DigiVis 500 Operations

Operators Manual

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DigiVis 500 Operations

Operators Manual
Version 1.0 SP1

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TRADEMARKS

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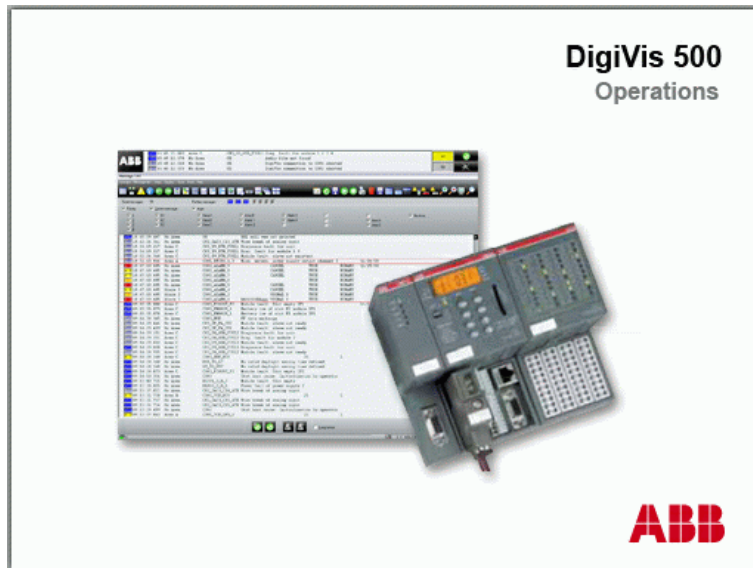
Contents

A 1   Visual Orientation Hints

To grant direct access to information, we have used different types of scripts and symbols.

Script	Meaning
Italics	Representation for (selectable) menu items or parameters.
SMALL CAPITALS	Inputs to be made via the keyboard, also via virtual keys.
boldface	Highlights important information, also as an orientation hint.

Symbols	Meaning
	Selection with mouse.
	The various instruction steps are separated by arrows.
	Example: → *Display* → *Logfile list* →
	In this example, the menu item "Display" is to be selected followed by the menu item "Logfile list".
	Information on operation with the keyboard, inasmuch as it differs from the Windows Standard.
	Example: Select log file → ALT → D → L → ... .
	Selected the module via keyboard, the keys ALT, D and L must be pressed successively.
	If two keys are to be pressed simultaneously:
	... → SHIFT + INSERT → ... .
	Hints

⚠

Special hints, must be observed!

Preconditions   Preconditions which must be fulfilled to implement commands or for
                         satisfactory results.

A 2   General Hints for Operating DigiVis 500 Operations

Operation of DigiVis 500 Operations is based on the Windows Standard. Therefore knowledge of
general operation under Windows is strongly recommended, see Windows Manual.

The "typical Windows operation" will therefore not be dealt with in detail when describing the
various operations.

B 1   Installing DigiVis 500 Operations

For information on how to install DigiVis 500 Operations please refer to the **Getting Started**
manual.

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C   Operating Philosophy

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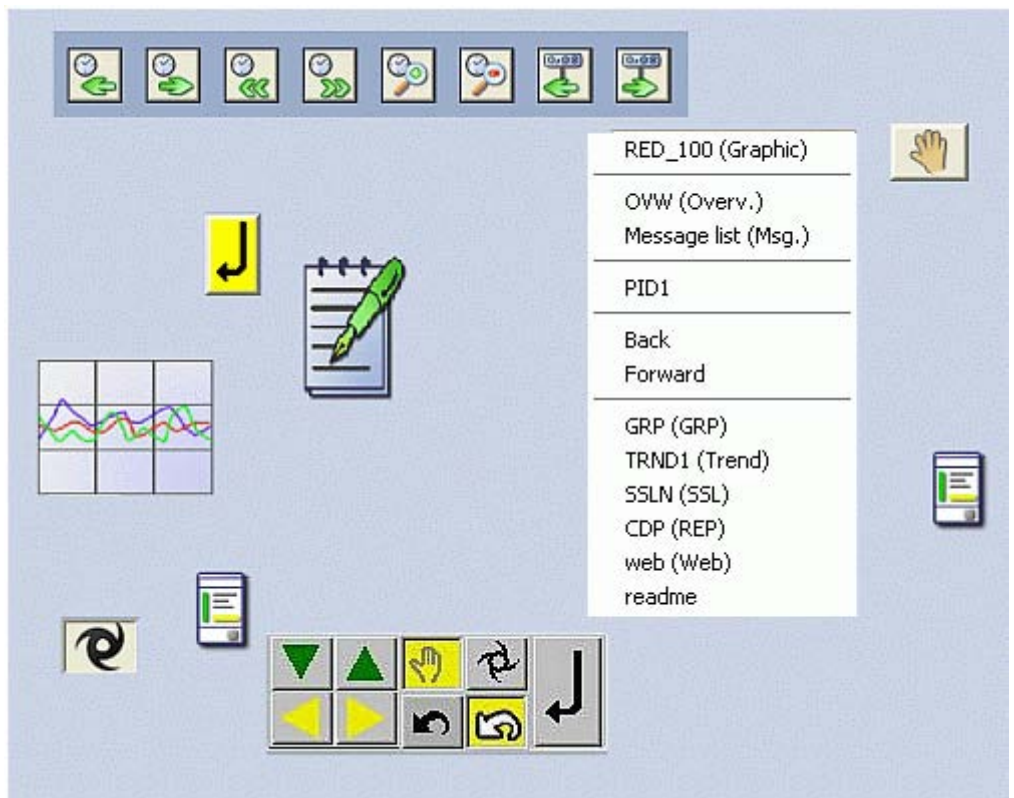
C 1   What is DigiVis 500 Operations?

The **software running on the operator station PC** in the DigiVis 500 system is known as **DigiVis 500 Operations**. It offers a user-friendly graphical user interface in accordance with the MS-Windows standard. In the DigiVis 500 system up to 10 operator stations can be connected per OPC server for process operation and observation.

Among other things, DigiVis 500 Operations offers the following features:

- Standard displays such as overview display, group display, faceplate, trend display and WEB display
- Customized graphic displays,
- Customized faceplates
- Simple process operation using the mouse or keyboard,
- Quick and direct access to tags for operation,
- Message management,
- Trend displaying and trend archiving,
- Logging,
- System diagnostics in the Information display.
- Reports

C 2   Using DigiVis 500 Operations to Operate the Process

Under DigiVis 500 Operations the automated process can be operated either with **mouse** or **keyboard**. This ensures that in the unlikely event of either device failing the other can be used for all operator actions.

C 2.1   Mouse operation ⌐☐

Tag selection

A tag is selected by clicking the left mouse button in one of the following selected areas:

- Faceplate in a group display,
- Message in message line, message list,
- Dynamic object in a graphic display,
- Menu item *Display→Faceplates*,
- Trend in a trend display,

Faceplate

By **double-clicking the left mouse button** in one of these areas, the **faceplate** for the function is displayed and can be operated.

Moving the faceplate

A faceplate can be moved freely around the display area of the screen by clicking on the header.   See   also

Structure of the User Interface in DigiVis Page C-12

Executing actions in the graphic display

Depending on the configuration, by selecting a dynamic graphic object in a graphic display one of the following actions can be performed:

- Calling up a display

- Operating a process variable

- Acknowledging messages

The configured action is initiated by a **single click of the left mouse button**.

Default display

The **default display** allocated to the selected tag appears as the first menu item in the context menu of the corresponding faceplate and can be easily called up by **clicking the left mouse button**, due to its exposed position.

Context menu

You can call up the **context menu** at any time by right-clicking with the mouse. The context menu contains menu items for the most important operations and directly selectable displays, depending on the element on which the cursor is currently positioned. See also

Operation Using the Context Menu , Page C-15.

C 2.2   Keyboard operation

Tag selection

After   selection   of   the   appropriate   focus   a   tag   can   be   selected   in   the
display in different ways:

Use the TAB KEY to select

- a faceplate in a group display,
· a dynamic object in a graphic display.

Use the CURSOR KEYS ($\uparrow \rightarrow \downarrow \leftarrow$) to select

- a message in message list,
- an entry from a display list,
- a trend in a trend display,

☞ The **selected area** of a display is indicated by a **frame**.

Faceplate

By pressing ENTER after selecting the desired tag name the relevant faceplate appears,
enabling the function to be operated.

Moving a faceplate

A selected faceplate can be moved freely around the display area of the screen. You can move
it in the appropriate direction, either by one pixel using CTRL + CURSOR KEYS or by a 30x4 grid
units by pressing CTRL + SHIFT + CURSOR KEYS.

Default display

You can call up a default display by using the F11 function key, provided that this has been configured accordingly in DigiVis 500 Graphics Builder.

Display Explorer

The Display Explorer shows a tree view of the displays available on the operator station. You can select and call up the appropriate display as required. The Display Explorer is called up by selection of the corresponding display via the menu or by a combined keystroke involving the following function keys:

Combination of keys

Tag list	CTRL + F5
Graphic display	CTRL + F6
Group display	CTRL + F7
Trend display	CTRL + F8
Log file list (incl. Reports)	CTRL + F9

In the Display Explorer you can select a display or tag by either pressing the CURSOR KEYS or by typing the name or first characters and then confirming with ENTER .

Display selection

After having selected a tag you can directly call up the allocated displays by using the function keys F6...F9.

Focus

In DigiVis 500 Operations more than one window is visible on the screen at a time.

> Which of these **areas** is **active**, i.e. which one can be currently operated using the keyboard, is indicated by the **symbol on the left side of the status line**: the green area is active! In order to toggle between display areas, press the **ALT key together with a CURSOR KEY** ($\uparrow \rightarrow \downarrow \leftarrow$) for the faceplate display area.

Possible focus areas are the

- message line (top),
- display area (bottom left),
- faceplate (bottom right).

Function keys

The following function keys are used in DigiVis 500 Operations with non-display dependent actions after installation:

F1	Calls up help.
F12	Acknowledges the control room horn, same function as HORN button in the message line.
SHIFT + F10	Calls up the context menu. (See Operation Using the Context Menu , Page C-15.)

C 3   Structure of the User Interface in DigiVis 500 Operations
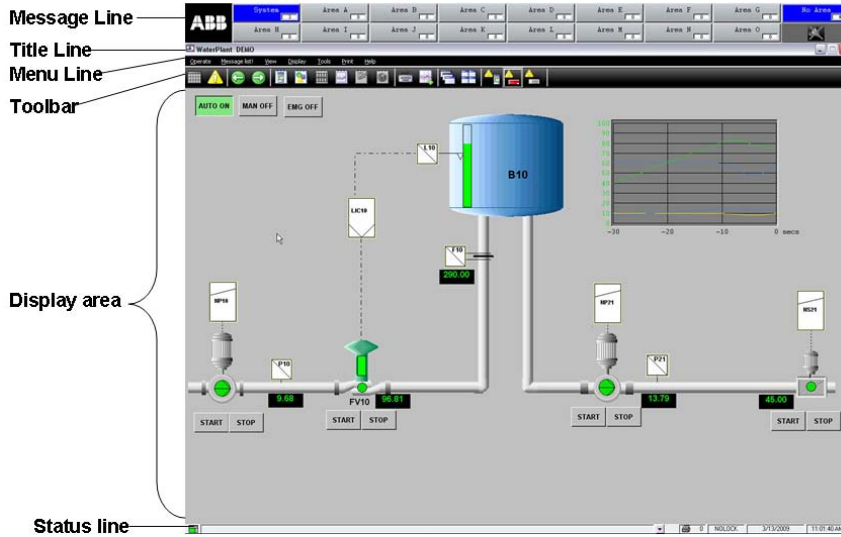
vh_c0062_us.bmp

Message line

The message line is always visible and cannot be overlapped by other displays. As seen in the example, it may consist of several message items with tag names and message point details, plus the following items:

>>	Field for **overflow area**
4	Field for indicating the total number of all messages on that operator station
	Button for the **acknowledgment** or **visual acknowledgment** of the displayed messages
	Button for the acknowledgment of the **control room horn.** The horn gets colored a soon as the control room horn becomes active.

See Display   , Page C-28.

Title line

In this line, the type of display, the display name, and, if available, the configured short or long text are displayed.

Menu line

The menu line is always visible. This means you can perform the actions available in the menu in any operating situation.

Toolbar

You can use not only the menu line, but also the toolbar buttons to perform actions. A tooltip is available for each icon. The toolbar can contain various buttons or icons, depending on the currently shown display.

Display area

This   screen   area   accommodates   displays   selected   by   the   user.
In some displays, the display area is further subdivided into three sub-areas.

Status line

vh_c0006_us.bmp

	On the left hand side of the status line there is a small icon, the keyboard focus indicator.
	Useful information for operation is shown in the middle of the status line. The 10 most recent messages can be viewed. Select the respective icon and hold down the left mouse button.
	In the right section of the status line the number of hardcopies to be processed is indicated.
Operator	If the **Security Lock** software package has been installed, the user name is indicated. Else, "NOLOCK" is shown.
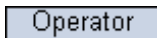
3/4/2009 | 2:52:09 PM   The current date and time of day are displayed in the status line on the right hand side. The character "S" to the right of the time indicates daylight saving time.

C 3.1   Operation Using the Context Menu

Right-click within selected display or on tag

SHIFT + F10

The **context menu** appears. It contains menu items for the most important operations and directly selectable displays. The illustration below shows an example of a context menu:

RED_100 (Graphic)	The first menu item can be the default display.
OVW (Overv.) Message list (Msg.)	Here you can find the standard displays.
PID1	With this menu item you can call up the faceplate.
Back	Return to previous display.
Forward	Forward to the next display of the ring buffer.
GRP (GRP) TRND1 (Trend) SSLN (SSL) CDP (REP) web (Web) readme	Here you may find the displays allocated to the tag. The displays can be allocated using DigiVis 500 Graphics Builder.

vh_c061_us.bmp

The **External Aspect** is a display allocation function which can be used for allocating any document or Windows program to a tag using DigiVis 500 Graphics Builder. With this, it is possible to link documents to a tag or open Excel spreadsheets for a tag. The External Aspect – in this example a "Readme" file. This is always the last menu item of the context menu.

⚠️ If you are using this option, the program configured for the External Aspect may provide access to the operating system.

C 4   User Identification

The software package **Security Lock** provides user access control both in DigiVis 500 Graphics Builder and DigiVis 500 Operations. A separate license must be optained for the Secutity Lock for each system. Security Lock can be used to manage a maximum of 16 groups and 1,000 users. See also the **Security-Lock Manual**.

Until a user-ID license is detected, the menu items for logging in and out and for changing the password are not active. This means that each user can call up and operate any of the displays.

After Security Lock has been installed, users must log in under DigiVis 500 Operations. Until a user has logged in, the rights assigned to the user GUEST are applied.

👆*Tools* → *Login* → Enter user name→ TAB KEY → Enter password → ENTER

When using **Security Lock**, each display will indicate whether or not the logged-in user has operating rights for this display – by means of an **open** or a **closed padlock**:

For each display and tag (faceplate) it is possible to define for each user group one of the following three access levels:

- No access
- Observation only
- Observation and operation

At the operator station (DigiVis 500 Operations) you will see the following concerning access control:

- The user name is displayed permanently in the status line.
- If an appropriate signal sequence log has been configured, all control actions along with user names are documented in it.

Standard users:

NOLOCK	No Security Lock license.
GUEST	No user is logged in, e.g. when DigiVis 500 Operations starts.
SYSTEM	Control action performed by the system (may appear in the log).

C 5   Process Visualization

Standard and free display types are available for presentation of process information.

Standard displays are fixed in appearance. During configuration, only the names of tags to be shown in the display need to be entered.

Free displays are graphic displays or user-defined faceplates both created in DigiVis 500 Graphics Builder using the graphic editor or the faceplate editor during configuration.

C 5.1   Overview Display

For any DigiVis 500 operator station one overview display can be configured.

A standard overview display consists of 16 rows of 6 columns. A maximum of 96 displays can be represented and selected via symbols. These displays can be group displays, trend displays, graphic displays, logs, reports and WEB displays. The displays can be called up with a left mouse click on the corresponding symbol.

Instead of using the standard overview display it is possible to define a graphic display to be used as overview display in the operator station.

C 5.2   Group Display

A group display is a configured collection of several faceplates. It offers the user the possibility of presenting related functions in one display. The functions or tags can be operated directly.

C 5.3   Graphic Display

In addition to the standard displays described above, customized graphic displays can also be created. These graphic displays can comprise a combination of static and dynamic elements and are designed according to the requirements of the user.

The static section can be used for the schematic representation of the plant structure as a background. In the foreground, the dynamic elements of the displays can be used to present the current values and states of the process variables to the operator.

C 5.4   Trend Display

The trend display is the virtual presentation of a trend recorder. Binary and analog values from the process can be plotted against time. Up to 6 process variables can be graphically represented per trend display. This allows the user to zoom, fade out and scroll curves. The recorded curves can be archived on the DigiVis 500 Operations PC. Trend files (archives) can also be exported to another PC. The software package **DigiBrowse** can be used to view these exported trend files as well as to convert them into CSV format for further processing with other programs, e.g. MS-Excel.

Trend displays can both be configured in DigiVis 500 Graphics Builder and defined by an operator station user.

⚠️ Loading data from DigiVis 500 Graphics Builder into the operator station may delete the operator-defined trend displays. It is, thus, recommended to export operator-defined displays and then re-import them if required.

C 5.5   Faceplate

Faceplates are used for operation and observation of tags. They show the current state of the associated process. Faceplates can be called up from other displays. They are always positioned on top of other displays. A selected tag is always operable via its faceplate.

A maximum of 5 faceplates can be displayed simultaneously on the screen . Even with the **Dual Monitor** DigiVis 500 Operations option not more than a total of 5 faceplates are available on both screens. If you open an additional faceplate, the system will automatically close the faceplate which had not been activated for the longest period.

You can fix faceplates by using the pin button in the title line of each faceplate. A fixed faceplate can be moved, but it will not be closed automatically. You can fix a maximum of 4 faceplates.

You can either tile or cascade the faceplates on the screen. See Display   , Page C-28.

C 5.6   Logs

Logs provide the documentation of events, states and sequences from the process. The data can be stored on the operator station hard disk, output to a printer or displayed on the screen. Log files can also be exported to another PC. The software package **DigiBrowse** can be used to view these exported log files as well as to convert them into CSV format for further processing with other programs, e.g. MS-Excel.

Three types of logs are available:

- Signal sequence log (SSL1, SSLN)
- Operation log (OPL)

C 5.7   Reports

Reports are used to acquire and store data in user defined MS Excel templates.

C 5.8   Information Display

This display provides access to all the other displays configured in the DigiVis 500 system Menu options for diagnostic mode and OPC server diagnostics are provided in this display.

C 5.9   WEB Display

If you call up a WEB display in DigiVis 500 Operations, the local Internet Explorer will be started and the link to the configured URL will be activated. With this, it is possible, for example, to call up into DigiVis 500 Operations the video display from a process monitoring camera.

⚠ The WEB display starts the local WEB browser. With this, DigiVis 500 Operations users may access files on the local machine or other machines in the intranet or global internet. Mind the risks and dangers associated with this.

C 6   The DigiVis 500 Operations Menu: An Overview

Operate   Message list!   View   Display   Tools   Print   Help

vh_c0010_gr.bmp

Operate

This menu item includes all operations for the currently active display. You can find a detailed description in the relevant chapter of each type of display.

Message list!

Calls up the message list.

View

Provides several view options for the message line and the faceplates.

Display

Allows for selection of a display or tag via the **Display Explorer**.

Tools

- Exits DigiVis 500 Operations (via the security dialog).
- Login, logout and change password, if Security Lock has been installed.
- Opens the Quick Select dialog box.
- Allows you to define trend displays.
- Opens the Options dialog box.

Print

Outputs hardcopies to the connected printer.

Help

- Calls the DigiVis 500 Operations help system.
- Calls the DigiVis 500 Operations context help system.
- Displays the DigiVis 500 Operations version.

☞ Many menu items can also be selected via the icons in the **toolbar**. In such cases, the icons are shown next to the menu items in the following text.

C 6.1 Operation

Depending on the selected display, you can carry out different actions via this menu item. You can find a detailed description in the chapters describing the individual displays. Basically, this menu option is intended for keyboard operation. All operator actions can usually be carried out directly in the display or its context, respectively, using the mouse.

C 6.2 Message List

This menu item calls up the message list without any further input. In the message list messages sent from the process stations to this operator station are sorted and displayed. Either the DigiVis 500 system or the automated process can produce the messages. Messages can be filtered for this display according to specific criteria. In the message list one or more messages can be selected and acknowledged, or the displays assigned to a particular tag can be called up via the display selection dialog. The operator can rapidly gain information on the selected message.

C 6.3 View
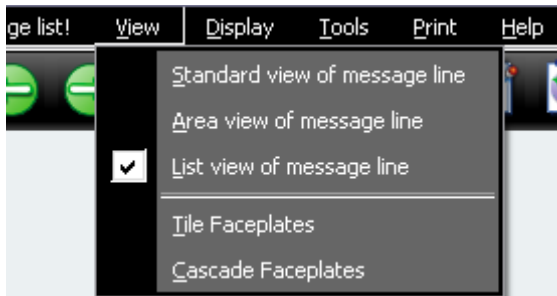
vh_c0011_us.bmp

Here you can select different views for the message line and the faceplates:
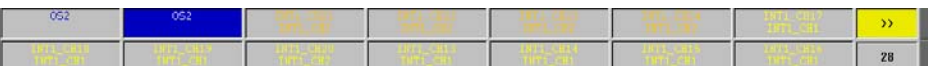
_us.bmp

Standard view of message line

You will get the standard view of the message line – several message items with tag names and message item information. Depending on the configuration, visual acknowledgement (only within the same operator station) or point acknowledgement (can be realized throughout the system by acknowledging the alarm point in the process station) are possible with this message line view.

Area view of message line

You will get the area-specific view of the message line. In the message line there is a fixed position for each plant area. The number of associated, present messages is displayed for each plant area. The plant area is displayed in the priority color of the most important message. The most important message is detailed in the tooltip. Selecting a plant area button opens a plant area specific message list. With this message line view, no acknowledgement is possible, as the DigiVis 500 system is based on the principle that only visible messages can be acknowledged.
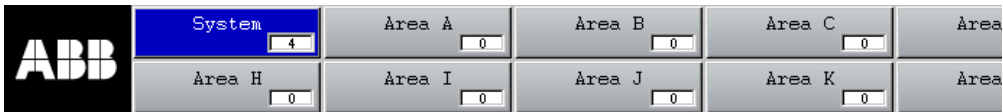
vh_c0047_us.bmp

List view of message line		You will get the list view of the message line. The 4 most important messages are displayed in the same format as on the message page. Depending on the configuration, either the eldest or the latest message is displayed as the first list item. Controlled scrolling in the mini list is not possible. Double-click to open the faceplate associated to the message. Depending on the configuration, visual acknowledgement (only within the same operator station) or point acknowledgement (can be realized throughout the system by acknowledging the alarm point in the process station) are possible with this message line view.
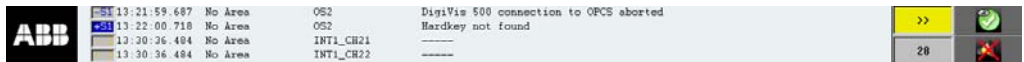
vh_c0048_us.bmp

Tile Faceplates		The faceplates are basically arranged side by side. This holds for both the faceplates already displayed and for those to be called up. If some user-defined faceplates are oversized, it is possible that not all faceplates can be arranged side by side. In this case, the first non-fitting faceplate appears right-aligned and may overlap other faceplates.
Cascade Faceplates		The faceplates are basically arranged overlapping each other. This holds for both the faceplates already displayed and for those to be called up.

C 6.4   Display
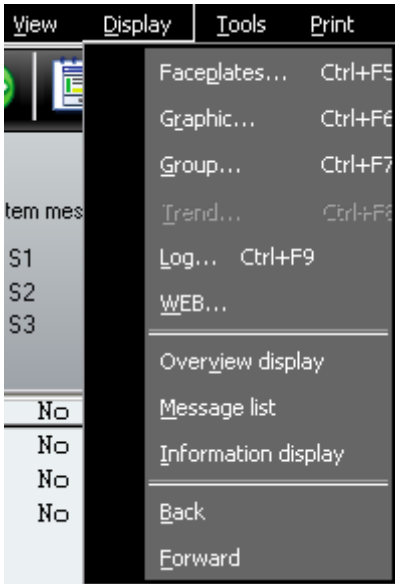
vh_c0017_us.bmp

This menu is used for selecting a display from a list of all those available, or for selecting a tag. Except for overview display, message list as well as system display, all of which only exist once per operator station, the **Display Explorer** is started for all other menu items, which include the names of all tags, displays, reports and logs. The displays of the selected type are already expanded.

Faceplates…		Opens the **Display Explorer** with expanded tags.

Graphic…		Opens the **Display Explorer** with expanded graphic displays.
Group…		Opens the **Display Explorer** with expanded group displays.
Trend…		Opens the **Display Explorer** with expanded trend displays.
Log…		Opens the **Display Explorer** with expanded logs.
WEB...		Opens the **Display Explorer** with expanded WEB displays.
Overview display		Opens the overview display.
Message list		Opens the message list.
Back/Forward		

DigiVis 500 Operations stores the five most recently called displays in a ring buffer. The *Back* and *Forward* controls replace the current display with the corresponding display from the ring buffer, with no other input.
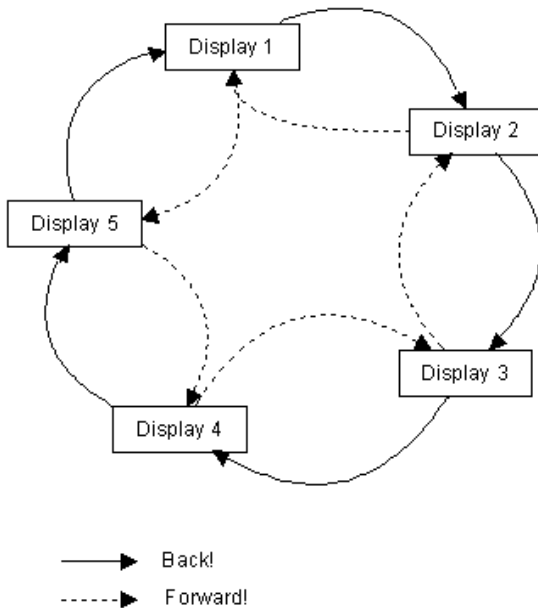
vc0630us.bmp

Pressing *Back* and *Forward* leaves the content of the display memory unchanged, i. e. after calling one of these menu items five times, the initial display will re-appear. A new entry is recorded in the display memory each time a display is called up via the menu, the context menu or a dynamic graphic object. The BACK/FORWARD buttons do not create an entry in the graphic memory! When a new display is called up, this replaces the stored display that would be reached by the next *Forward!* command.

