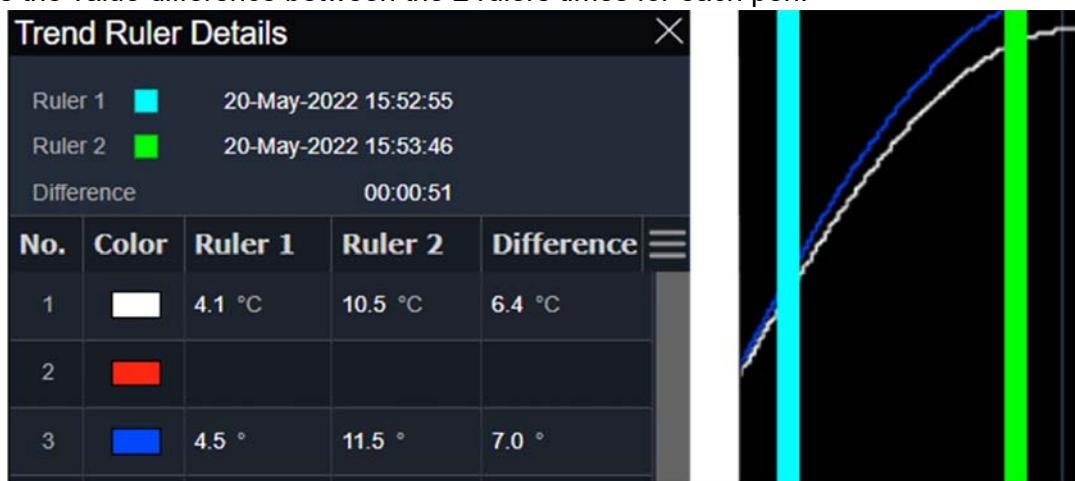


Figure 5-45: Configuration popup

5.14.2 LIVE

The Trend Live page shows values in a graph as they are now. The time line on the X-axis will be moving to keep adding new data as it comes in. The data that is shown, will be lost as soon as you leave this page or make a change to the configuration.

The values to be shown can be selected by the user from a list of values like on the History page, but this list also includes values that are not stored by the SCADA server.

The layout and setup of the Live page is similar to that of the History page and only the differences are explained below.

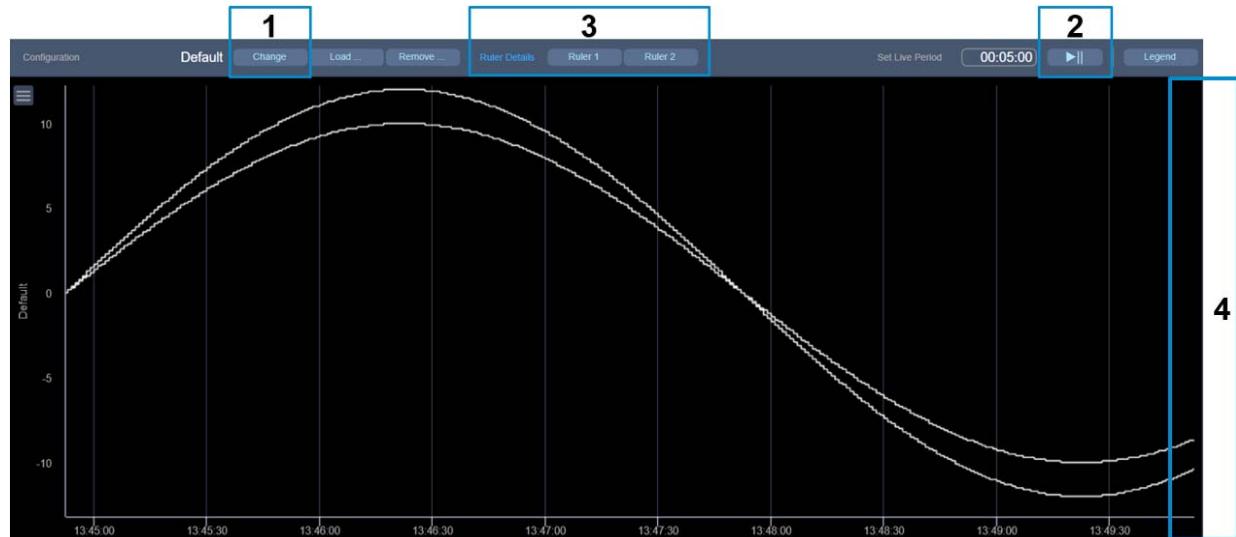


Figure 5-46: Trend page value legend

1. When selecting values for the configuration, a filter can be added to search for all values, only those that are logged (historized) or only those that are not logged.
2. Click this button to pause the moving of the time line. Clicking it again will make the time-line start again and jump to the now.
3. Adding any of the rulers is only possible, when the time-line is paused.
4. When moving, the time stamp on the right is the current time (live).