The ring buffer can be switched on or off in the **Tools → Options** menu under **Cyclic back/forward display switch**. When the ring buffer is switched off, the 5 display entries are managed in a linear fashion, i.e. after *Back!* is called for the fourth time, the end of the buffer is reached. The first display is not called again as when the ring buffer is switched on. Once the last displays have been called using *Back!*, the current pointer can be shifted back to the front memory locations using *Forward!*
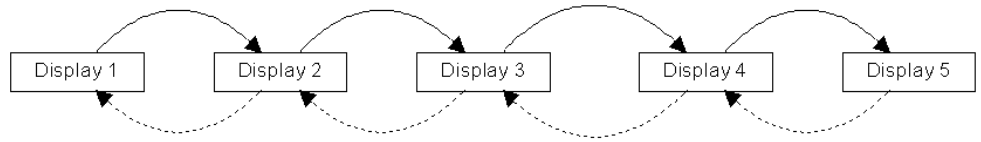
vc0631us.bmp

C 6.5   Tools
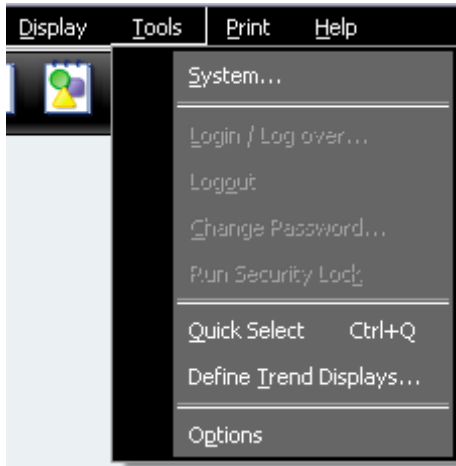
vh_c0018_us.bmp

System...

Here you can terminate DigiVis 500 Operations after entering the password, which has been defined in DigiVis 500 Graphics Builder.

☞ The following menu items can only be selected if the additional software package **Security Lock** has been installed.

When entering the user name and password the pattern of upper-case and lower-case characters must be correct.

Login / Log over…

Here you can **log in** using your user name and password. Specific access rights are assigned to each user, depending on the configuration.

Logout

Here you can **log out.** Only the rights for the user "GUEST" are active then. If the user wants to execute a function that is not available to the GUEST, he must log in again.

Change Password

Here, users may change the passwords they need to identify themselves. First the old valid password must be entered, followed by the new password (twice).

☞ The changed password is only valid for this DigiVis 500 Operations PC. If the user is authorized to log in on another DigiVis 500 Operations PC, the previous password is still valid on that DigiVis 500 Operations PC. We recommend to successively change the password on all relevant DigiVis 500 Operations PCs to ensure the same password is valid on all of them.

Run Security Lock

Starts the add-on program **Security Lock** after entering your password, provided that you are authorized to use Security Lock. See the Security Lock Manual for details. Using the Security Lock program, users can be added or deleted, or access rights can be changed.

The following menu items are always available:

Quick Select		Opens the Quick Select dialog box for user-defined display calls (see Calling up the Quick Select Window , Page C-49).
Define Trend Displays		Opens the dialog box for definition of trend displays by the user (see Section **Trend Display).**
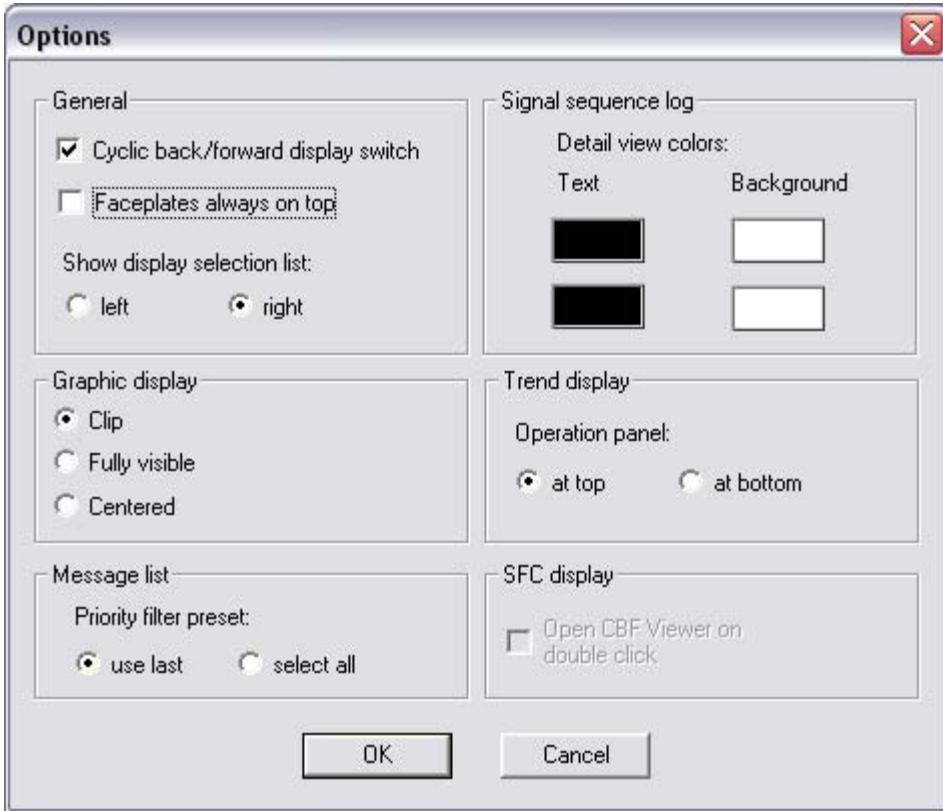
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Options

Opens the *Options* dialog box that has the following settings:

General

Cyclic back/forward display switch

Linear management of display memory as ring buffer memory, or linear management (see back/forward   -

Tools , Page .

Faceplate always on top

Enables the faceplates to remain constantly displayed on top when switching to other Windows applications.

Show display selection list

Here you can select whether the **Display Explorer** shall appear on the right or left hand side of the screen.

Graphic display

Clip	A full width graphic display will be visualized in the available graphic area. Since with scaling the page ratio is not modified, the lower side of the display can be cut.
Fully visible	A full height graphic display will be visualized in the available graphic area. Since with scaling the page ratio is not modified, the right section of the display can be left unused.
Centered	The graphic display is completely arranged and centrally aligned in the available graphic area.

Message list

Here you can select whether a set priority filter shall be used the next time an area message list is called up.

use last	When calling up an area-related message list, the messages will be filtered according to priority filters last used.
select all	Messages of all priorities will be displayed when invoking an area-related message list.

Signal sequence log

Here you can configure the text and background colors for the signal sequence logs so that you get alternating line colors which give you a better overview of the table, as shown in the example.

vh_c0049_us.bmp

Trend display   Here you can select for **trend displays** whether the operating field shall be arranged above or below the curve.

C 6.6   Print
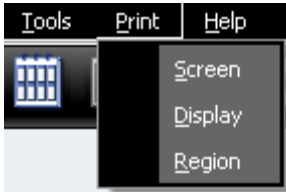
vh_c0020_us.bmp

Screen   Outputs a copy of the entire screen currently displayed to the printer.

Display   Outputs only the display area of the screen to the printer, without the menu or
                      dialog area.

Region   Prints a selected section of the screen. To do so, you need to define the area
                      to be printed. Press the left mouse button and move the focus to the
                      appropriate section of the display. The selected section will be printed once
                      you release the left mouse button.

C 6.7   Help

vh_c0021_us.bmp

DigiVis 500   Calls the DigiVis 500 Operations help. It includes all the important parts of
Help   this manual. You can read the help texts and graphics directly at the operator
                      station PC.

Context Help   Helpful information about the current display.

About...   Information about the DigiVis 500 Operations software version.

C 7   Display Selection

A good, straightforward system of display selection is particularly important for a control system. Thus you will arrive as quickly as possible at the appropriate place in order to take the necessary steps and control the process safely.

C 7.1   Display Selection via Icons in the Toolbar or via Menu Item Display

You can access all displays, tags and logs of this operator station. There are different options.

Via the toolbar
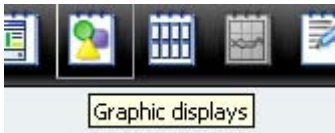
☞ Left-click toolbar icon (here e.g. GRAPHIC DISPLAYS)→In Display Explorer double-click appropriate graphic display

Via the menu

☞ Display→Graphic… (e.g.)→In Display Explorer double-click appropriate graphic display

Via a shortcut

⌨ CTRL + F5 to CTRL + F9→Use CURSOR KEYS to select appropriate display→ENTER

For   further   details   concerning   the   display   types   see

Tools , Page C-32.

In all cases the **Display Explorer** with the names of all available displays comes up. Double clicking the required display name selects the display.

☞ **I**n the **Display Explorer**, a **quick selection** is possible by entering the first letter of the tag or of the display name.

C 7.2   Display Selection Using the Context Menu

The **Display selection via the context menu** is a fast alternative for calling up displays. In addition to **general displays**, it is also possible to directly select the **displays assigned to the tag**.

🖱Select tag→Call up context menu→Select appropriate display

RED_100 (Graphic)
_____
OVW (Overv.)
Message list (Msg.)
_____
PID1
_____
Back
Forward
_____
GRP (GRP)
TRND1 (Trend)
SSLN (SSL)
CDP (REP)
web (Web)
readme
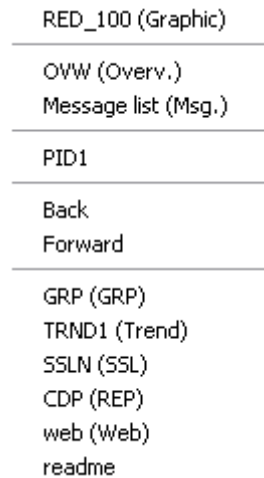
vh_c0042_us.bmp

In the context menu, you will find the following displays:

General displays

(Overv.)   Overview display

(Sys.)   System display

(Msg.)   Message list

Other displays

(Graphic)	Graphic display	This list describes the order and possible entries. Only those entries will be displayed which have been assigned to the selected tag.
(GRP)	Group display	
(Trend)	Trend display	
(SSL)	Signal sequence log	
(OPL)	Operation log	
(REP)	Reports	
(Web)	WEB Display	

For details concerning the context menu see Operation Using the Context Menu , Page C-15.

C 7.3   **Display Selection from the Overview Display**

Alternatively you can select displays via the overview display.
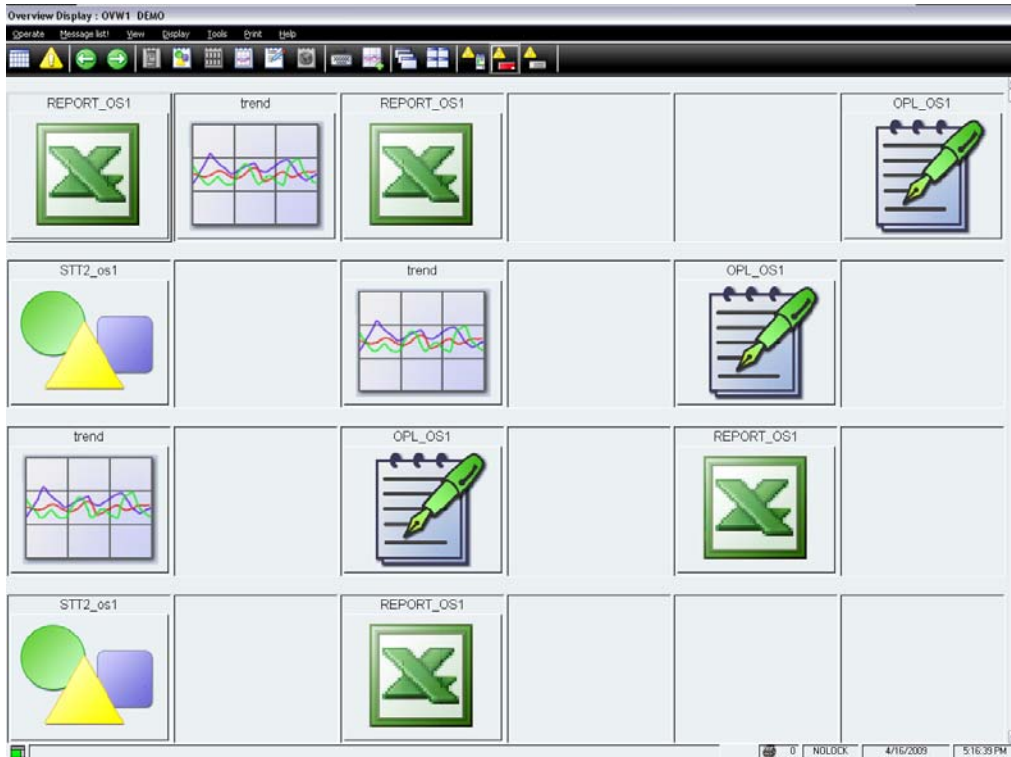
vh_c0057_us.bmp

In order to select e.g. the following graphic display, proceed as follows:
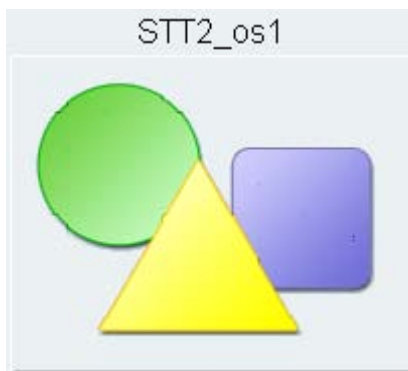
Left-click appropriate graphic symbol

Use TAB KEY to select appropriate graphic symbol→ENTER

C 7.4   Display Selection from a Graphic Display

In order to be able to call up a display from a graphic display, you must first select a graphic object for which the *Show display* action with the display has been configured in DigiVis 500 Graphics Builder.

Left-click appropriate graphic symbol

Use TAB KEY to select appropriate graphic object→ENTER

C 7.5   Display Selection with Default Display

It is possible to specify during the display access configuration in the DigiVis 500 Graphics Builder for each tag a so-called **default display** which, can be **selected particularly fast** for operation and observation in order to quickly receive information concerning the status of the plant, e. g. in case of emergency. After selecting the tag, this display will be listed in top position of the context menu so that you can call it up with both the mouse and the keyboard:

Call up context menu→Left-click default display

F11

Only one default display can be configured per tag. The following types are available:

- Graphic display
- Trend display
- Group display
- Operation log
- Signal sequence log
- Reports
- WEB display

C 7.6   Quick Select Window

The **Quick Select** window allows you to configure a quick access to your favorite displays, trends, logs and so on, thus optimizing DigiVis 500 Operations for your way of working.

The **Quick Select** window can be called up as an additional dialog box on the screen. This dialog box contains a set of buttons. Each of these buttons can be configured to call up any display. In the following text, the term **display** is used as generic term for all displays that can be selected in DigiVis 500 Operations: graphic, group, WEB, and trend displays, logs as well as the overview or system display, the message list and all faceplates.

For each button in the **Quick Select** window it is also possible to assign any keystroke from the keyboard to each function. Therefore, the function keys F1 to F12 are available for configuration - as single keystroke as well as in combination with the CTRL, SHIFT or ALT key. Furthermore, the ASCII keys – with or without the SHIFT key - can be used in combination with the CTRL or ALT key. In the following text, all these keystroke combinations are called **shortcuts**.

⚠ For key assignment purposes it is also possible to define those combined keystrokes, which are normally pre-assigned to the system (F1 for Help, CTRL+F5 for the Tag list), thus deleting the pre-assignments. There will be no system warning in such cases!

Configuration of the **Quick Select** window is performed in DigiVis 500 Operations. Each **Security Lock** user selects their own favorite display. Existing configurations can be imported and exported.

vh_c0043_us.bmp

Each display that is assigned to a button is represented by a symbol and text on the corresponding button.

C 7.6.1   Calling up the Quick Select Window

There are several ways to call up the Quick Select window. See also

Print , Page C-38.

Via the toolbar

👆-Left-click toolbar icon

Via the menu

👆-Tools→*Quick Select*

Via a shortcut

⌨ CTRL + Q

This window is displayed in the operating area, and can be moved freely by the operator over the whole operating area below the message line.

C 7.6.2   Exiting the Quick Select Window

The **Quick Select** window is closed with each call of a display. You can also select the *Close* menu option or click outside this window in order to close the **Quick Select** window.

C 7.6.3   Scope of the Quick Select Window

The configuration of the **Quick Select** window is according to the current **Security Lock** user. If Security Lock has not been installed, the user **NOLOCK** is used.

The **Quick Select** window is not part of a special project, but rather belongs to an operator station. In this way there will be no modifications when loading a new project or a whole station from DigiVis 500 Graphics Builder.

C 7.6.4   Saving the Configuration of the Quick Select Window

Every time the dialog box is closed, the Quick Select window configuration is automatically saved in the file <user name>.Qck. This file is stored in the default project directory:

<DigiVis 500_installation_folder>\proj.

C 7.6.5   Functions of the Quick Select Window

All functions described for the Quick Select window can be called up from its **context menu**:

👆Right-click on any position in the dialog box (do not position mouse pointer on buttons!)
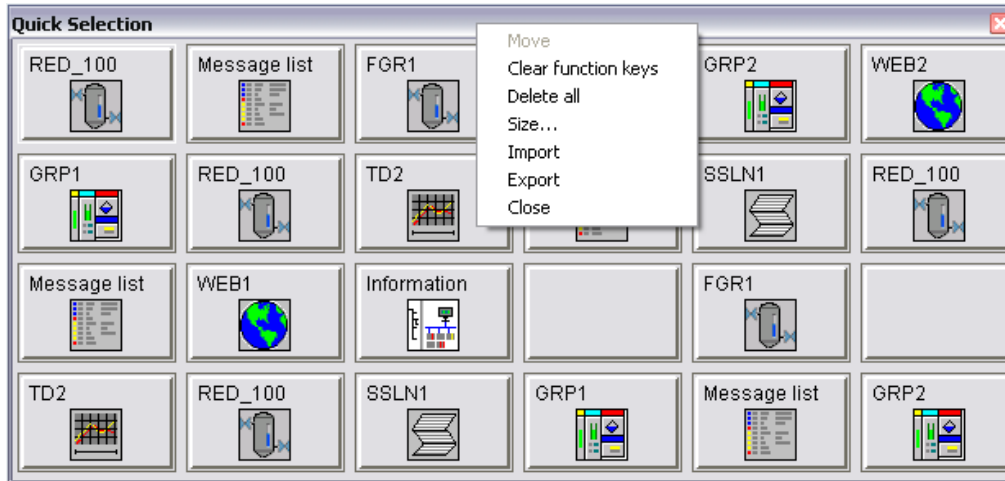
vh_c0044_us.bmp

Clear function keys   All assignments of the function keys (shortcuts) will be deleted.

All functions of the soft buttons remain unchanged.

Delete all   All user-made assignments for the buttons and shortcuts will be deleted.

☞ If you select *Clear function keys* or *Delete all*, all standard keyboard assignments of the function keys, which had been pre-assigned for the use of the menu and the display, will then be available again.

Size   The Quick Select window includes up to 6x6 buttons. Proceed as described below to configure the size of the button field:
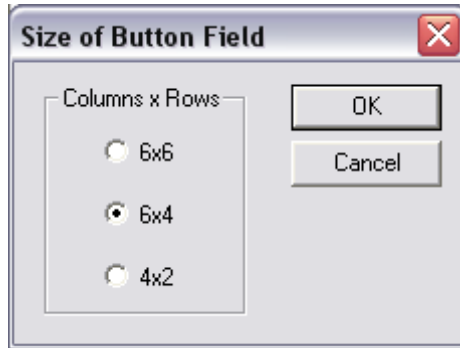
The default size is 6x4. The buttons are consecutively numbered from 1 to 36.

Export   To make the configuration available for other PCs, this menu item can be used to store configuration data on floppy disk as file: **'a:<username>.qck'**.

Import   The file **'a:<username>.qck'** will be imported. If a configuration is already available on the operator station for the Quick Select window, a security dialog will ask you if you really want to delete the current configuration.

C 7.6.6   Functions of a Specific Button

Proceed as follows to open the **context menu for a button**:

🖱️ Right-click appropriate button

⌨️ SHIFT + F10
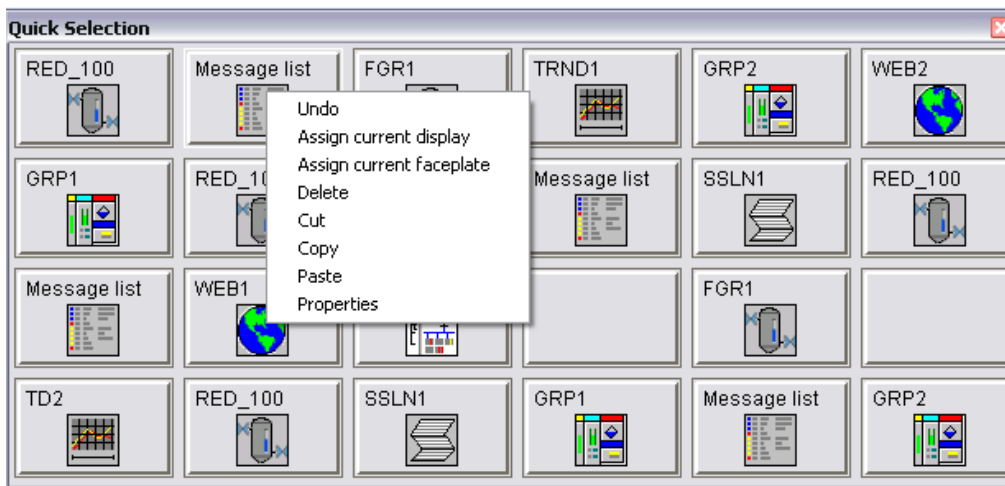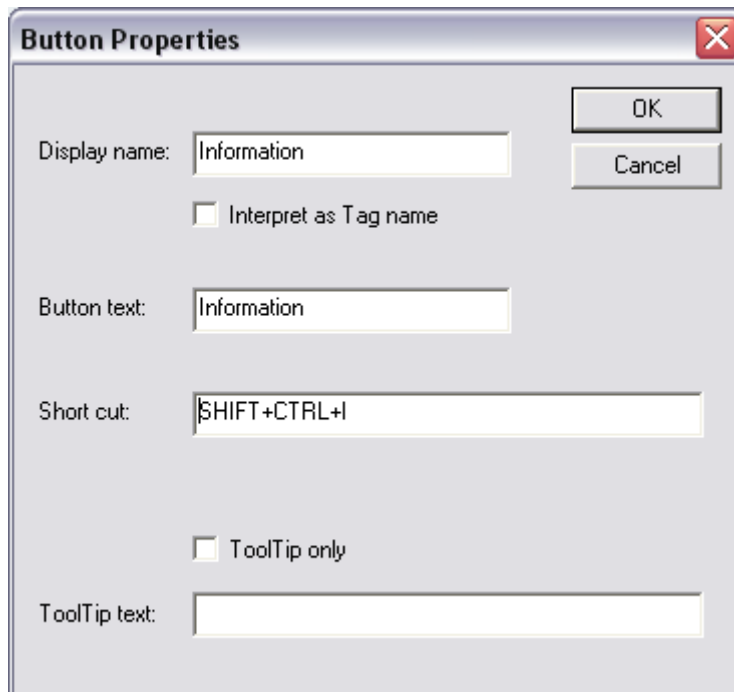
vh_c0045_us.bmp

Undo	The last button configuration will be undone.
Assign current display	The display currently shown is assigned to the selected button.
Assign current faceplate	The currently shown faceplate is assigned to the selected button.

Delete	The assignment of the selected button is deleted. Pressing this button will no longer call up a display.
Cut	The configuration of the selected button is deleted and stored in the clipboard.
Copy	The configuration of the selected button is stored in the clipboard.
Paste	The content of the clipboard is assigned to the selected button.
Properties	A new dialog box with the characteristic data of a Quick Select button will be opened where you can specify additional properties.

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Display name   Enter the name of the display or a tag in the edit field. With the check box you have to indicate whether the name should be interpreted as a display or a tag name.

☞ Some displays – e.g. system display, message list – do not have any name. Such a display can only be linked to a Quick Select button by opening it and then calling up the *Assign current display* menu.

If the specified display is not found, a dialog box will be displayed:

vh_c0052_us.bmp

By confirming this dialog with *Yes* it is possible to specify a Quick Select Window for future use or e.g. another operator station.

Button text   Any text can be entered to be shown on the selected button.

Short cut   Instead of using the Quick Select buttons, the linked display can also be called up via the keyboard. By pressing an appropriate combination of keys from the keyboard, this key combination is entered as the short cut of this button.

You can call up the assigned display at any time using this combined keystroke.

⚠ **Caution!**   For key assignment purposes it is also possible to define those combined keystrokes, which are normally pre-assigned to the system (F1 for Help, CTRL + F5 for Tag list), thus deleting the pre-assignments. There will be no system warning in such cases!

ToolTip text	You can enter any text in the edit field.
ToolTip only	Tooltip text will be displayed as follows ☐**<Display name>, <Shortcut> <Tooltip text>** e.g. <Reactor> <ALT + F8> <Plant display>
	☑ only the entered tooltip text will be displayed.

D   Messages

Contents

D 1 General Description – Messages

Errors and certain state deviations in the DigiVis 500 system are signaled by visual and acoustic messages.

The DigiVis 500 system makes available the message types **system message**, **fault message and switch message**. These message types are sorted according to their importance to the process into different **priority levels,** one system level (divided into the three groups S1–S3) and four user levels (1–4).

Messages   are displayed in the message line and message list, and can be acknowledged from the respective location, except for the area view. In addition, the messages can be acknowledged via the context menu of the assigned faceplate and in a graphic display.

D 1.1   Message Types

In the DigiVis 500 system, messages are divided into the following **message types** according to their importance to the process:

System messages

System messages have the highest **priority level** and are subdivided into three message groups S1 to S3. These messages cannot be configured or changed by the user. System messages are used to indicate fault states of the system (hardware) itself.

Fault messages

Fault messages are at **priority levels 1 to 3**. Messages of this priority level are used, for example, to signal that a limit value has been exceeded.

Switch messages

Switch messages are at **priority level 4**. Messages of this type are used to indicate switch events, e.g. *Valve open/closed*.

D 1.2   Priority Levels

Messages generated by the process stations can be of varying importance for the smooth operation of a process. The DigiVis 500 system provides **five** different priority levels for messages. Four display colors are assigned to these priority levels:

Priority level	Message type	Display color
S1, S2, S3	System message	blue
1	Fault message	red
2	Fault message	orange
3	Fault message	yellow
4	Switch message	yellow

☞ The same color is used to indicate the priority level of a message in the message line, message list as well as faceplates.

D 1.3   Acknowledgment of Messages

D 1.3.1   Types of Acknowledgment

Two types of message acknowledgment are possible: **visual acknowledgment** and **point acknowledgment**.

☞ **Visual acknowledgment** does not replace **point acknowledgment**; it is an additional function.

Visual acknowledgment

With **visual acknowledgment** the message are marked as "viewed". This type of acknowledgment has no effect on the current state of the message in the process station. It is available in the message line.

By visual acknowledgment in the message line all listed entries are deleted. However, they are still present in the message list.

Visual acknowledgement is limited to the operator station where it has been performed.

Point acknowledgment

This type of acknowledgment is available in the message list, faceplates, and graphic displays. If configured accordingly, it is also available in the message line. It performs an acknowledgment of the message in the process station. This changes the status of the message. Point acknowledgement has an effect throughout the system, as it is broadcast from the process station to all operator stations connected.

D 1.3.2   Acknowledgment Levels

The acknowledgment strategy encompasses three different acknowledgment levels (acknowledgment levels 1–3).

Level 1

This is the highest acknowledgment level. Messages with this acknowledgement level must be acknowledged for **incoming** and **outgoing** messages.

Level 2

Message of this level must only be acknowledged if they are **incoming**.

Level 3

These messages need not be acknowledged.

A message is labeled **incoming** when the situation that caused it has just occurred. The message is newly added to the message line and the message list.

Example:

A message generated when a process value exceeds its limit will be considered as **incoming** until the value returns to the "normal range."

A message is labeled **outgoing** when the situation that caused it is **no longer active**. In some cases, acknowledgment must be used to remove these messages from the message line and the message list.

Example:

A message generated when a process value exceeds its limit is considered as **outgoing** when the associated is in the "normal range".

D 1.3.3   Acknowledgment in the Message Line and Message List

Depending on the configuration, **visual acknowledgment** or **point acknowledgment** are available in the message line. The active acknowledgement type can be recognized by the following symbols:

                               Visual acknowledgement of message

                               Point acknowledgement of message

The messages in the message list can only be point acknowledged. The appropriate buttons can be found in the operation line.

This type of acknowledgment affects the message status. Possible combinations are:

Ac-knowl-edge-ment level	Message incoming not ac-knowl.	Message incoming acknowl. once	Message outgoing not acknowl.	Message outgoing acknowl. once	Message outgoing acknowl. twice
1	Full symbol flashing	Full symbol static	Empty symbol flashing	Empty symbol static	Not visible
2	Full symbol flashing	Full symbol static	Empty symbol flashing	Not visible	Not visible
3	Full symbol flashing	Not visible	Not visible	Not visible	Not visible

An **incoming** message is **active** in the OPC server.

An **outgoing** message is **no longer active** in the OPC server.

The **full symbol** is displayed at the left in the message list. It is displayed as white or black text on a colored background. The background color depends on the priority.

The **empty symbol** is also displayed at the left in the message list. It is displayed as colored text on a gray background. The text color (number and sign) depends on the priority.

D 1.4   Messages with Sound Files

One or more sound file can be configured for each message priority. These sound files are played one after another without any interval, and are therefore treated as a single sound file.

The sound files for a message priority can be played when the status changes from **inactive** to **active** and vice versa. The sound file for a specific process message is triggered when the message status changes from **inactive** to **active**.

There are three different options for processing the sound files in the operator station:

·   priority-controlled, oldest message,

·   priority-controlled, newest message,

•   chronological order.

One of the above options is chosen in DigiVis 500 Graphics Builder during the configuration process.

The following section provides more information about the processing of sound files:

Priority-controlled, Oldest or Newest Message

As well as being added to the message list, for the period of time during which the sound file of a message is being played back all messages received at the operator station are stored in a cache. When the playback of the sound file is completed, the newly-received messages are checked and the next sound file to be played as per configuration is determined. If there is no "more important" message in the cache, the last sound file is played back again. Once the sound file has been played, the message entry is deleted from the cache and the sound file from the next message to appear is output.

The current sound file is rejected in favor of the sound file of a newly-received message in the operator station if the latter is "more important" according to the following criteria:

A) Incoming message status
An incoming message (state transition from **inactive** to **active**) is more important than an outgoing message (changing from **active** to **inactive**).

B) Higher message priority
The message priorities in order of increasing "importance": 4, 3, 2, 1, S3, S2, S1.

C) Customized sound file
An individually configured sound file is more important than the ones configured for the priority.

D) Time

·   *newest message*: a new message is more important than an existing message.

·   *oldest message*: in the event of the same importance according to criteria A–C, the sound file of the oldest message is played again.

The HORN OFF button or F12 key can be used to terminate output of the current sound file and to clear the sound cache.

Chronological order

In addition to being added to the message list, all incoming messages (message status changed from **inactive** to **active**) are stored in a cache in the correct chronological order. Outgoing messages are not processed.

The configured sound file of a message from the cache is output once. Once the sound file has been played, the message entry is deleted from the cache and the sound file from the next message to appear is output.

This sequence of sound files, which is determined by the system, can be interrupted through an operator action. You can select a message in the message list and start the configured sound file. After the current sound file has finished playing, this user-chosen file is played without any effect on the sound cache. Once the sound file has been played, the next file to play is then determined according to the configured algorithm.

☞ The sound files are not loaded by DigiVis 500 Graphics Builder. The files must be copied into the following predefined folder on the DigiVis 500 Graphics Builder PC:

<DigiVis 500_Installation_Folder>\wave

D 2   Message Line

The message line indicates any process problem as a message.

The message line is at the top of the screen. This display area cannot be overlaid by other displays and, thus, is always visible.

D 2.1   Structure

The messages occurring can be displayed in three different view types. The view is changed via the toolbar. The following three symbols are available on the right hand side of the toolbar:

☞ The desired view can also be selected via the *View* menu. The range of available views may be limited by settings made in DigiVis 500 Graphics Builder.

Standard view

Indicates each message in a separate field.

Area view

Displays for each plant area the associated number of messages.

List view

Shows the four most important messages of the message list.

Message fields

These fields show the following information:

- Standard view: the received messages

- Area view: the plant areas and their number of messages

- List view: a list with the four most important messages
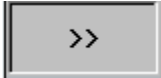
>>	If more messages than can be displayed on the screen exist, this field is highlighted yellow. This field is not available in the area view.
4	The number indicated is the total count of all messages in this operator station. This field is not shown in the area view.
(icons)	Visual acknowledgment or normal acknowledgment, depending on the configuration. This button is not available in the area view.
(icons)	The control room horn is enabled with a redcross mark when it is in operation. It can be switched off using this button.

The next sections provide more information about the different views.

D 2.1.1   Standard View
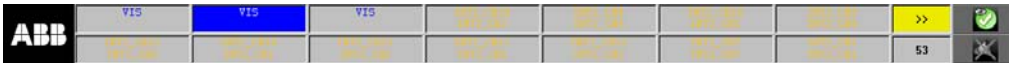
vh_d0012_us.bmp

Each alarm is indicated in a separate field. The tooltip for this field contains the same information as the message list.

By default, this message line view shows fourteen fields for the indication of messages. All fields are identical in size.

The message field display provides two lines: The first line contains the name and the second line the short text.

Moreover, the message line contains the field for the display of the message line overflow, the field with the number of all messages in the message list, the button for acknowledging the dis-

played messages (i.e. the button for visual acknowledgment or the button for point acknowl-edgment, depending on the configuration), and the button to switch off the signal horn.

It is recommended to use visual acknowledgment for this view. This allows you to empty the message line upon a quick check of the alarm priority and to recognize newly occurring alarms immediately.

If you choose point acknowledgment for the message line, you should use the type of configu-ration where the latest alarms appear in the top left corner. This also allows you to quickly rec-ognize newly occurring alarms.

D 2.1.2 Area View

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Each plant area is displayed in a separate field. In addition to that, a plant area called **No Area** is displayed. All messages of those tags which have not been assigned to a specific plant area are assigned to this area. There is also a field called **System**, where all system messages can be found.

Information about the most important messages is shown as a tooltip for each area. The most important message also determines the color and blinking state of the message field.

When you click a plant area, the display area shows the message list of this plant area.

D 2.1.3 List View
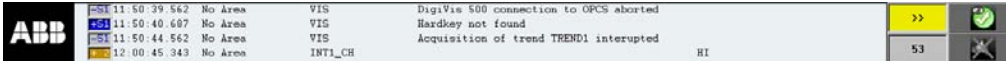
vh_d0014_us.bmp

This view shows a list of the four most important alarm messages. The information about the messages corresponds to the information in the message list.

Moreover, the message line contains the field for the display of the message line overflow, the field with the number of all messages in the message list, the button for acknowledging the displayed messages, and the button to switch off the signal horn.

D 2.2 Operating the Message Line

D 2.2.1 Selecting a Message

⌨ Left-click message

D 2.2.2   Calling up Faceplates

👆 Double-click message

👆 Call up context menu of message→Left-click associated faceplate

⌨ Select message→ENTER (only possible in the standard view)

D 2.2.3   Calling up Assigned Displays

👆 Right-click message→Left-click appropriate display

D 2.2.4   Point Acknowledging- or Visually Acknowledging Messages

Selecting the button *Point-acknowledge message* or *Visually acknowledge message* in the standard view **point-acknowledges** or **visually acknowledges** all messages in the message line. In the list view, there are two possibilities: If a message has been selected, only this message is acknowledged. Otherwise, all visible messages are acknowledged. If the overflow field is displayed with a yellow background, the subsequent messages are displayed after operating button *Point-acknowledge message* or *Visually acknowledge message*.

👆 Left-click or

⬦ Set focus to message line with ALT + ↑→Press key A or ALT + A

☞ **Visual acknowledgment** has no effect on messages in the message list!

D 2.2.5   Switching off the Control Room Horn

👆-Left-click

👆-*Operate→Horn off*

⬦ Set focus to message line with ALT + ↑→Press key O, ALT + O, or F12

D 3   Message List

The message list contains all messages of priority levels 1 to 4 and system messages S1-S3. Dependent upon the parameters set for the message configuration in DigiVis 500 Graphics Builder, the oldest message can be shown either at the top or the bottom of the list. Additionally, the DigiVis 500 Graphics Builder configuration defines whether the message display from certain OPC server or plant areas or messages of a specific priority is to be suppressed.

☞ The maximum number of messages depends upon the parameter for the length of the message list. It can be between 10 and 2000 messages.

In order to be able to call the individual message lists (for different plant areas) you can change the priority filter default setting. Once you have changed the priority filter settings in a message list, you can select if this new setting is to be used again when you call up the message list the next time or if you want the settings to be reset.

-Tools→ Options

ALT→T→ P

In the following dialog you determine which priority filter pre defined setting is to be valid. You can choose between the settings *use last* and *select all*.

Options   ✕

General
☑ Cyclic back/forward display switch

☑ Faceplates always on top

Show display selection list:
○ left   ● right

Signal sequence log
Detail view colors:

Text   Background

Graphic display
● Clip
○ Fully visible
○ Centered

Trend display
Operation panel:
● at top   ○ at bottom

Message list
Priority filter preset:
● use last   ○ select all

SFC display
☐ Open CBF Viewer on double click

[OK]   [Cancel]

vh_d0015_us.bmp

D 3.1   Calling up the Message List

👆–Left-click toolbar icon

👆–*Display→ Message list*

👆–Call up context menu→ *Message List (Msg.)*

Clicking this symbol always calls up the entire message list with all messages from all plant areas.

Additionally, it is possible to call up the plant-specific message lists. They can be called from the message line of the respective Area view, only. The plant area filters are set accordingly to ensure that only that plant area is selected.

The priority pre defined settings are used for invoking different message lists.

D 3.2   Structure

The message list consists of a header, the list with the actual messages, and the operating element area with four buttons and a 3 checkboxes.
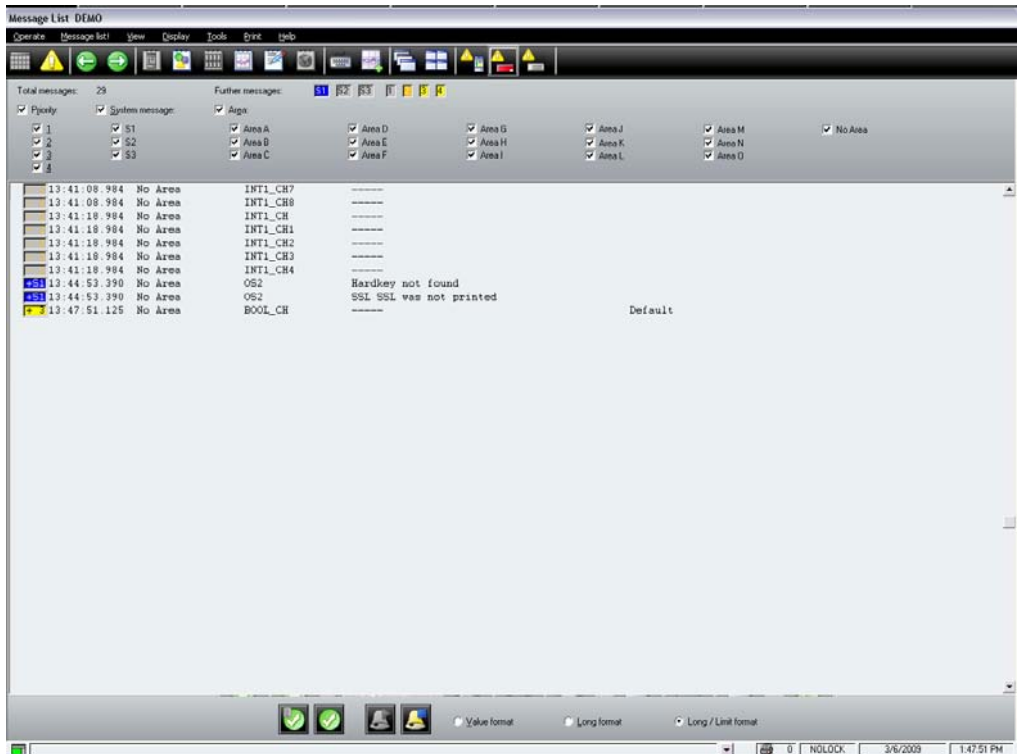
vh_d0016_us.bmp

D 3.2.1   Header

The header contains information about the message list. The total number of messages is indicated on the left hand side. On the right hand side, colored boxes indicate if any messages exist outside the currently displayed page. If a box is highlighted with its priority color, messages of that priority are not visible on the screen.

Several checkboxes are available to filter the messages. When you select a checkbox, the associated messages are shown. If you check or uncheck the non-indented checkbox on top of a list, all indented checkboxes under it are at the same time checked/unchecked.

The following options are available:

Priority	Apart from selecting all messages, messages assigned to a certain priority level can be hidden.
System message	Apart from selecting all messages, messages assigned to certain system messages can be hidden.
Area	Apart from selecting all messages, messages assigned to a certain plant area can be hidden.

The messages are filtered as follows:

Left-click appropriate option

Operate→Select filter→Select level

ALT→O→ Use CURSOR KEYS to select filter→ENTER→Use CURSOR KEYS or appropriate NUMBER KEYS to select level

Focus in display area→Use TAB KEY to select checkbox→Use SPACE BAR to toggle checkbox

If there are more messages than can be displayed in the display area, this is indicated by a scroll bar on the right edge of the area. The assigned priorities or assigned system messages of the messages in the non visible display area is shown under *Further messages* by a color code. The color corresponds to the priority level.

D 3.2.2   List with Messages

Messages can be displayed in **value format, long format** or **long/limit format**. The check box for the long/limit format is checked by default. The formats differ in the type of information presented to the operator. Display formats for the system messages are as per the configuration in DigiVis 500 Graphics Builder.

The following overview shows the explanations for the individual formats. The terms used are explained below the overview table.

Value format	Priority	Time	Plant area	Tag name	S-Text	ST-Text	Type	Date
Long format	Priority	Time	Plant area	Tag name	S-Text	L-Text		Date
Long.limit format	Priority	Time	Plant area	Tag name	S-Text	L-Text	Type	Date
System message	Group	Time	Plant area	Tag name	Fault Text	Date		

Priority	Priority of the message with sign for incoming (+) or outgoing (–). Indicates the priority level by appropriate digit and associated color.
Group	System message group, specified by system (S1–S3).
Time	Time of occurrence of the message. The resolution is 1/1000s.
Plant area	Plant area to which the tag name is allocated.
Tag name	Description of the tag which triggered this message.
S-Text	Short text for the tag.
L-Text	Long text for the tag.
ST-Text	Status text of the message.
Measured value	Measured value registered when the message was generated, e.g. limit value.
Type	Every message has a message type. For limit values, the message type is the limit value type (e.g. HH for the second high limit value).
Date	Only shown with the first message and after a date change. A date change is indicated by a horizontal red line.

D 3.2.3   *Operate* **Menu**

The *Operate* menu for the message list contains the following menu items:

Operate	*Priority filter*	▸
	System message filter	▸
	Area filter	▸
	Acknowledge block	
	Acknowledge page	
	Play sound file	
	Stop sound file	
	Horn off	
	Long format	

D 3.2.4   **Operating Element Area**

The operating element area contains the followings buttons:

Acknowledge page: Point-acknowledges all messages visible in the display area.

Acknowledge block: Point-acknowledges all messages that are selected in the display area.

Play sound file: Plays the sound file configured for a message.

☞   The button PLAY SOUND FILE can only be activated when

an sound file has been configured for the selected message. Once the button has been pressed, the selected sound file is played cyclically.

Stop sound file: Stops playing the sound file.

Via the Long format checkbox the tags are displayed in long format. See also **List with Messages , Page D-25 .**

☞ When the format is toggled, any empty lines in the list are deleted.

Via the Value format checkbox the tags are displayed in long format. See also **List with Messages , Page D-25 .**

☞ When the format is toggled, any empty lines in the list are deleted.

Via the Long / Limit format checkbox the tags are displayed in long format. See also **List with Messages , Page D-25 .**

☞ When the format is toggled, any empty lines in the list are deleted.

D 3.2.5   Display of Different Priority Levels

The different priority levels are displayed at the beginning of each list entry. The following symbols are used:

The priority levels differ in background color and the appropriate digit.

D 3.2.6   Display of the Incoming / Outgoing Status

The priority level of a message is indicated with a sign. The sign indicates the **incoming (+)** or **outgoing (–)** status of the message.

Incoming messages can also be recognized by their colored background. Outgoing messages are marked by colored text on a gray background. The symbol of unacknowledged messages is shown in color and is flashing.

D 3.3   Operation

D 3.3.1   Calling up Faceplates

After selecting the message of a tag, the associated faceplate can be called up.

☞ Double-click message

☞ Call up context menu of message→Left-click associated faceplate

◇ Set focus to message list with ALT + ↓→Use CURSOR KEYS to select message→Use SPACE BAR to select message→ENTER

D 3.3.2   Calling up Assigned Displays

After selecting the message of a tag via the context menu, the displays assigned to this tag can be called up.

🖱️Call up context menu of message→Left-click appropriate display

⌨️Use Cursor keys to select message→Use *Space bar* to select message→Shift + F10→Select display

D 3.3.3   Acknowledge Messages by Page

☞ All messages on the current page of the message list will be point-acknowledged.

🖱️In operating element area: Left-click

🖱️*Operate→Acknowledge page*

⌨️Alt→O→C

D 3.3.4   Acknowledge Messages by Block

☞ All selected messages are point-acknowledged.

🖱️Select messages→In operating element area: Left-click

Select messages→*Operate*→*Acknowledge block*

Select messages→ALT→O→B

To provide a better overview, the gaps of the outgoing or deleted message in the display area are only filled when the message list is scrolled. You can also press the button

to refresh the currently seen list. All gaps are closed then.

Index
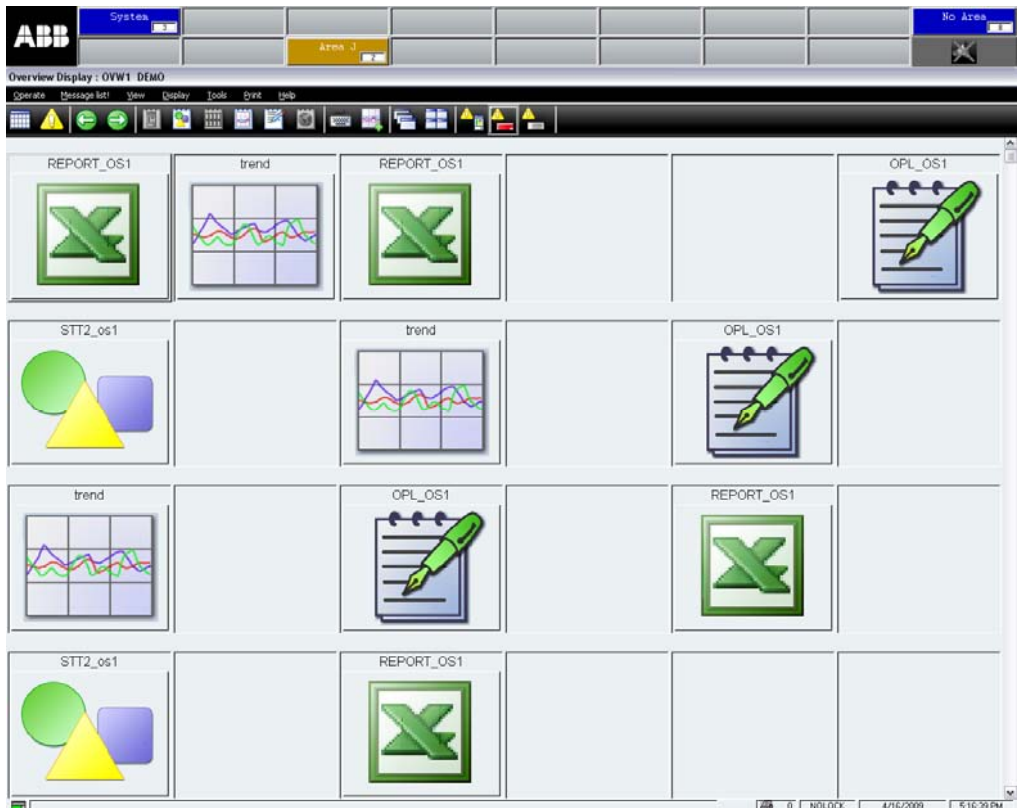
E   Overview Display

Contents

E 1   General Description – Overview Display

The process information from the whole plant can be presented in concentrated form in the overview display.

One overview display can be configured for each DigiVis 500 operator station. When configuring the operator station, you can specify whether the default display or a user-configured display is to be used as the overview display.

In the standard overview display the following display types can be selected: group display, trend display, graphic display and WEB-display. Logs and reports can also be called up directly from the overview display. An overview display comprises 16 lines of 6 columns; therefore up to 96 entries can be configured.

E 2   Calling up an Overview Display

E 2.1   Calling up an Overview Display via the Toolbar
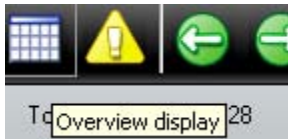
☞ Left-click toolbar icon

E 2.2   Calling up an Overview Display via the Display Menu Item

☞ *Display → Overview display*

⌨ Alt + D → V

E 2.3   Calling up an Overview Display via the Context Menu

☞ Call up context menu →Select *Overview display*

E 2.4   Calling up an Overview Display via the Graphic Display

👆 Left-click accordingly configured graphic object

⬗ Use TAB KEY to select appropriate graphic object → ENTER

E 3   Operation in the Overview Display
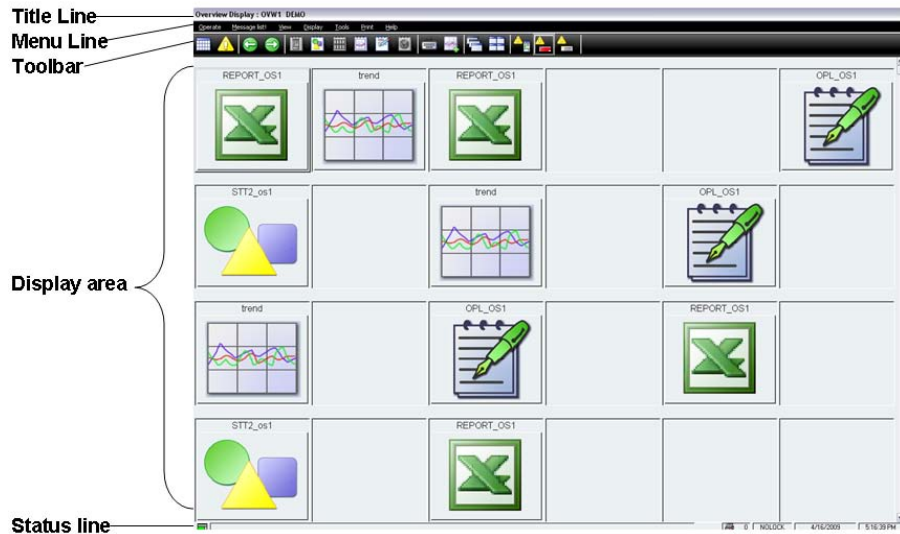
vh_e0002_us.bmp

If you want to see an area of the overview display currently not shown, move the scrollbar on the right hand side of the screen.

E 3.1   Display Selection from the Overview Display

Left-click a display type symbol (group display, trend display, etc.)

Use CURSOR KEYS to select a display type symbol → ENTER

E 4   **Symbols for Individual Display Types**

Group display

Graphic display
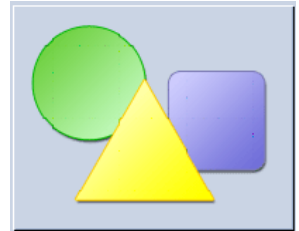
Trend display
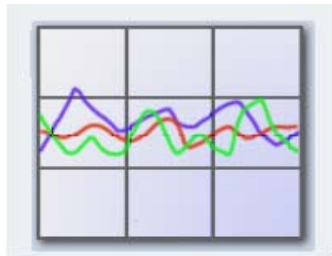
Logs

WEB display

Report

Index

O
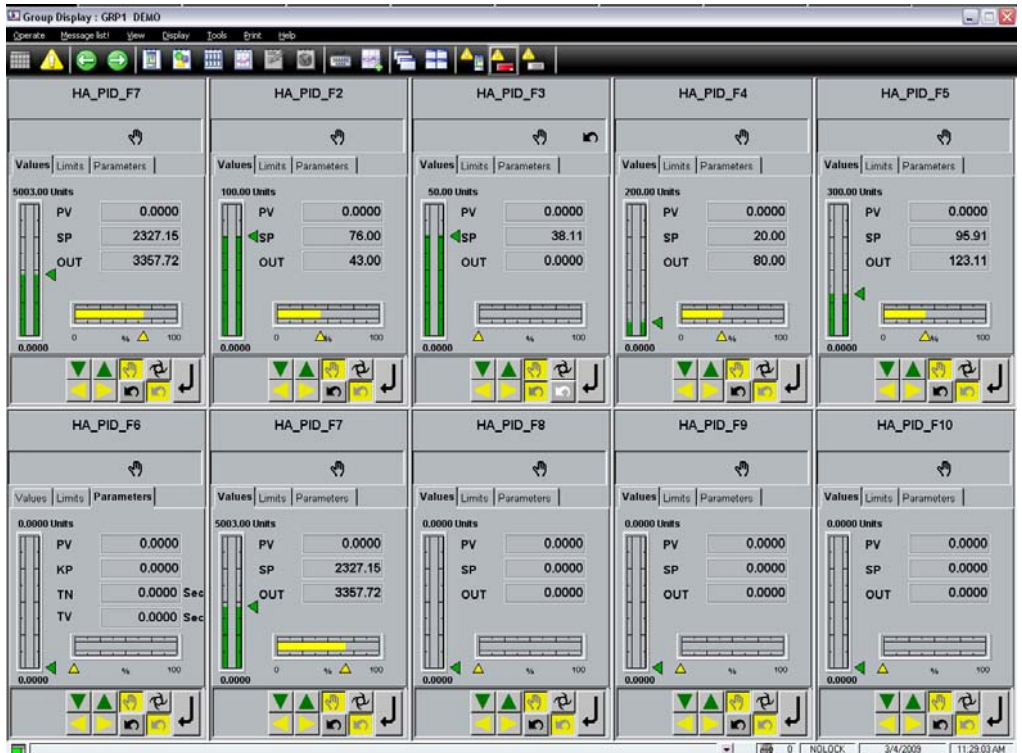
F   Group Display

Contents

F 1   General Description – Group Display

A group display is a collection of several faceplates. It offers the user the opportunity of displaying related functions in one display. After selecting one of the displayed faceplates the corresponding function is operable. The group display is assembled during configuration with DigiVis 500 Graphics Builder.