5.14.3 ADD VALUES TO TREND

5.14.3.1 Widget tile

For an alternative way to trend a value that is specific to a component, go to the page that holds a widget tile of this component. These are most commonly found on the equipment, power and network pages. Some widget tile popups will have a blue text link "Select Variables to be Trended".

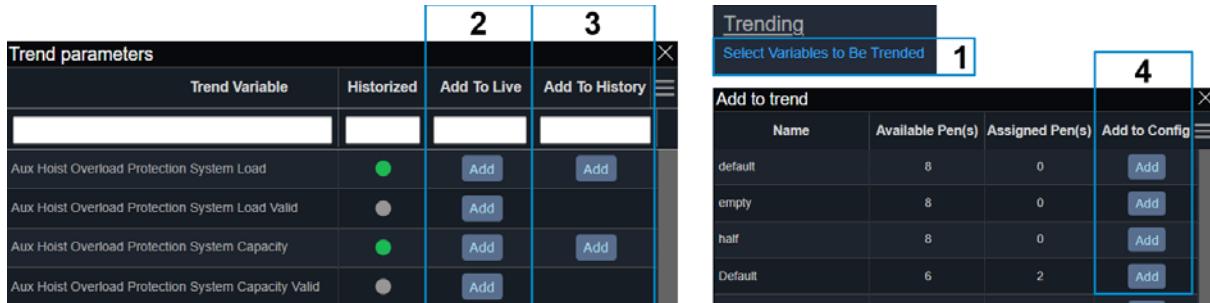


Figure 5-47: Popup Variables to be Trended

1. In the widget tile popup, click on the blue text link “Select Variables to be Trended”.
2. In the next popup, to add a value to a Live trend, click the “Add” button in this column behind the preferred value.
3. Or to add a value to a History trend, click the “Add” button in this column behind the preferred value. This is only possible for Historized values.
4. For both choices, in the next popup, click the “Add” button behind the preferred configuration. The value will now be shown in the trend of your chosen type and configuration.

5.14.3.2 IO

For an alternative way to trend an Input or Output, go to the page Main>Maintenance>IO. Clicking on the blue text link can bring to a popup that has a blue text link “Select Variables to be Trended”. Follow the instruction in [Section 5.14.3.1: "Widget tile" on page 76](#)

5.15 UTILITIES PAGES

The menu Utilities can contain multiple pages. Please check your user manual for the other pages in the Utilities menu on your equipment. The menu Utilities always contains the page “User Management” and can contain the page “Icons”.

5.15.1 USER MANAGEMENT

This page comes in the form of a list.



Figure 5-48: User management page

1. All Users are shown in the column “User name”.
2. The other columns show the selected user groups for each user as coloured dots. Grey for no and green for yes. The dots become sliders to be able to change them when logged in with Supervisor privileges. The Huisman user cannot be changed or removed and the Huisman user group cannot be selected.
3. With this button, you can remove a selected user.
4. Click on this button to get a popup to add a user.
5. Fill out the detail for the new user in all fields and click on “Apply”.to create the new user
6. In the field “Group”, you can make a selection of the user groups.