In the group display, the faceplates are arranged in a grid. If it should not be possible to show all available faceplates at the same time in the display area, a horizontal scrollbar appears under the group display.
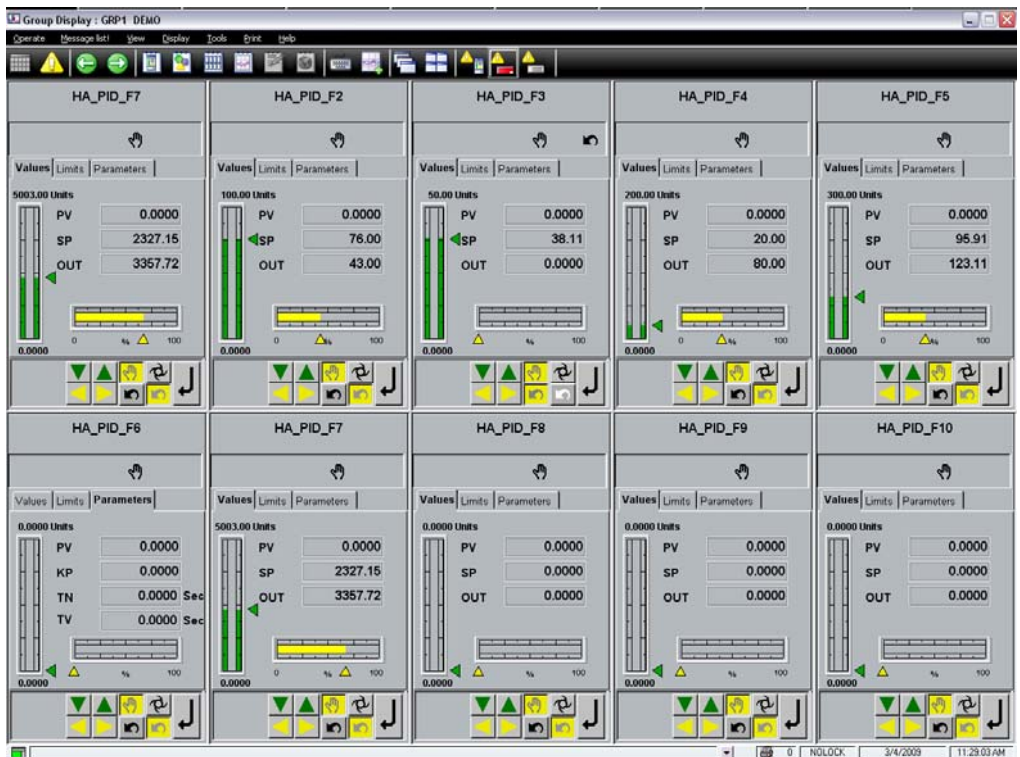
vh_f0005_us.bmp

F 2   Calling up the Group Display

F 2.1   Calling up a Group Display via the Toolbar

Group displays

☞ Left-click toolbar icon →In Display Explorer double-click appropriate group display

F 2.2   Calling up a Group Display via the Display Menu Item

☞ *Display* → *Group…* → In Display Explorer double-click appropriate group display

⬦ Ctrl + F7 → Use cursor keys to select appropriate group display → Enter

### F 2.3   Calling up a Group Display via the Context Menu

In order to be able to call up a group display via the context menu, you must first select a tag to which a group display has been allocated in DigiVis 500 Graphics Builder using the *Display access* function.

☞ Select tag → Call up context menu → Select appropriate group display

F 2.4   Group Display Selection from the Overview Display

☞ Left-click appropriate graphic symbol

◇ Use CURSOR or TAB KEYS to select appropriate group display symbol →ENTER

F 2.5   Calling up a Group Display via the Graphic Display

In order to be able to call up the group display using the graphic display you must first select a graphic object for which the *Show display* action with the group display has been configured in DigiVis 500 Graphics Builder.

☞ Left-click appropriate graphic symbol

◇ Use TAB KEY to select appropriate graphic object →ENTER

F 3   Operating Procedures in the Group Display

You can directly operate the tags shown in the group display by clicking the appropriate faceplate. All user actions can be performed as required, provided that this has been enabled.

Additionally, all tags of the group display are listed in the *Operate* menu and can be operated in the faceplate using the hotkeys ALT + B and the CURSOR KEYS.

☞ Further details can be found under **Faceplates.**

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G

G   Graphic Display
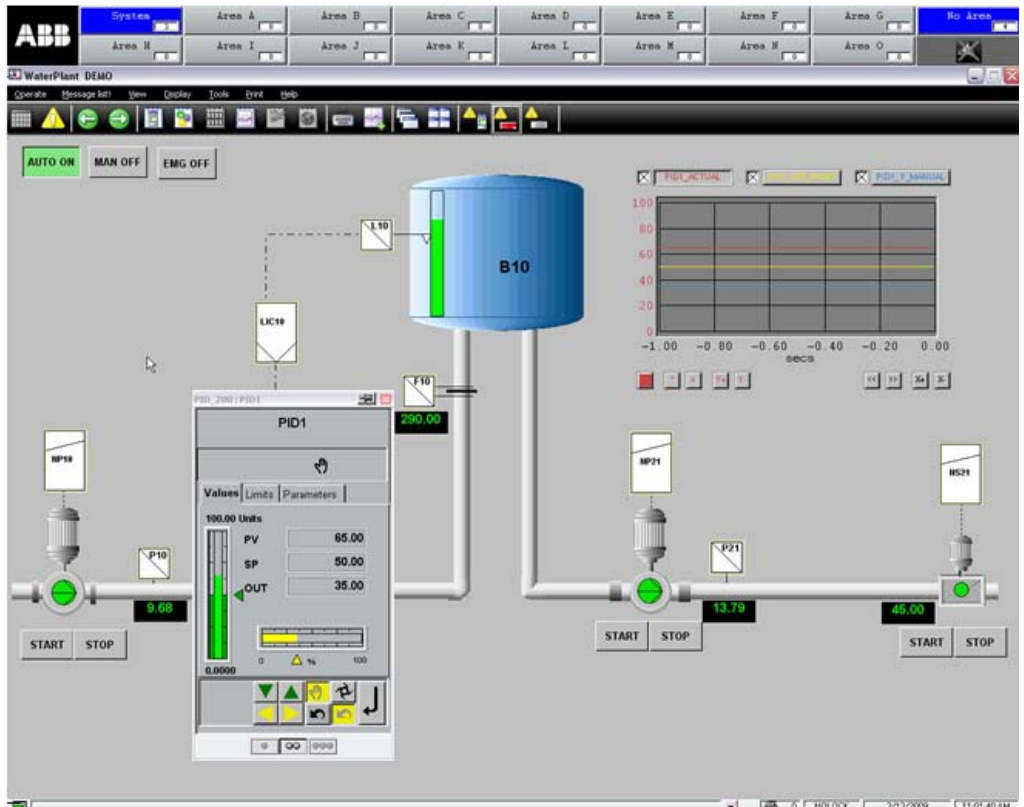
Contents

G 1   General Description – Graphic Display

In addition to standard displays such as overview display, group displays or trend displays it is possible to create customized graphic displays. These graphic displays can contain **static and dynamic display elements** and can be designed as per the requirements of the plant operator.

The static part can be, for example, the **schematic structure of the plant as background display.**
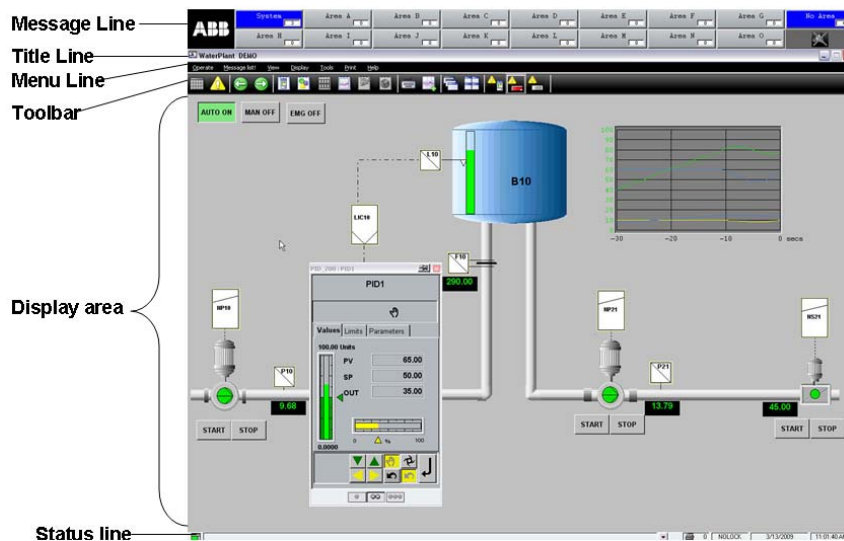
vh_g0021_us.bmp

Current process data and process state information can be presented in digital or analog form (e.g. bar graph, fill level or trend) in the required position as a **dynamic foreground display**

Depending on the process status the graphic symbols can be alternated, the colors or positions in the display can be changed or colors can flash.

With **configurable display selection buttons and areas**, a selection hierarchy for operation can be created within the free graphic displays.

The graphic display shown here, together with a faceplate called up in addition,is a possible way of displaying current process data in plant-specific form in the DigiVis 500 system.

G 2   Calling up a Graphic Display

G 2.1   Calling up a Graphic Display via the Toolbar

👈 Left-click toolbar icon → In Display Explorer double-click appropriate graphic display

G 2.2   Calling up a Graphic Display via the Display Menu Item

👈 *Display* → *Graphic…* → In Display Explorer double-click appropriate graphic display

👈 CTRL + F6 → Use CURSOR KEYS to select appropriate graphic display → ENTER

👈 CTRL + F6 → Enter first characters of graphic display name → ENTER

G 2.3   Calling up a Graphic Display via the Context Menu

In order to be able to call up a graphic display via the context menu, you must first select a tag
to which a graphic display has been allocated in DigiVis 500 Graphics Builder using the *Display
access* function.

👈 Select tag →Call up context menu →Select appropriate graphic display

G 2.4   Calling up a Graphic Display via the Overview Display
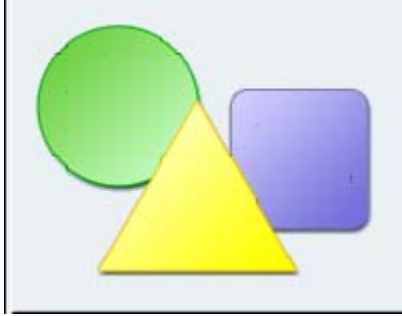
👆 Left-click appropriate graphic symbol

⌨ Use CURSOR or TAB KEYS to select appropriate graphic symbol→ENTER

G 2.5   Calling up a Graphic Display from Another Graphic Display

In order to be able to call up the graphic display using another graphic display you must first select a graphic object for which the *Show display* action with the graphic display has been configured in DigiVis 500 Graphics Builder.

👆 Left-click appropriate graphic symbol

⌨ Use TAB KEY to select appropriate graphic object→ENTER

G 3   Displaying a Graphic Display

The display of a graphic can be configured according to the monitor screen resolution. The available area for display of a graphic varies, for example, with different heights of the menu and status bars. A configured graphic display designed for another resolution is scaled for display, keeping the ratio of the sides constant. Thus, either the full height or the full width of the available area can be utilized.

These settings are available under *Tools* in the *Graphic…* group of the *Options* dialog box.

G 3.1   Clipping Graphic Displays

👉 *Tools* → *Options* → *Clip.*

The full width of the graphic is displayed in the available graphics area. Since the ratio of the sides is not changed by scaling, the lower area of the image may be clipped.

G 3.2   Fully Visible Graphic Display

👉 *Tools* → *Options* → *Fully visible*

The full height of the graphic is displayed in the available graphics area. Since the ratio of the sides is not changed by scaling, the right side of the screen may be unused.

G 3.3   Graphic Display Centered

👉 *Tools* → *Options* → *Centered*

The graphic display is centered on the screen.

G 4   Operating Procedures in the Graphic Display

In addition to the visualization of process data, each dynamic graphic object can be configured with an action. This action is executed by a single click.

Four types of action are available for each dynamic graphic object alternatively:

- Display or log selection

- Faceplate selection

- Writing of process variables with acknowledgement of writing actions as well as cancelation of writing actions

- Message acknowledgement

G 4.1   Selecting a Display in the Graphic Display

It is possible to **jump to other graphic displays** using a configured dynamic graphic object. This display change is initiated by **left-clicking** the graphic object.

G 4.2   Selecting a Faceplate

It is possible to call up any faceplate using a configured dynamic graphic object. This **faceplate** is called up by **double-clicking** the graphic object.

G 4.3   Writing Process Variables

Additionally, each dynamic graphic object in the graphic display offer the facility for manipulating analog and binary process variables. There are different options to manipulate process variables:

- You can write a new process variable in an edit field. Confirm the writing action with OK or ENTER.
  You can cancel the writing action at any time with ESC.

- You can continuously manipulate process variables by permanently clicking graphic elements (e.g. arrow keys).

- You can manipulate process variables within a certain range by shifting a graphic element (e.g. a cursor in a bargraph).

- You can write values to a set of variables (e.g. into variables linked to a button)

⚠ If any OPC server is not accessible or if any controller linked to a particular OPC server is down and if the user tries to write a value into a variable, then the write operation is not possible for the entire set of variables. This feature is built in to ensure consistancy of data.

G 4.4   Acknowledging Messages

As configured a single left mouse click will process an acknowledgement to a set of messages.

G 5   Dynamic Display Elements
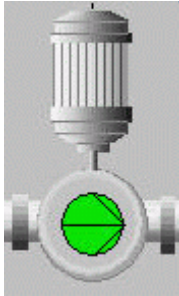
vh_g0022_us.bmp

User defined Macros are used to ease the creation of graphics and to create dynamic display elements. Macros are a combination of existing standard graphic elements as available in the Graphics editor. If graphics using macros are imported the dependent macros are imported as well.

G 5.1   Displaying Analog Values

Analog values can be displayed using bar graphs, fill levels, graphic object positioning and, of course, alphanumeric displays.

Bar graph	Display of analog values by filling a rectangular form, where the rectangle can be filled horizontally or vertically.
Fill area	Similar to a bar graph, but the area to be filled may be of any shape.
Object position	Symbols can be moved continuously in response to an analog value.
Alphanum. display	Display of analog values in numerical form, in different sizes and colors.

Changing values

- Left-click a numerical value →Change value →

- Controllable values can also be changed by scrolling the appropriate cursor. Subsequently confirm with .

Use TAB KEY to select appropriate numerical value →ENTER→ Change value →ENTER

G 5.2   **Displaying Binary Signals**

If configured, the color of graphic objects will change depending on the values of **binary signals**; depending on binary states, graphic objects may also be displayed in different positions.

G 5.3   Trend Window in the Graphic Display

The temporal progression of up to six measurement values can be tracked in a trend window. Unlike the trend display, the trend window in the graphic display does not include a history. This means that the trend window does not start displaying curves until the graphic display is called up.
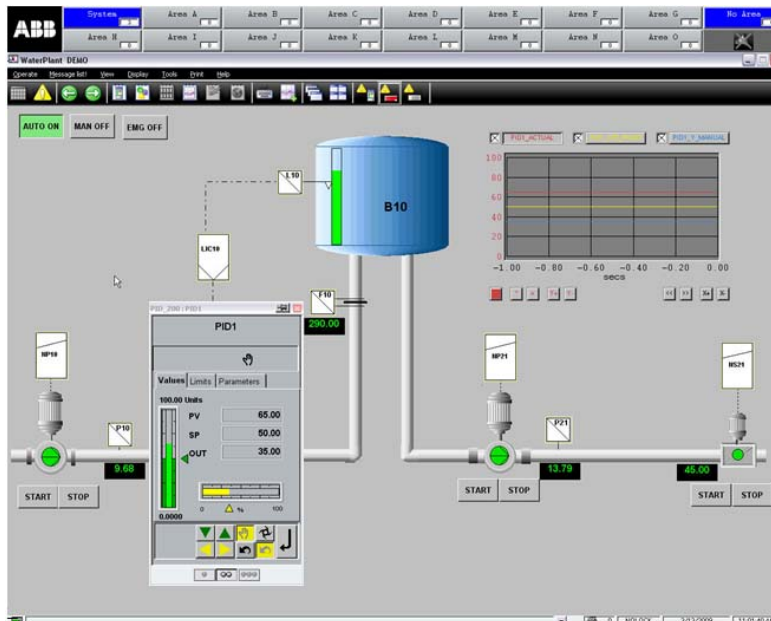
vh_g0023_us.bmp

Operations in the trend window can always be executed via the **context menu**, and in some cases via the **toolbar icons** – however the toolbar icons are only visible if this has been con-

figured in DigiVis 500 Graphics Builder ! Below you can see the toolbar icons next to the menu items.

☞ Call up context menu
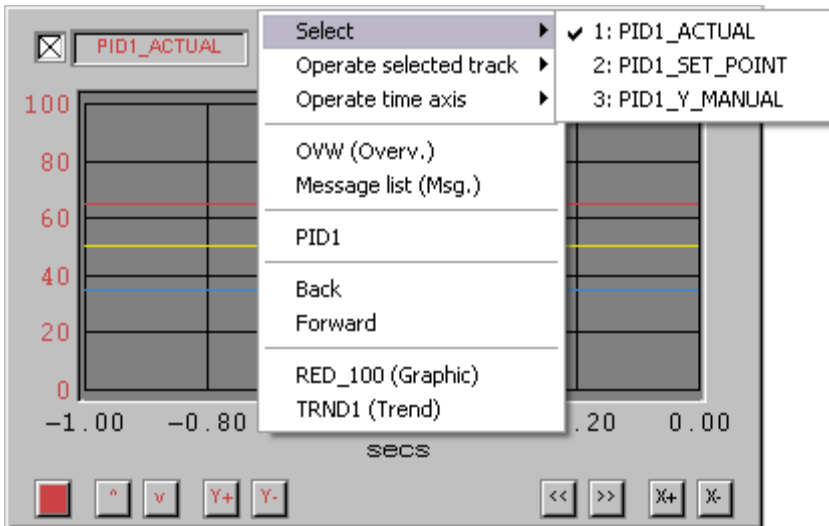
vh_g0006_us.bmp

Select   `PID1_ACTUAL`   When the button with the variable name (LI704 in the example) is clicked, the respective track is selected and can be operated in the *Operate selected track* menu.

👆 Call up context menu → *Operate selected track*

Here you will find all operating options of a track. The associated five buttons (bottom left corner in the trend window) change colors depending on the track selected in the upper left section of the trend window – in the example red for track LI704.
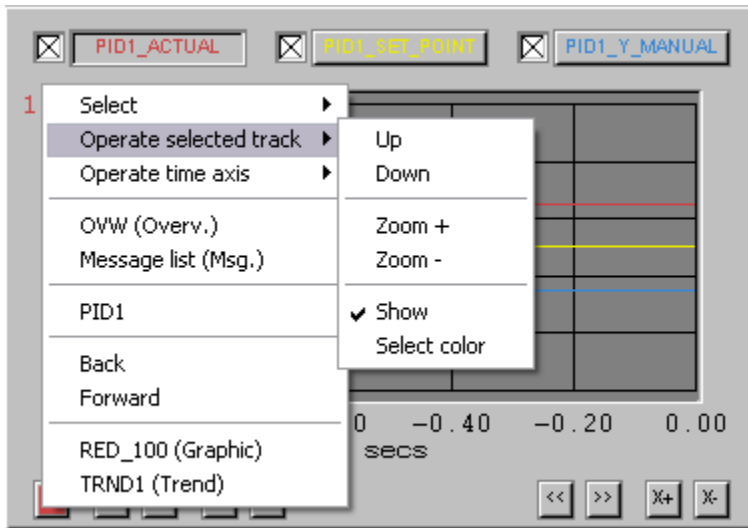
vh_g0004_us.bmp

Up	^	Shifts the selected trend upwards.
Down	v	Scrolls the selected trend downwards.
Zoom +	Y+	Halves the measurement range displayed for the selected trend (curve increases).
Zoom –	Y-	Doubles the measurement range displayed for the selected trend (curve decreases).

Show	☒ PID1_ACTUAL	The track selected in the context window or marked in the symbol is displayed in the trend window - in the example track LI704.
Select color	■	Here you can modify the trend color.

🖱 Call up context menu →*Operate time axis*

Here you can find all operating features of the time axis .

These buttons (bottom right corner in the trend window) always remain the same.
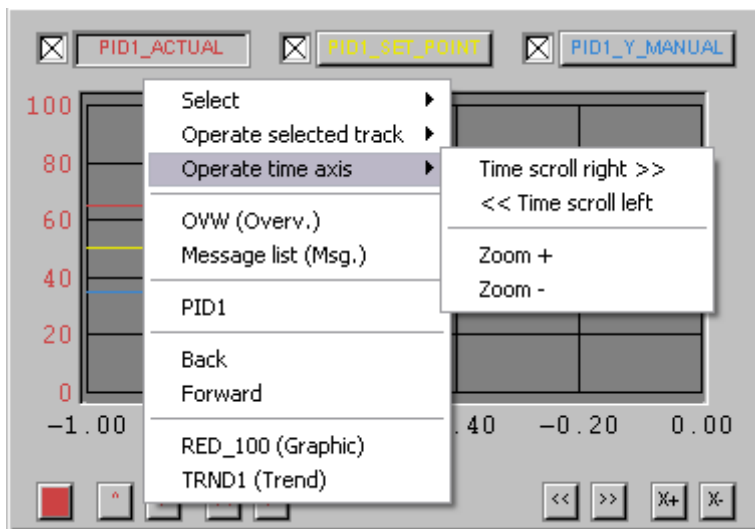
vh_g0005_us.bmp

Time scroll right >>	>>	Scrolls the selected trend to the right (more towards the present time).
<< Time scroll left	<<	Scrolls the selected trend to the left (past).

Zoom X+   X+   Halves the time displayed span. (spreads the curve horizontally)

Zoom X-   X-   Doubles the time displayed span.

                                                            (squeezes the curve horizontally)

☞ The trend window in the graphics display does **not save the settings** specified in the operating dialog. Each time it is called up the display commences with the originally configured settings.

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G

Graphic display
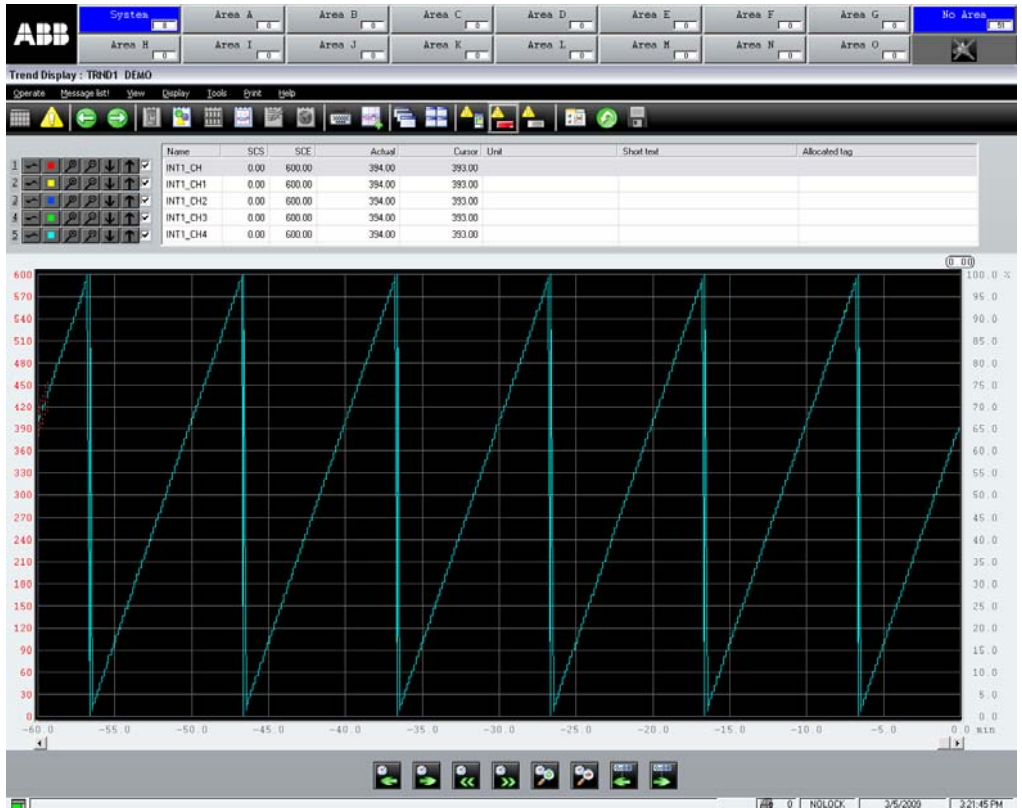
H   Trend Display

Table of Contents

H 1   General Description – Trend Display

A trend display is the visual representation of a trend recorder. It shows the temporal pro-gression of analog and binary process variables as trend curves in an X-Y coordinate system, where **up to six process variables** can be graphically represented in a display. Trend displays can be **configured** in DigiVis 500 Graphics Builder and also **defined** by the user at the opera-tor station. In a trend display, the operator can zoom in and out, show and hide, and scroll the display of the measured values.

The **OPC server** is used for the acquisition of any variable. The minimum acquisition time for this is 1 second.

Trend Archiving

The trend values are archived based on the configuration in DigiVis 500 Graphics Builder. The process data is read in the configured cycle time and archived as per the configured duration. **These archives** are stored on the operator station. The archives can also be copied by FTP (File Transfer Protocol) to an FTP server. The target can also be a disk drive of an operator sta-tion. Using the **DigiBrowse** add-on, files can later be displayed and converted into CSV format for further processing.

☞   The number or size of trend archives is not limited by configuration, it depends on the PC's performance capacity. Missing parts of tracks or a sluggish response from DigiVis 500 Operations – even as far as reaching inoperability – may indicate that the system is overloaded. In this case, it is recommended to reduce the number of trend archives or increase the archiving cylce (acquisition cycle).

Start-up Characteristics

After changes have been made in DigiVis 500 Graphics Builder and downloaded to DigiVis 500 Operations, the trend display appears with the configured values. Previous changes if any to the display characteristicsmade by the user are lost. The default setting is used instead. Changes made by the operator after the download in DigiVis 500 Operations for visualization are stored. The next time it is called up, the trend display appears again with these settings un-til the next download to the same trend.

☞ If the system time is set back by a time greater than the trend acquisition cycle (i.e. task cycle time * scan-down factor), the current trend archive file is closed and a new one is created.

H 1.1   *Operate* **Menu**

The *Operate* menu for the trend display contains the following menu items:

Operate	*Select*	`	
	Operate selected track	`	*Up*
			Down
			Zoom ±
			Zoom -
			Show
			Select color
			Select marker
	Operate time axis	`	*Time scroll right >>*
			Time scroll right >
			< Time scroll left
			<< Time scroll left
			Zoom ±
			Zoom -
			Cursor ≥
			≤ Cursor
	Options...		
	Reset		
	File transfer		

H 2 Calling up a Trend Display

H 2.1 Calling up a Trend Display via the Toolbar

Left-click toolbar icon → In Display Explorer double-click appropriate trend display

H 2.2 Calling up a Trend Display via the Display Menu Item

Display → *Trend…* → In Display Explorer double-click appropriate trend display

CTRL + F8 → Use CURSOR KEYS to select appropriate trend display → ENTER

H 2.3 Calling up a Trend Display via the Context Menu

To be able to call up a trend display via the context menu, you must first select a tag to which a trend display has been allocated in DigiVis 500 Graphics Builder using the *Display access* function.

Select tag → Call up context menu → Select appropriate trend display

H 2.4   Calling up a Trend Display from the Overview Display
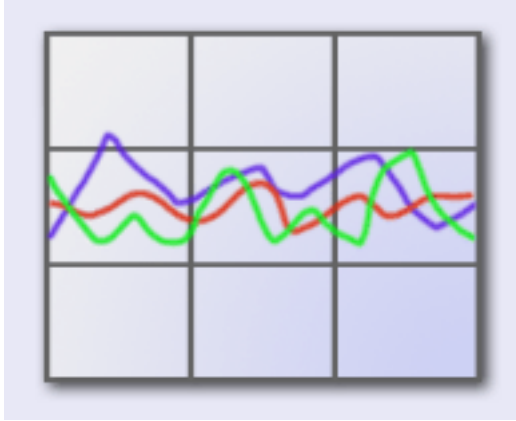
Left-click appropriate graphic symbol

Use CURSOR or TAB KEYS to select appropriate trend display symbol → ENTER

H 2.5   Calling up a Trend Display via the Graphic Display

To be able to call up a trend display using the graphic display you must first select a graphic object for which the *Show display* action with the trend display has been configured in DigiVis 500 Graphics Builder.

Left-click appropriate graphic symbol

Use TAB KEY to select appropriate graphic object →ENTER

H 3   Defining the Trend Display

In DigiVis 500 Operations, the operator can define up to **20 trend displays**. Every display can comprise of up to six freely definable variables of the project. User-defined trend displays are intended for short-term records / analyses or optimization related to a specific situation. If you should need the trend for a longer time period, please contact your configuration engineer and let him configure the trend in DigiVis 500 Graphics Builder.

User-defined trend displays can be changed, exported, or deleted at any time. A trend display that was previously exported can be imported again as new display. All these operations are carried out in the **operation dialog for user-defined trend displays**. In this dialog, all existing **user-defined** trends are displayed.

When data is loaded from DigiVis 500 Graphics Builder to an operator station, it may happen that user-defined trend displays are deleted. It is, therefore, recommended to export your user-defined trend displays prior to this data loading process and then re-import them if required.

H 3.1   Opening the Operation Dialog for User-defined Trend Displays

Define trend displays

Left-click toolbar icon

Tools → Define trend displays

The operation dialog is opened. The list of the existing **user-defined** trend displays and all operating options are displayed.
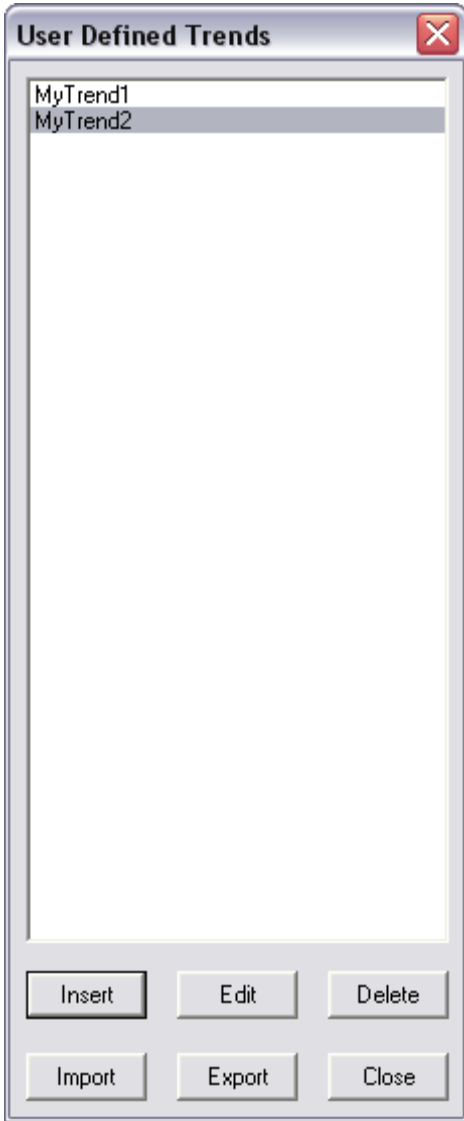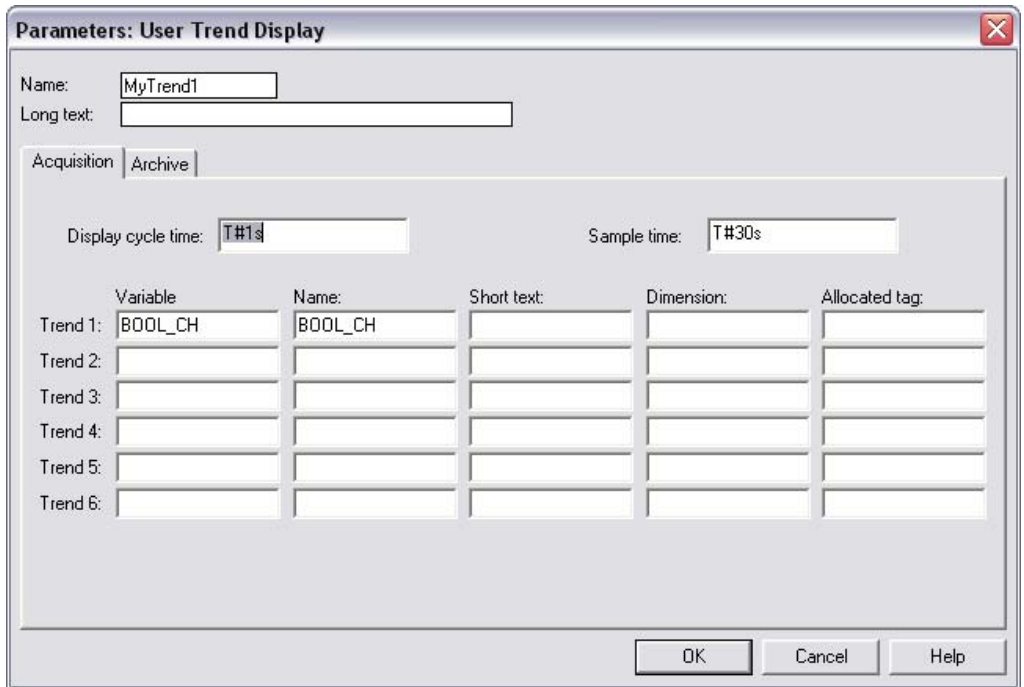
vh_h0008_us.bmp

H 3.2   Creating a New Trend Display

Open the operation dialog for user-defined trend displays.

☞-Tools → Define trend display → INSERT

The new trend display is defined in the subsequent dialogs:

vh_h0003_us.bmp

Name   Max. 12 characters (without spaces)

Long text   Max. 30 characters for free-form text

Acquisition **Tab**

Display cycle time   This cycle time is used for refreshing the trend display.

Sample time   Cycle time for the acquisition of new trend values.

Variable   Name of the variable whose values are acquired in the
                            trend. Pressing function key F2 displays the list of vari-
                            ables known in the system for selection.

Name, short text, dimension   These texts are displayed at the trend curve in the display.
                            After a variable is selected from the list, the variable name
                            is used as name and the first 12 characters of the variable
                            comment as short text. The text can be modified freely.

Allocated tag   Each trend curve may have a tag allocated to it. Using the
                            F2 function key the available tags are displayed in a list for
                            selection.

Archive **Tab**

On this tab you define whether and how trend data is to be archived.

vh_h0004_us.bmp

Enable archiving	☑	The trend data is archived.
Delete old archive	☑	The old archive is deleted when the operator station is rebooted (DigiVis 500 Operations restarted).
	☐	If no active archiving has been set up, a single archive file (in the form of a ring buffer) of fixed size is created for each trend display on the operator station.
	☞	In the event that archives do not match following a reboot, for instance if the number of trend curves has changed in the interim period, the old archive is saved as a file. The old archive files are given consecutive extensions from 001 to 999.

Archive name   The name of the trend is entered as the archive name. This name cannot be changed.

Archive duration   Enter the archive duration according to the IEC 61131-3 time format. The period can be entered in days, hours, minutes and seconds. Minimum value 1 s, maximum value: 1d = 1 day.

Examples: T#1d or T#20h31m23s

☞	The **archive duration** of the long-term archive determines the **size of the trend file**. This size can never exceed that of the trend file since the data is stored in a **ring buffer**. This means that once the archival period has been reached the current data always overwrites the oldest data.
☞	User-defined trend displays are intended for short-term records/analyses and optimzation related to a specific situation. If you should need the trend for a longer time period, please contact your configuration engineer and let him configure the trend in DigiVis 500 Graphics Builder.

Disk space req.   Adjacent to the edit field for the archive duration the space required for the archive is automatically displayed in kilobytes.

H 3.3   Saving a User-defined Trend Display

After all dialogs are edited, the definitions are saved with OK. The data that has been entered is checked and tested for plausibility. If any errors are encountered, these will be displayed.

☞ When data is loaded from DigiVis 500 Graphics Builder to an operator station, it may happen that user-defined trend displays are deleted. It is, therefore, recommended to export your user-defined trend displays prior to this data loading process and then re-import them if required.

H 3.4   Editing a Trend Display

Open the operation dialog for user-defined trend displays.

👉 Select appropriate trend display → EDIT

The same dialogs as for creating a trend display are shown. All entries can be changed.

👉 Save changes with OK.

H 3.5   Deleting a Trend Display

Open the operation dialog for user-defined trend displays.

☞ Select appropriate trend display → DELETE

The selected trend display is deleted without security dialog.

H 3.6   Exporting a Trend Display

Open the operation dialog for user-defined trend displays.

☞ Select appropriate trend display → EXPORT

export user-defined trend   ✕
Path: C:\Program Files\ABB Industrial IT\DigiVis 500\proj\MyTrend1.UTR
OK   Cancel
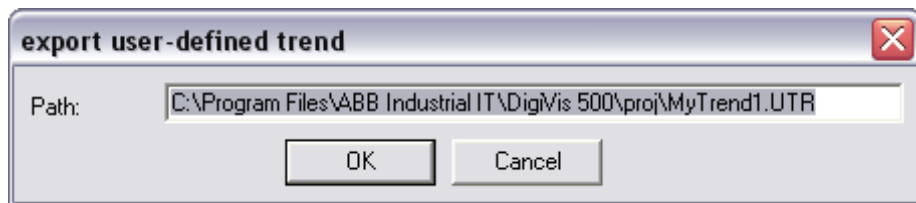
vh_h0019_us.bmp

You can change the displayed folder and file name. The definition of the selected trend display is stored in a *.UTR file.

H 3.7   Importing a Trend Display

Open the operation dialog for user-defined trend displays.

☞ IMPORT
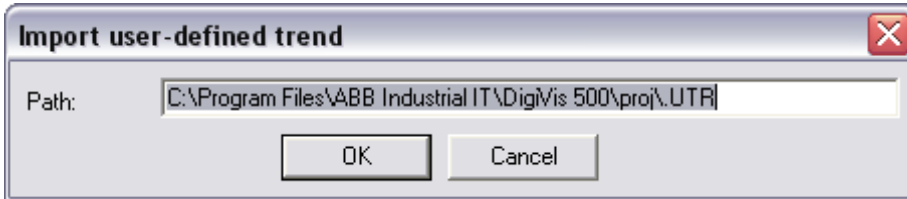
vh_h0005_us.bmp

In the displayed path, enter the name of the file to be imported and click OK.

The system checks whether a trend display already exists on the DigiVis 500 Operations station with the same name as the import file. If a trend display exists you can decide whether to overwrite the existing trend with the imported data or whether to create a new trend display with a new name.

H 4 Operations in the Trend Display
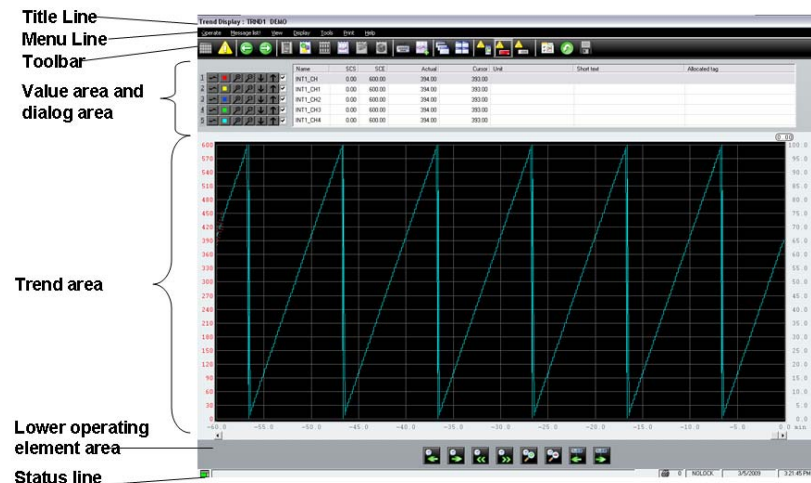
vh_h0007_us.bmp

After switching to the trend display, three new icons are shown in the toolbar on the right hand side.

H 4.1   Value Area and Dialog Area

The **value area** lists all variables with trends in this display and the associated information:

Name   **Name** of the variable.

SCS   **Scale start** for this trend on the Y axis.

SCE   **Scale end** for this trend on the Y axis.

Actual   The **current** value of the process variables.

Cursor   The present value of the process variable at the position
                          of the **cursor**.

Unit   **Unit** of the process variable.

Short text   Configured **short text** for this trend.

Allocated tag   Name of the assigned tag.

The operation buttons are located on the left hand side in the **dialog area**:

Switches cursor on/off.

Selects color for trend curve.

Zooms in trend curve (value range).

Zooms out trend curve (value range).

Scrolls trend curve downward.

Scrolls trend curve upward.

Shows/hides trend curve.

H 4.1.1   Selecting a Trend in the Value Area

Left-click the appropriate trend in the value area

Use TAB KEY to go to value area list → Use CURSOR KEYS to select appropriate trend

When the trend is selected in the trend area, the scaling configured for the trend is displayed to the left of the X-Y coordinate system. The scaling is shown with the same color as the trend.

H 4.1.2   Switching the Cursor On and Off

In the dialog area, left-click

Use TAB KEY to select → Toggle with SPACE BAR

H 4.1.3   Setting the Color of the Trend Curve

In the dialog area, left-click

Use TAB KEY to select → Toggle with SPACE BAR

The **color selection dialog** is opened. This dialog window shows all available colors in a list. The colors are sorted by usage groups that can be shown/hidden.

The individual color groups can be selected (keyboard: TAB key and ENTER) by left-click to the switches STATIC, MESSAGE, SIGNAL, MEDIA, and FREE.

To reduce the number of colors displayed in the list, mark only the color groups that should be shown.

Left-click appropriate color in color selection list → OK

Use CURSOR KEYS to select appropriate color → ENTER

H 4.1.4   Zooming the Trend Curve In/Out

The zoom function affects the scaling of the Y axis.

☞ In dialog area: Left-click 🔍 or 🔍

This has the same effect as changing the band start and band end. See also **page H-30**, **RESET**
in Setting and Changing Options **.**

H 4.1.5   Scrolling the Trend Curve Vertically

☞In dialog area: Left-click ⬆ or ⬇

The zero point of the trend is moved upward or downward along the Y axis. This has the same
effect as simultaneously increasing or decreasing band start and band end. See also **page**
H-30, RESET in Setting and Changing Options**.**

H 4.1.6   Showing/hiding the Trend Curve

☞In dialog area: Left-click ☑ or ☐

The trend curve is shown or hidden.

H 4.1.7   Calling up Assigned Displays

If the appropriate tag are assigned, a trend can be selected in the value area and the displays assigned to this tag can be called up via the context menu.

☞ Select appropriate trend in value area → Call up context menu → Select display

To open the faceplate of the assigned tag:

☞ Double-click selected trend in value area

☞ Select appropriate trend in value area → Call up context menu

H 4.2   Trend Area

The individual trends are displayed as curves in an X-Y coordinate system. There are two scale settings for the Y axis: on the right hand side it is always 0%...100%. On the left hand side, the scaling of a selected trend is in physical units. The scaling is displayed in the same color as the trend curve.

The X axis represents the time axis. Depending on configuration or operation, the time display can be relative or absolute. See also **page H-30, Current values in** Setting and Changing Options .

Below the coordinate system is a horizontal scroll bar, to adjust the visible time window backward in time for analyzing the trends. By using an adjustable cursor, past behavior of trends can be evaluated and compared to one another.

The trend values are always acquired with **OPC server time**. The displayed time axis, however, is labeled with the **current time**. Times in the daylight saving time period are marked with **S**. As a result, no time gaps or double curves in the trend display result from the changeover from normal time to daylight saving time or vice versa.

Time gaps within a trend curve are displayed by vertical red lines at the beginning and end. The size of a gap can be configured in the parameter definition mask of the trend display (see **Engineering Manual, Operator Station, Standard Display, Trend Display**). If **no time gap** detection is configured, the threefold cycle time is displayed as gap. Example: With a cycle time of 10 seconds, a data gap of 30 seconds is shown as gap in the trend, even if no gap detection is configured.
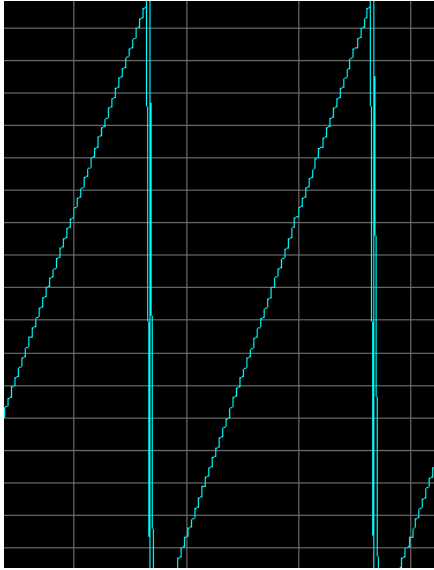
vh_h0020_us.bmp

H 4.2.1   Cursor Adjustment
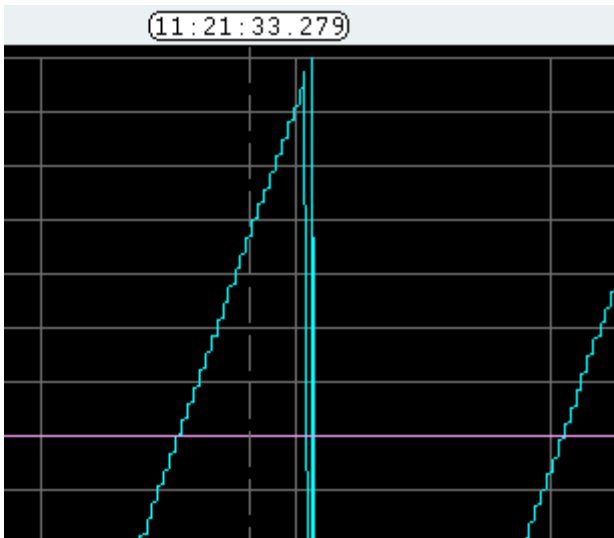
vh_h0021.bmp

After calling up a trend display the cursor appears at the top of the right side Y axis. The time-of-day or the deviation to local time is shown in the cursor area.

▭▬ In trend area, left-click the X-Y coordinate system at the height of appropriate time

▭▬Repeat left-click to switch [0.08 ←] or [0.08 →] until cursor is positioned at appropriate time

⬦Repeat pressing Alt + < or Alt + > until cursor is positioned at appropriate time

H 4.2.2 Scrolling the Displayed Time Range in the Trend Display

The time window for the trend display can be scrolled by the horizontal scroll bars or switches below the X-Y coordinate system. When the trend display is opened, the zero point (current time) is always located at the right edge of the time axis.

The time window can also be scrolled with the buttons below the X-Y coordinate system:

▭▬	⬦	**Function**
[icon clock ←]	Alt + T	Scroll time window in **small** steps to the **left** (step width one scale unit)
[icon clock →]	Alt + E	Scroll time window in **small** steps to the **right** (step width one scale unit)
[icon clock «]	Alt + I	Scroll time window in **large** steps to the **left** (step width one screen)

	ALT + M	Scroll time window in **large** steps to the **right** (step width one screen)

☞ When the time window is scrolled to the left, the time display on the X axis changes automatically from relative to absolute.

H 4.3   Scaling the Displayed Time Range in the Trend Display

To facilitate better viewing, the X axis (time axis) can be expanded or compressed. This alters the resolution of the time axis.

		Effect
	ALT + +	Expands the time axis (each click doubles the display width, which means that the time segment is cut in half)
	ALT + −	Compresses the time axis (each click cuts the display width in half, which means that the time segment is doubled)

H 4.4   Trend Display Options

In the *Trend Display Options* dialog you can make the settings for the displayed trend. The settings are related to the general layout of the trend display as well as to settings for individual trends.

H 4.4.1   Opening the *Trend Display Options* Dialog

After switching to the trend display, a new icon is shown in the toolbar on the right side.
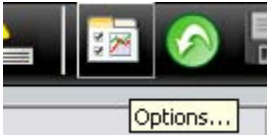
👆Left-click toolbar icon

👆 *Operate → Options*

⌨ ALT + O → O

H 4.4.2   Setting and Changing Options
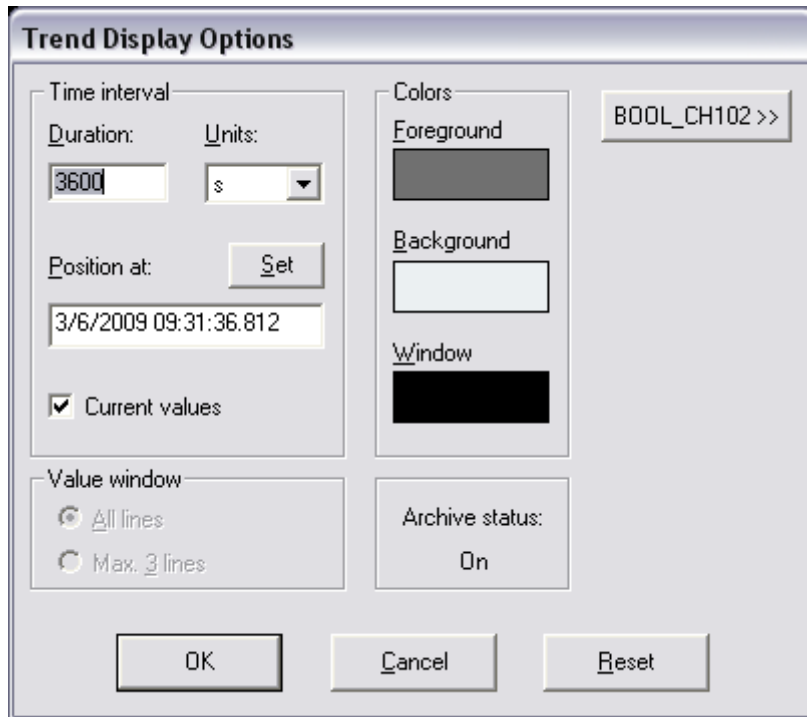
vh_h0006_us.bmp

Trend-independent Settings

Time interval

Duration	Range of the time window on the X axis for the trend display.
Position at	Enter point in time (for positioning window at a specified time on the trend curve).
SET	Sets the window to the specified position.

Current values   The right side of the trend shows the current process
                     values. The X axis shows relative time values.

Value window

All lines   All configured trends.

Max. 3 lines   A maximum of three trends displayed in text form.

Colors

You can adjust the colors for *Foreground*, *Background* and *Window* of the trend display.

A click on the appropriate color field opens the color selection list.

A click on RESET restores the default colors.

Archive status   Archive status display

                          On   Archive is running.

                          Idle   Archive status is controlled by function block input
                                            SEN from the allocated trend data acquisition.

                          Emergency stop Internal emergency stop.

                          Off   No archive.

OK   All inputs are taken over and checked for plausibility.

CANCEL   All entries are discarded and the dialog window is closed.

RESET   All settings are reset to the configured values:

                     - Trend display colors

                     - Trend curve colors

                     - Values window settings

- Band start, band end,

- Time range (with jump to present = current time).

Trend-specific Settings

Product <A>
>>

This button label is an example for "Produkt <A>". The number of buttons corresponds to the number of trends configured for this trend display. These buttons are used to open the respective dialog for the trend specific settings:
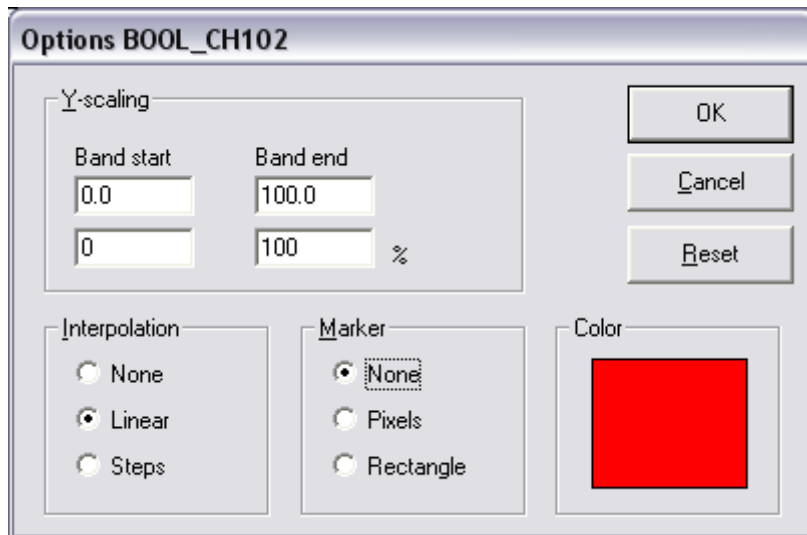
vh_h0017_us.bmp

Y-scaling   The options *Band start* and *Band end* define the scaling of the Y axis
                   for this trend. The position on the Y axis of the band start and band
                   end can be set between 0% and 100% using band start % and band
                   end %.

                   ☞

                   The band start setting must always be less than the band end. This
                   also applies to the band start % and band end %. The percentage val-
                   ues can be less than 0% and more than 100%. In this case the part of
                   the trend not between 0% and 100% will be displayed as a line above
                   100% or below 0%. Band start and band end must be entered as real
                   values. The value range is between 0.0 and ±999999999.9. The per-
                   centage values for band start and band end must be entered as integer
                   values. The value range must be between -5000 and +5000%.

Interpolation   Select *None*, *Linear*, or *Steps*.

Marker   Select *N*one**,** *Point/Pixels*, or *Rectangle* for the display of the cursors.

☞ If you select both for Interpolation and Marker the *None* option, the trend curve is not visi-
   ble!

di0559us.bmp

Trend color   The color for the display of the trend curve is defined as described earlier in this chapter. For further details see Setting the Color of the Trend Curve Page, H-21.

RESET   This button resets all settings for this trend curve to the default values. This applies, for example, to the Y-scaling, the markers, the interpolation, and the color.

H 4.4.3   Resetting all Settings

The changes made in the settings of all trends can be reset to the default values.

☞Left-click toolbar icon

☞*Operate → Options → Reset*

H 4.4.4   Saving the Trend File

A copy of the trend archive file can be saved on the configured disk drive.
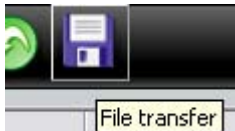
☞Left-click toolbar icon

☞*Operate → File transfer*

Index

T

Trend display

I   Faceplates

Contents

I 1   General Description – Faceplates

In a faceplate you can observe and operate the associated tag. The information shown in the faceplate is cyclically polled and updated. This means, the faceplates always indicate the **current state** of the connected process.