5.15.2 Icons

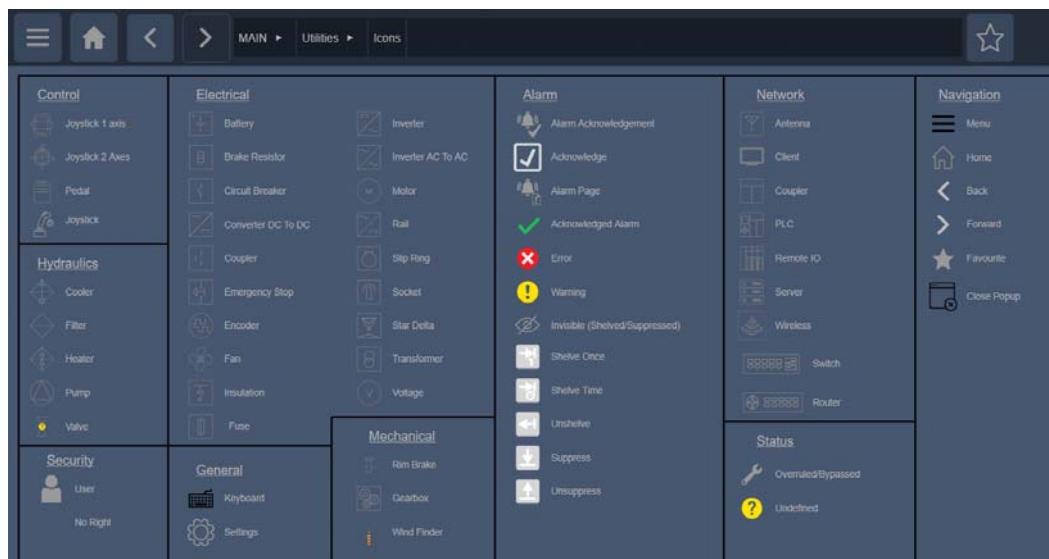


Figure 5-49: Icons page

The Icons page is a legend explaining all icons used within SCADA.

6 INTERLOCKS

Below you see an example to explain interlocks and blocking conditions.

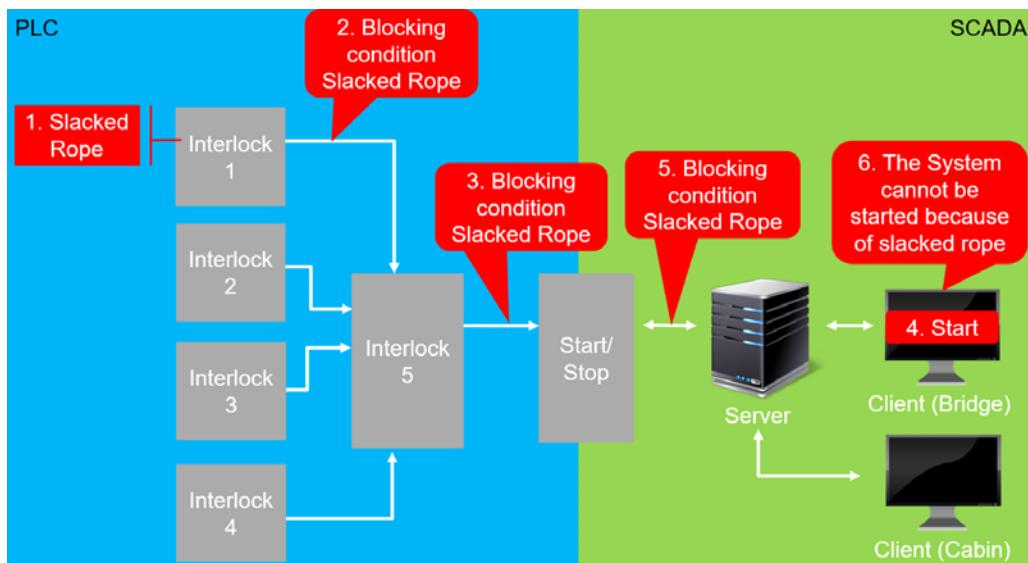


Figure 6-1: Interlock example

1. Interlock 1 is a slack rope situation.
2. When it happens a blocking condition, (Slacked Rope) is send to Interlock 5.
3. Interlock 5 becomes a blocking condition in the Start/Stop logic, but with the original situation.
4. When a request is made in SCADA to start the operation.
5. The PLC reports the original blocking condition.
6. This is translated into the corresponding invalid command to the operator.

To summarise:

- An interlock is a detected situation.
- This is called a Blocking condition when it will not allow a certain action to be performed.
- The operator receives an Invalid command message when attempting to perform this action.

6.1 BLOCKING CONDITIONS

There are multiple ways to get to the detail popup of blocking conditions, depending on the blocked function.

- Click on the Invalid Command line when it appears and if the text is in blue.
- Click on the blue “Speed” text in the Operation page and click on one of the Applied Speed limits in the next popup.
- Click on the Speed Set-point tile in the Equipment page. Click on one of the Applied Speed limits in the next popup.
- Click on a blue text line in a popup that includes the word “allowed” or “limit” or has one of these words in the section header.