Faceplates provide both overview and detail information on tags. They can appear on the screen combined with either pre-configured or freely configurable displays.

Each Tag type in the AC500 Tag Type library has a **pre-configured faceplate.**
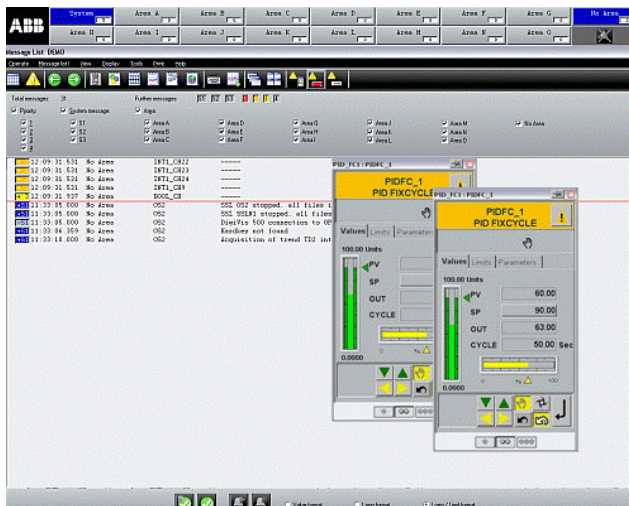
vh_i0008_us.bmp

A faceplate can be moved freely around the display area of the screen. For safety reasons, however, it cannot overlap the alarm line. When using two monitors, you cannot move the faceplate from one monitor to the other. Instead, you have to move the cursor to the second monitor and invoke the desired faceplate from there. A displayed faceplate stays on the screen until it is closed or replaced by another faceplate. A faceplate will thus remain on screen even when the display in the background is changed, such as during a change from an overview display to the message list.

A maximum of 5 faceplates can be displayed simultaneously on the screen. If you open an additional faceplate, the system simultaneously closes the faceplate which had not been activated for the longest period.

For additional hints about handling faceplates refer to **Operating Philosophy**.

I 2   **Calling up a Faceplate**

A faceplate can be displayed by several methods. When the appropriate tag is selectable on the screen (e. g. in a graphic display), the associated faceplate can be called up directly via the context menu. In every operating situation a tag in the tag list of the graphic display explorers can be selected and displayed in its faceplate (**see Operating Philosophy**).

I 2.1   **Calling up a Faceplate via the Toolbar**

👈 Left-click toolbar icon → In Display Explorer double-click appropriate tag

I 2.2   **Calling up a Faceplate via the Display Menu Item**

👈 *Display* → *Faceplates…* → In Display Explorer double-click appropriate tag

◇ Cᴛʀʟ + F5 → Enter significant first character of tag and/or select appropriate tag with Cᴜʀsᴏʀ ᴋᴇʏs → Eɴᴛᴇʀ

I 2.3   **Calling up a Faceplate via the Context Menu**

In order to call up a faceplate via the context menu, first select a tag.

👈 Right-click the tag or an area in the current display to which a tag has been assigned → Left-click tag name in context menu

I 2.4   Calling up a Faceplate via a Group Display

The group display is a configured collection of several faceplates (**see Group Display**).

☞ Double-click appropriate faceplate

◇ ALT + D → Use CURSOR KEYS to select appropriate faceplate → ENTER

I 2.5   Calling up a Faceplate via a Graphic Display

To be able to call up the faceplate using the graphic display you must first select a graphic object for which the *Open faceplate* action with the group display has been configured in DigiVis 500 Graphics Builder.

☞ Double-click appropriate graphic object

◇ Use TAB KEY to select appropriate graphic object → ENTER

I 2.6   Calling up a Faceplate via the Message List

☞ Double-click appropriate message

◇ Use CURSOR KEYS to select appropriate message → ENTER

I 3   Structure and Operation of Faceplates

I 3.1   Basic Structure and Operation of Faceplates

All faceplates have an **identical basic structure**. This provides important information about the displayed tags which can be instantly recognized.

The width of a faceplate is 1/5 of the total screen width.

All faceplates have the following structure:
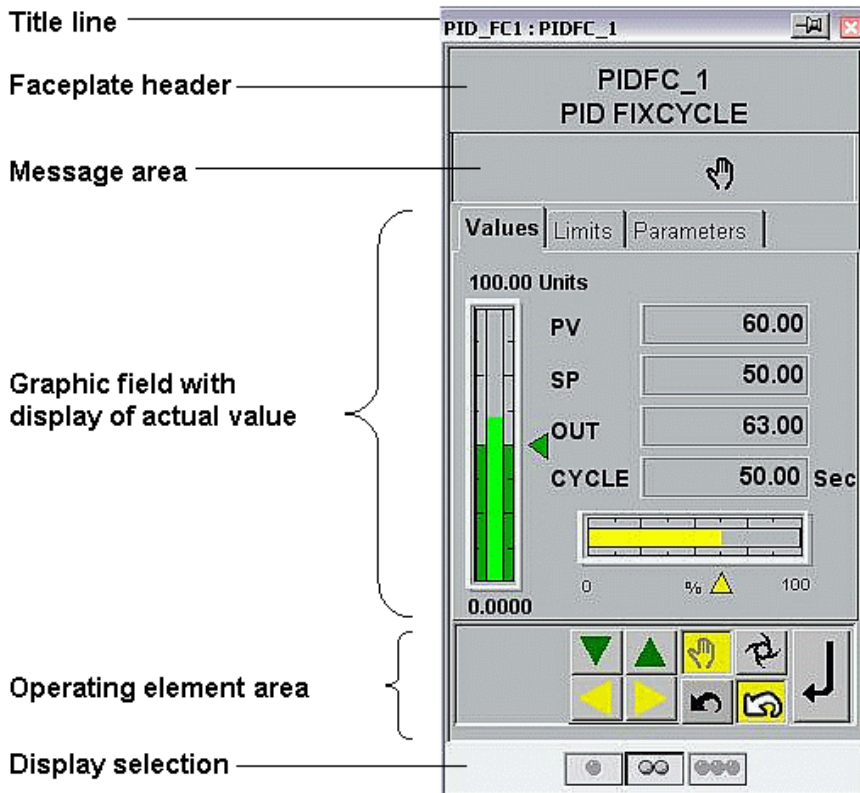
vh_i0009_us.bmp

I 3.2   Title Line and Faceplate Header

vh_i00101_us

The faceplate's title line contains the tag type and the function block class description (e.g. PID_FC1). On the right edge, the **pin button** to fixate the display and the **Close button** are located. When a faceplate is selected, the title line and the entire frame around the faceplate have a dark gray background.

The **tag name** is displayed in the **faceplate header**, below it the **short text** is displayed. An icon shows the summary alarm state of the function block.

For messages the **faceplate header** is displayed with a **colored background** according to the configured priority and a **Caution icon**. This colored background flashes as long as the message has not been acknowledged, just as the message line does (see **Messages**).

In each faceplate you can acknowledge all present messages of a tag by left-clicking the caution icon.

I 3.3   Message Area
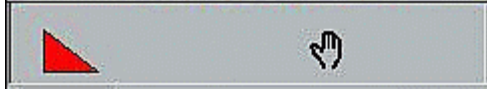
vh_i00102_us.bmp

In the **message area** all configured messages of the tag, to which a message priority has been assigned, are displayed as **icons**. In the event of an alarm the color changes or flashes according to the priority. Here, too, for every icon there is a tooltip that shows the **configured message texts**.

In addition to the messages, tag states like the track mode can be visualized in the message area.

☞ The messages for the tag are always shown in the faceplate, even if these messages are not visible in the message line and message page because of the filters that have been configured for the station.

The following table lists all **icons in the message area of faceplates**. The designations of the limit value types are shown in the message list.

Change table (only 4 icons: get icons and description)

Icon	Meaning	Limit value
	Process value is **greater** than configured limit value	**H**
	Process value is **smaller** than configured limit value	**L**
	Process value is **greater** than configured limit value/ important	**HH**
	Process value is **smaller** than configured limit value/ important	**LL**

Icon	Meaning	Limit value
△	Monitoring of maximum control difference	**H_XD**
▽	Monitoring of minimum control difference	**L_XD**
⧖	Monitoring of maximum control difference/important	**HH_XD**
⧗	Monitoring of minimum control difference/important	**LL_XD**
⋈	Monitoring of the size of control difference	**LH_XD**
↗	Monitoring of the **maximum** change rate	**DHs, DHm, DHh**
↘	Monitoring of the **minimum** change rate	**DLs, DLm, DLh**
↗	Monitoring a **maximum** change rate/high priority	**DHHs, DHHm, DHHh**
↘	Monitoring a **minimum** change rate/important	**DLLs, DLLm, DLLh**
⊝	Monitoring of a ratio limit	**H_V, L_V, HH_V, LL_V**

I 3.4   Graphic Field
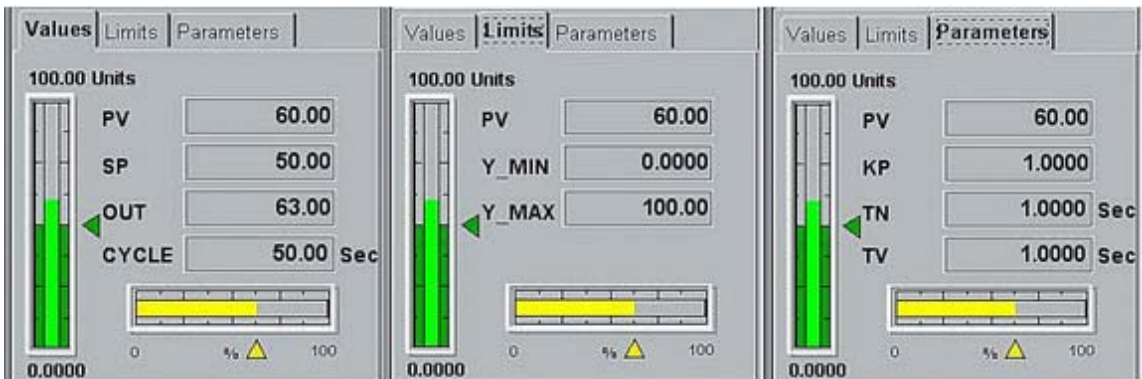
vh_i00103_us.bmp

The graphic field of a faceplate has three tabs **Values, Limits and Parameters**.

The **Values** tab displays the **current values** and **states** of the function block.

The most important **analog variables** of a function block are displayed in engineering units and with corresponding markers.

The changing actual value is generally framed within the usually static set point. If the operator can change the value associated with the outer bargraph, a green triangle is shown to the right of the bargraph. You can shift this triangle along the bargraph as required using the mouse. With this, you can set the displayed process variable to a new value.

For blocks with discrete current states, **texts** for identifying the current state are displayed in the graphic field instead of the bargraphs. A **current** state is denoted by **flashing red color**

Depending on the function block, the displayed process variables are arranged in the graphic field of up to three **tabs** called **Values, Limits and Parameters**.

I 3.4.1   Display and Operation in the Graphic Field

All numerical values that can be changed or set by the operator (operator-controllable values) are denoted by **gray highlighting**.

Selecting Tabs

👆 Left-click appropriate tab (*Values*, *Limits*, etc.)

⌨ Use TAB KEY to select current tab →Use CURSOR KEY to select appropriate tab

Changing Values in the Graphic Field

👆 Left-click an operable numerical value →Change value →

👆 Some values can also be operated by moving the slider symbol with the mouse.

Subsequently confirm with [↵] .

📦 Use TAB KEY to select appropriate numerical value →ENTER→ Change value →ENTER

☞ If the button for confirmation of the entries is not actuated within 5 seconds, the input field is closed automatically and the previous value is restored.

For further operations refer to Operating Element Area , Page I-16.

I 3.4.2   Symbols and Abbreviations in the Graphic Field

The display of actual value of the graphic field uses the same **symbols** as the message area (see **Message Area , Page I-11**). The used **abbreviations** and their meanings are listed in the following table.

Abbreviation	Description
CD	Derivative gain
IN	Function block input
PV	Process value (actual value)
RV	Reset value
RV	Current ratio value
S	Shut-off value
Sec	Time scheduler sections
Scale end	High scale limit
Scale start	Low scale ID
SI	Step index
SP	Set point
ST	Status register, Current state
T	Current test step duration
T	Runtime since start resp. configured time in time scheduler
TC	Time, current value
TD	Derivative action
TR	Reset time
Type	Configured TIMER type

I 3.5   Operating Element Area

vh_i0104_us.bmp

The current **operating modes** of the function block are displayed in the operating element area and can be switched over. The **PID (example) blocks** can be **reset** by pressing a button.

All operable buttons are marked with black icons, those that cannot be operated with gray icons. Current states are denoted by yellow buttons.

I 3.5.1   Operating the Switches in the Operating Element Area

Left-click appropriate button →

Use TAB KEY to select appropriate button →ENTER
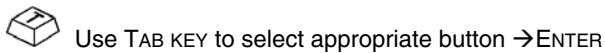
I 3.5.2   Continuous Change of Controller Output and Set Point

The controller function block allow for continuous adjustment of the set point and output. For this purpose, buttons with three colored triangles are provided. The colors correspond to the associated bargraphs: green for the setpoint, and yellow for the output.
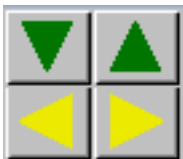
☜ Left-click appropriate button →Hold left mouse button down or repeat clicking until the

appropriate value is reached → [↵]

The current value is shown as tooltip.

☞ A value change made with these buttons is directly written into the process station. No confirmation (with ENTER) is required.

☞ While the button is being pressed, the changes are written cyclically into the operation log.

I 3.5.3   Buttons in the Faceplates' Operating Element Area

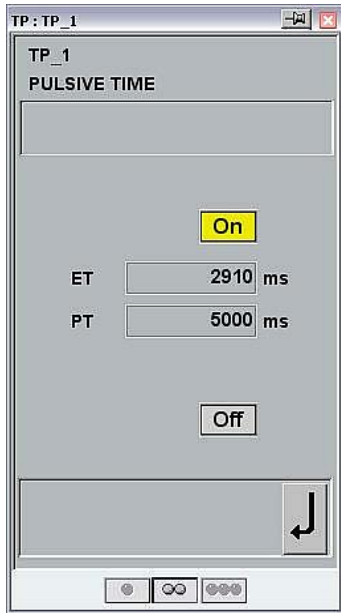| Button	Description
🖐 ↻	Toggle manual/automatic
▬	Reset
◀ ▶ (yellow)	Decrease/increase output value
▼ ▲ (green)	Decrease/increase set point

I 3.6   Display Selection

At the time of this writing the buttons in the display selection area have no function.

I 4   Faceplates for AC500 Function Blocks

I 4.1   Standard Library

I 4.1.1   Timer, TP

TP.bmp

Display

Faceplate header

>   Name, short text.

Message area

>   Not used

Numerical display

>   **ON**   ON

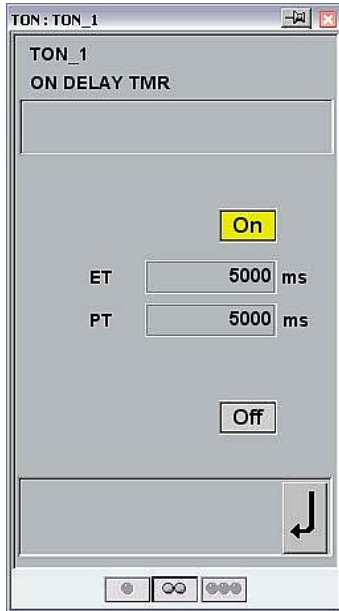>   **ET**   Elapsed time
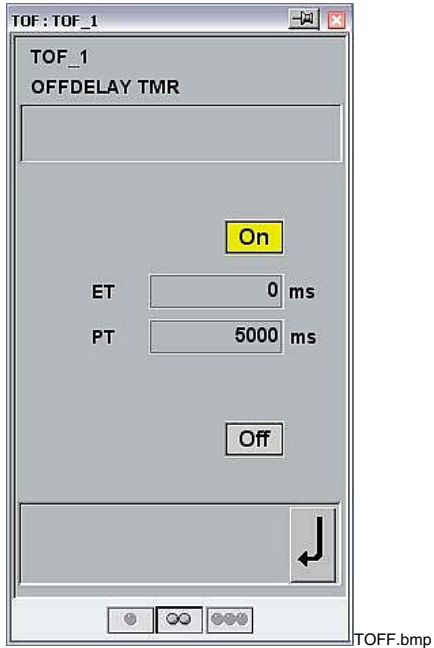
>   **PT**   Pre-set time

>   **OFF**   OFF

When OUT is true, ON is filled with yellow back-ground color and when OUT is false, OFF is filled with yellow background color.

Operator interventions

>   none

I 4.1.2   On-delay Timer, TON

TON.bmp

Display

Faceplate header

> Name, short text.

Message area

> Not used

Numerical display

> **ON** ON
>
> **ET** Elapsed time
>
> **PT** Pre-set time
>
> **OFF** OFF

When OUT is true, ON is filled with yellow background color and when OUT is false, OFF is filled with yellow background color.

Operator interventions

> none

I 4.1.3   Off-delay Timer, TOFF

TOF : TOF_1
TOF_1
OFFDELAY TMR

ET   0 ms
PT   5000 ms

On

Off

TOFF.bmp

Display

Faceplate header

   Name, short text.

Message area

   Not used

Numerical display

   ON   ON

   ET   Elapsed time

   PT   Pre-set time

   OFF   OFF

When OUT is true, ON is filled with yellow background color and when OUT is false, OFF is filled with yellow background color.

Operator interventions

I 4.1.4   Up Counter, CTU
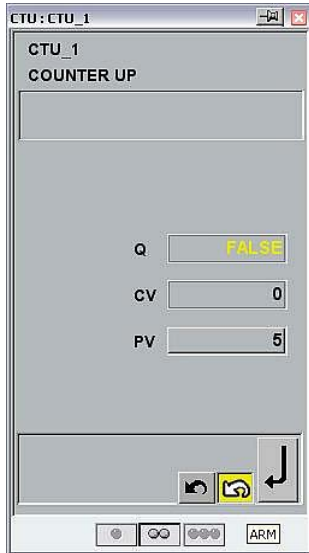
CTU.bmp

Display

Faceplate header

   Name, short text

Message area

   None

Numerical display

   Q   Output

   CV   Counter actual value

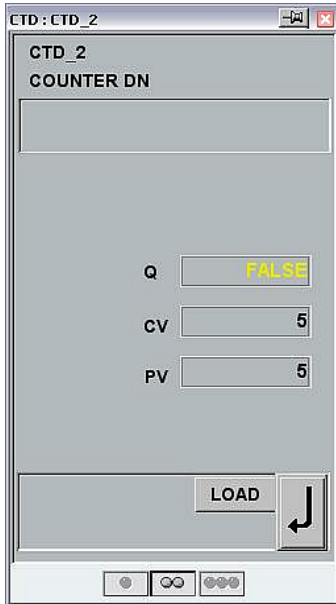   **PV**   Preset value

Operator interventions

   Reset = 1 will initialize the counter readings and
   RESET symbol is shown in the indication area.

I 4.1.5   Up/Down Counter, CTUD
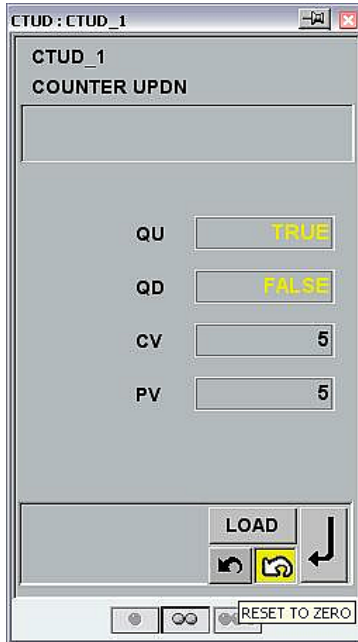
CTUD.bmp

Display

Faceplate header

> Name, short text

Message area

> None

Numerical display

> **QU**   Output
>
> **QD**   Output
>
> **CV**   Counter actual value
>
> **PV**   Preset value

Operator interventions

> Reset = 1 will initialize the counter readings and RESET symbol is shown in the indication area. If LOAD = True, the counter variable CV will be initialized with the upper limit PV and flashing text with LOAD BUTTON ACTIVE will appear on the faceplate.
>
> When CounterUp is done (CV = PV), QU is true. When CounterDown is done (CV = 0), QD is true.

I 4.1.6 Down Counter, CTD

CTD.bmp

Display

Faceplate header

Name, short text

Message area

None

Numerical display

Q   Output

CV   Counter actual value

PV   Preset value

Operator interventions

Reset = 1 will initialize the counter readings and RESET symbol is shown in the indication area. If LOAD = True, the counter variable CV will be initialized with the upper limit PV.

I 4.1.7   LIMITALARM
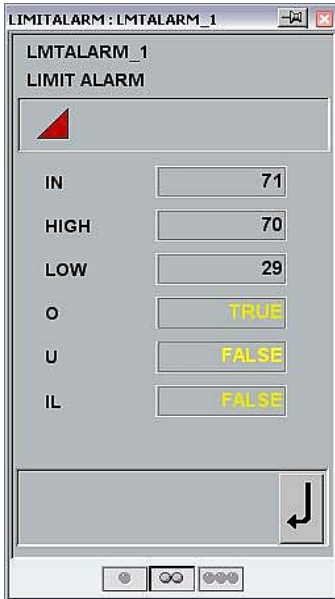
LIMIT ALARM.bmp

Display

Faceplate header

Name, short text.

Message area

Icon for time message, if a message has been configured for the set output

Numerical display

IN   Input

HIGH   Upper limit

LOW   Lower limit

O   Output

U

IL

If IN > HIGH, then OUT is true.It is indicated by a red flashing triangle in the message area

If IN < LOW, then U is true. It is indicated by a red flashing triangle in the message area.

If IN is in between HIGH and LOW, then IL is true.

I 4.2   Utility Library

I 4.2.1   PD
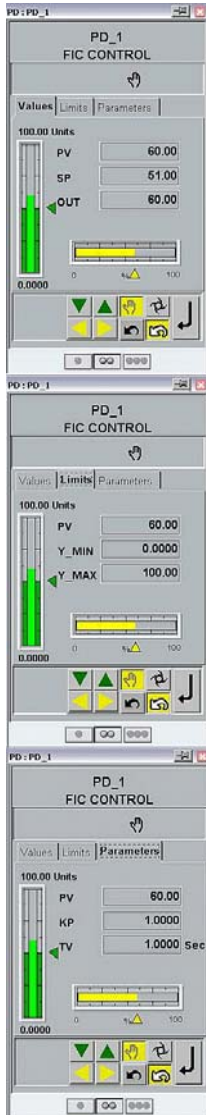
PD_1.bmp

Display

Faceplate header

Name, short text.

Message area

Icon for time message, if a message has been config-
ured for the set output

Numerical display

PV   Process value

Values Tab:

SP   Setpoint

OUT   Output

Limits Tab:

Y_MIN, Y_MAX   Output value limiters

Parameters Tab:

KP   Gain

TV   Derivative time

Graphical display

SP, PV and OUT values are shown in bargraphs.

Vertical bargraph:

SP is shown in the outer bargraph and PV is shown in
the inner bargraph.

Horizontal bargraph:

OUT is shown in this bargraph.

Operator interventions

SP can be altered in Auto and Manual modes (using
arrow buttons or slider)

OUT can be altered in Manual mode

Confirmation button is used to commit the changes

If **reset**=1, output is set to logic-0 signal and **reset** =0
will restore the PD output.

I 4.2.2   PID

PID_1.bmp

Display

Faceplate header

Name, short text.

Message area

Icon for time message, if a message has been config-ured for the set output

Numerical display

PV   Process value

Values Tab:

SP   Setpoint

OUT   Output

Limits Tab:

Y_MIN, Y_MAX   Output value limiters

Parameters Tab:

KP   Gain

TN   Integral time

TV   Derivative time

Graphical display

SP, PV and OUT values are shown in bargraphs.

Vertical bargraph:

SP is shown in the outer bargraph and PV is shown in the inner bargraph.

Horizontal bargraph:

OUT is shown in this bargraph.

Operator interventions

SP can be altered in Auto and Manual modes (using arrow buttons or slider)

OUT can be altered in Manual mode

Confirmation button is used to commit the changes

If **reset** =1, output is set to logic-0 signal and **reset** =0

will restore the PID output.

Message acknowledgement

I 4.2.3 PID_FIXCYCLE
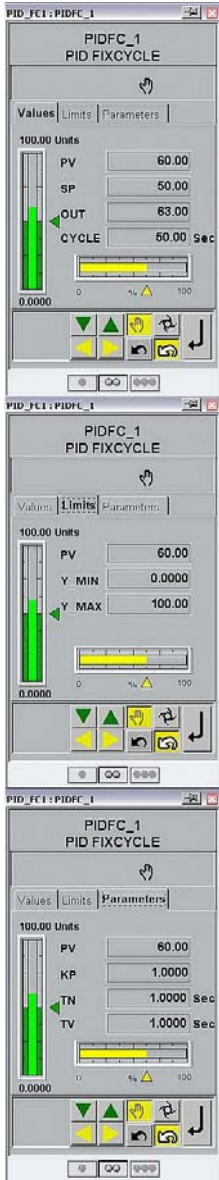
Display

Faceplate header

Name, short text.

Message area

Icon for time message, if a message has been configured for the set output

Numerical display

PV   Process value

Values Tab:

SP   Setpoint

OUT   Output

CYCLE

Limits Tab:

Y_MIN, Y_MAX   Output value limiters

Parameters Tab:

KP   Gain

TN   Integral time

TV   Derivative time

Graphical display

SP, PV and OUT values are shown in bargraphs.

Vertical bargraph:

SP is shown in the outer bargraph and PV is shown in the inner bargraph.

Horizontal bargraph:

OUT is shown in this bargraph.

Operator interventions

SP can be altered in Auto and Manual modes (using arrow buttons or slider)

OUT can be altered in Manual mode

Confirmation button is used to commit the changes

PIDFC.bmp

If **reset** =1, output is set to logic-0 signal and **reset** =0 will restore the PID_FIXCYCLE output.

Message acknowledgement

I 4.2.4   GEN
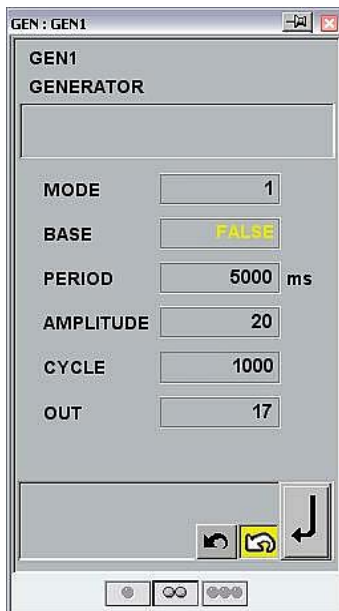
GEN.bmp

Display

Faceplate header

Name, short text.