6.1.1 DETAIL POPUP

This popup comes in the form of a list.

1	2	3	5	6
Main Hoist Speed Setpoint Speed Limit Hoisting	Description	Blocking	Limited to	Bypassed
<input checked="" type="checkbox"/> Condition Group				
<input type="checkbox"/>				
<input type="checkbox"/> Main Hoist Tackle 1 Motor Temperature Control Speed Limit Temperature Level	Pre-High	●	∞ %	<input type="checkbox"/>
<input type="checkbox"/> Main Hoist Tackle 1 Motor Temperature Control Speed Limit Temperature Level	High	●	∞ %	<input type="checkbox"/>
<input type="checkbox"/> Main Hoist Tackle 1 Motor Temperature Control Speed Limit Hoisting/Lowering	Temperature Level Parameter Inconsistency	●	∞ %	<input type="checkbox"/>
<input type="checkbox"/> Main Hoist Tackle 1 Block Position Speed Limit Hoisting	Block Position High	●	0.0 %	<input type="checkbox"/>
<input type="checkbox"/> Main Hoist Tackle 1 Block Position Speed Limit Hoisting	Block Position Pre-High	●	10.0 %	<input type="checkbox"/>
<input type="checkbox"/> Main Hoist Tackle 2 Operational Speed Limit Hoisting/Lowering	System Not Running	●	0.0 %	<input type="checkbox"/>
<input type="checkbox"/> Main Hoist Tackle 2 Operational Speed Limit Hoisting/Lowering	Emergency Stop Active	●	0.0 %	<input type="checkbox"/>
<input type="checkbox"/> Main Hoist Tackle 2 Overspeed Protection (DISPS) Speed Limit Hoisting	Speed Curve	●	100.0 %	<input type="checkbox"/>
<input type="checkbox"/> Main Hoist Tackle 2 Winch Hoisting Limit	VFD Speed Limit	●	0.0 %	<input type="checkbox"/>
<input type="checkbox"/> Main Hoist Tackle 2 Hydraulic Brake Power Supply Speed Limit Hoisting/Lowering	Oil Level Too Low	●	0.0 %	<input type="checkbox"/>
<input type="checkbox"/> Main Hoist Tackle 2 Hydraulic Brake Power Supply Speed Limit Hoisting/Lowering	Pressure Switches Not OK	●	0.0 %	<input type="checkbox"/>

This Station In-Control 0.0 / 155.0 0.0 / 95.0 0.0 / 125.0 0.0 / 125.0 Show Only Blocking

4

Figure 6-2: Detail blocking condition

1. The column “Condition group” contains the first part of the blocking condition name. A smaller list with only items from this group will be shown in a new popup, when you click on the blue text line.
2. The column “Description” contains the second part of the blocking condition name. A detail popup of the device that creates this condition will come, when you click on the blue text line.
3. This column shows a blocking condition with a red dot. Grey dots are not blocking now.
4. Click on this slider to remove the non-blocking conditions from the list.
5. The column “Limited to” shows the value of the limit. The condition is only blocking when the limit is 0. There are no values here in a detailed popup from an “Allowed” function.

6. The column "Bypassed" shows a by-pass to this condition as a green dot or a grey dot when it is not bypassed. The dots become sliders, when you are logged in with Supervisor privileges and this bypass is possible.

6.1.2 BYPASS

Bypasses should only be made when operation needs to continue and making this bypass does not create a dangerous situation. Bypassing an interlock is always making it allowed.

Bypassing a speed limit will set the speed limit to a bypassed speed limit value defined in the PLC. In some components, it is possible to change this from the parameter.

A bypass is different from an overrule, as it only influences a single condition and not an input or output.

6.1.3 FIND BYPASSES

You will get a list popup of all overruled and bypassed items, when you click on the button with the wrench icon in the right bottom corner of the bottom row.



Figure 6-3: Overruled and by-passed items

1. Overruled and by-passed items list popup
2. Click on the blue text line of an item to open the popup that will show the list of conditions belonging to this group.
3. Conditions popup.
4. In this example, you see the only one condition is bypassed. The others were not blocking, as their limit shows infinite.
5. You can use the sliders to make or remove a bypass here.

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