Message area

None

Numerical display

MODE   Defines the function to be generated

(sine, cosine, ascending-, descending

sawtooth, rectangular signal, triangular

functions)

BASE

PERIOD   Defines the cycle time

AMPLITUDE   Defines the amplitude of the gener-

ated signal

CYCLE   Defines the number of cycles in a de

fined period of time

OUT   Output

Operator interventions

Reset = 1 will set the function generator to 0 and Reset symbol will appear on the message area of the faceplate.

I 4.2.5   RAMP_INT
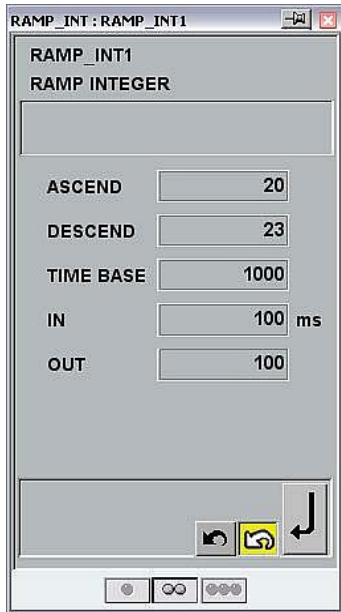
RAMP_INT.bmp

Display

Faceplate header

    Name, short text.

Message area

    None

Numerical display

    ASCEND   Ascend value (integer)

    DESCEND   Descend value (integer)

    TIME BASE   Base time

    IN   Input

    OUT   Output

Operator interventions

Reset = 1 will initialize the function block

I 4.2.6   RAMP_REAL
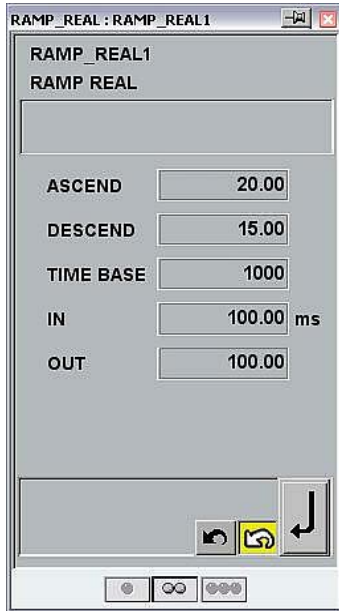
RAMP_REAL.bmp

Display

Faceplate header

> Name, short text.

Message area

> None

Numerical display

> **ASCEND**   Ascend value (real)
>
> **DESCEND**   Descend value
>
> (real)
>
> **TIME BASE**   Base time
>
> **IN**   Input
>
> **OUT**   Output

Operator interventions

Reset = 1 will initialize the function block

I 4.2.7   HYSTERESIS
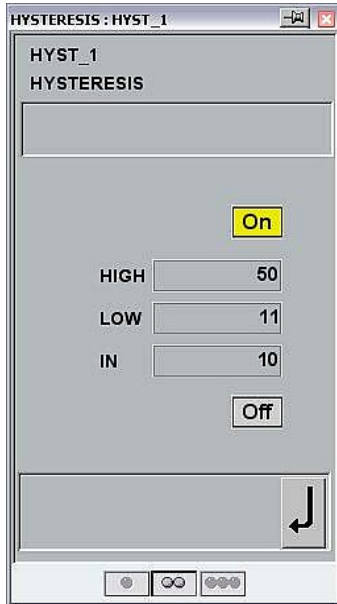
HYS.bmp

Display

Faceplate header

> Name, short text.

Message area

> None

Numerical display

> **ON** ON
>
> **HIGH** Upper limit
>
> **LOW** Low limit
>
> **IN** Input value
>
> **OFF** OFF

When IN < LOW, then OUT is true and the ON indi-
cation is filled with yellow background color, When IN
> HIGH, then OUT is false and the OFF indication is
filled with yellow background color.

I 4.2.8   CLOCK Setting/ reading the clock and date
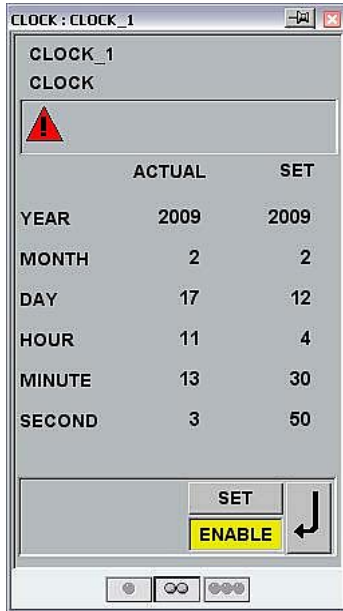
CLOCK.bmp

Display

Faceplate header

> Name, short text.

Message area

> Icon for time message, if a message has been configured for the set output

Numerical display

> **YEAR**
>
> **MONTH**
>
> **DAY**
>
> **HOUR**
>
> **MINUTE**
>
> **SECOND**

Operator interventions

> SET and ENABLE buttons.
>
> When ENABLE = true then the system values for the parameters in the numerical display are updated in the "ACTUAL" column. When SET= true, values for the parameters can be specified in the "SET" column. On confirmation the "SET" values will be written into the "ACTUAL" values.
>
> When ERR=1, warning symbol with flashing red will appear in the message area.

I 4.2.9   HA_CONTROL

HA_CONTROL Block handles the AC500 HA Operation such as Change over from Primary to Secondary in case of fault with related diagnostics and also Data transfer between HA CPUs.
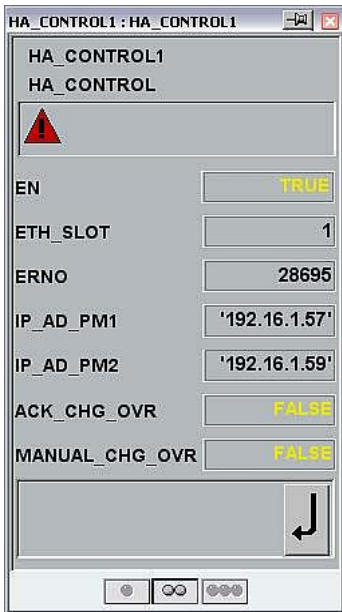
Display

Faceplate header

Name, short text.

Message area

Icon for time message, if a message has been configured for the set output

Numerical display

EN	Enable Block Processing
ETH_SLOT	Ethernet Slot Number
IP_AD_PM1	IP address of the AC500 CPU connected to Line A
IP_AD_PM2	IP address of the AC500 CPU connected to Line B
ACK_CHG_OVER	Acknowledgement of Change Over Event
MANUAL_CHG_OVER	Manual change over input
DONE	Completion of the Block Processing
ERR	Error occurred block processing
ERNO	Error Number

HA_CONTROL.bmp

Operator interventions

SET and ENABLE buttons.

When ENABLE = true then the system values for the parameters in the numerical display are updated in the "ACTUAL" column. When SET= true, values for the parameters can be specified in the "SET" column. On confirmation the "SET" values will be written into the "ACTUAL"

values.

When ERR=1, warning symbol with flashing red will appear in the message area.

I 4.2.10   HA_CS31_DIAG

HA_CS31_DIAG Block handles the control and status bytes of each CI590 Module on the CS31 BUS.   It is also possible to find information such as Configured and Active CI590 Slaves available on CS31 BUS and related diagnostics.
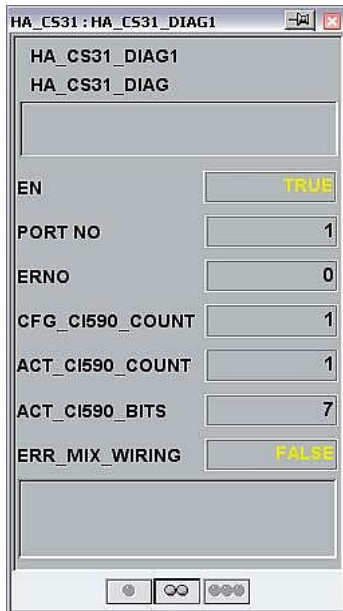
HA_CS31.bmp

Display

Faceplate header

 Name, short text.

Message area

 Icon for time message, if a message has been configured for the set output

Numerical display

EN	Enable Block Processing
HA_COM	CS31 Communication Port Number
ERR	Error occurred block processing
ERNO	Error Number
DONE	Completion of the Block Processing

 CFG_CI590_COUNT   Number of CI590 Slaves configured the PLC configuration

 ACT_CI590_COUNT   Number of active CI590 Slaves in the CS31 BUS

 ACT_CI590_BITS   Each bit of this DWORD represents an active CI590 in the CS31 BUS

 ERR_MIX_WIRING   Error in case of Mix wiring between Line A and Line B of CI590 slaves

 When ERR=1, warning symbol with flashing red will

appear in the message area.

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K   Reports

Contents

K 1   General Description – Reports

Reports are used to acquire and store data in user defined MS Excel templates.

K 1.1   File transfer

Using the *file transfer* function it is possible to transfer a copy of the report file from the local DigiVis 500 Operations PC to another PC. The target PC must have a network communication connection (FTP) to the DigiVis 500 Operations PC. Normally, report files are sent directly to another PC on the network. It is, however, also possible to transfer them to another drive of the local DigiVis 500 Operations PC. The file transfer target is configured in DigiVis 500 Graphics Builder and **cannot be changed in DigiVis 500 Operations**.

After calling up a report, the title line indicates the type of the report plus the report name, short text and long text. A list of the report files available is displayed below the toolbar.

The list header contains the following information:

- Sequential number
- Number of entries
- Size of the report
- Last acquisition
- State
- Name of the report

States

The following *States* can be indicated for the report:

acquiring

Indicates that the data for the report is being acquired

completed

Indicates the completion of the data acquisition. The report is ready to be viewed.

deleted

Indicates that the report has been deleted from the database.
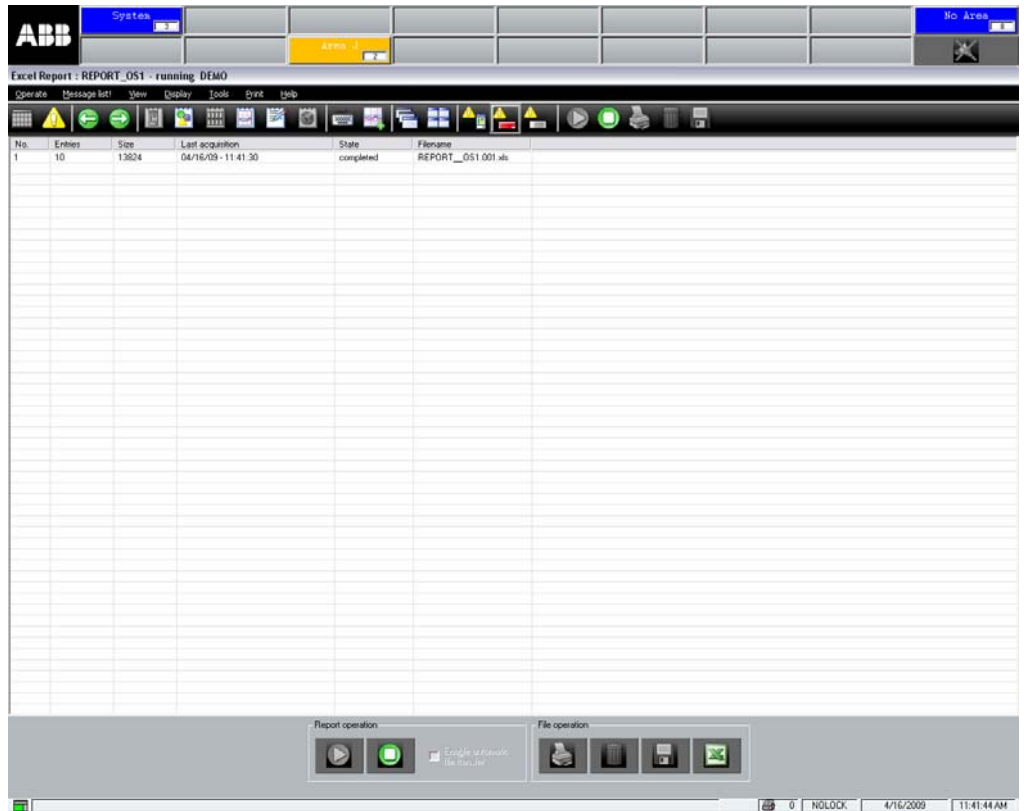
vh_l0010_us.bmp

K 1.2   *Operate* Menu

The *Operate* menu for logs contains the following menu items.

<u>O</u>perate   <u>S</u>tart

                                    S<u>t</u>op

                                    <u>P</u>rint ...

                                    <u>D</u>elete ...

                                    <u>F</u>ile transfer

                                    Sp<u>l</u>it

                                    D<u>e</u>tails only

                                    File list <u>o</u>nly

K 2   Calling up Reports

K 2.1   Calling up Reports via the Toolbar
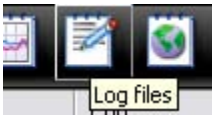
☞ Left-click toolbar icon for logs → In Display Explorer double-click appropriate report

K 2.2   Calling up Reports via the Display Menu Item

☞ Display → Log → In Display Explorer double-click appropriate report

Ctrl + F9 → Use CURSOR KEYS to select appropriate report or enter first character of report name → ENTER

K 2.3   Calling up Reports via the Context Menu

In order to be able to call up a log via the context menu, you must first select a tag to which a
log has been allocated in DigiVis 500 Graphics Builder using the *Display access* function.

Select tag → Call up context menu → Select REP

K 2.4   Calling up Reports from the Overview Display

Left-click appropriate report symbol

Use CURSOR or TAB KEYS to select appropriate report symbol → ENTER

K 2.5   Calling up Reports via a Graphic Display

In order to be able to call up a report via a graphic display you must first select a graphic object
for which the *Show display* action with the log has been configured in DigiVis 500 Graphics
Builder.

Left-click appropriate graphic symbol

Use TAB KEY to select appropriate graphic object →ENTER

K 3   Operating

Three methods are available for operating the individual reports in the DigiVis 500 system:

- via the buttons in the toolbar,
- via menu item *Operate* (mouse and keyboard operation),
- via the buttons in the bottom operating element area.

K 3.1   Starting the Reports

Logging can be started by user interaction only if **Manual starting and stopping** has been en-
abled in DigiVis 500 Graphics Builder during configuration.

Logging can be started if:

- logging has not been started yet,

- the maximum number of report files has been reached and **Automatic delete** is enabled.

In toolbar or operating element area: Left-click

Operate→ Start

Alt→ O → S

Do not access the report file when data acquisition is in progress. This will cause the data
acquisition to be aborted and will thus lead to loss of data.

K 3.2   Stopping the Reports

Logging can be stopped by user interaction only if **Manual starting and stopping** has been
enabled in DigiVis 500 Graphics Builder during configuration.

In toolbar or operating element area: Left-click
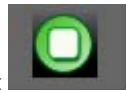
Operate → Stop

Alt→ O → T

K 3.3   Printing a Report File

The contents of the selected log file can be printed only if **Manual print** was expressly enabled for this log in DigiVis 500 Graphics Builder during configuration.

In toolbar or operating element area: Left-click

Operate → Print

Alt→ O → T

Call up context menu → Print

K 3.4   Deleting a Report File

The selected report file can be deleted only if **Manual delete** was expressly enabled for this report in DigiVis 500 Graphics Builder during configuration.

In toolbar or operating element area: Left-click

Operate → Delete

Call up context menu → Delete

Alt → O → D

K 3.5   Enabling Automatic File Transfer

If automatic file transfer is enabled, the report data is copied to the specified target folder – either cyclically or after closing a file, depending on the configuration.

Automatic file transfer can only be enabled or disabled if **Manual enable and disable** was expressly enabled in DigiVis 500 Graphics Builder during configuration.

In operating element area: Mark checkbox

In order to disable automatic file transfer, the checkmark must be removed again.

K 3.6   Initiating Manual File Transfer

The data of the selected report file is copied to another computer or another folder according to the configuration. With this, it is also possible to transfer report files that have not yet been completed.

Manual file transfer can be initiated only if **Manual controlled** was enabled in DigiVis 500 Graphics Builder during configuration.

In toolbar or operating element area: Left-click

Operate → File transfer

Alt → O → F

K 3.7   Updating report Files

The list of available report files is automatically updated. The **contents** of the respective log file can be updated manually.

In operating element area: Left-click

Alt   +   K

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L   Logs

Contents

L 1 General Description - Logs

Logs are used to chronologically document historical events, states and sequences from the process and from the DigiVis 500 system. Logs are output to the printer, screen or (by data transfer) to data storage devices.

A distinction is made between various types of logs:

Event logs

These are used for logging **events** such as messages, faults, switching actions and operator interventions. Logging is performed **spontaneously** when the event takes place.

Protocol type: Signal sequence log

State logs

These are used for **cyclical** logging of **process states**. This includes the cyclical logging of a tag's status or the logging of events in the process.

Protocol type: **Operation log**.

Number of logs

The following logs can be set up per operator station:

Operation log　　　　　　　max**.** four logs

Signal sequence log 1　　　max. one log

Signal sequence log N　　　max. three logs

File transfer

Using the *file transfer* function it is possible to transfer a copy of the log file from the local DigiVis 500 Operations PC to another PC. The target PC must have a network communication connection (FTP) to the DigiVis 500 Operations PC. Normally, log files are sent directly to another PC on the network. It is, however, also possible to transfer them to another drive of the local DigiVis 500 Operations PC. The file transfer target is configured in DigiVis 500 Graphics Builder and **cannot be changed in DigiVis 500 Operations**. **To visualize the exported files**, use the add-on program **DigiBrowse**. This also offers conversion of the files to the standard CSV format, so that an evaluation with other programs (e.g. MS Excel) is then possible.

After calling up a log, the title line indicates the log type plus the log name, short text and long text. A list of the available log files is displayed below the toolbar. The contents of the first log file is shown below that list.

The list header contains the following information:

- Sequential number, number of entries

- Time specified for the start of logging

- Time specified for the end of logging (if already terminated)

- Log state

States

The following *States* can be indicated for the log:

deleted

The log file is automatically deleted when the configured maximum number of files that can be archived is reached and automatic deletion has been enabled. When the screen view is changed, these files are deleted from the log list.

printed

The log file was printed.

printing

The log file is currently being printed.

in printer queue

The log file was entered into the printer queue.

vh_l0002_us.bmp

You can easily identify the current log file as it already has an entry in the *Start* column, but no entry in the *End* column. The operation of the **operation log**, and **signal sequence log** is largely identical. Therefore, it is described once for all log types.

L 1.1 *Operate* Menu

The *Operate* menu for logs contains the following menu items.

O̲perate   S̲tart

S̲t̲op

P̲rint ...

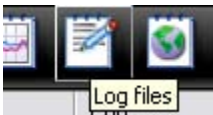D̲elete ...

F̲ile transfer

Spl̲it

De̲tails only

File list o̲nly

L 2 Calling up Logs

L 2.1 Calling up Logs via the Toolbar

Left-click toolbar icon → In Display Explorer double-click appropriate log

L 2.2 Calling up Logs via the Display Menu Item

Display → Logs → In Display Explorer double-click appropriate log

CTRL + F9 → Use CURSOR KEYS to select appropriate log or enter first character of log name → ENTER

L 2.3   Calling up Logs via the Context Menu

In order to be able to call up a log via the context menu, you must first select a tag to which a log has been allocated in DigiVis 500 Graphics Builder using the *Display access* function.

Select tag → Call up context menu → Select appropriate log

L 2.4   Calling up Logs from the Overview Display

Left-click appropriate log symbol

Use CURSOR or TAB KEYS to select appropriate log symbol → ENTER

L 2.5   Calling up Logs via a Graphic Display

In order to be able to call up a log via a graphic display you must first select a graphic object for which the *Show display* action with the log has been configured in DigiVis 500 Graphics Builder.

Left-click appropriate graphic symbol

Use TAB KEY to select appropriate graphic object →ENTER

L 3   Operating

Three methods are available for operating the individual logs in the DigiVis 500 system:

- via the buttons in the toolbar,

- via menu item *Operate* (mouse and keyboard operation),

- via the buttons in the bottom operating element area.

L 3.1   Changing the View Settings

The logs can be viewed in various modes: you can **split** the log, view a **detail only**, or view a **file list only**.

Split

The upper display area shows the list of log files, the lower the contents of the selected log. When a log is called up, the first file of the list is highlighted. Click with the mouse or use the CURSOR KEYS (↑,↓)o select a different file from the list.


☞ In toolbar or operating element area: Left-click .

☞ *Operate → Split*

☞ Alt → O → L

Detail only

Contents of selected log, only

🖱 In toolbar or operating element area: Left-click [image] .

🖱 *Operate* → *Detail only*

✏ ALT → O → E

File list only

List of log files, only

🖱 In toolbar or operating element area: Left-click [image] .

🖱 *Operate* → *File list only.*

✏ ALT → O → O

L 3.2   Starting the Logging

Logging can be started by user interaction only if **Manual starting and stopping** has been enabled in DigiVis 500 Graphics Builder during configuration.

Logging can be started if:

• logging has not been started yet,

• the maximum number of log files has been reached and **Automatic delete** is enabled.

🖱️ In toolbar or operating element area: Left-click   .

🖱️ Operate→ Start

⌨️ Alt→ O → S

L 3.3   Stopping the Logging

Logging can be stopped by user interaction only if **Manual starting and stopping** has been enabled in DigiVis 500 Graphics Builder during configuration.

🖱️ In toolbar or operating element area: Left-click

🖱️ Operate → Stop

Alt→ O → T

L 3.4   Printing a Log File

The contents of the selected log file can be printed only if **Manual print** was expressly enabled for this log in DigiVis 500 Graphics Builder during configuration.

☞In toolbar or operating element area: Left-click .

☞Operate → Print

✍Alt→ O → T

☞Call up context menu → Print

In the following dialog you can define what is to be printed: either the *Complete selected log file*, the *Current page* or a range of *Pages*.

Print

Print area

○ Complete selected log file

● Starting with first visible line

Number of pages:

Configured lines per page: 70

| OK | Cancel |
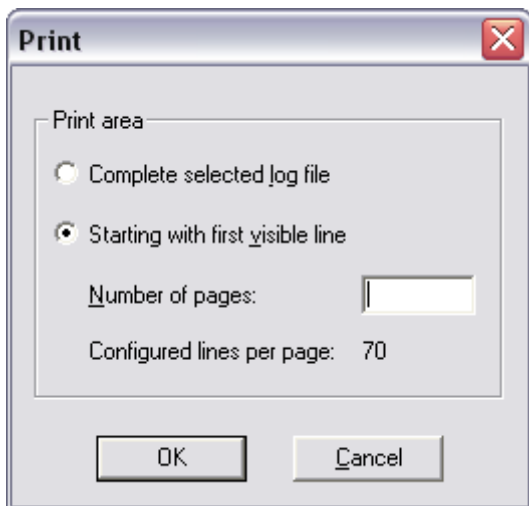
vh_l0011_us.bmp

L 3.5 Deleting a Log File

The selected log file can be deleted only if **Manual delete** was expressly enabled for this log in DigiVis 500 Graphics Builder during configuration.

In toolbar or operating element area: Left-click .

Operate → Delete

Call up context menu → Delete

Alt → O → D

L 3.6 Enabling Automatic File Transfer

If automatic file transfer is enabled, the log data is copied to the specified target folder – either cyclically or after closing a file, depending on the configuration.

Automatic file transfer can only be enabled or disabled if **Manual enable and disable** was expressly enabled in DigiVis 500 Graphics Builder during configuration.
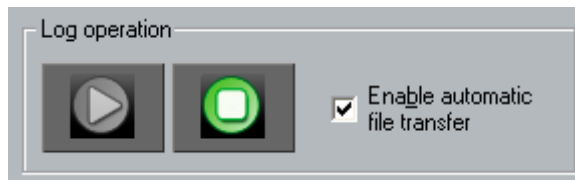
vh_l0013_us.bmp

☞–In operating element area: Mark checkbox

☞ In order to disable automatic file transfer, the checkmark must be removed again.

L 3.7 Initiating Manual File Transfer

The data of the selected log file is copied to another computer or another folder according to the configuration. With this, it is also possible to transfer log files that have not yet been completed.

Manual file transfer can be initiated only if **Route manual file transfer** was enabled in DigiVis 500 Graphics Builder during configuration.

☞–In toolbar or operating element area: Left-click .

☞–Operate → File transfer

Alt → O → F

L 3.8 Updating Log Files

The list of available log files is automatically updated.The **contents** of the respective log file can be updated manually.

☞–In operating element area: Left-click .

Alt + K

L 4 Operation Log

The **operation log** is one of the state logs. It is used for logging process variables. To allow for a better understanding, configured texts can be added to the process variables. The operation log can be started manually, cyclically, or by a specific event.

L 4.1 Displaying the Operation Log

Left-click appropriate log file

Use cursor keys to select appropriate log file

vh_l0017_us.bmp

L 4.2   Operating the Operation Log

For details about operating the log refer to Operating , Page L-12**.**

The operation log file may consist of several pages. Once the log file has been opened, the appropriate "page" can be directly selected. In the bottom operating element area you can find the appropriate edit field.

vh_l0018_us.bmp

Edit field for the **page number** and button for scrolling **backwards** and **forwards** one page at a time.

The numbers of the current page and last page are shown in the window title bar in the format: **Current page / Last page**

Selecting a Page in a Log

🖱️Left-click in edit field → Enter page number

⌨️Use TAB KEY to select edit field → Enter page → ENTER

Scrolling Backwards and Forwards one Page at a Time

🖱️Left-click button to scroll backwards and forwards

⌨️Use TAB KEY to select button → ENTER

☞ The current page number is displayed in the entry field.

L 4.3   Operation Log Format

The operation log does not have a fixed format because its configuration in DigiVis 500 Graphics Builder allows **text to be freely combined with formatted process variable values**.

L 5   Signal Sequence Log

The **signal sequence log** is used for logging events and operator interventions and is, therefore, classified as an event log. This means, the data (events) are not polled and recorded cyclically, but only when an event occurs.

A distinction is made between two types of signal sequence logs:

Signal sequence log 1 outputs events to a printer constantly as they occur. This log guarantees that events are printed out in strict chronological order.

Signal sequence log N does not output the events to the printer until the end of logging or until an operator intervention initiates printing.

L 5.1   Displaying the Signal Sequence Log

☞ Left-click appropriate log file

☞ Use cursor keys to select appropriate log file

vh_l0019_us.bmp

L 5.2   Operating the Signal Sequence Log

For details about operating the log refer to Operating , Page L-12.

The signal sequence log is not divided into separate pages. It is, therefore, not possible to directly specify a page as with the operation log.

☞ The color scheme of the text and background can be changed for a better overview when displaying the signal sequence log.

👆-Tools→ Options

⌨Alt → T → P

In the following dialog, you can define the color scheme for text and background.
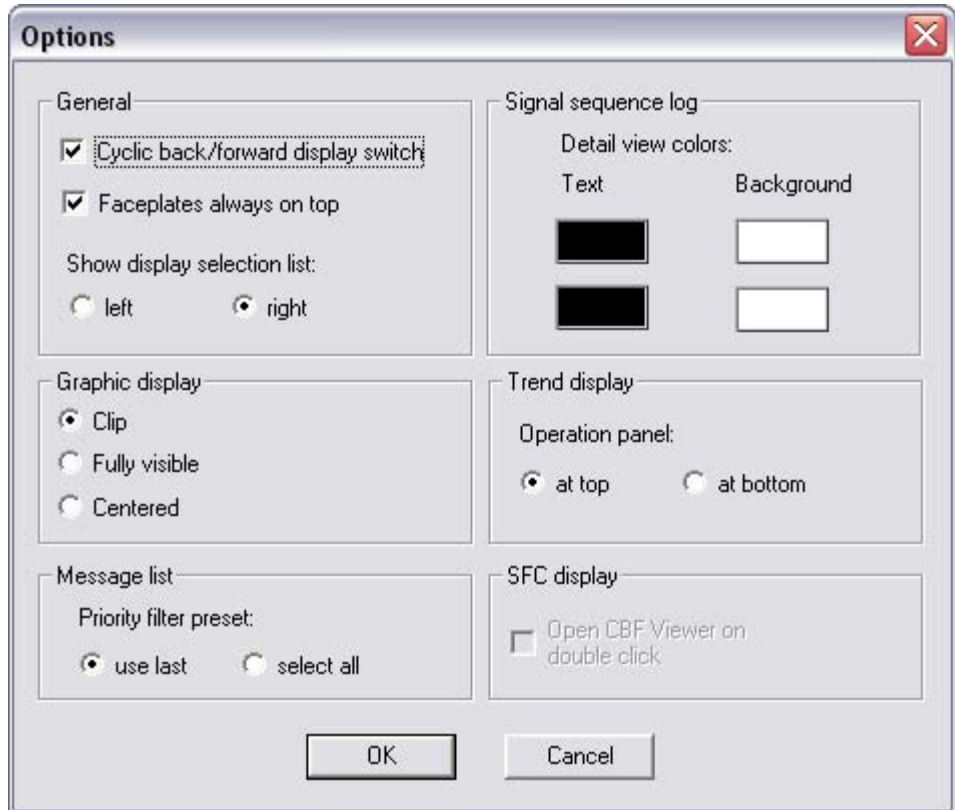
vh_l0020_us.bmp

L 5.3   Signal Sequence Log Format

The format of the signal sequence log is largely identical to the format of the message list. The first and last lines each contain a time marker comprising the date and time of day. The time marker in the first line of the signal sequence log represents the log's start time. The time marker in the last line represents the log's stop time. In addition to this, another time marker is output every hour while a log is being compiled.

In between these time markers are the various event entries. Messages can be represented in any of the following four formats: **Empty** (none), **Value**, **Long text, Long/Limit** or **All**. The definition which event is displayed in which format is made in DigiVis 500 Graphics Builder during configuration. Additionally, the length of the log lines (80 or 132 characters) is specified.

The following overview shows the explanations for the individual formats. The abbreviations used are explained on the next page in alphabetical order.

Format for all messages

No entry   (Format **Empty**)

Format for Process Messages

M	TIME	AR	TAG	S-TEXT	M-TEXT		TYPE	(Format **Value**)
M	TIME	AR	TAG	S-TEXT	L-TEXT	M-TEXT		(Format **Long text**)
M	TIME	AR	TAG	S-TEXT	L-TEXT	M-TEXT	TYPE	(Format **All**)

Format for System Messages

M	TIME	AR	TAG	SYS-M-TEXT	(Format **Value, Long, All**)

Format for Operator Actions

| B | TIME | OPERATOR | TAG | COMPONENT | OLD | NEW | (Format **Value**, **Long**, **All**) |
| B | TIME | OPERATOR | DISPL | VAR-NAME | OLD | NEW | (Format **Value, Long, All**) |

Format for Acknowledge Action

| B | TIME | OPERATOR | TAG | TYPE | M-TEXT | ACK | (Format **Value, Long, All**) |

Formats for Log Events

| ! | TIME | L-NAME | S-TEXT | EVENT | | (Format **Value**, **Long**) |
| ! | TIME | L-NAME | S-TEXT | L-TEXT | EVENT | (Format **All**) |

Abbreviations

!	Indication of a log event.
AR	Plant area. If a line length of 132 characters has been configured, the long names of the plant areas are shown. With a line length of 80 characters the short names A–O appear instead
BIN-TEXT	Fixed text: Channel xx, sequence of events.
COMPONENT	Component for the tag being written.
DISPLAY	Name of the graphic display from which the interaction was initiated.
EVENT	Log event such as Start, Stop, Print, Delete, and Export.
L-NAME	Log name.
L-TEXT	Long text configured for the tag.
M	All messages are displayed with their priority (S1..S3 or 1..5) and a prefix for **incoming** (**+**) and **outgoing** (**–**). Acknowledged messages are marked with < or >: < Acknowledgment was carried out in the message list, a graphic display, or a faceplate. > Acknowledgment was carried out in the message line.
M-TEXT	Message text configured for a message.
NEW	New value of the **process variable**.
O	Indication of operator action.
OLD	Old value of the **process variables**.
OPERATOR	If the add-on program **DigiLock** is installed, this position contains the **name of the operator** who carried out the operator interaction. In the base version without DigiLock the default user name **NOLOCK** or **SYSTEM** is entered.
S-TEXT	Short text configured for the tag.
SYS-M-TEXT	Text of system message.
TAG	Name of the tag.
TIME	Time stamp.
TYPE	Configured message type.
VAR-NAME	Name of the **process variable** being written.

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L

Logs

O

S

M   Information Display
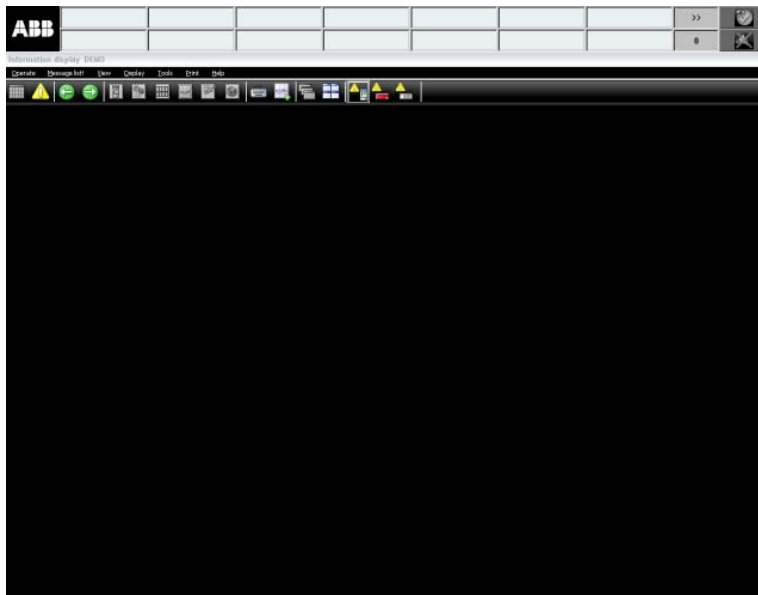
Contents

M 1   General Description – Information Display

Information display contains general information on the DigiVis 500 system and diagnostic opt-ins .

M 2   Calling up the Information Display

M 2.1   Calling up the Information Display via the Display Menu Item

🖰–*Display* → *Information Display*

⬦$_{ALT + D}$ → I

M 2.2   Calling up the Infomation Display via the Context Menu

To be able to call up a Information display via the context menu, you must first select a tag to which a Information display has been allocated in DigiVis 500 Graphics Builder using the *Display access* function.

🖰–Select tag → Call up context menu →Select appropriate Information display.

M 3   Operating Procedures in the Information Display

The following operations are defined in the Information Display.

•   Enter diagnostic mode

•   Leave diagnostic mode

- Start OPC diagnostic server

- Stop OPC diagnostic server

These options are used for diagnostic purposes and are to be used only by L3 support personnel or under specific instructions from the L3 support personnel.

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I

N   WEB Display

Contents

N 1   General Description – WEB Display

If you call up a WEB display in DigiVis 500 operations, the local WEB browser will be started and the link to the configured WEB site will be activated.

The WEB display starts the local WEB browser. With this, DigiVis 500 operations users may access files on the local machine or other machines in the intranet or global internet. Mind the risks and dangers implied by this.

N 2   Calling up the WEB display

N 2.1   Calling up the WEB Display via the Toolbar

Left-click toolbar icon → In Display Explorer double-click appropriate WEB display

N 2.2   Calling up the WEB Display via the Display Menu Item

Display → *WEB...* → In Display Explorer, double-click appropriate WEB display

ALT + D → W → Use CURSOR KEYS to select the appropriate WEB display → ENTER

N 2.3   Calling up the WEB Display via the Context Menu

To be able to call up a WEB display via the context menu, you must first select a tag to which a WEB display has been allocated in Control Builder F using the *Display access* function.

Select tag → Call up context menu →Select appropriate WEB display.

N 2.4   Calling up the WEB Display from the Overview Display

☞ Left-click appropriate WEB display icon

⬠ Use CURSOR or TAB KEYS to select appropriate WEB display icon →ENTER

N 2.5   Calling up the WEB Display via a Graphic Display

In order to be able to call up the WEB display using the graphic display you must first select a graphic object for which the *Show display* action with the WEB display has been configured in Control Builder F.

☞ Left-click appropriate graphic symbol

⬠ Use TAB KEY to select appropriate graphic object →ENTER

N 3   Operating Procedures in the WEB Display

The operating procedures in the WEB display are given by the activated WEB site.

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V   System Messages

Export: General FTP error ('xxx')

Export: FTP not accepted by 'xxx'

Export: FTP connection 'xxx' failed

Archiving of a trend has been stopped

Hardkey not found

Message list overflow

No valid daylight saving time defined

Messages lost: overflow for prio 'xxx'

Archiving of a trend has been stopped

Message text: The text is displayed in the message list or the signal sequence log

Pr   Priority level S1, S2 or S3

MR   Message rate:

    1 =   Message with one state

    2 =   Message with two states

Message text	Pr	M R	Cause of message	Remedy
Archiving of a trend has been stopped	S1	1	An unexpected error occurred while writing trend archive data, e.g. the hard disk is full.	Create more space on the disk in question, or switch the storage of log files etc. to a disk with more space available.
DigiVis configuration changing failed	S1	1	An error has occurred while loading new project data to the DigiVis station.	Check available disk space at your DigiVis PC or contact your authorized service engineer.
DigiVis connection to 'xxx' aborted	S1	2	The link to station 'xxx' has been disturbed.	Check that the station in question is functioning correctly, and check its OPC server connection.
Export failed due to copy file	S1	1	FTP export: Failure to save export file in temporary storage in the Temp directory of the sending PC.	Increase size of Temp directory or delete unnecessary files from it.

Message text	Pr	M R	Cause of message	Remedy
Export queue full	S1	1	The export of log data requires a certain length of time, depending on the type of network connection to the FTP server and on the volume of data The DigiVis station is producing transmit jobs faster than they can be processed.	Use a faster network connection to the FTP server, or a more powerful server. Alternatively, reduce the number of transmit tasks per unit of time.
Export: FTP connection to 'xxx' failed	S1	1	No connection could be established to the export target device addressed 'xxx'.	Check the target device.
Export: FTP not accepted by 'xxx'	S1	1	Access to the export target device addressed 'xxx' was denied due to an incorrect password.	Check the password.
Export: General FTP error ('xxx')	S1	1	A general error has occurred while exporting the archive data.	Check the amount of storage available on the target device.
FTP error 'xxxx'. Create file failed	S1	1	FTP access at target station failed, e.g. the configured path may be wrong.	Check te configured archive path of the trend display configuration.
FTP error 'xxxx'. Restart FTP server.	S1	1	FTP access at target station failed.	Restart the FTP server or contact your authorized service engineer.
Hardkey not found	S1	2	The hard key required for operating the software was not found.	Check that the hard key is installed, and/or check its connection Otherwise, contact your authorized service engineer.
Less than 'xxx' KB free disk space on drive "yyyy":	S1	2	Hard disk "yyyy" on the DigiVis PC no longer has sufficient free space (less than 'xxx').	Create more space on the disk in question, or switch the storage of log files etc. to a disk with more space available.

Message text	Pr	MR	Cause of message	Remedy
Message list overflow	S1	1	The system is producing more messages than the DigiVis message list can accommodate.	In the message list configuration, increase the number of messages (up to 2000 are possible). If this parameter is already at the maximum, try reducing the number of messages or changing the acknowledge levels.
OPL 'xxx' stopped, all files in use	S1	1	The operation log 'xxx' has been halted automatically. The maximum volume of data for this log has been reached, and automatic deletion has not been configured.	Delete or export log data and re-start the log. You can also configure automatic deletion.
OPL 'xxx' was not printed	S1	1	The print job for the operation log could not be carried out. Presumably the printer driver is not installed or the printer queue is full.	Check your system installation, or check that the printer is on-line.
SSL 'xxx' stopped, all files in use	S1	1	The signal sequence log 'xxx' has been halted automatically. The maximum volume of data for this log has been reached, and automatic deletion has not been configured.	Delete or export log data and re-start the log. You can also configure automatic deletion.
SSL 'xxx' was not printed	S1	1	The print job for the signal sequence log could not be carried out. Presumably the printer driver is not installed or the printer queue is full.	Check your system installation, or check that the printer is on-line.
Stop archiving	S1	1	An unexpected error occurred while writing archive data, e.g. the hard disk is full.	Create more space on the disk in question, or switch the storage of log files etc. to a disk with more space available.

W   Glossary
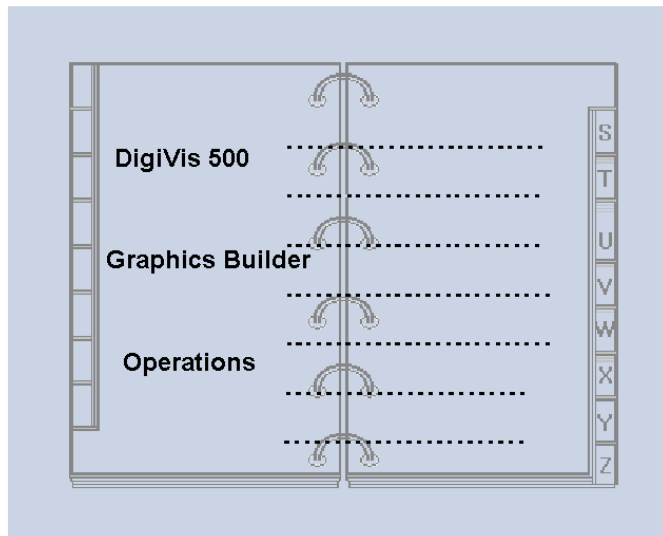
Access	Parameters from preconfigured displays that either authorize or prevent certain sizes, values or actions for the user.
Acknowledge	Operator action whereby one or more messages is/are acknowledged as seen and understood. Every action performed by the logged-in operator can be logged in the signal sequence log.
Alphanumeric display	A dynamic symbol from the graphic editor for displaying analog values on the operator station.
Archive	An archive is the file in which the data from a trend display or log are saved. Depending on how data is logged, in this way large volumes of data can be generated under certain circumstances.
Authentication key	The authentication is a combination of numbers that, comes with the hard key, forms the copy protection for a DigiVis 500 Graphics Builder and/or DigiVis 500 Operations license. The authentication key is to be found on a separate disk among the installation disks.
Authorization disk	The authorization disk contains the rights conferred by your software license in an encoded format. You will need this authorization disk at installation time in order to be able to utilize all the features of DigiVis 500 Graphics Builder and/or DigiVis 500 Operations that you ordered.
Auto	Operating mode in which processing is carried out automatically through the program's control settings. The operator is not allowed to do any input in automatic mode. For operator input you must change to manual operating mode.
Block acknowledgment	Acknowledgment of several selected entries in the message list or hints list
Block type	Identical to the tag type. The block type forms a short description of the block in the library.
Button field	See Operating element area.
Caption	This line shows the name of the current display along with the long text.

Classifying	The entry of values (parameters) in a fixed configuration on the engineering station or operator station.
Colors	The colors that cannot be changed through the Windows interface can be set individually in DigiVis 500 Graphics Builder in the project tree and the program editors.
	In DigiVis 500 Operations the colors for trends can be selected by the operator.
Control Aspect	The Control Aspect is an animated representation of a step or transition program of a sequential control or of the program, in which a tag has been configured in DigiVis 500 Graphics Builder, similar to the display of the program in the commissioning program.
DigiVis 500 Graphics Builder	Software for the engineering station; runs under MS Windows. → Engineering station.
Control room horn	A control room horn can be configured along with the field horn. This is done by entering wav files (requiring a sound board) in the local event processing. When an event, these wav files are executed.
Data type	Data types are assigned to variables either directly in the program or through a variable declaration in the variable list. Along with the basic data types such as REAL or BOOL, user-defined data types can also be set up (structured variables).
Default display	The default display is a display with a special significance for the context menu for display allocation. This allows a specific display to be called up for each tag when F11-key is pressed.
Demo mode	If DigiVis 500 Graphics Builder or DigiVis 500 Operations is installed without a hardkey connected to the PC, the application will automatically start up in demo mode. In this case, the DigiVis 500 software package can be used for 100 days.
DigiBrowse	DigiBrowse is an add-on package for the PC to view trend and log archives.
DigiVis 500 Operations	DigiVis 500 software application for the operator station allowing for process operation and observation using various pre-configured and individual functions and displays.

Directory	During installation, directories are set up in advance for the storage of DigiVis 500 -specific data.
Display	Various process displays, e.g. the graphic displays, group displays, trend displays, logs, system displays, the overview display, the WEB displays, and the faceplates of the individual tags can be called up for display via this menu item in the menu line.
Display access	Through display access DigiVis 500 Graphics Builder can be used to allocate displays to tags; these displays can then be called up through the context menu in DigiVis 500 Operations.
Display area	In this region of the screen the displays selected by the operator are displayed.
Display format	The display format determines the format in which a variable's value is displayed in the operation interface.
Display scroll bar	The hidden area of the overview display can be brought into view using the scroll bar on the right-hand edge.
Emergency mode	If the hard key cannot be detected during program start up or during normal operation (hard key is missing or defective) the system will enter the emergency mode. In this mode the software is fully operational for 100 days. During this time you have to exchange the defective hard key.
Enable	For the function blocks to run, an Enabled state must be detected. The enable command should be issued automatically by the program or in the parameter mask.
Engineering station	PC or laptop with DigiVis 500 Graphics Builder software package and a Windows operating system. Used by the system engineer for configuration, commissioning, and documentation.
Ethernet board	PC plug-in board for connecting engineering station and operator station to Ethernet system bus.

Event logs	Event logs are used for logging events such as messages, faults, switching actions and/or operator actions. Logging is performed automatically when the appropriate event occurs.
Faceplate	A faceplate is used for operation and observation of a tag. This shows the current states from the related process. It can be incorporated into any other display.
Fault message	Messages of priority 1 (red), 2 (yellow) and 3 (orange) for showing faults such as violations of limit values in the operation interface.
Focus	The focus symbol indicating the currently active window is provided for DigiVis 500 Operations keyboard operation. The symbol is displayed at the left-hand end of the status line. Pressing the ALT key together with a cursor key will toggle the focus between the individual windows
DigiVis 500 system	The sum of all the DigiVis 500 components. DigiVis 500 Graphics Builder, DigiVis 500 operations, add-on packages, hardware components. See also Engineering station, Operator station.
Group display	A group display is a combination of several faceplates. It provides the user with the opportunity to display related tags in the same display. After a displayed faceplate has been selected, the corresponding tag can then be operated.
Hard disk requirement	The amount of hard disk space needed for a trend archive or a log file is calculated, during the configuration.
Hard disk space	Around 500 MB of free hard disk space are required for installing the DigiVis 500 Operations software, and approximately 500 MB for installing DigiVis 500 Graphics Builder. More disk space again will be required to work with the software: at least 2 GB for DigiVis 500 Operations and 10 GB for DigiVis 500 Graphics Builder. The actual amount of space required is determined by the size of your user program. For archiving trends and log files usually at least 80 GB memory should be available.
Hard key	A hard key and an authorization disk are needed for using DigiVis 500.
Hardcopy	Complete or partial printout of the current screen contents.

Help   The DigiVis 500 help system enables operators to quickly call up relevant infor-
                              mation onto the screen while they are working with the software.

Horn   A control room horn can be configured which will be switched off once the corre-
                              sponding message is acknowledged.

Host name   A name identifying the computer. Each name must be unique within the DigiVis
                              500 network. No other PC in the DigiVis 500 network may have the same name.

Interpolation   The trend display and the representation therein between two captured values
                              can appear in three varying forms: with no interpolation (whereby only the data
                              point is shown), as a line connecting two points, or as a staircase.

Limit value   Limit values form the basis for generating events. Limit values are thus declared
                              in the operation interface and/or in a log, e.g. when a particular value is ex-
                              ceeded. Particular events are specified depending on the type of limit value. The
                              message is generated with, amongst other attributes, a specific priority and a
                              message text.

Limit value type   The limit value type determines the event triggered by the message.

Load   Transfer of programs or sections of programs in commissioning that have
                              passed the plausibility check without revealing any errors. In addition the objects
                              or levels in the project tree are selected and transferred automatically to the as-
                              signed resource by the load procedure.

Log type   Three different types of logs are provided: the signal sequence log (SSL) and
                              operation log (OPL).

Logs   Logs are used for documenting events, states and sequences from the process.
                              The data they capture can be saved on the hard disk in the operator station,
                              printed out on the printer or displayed on the monitor.

Long text   A text entry up to 30 characters in length for providing a brief description of a
                              Tag or a preconfigured display.

Manual	Operating mode in which the tag can be operated from within DigiVis 500 Operations.
Menu line	A screen region in the DigiVis 500 operation interface. The menu line remains visible at all times. Because of this, actions linked in the background with the menu can be performed in any operating situation.
Message	Certain process states and/or events can be configured as messages. When that event occurs a message is sent to the operator station.
Message box	The message boxes in the message line contain the still-to-be-acknowledged messages.
Message line	The message line forms part of the operation interface and is included above every display on the operator station.
Message list	In the message list the messages sent from the OPC server to the operator station or may originate in the operator station, where they are displayed and managed. These messages may relate either to the DigiVis 500 system or to the automated process. In the message list a message can be selected and/or acknowledged, the faceplate associated with a tag can be displayed, and the display assigned to a tag can also be called up through the context menu. In this way one can quickly obtain detailed information relating to the selected message.
Message overflow box	A box in the message line used to indicate that the message line contains more messages than can be displayed.
Message text	Additional output text of a message in the message box and in the message list.
Message types	In DigiVis 500 messages are subdivided into the following message types based on their significance for the process: system errors, fault messages and switch messages.
Monitor resolution	Number of pixels that can be displayed on the monitor, e.g. 1024 x 768 or 640 x 480. The recommended monitor resolution for DigiVis 500 Operations is 1280 x 1024. If the monitor resolution is less then the recommended resolution then it may lead to distortion of the displays.

Monitoring time	The length of time after which the transitions/advancing criteria that follow a step but have not been satisfied will be reported.
MS-DOS	Operating system used for operator station and engineering station.
MS-Windows	Graphical user interface. Requires MS-DOS.
Network board	Plug-in Ethernet card for a PC through which connection to the system bus is effected.
Offset mode	This operating mode is used to determine which offset value is being used in the time scheduler.
Offset value	Value added to the time scheduler's set point.
Operate	This menu item allows you to select and execute all specific operating options for the currently shown display.
Operate and observe (man machine interface)	A general term describing the process-control approach in an industrial process.
Operation log	Cyclical, manual or event-related logging of up to 200 variables within a configurable text.
Operator	The person who holds responsibility at any given point in time for controlling process events through the control system.
Operator action	An operator action is an action on the part of the operator through which a process variable or process value is changed from the operator station.
Operator hint box	Display field in the message line showing whether or not there are any available hints relating to a message or event. Through the operator hint box or message list one reaches a hint list showing any unacknowledged hints.

Operator interface	The operation interface is the sum of all the display objects and operating objects at the operator station.
Operator station	PC with a MS Windows operating system and the DigiVis 500 Operations software. Used for operation and monitoring, alarms, trends, archives and reports.
Overview display	Preconfigured display for quick selection of displays and/or logs. A maximum of 96 displays or logs can be included in an overview display. Alternatively, a graphic display can be configured as an overview display.
Permanent	Scheduler operating mode whereby all sections of the set curve are run through systematically.
Preconfigured display	Along with the free graphic displays created using the graphic editor there is also a series of preconfigured displays; to display these in DigiVis 500 Operations you only need to configure a tag and a few parameters. The preconfigured displays in DigiVis 500 are the overview display, group displays, trend displays, and system display. The faceplates for each tag and the logs can also be displayed without any need for further configuration.
Print job	The output of documentation is always controlled by a so-called print job, i.e. there must always be a job selected before printing. The contents of the print task is defined in this job.
Priority levels	Messages are distinguished by their priority levels. Priority levels S1, S2 and S3 are reserved for system errors, levels 1 to 3 for disturbance messages, level 4 for switching messages and 4 for hint messages.
Process message	Process messages inform the user about disturbances and specific status changes in the DigiVis 500 system. A distinction is made between fault messages and switch messages. The message types are further subdivided according to their importance for the process and according to the priority levels.
Region	A selected region of the display is printed.
Report printer	The report printer is the printer connected to the operating station. A maximum of 2 printers can be connected to one operator station.
Scroll bar	Used for scrolling through a display that cannot be fully displayed on the screen. The scroll bar is placed at the bottom side or to the right of the display window.

Security Lock | Security Lock is a package of the DigiVis 500 Graphics Builder to permit the configuration of user groups. Various access rights can be awarded to user groups. Each user specifies an individual password which the user can only change himself/herself.

Selection | Operating technique from the operation interface. Selection is used to activate displays or to select tags for operation.

Short term archive | When a trend display is selected, the short-term archive for the individual signals is displayed first. The short-term archive holds 200 values, i.e. max. 6 x 200 values per trend display. For older values the system will then automatically return to access the archive file.

Signal sequence log | Configurable logging of system errors, fault messages, switch messages and operator actions.

Signal sequence log 1 | Logging of system errors, fault messages, switch messages and operator actions with continuous printing.

Signal sequence log N | Logging of system errors, fault messages, switch messages and operator actions, recording these in a log file.

State line | At the left of the state line is the keyboard focus indicator. To the right of it system messages are displayed. The 10 most recent messages can be viewed by selecting the pull down symbol. In the center area the symbol for calling up the Quick Select Window is displayed. On the right the number of hard copies still to be produced is displayed, and next to that are the user name, date and time.

State log | The function of state logs is to record process states cyclically. This includes the cyclical logging of the state of a tag or the logging of sequences in the process.

Switch message | Priority 4 message (yellow) for reporting switching events such as Pump On; not to be confused with a fault message.

System message | System errors have the priority S1, S2 or S3. Messages with this priority cannot be either configured or changed by the user. System errors generate messages about error states in the system itself.

Tag	A tag is a preconfigured function block. Every function block must be assigned a tag name.
Time synchronization	Time synchronization of the stations are done as per standard windows time synchronization. OPC server time stamps the messages that originate from it.
Title line	In this line, the current display name and the text configured for it is displayed.
Trend	The function of a trend is to provide a graphic representation of values using a time axis. In DigiVis 500 this is done by capturing the values in the OPC server and transferring them to the operator station.
Trend display	The trend display is used to display values graphically using a time axis. A maximum of 6 trends can be shown in one trend display.
Visual acknowledgment	Visual acknowledgment marks the messages as "viewed". However, this kind of acknowledgment has no effect on the current state of the respective messages in the OPC server, i.e. the messages are still present in the message list and hint list and must be acknowledged separately.
WEB display	After calling a WEB display in DigiVis 500 Operations, the local Web browser is loaded, and the link to the configured WEB site is activated.

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ABB

http://www.abb.com/plc

http://www.abb.com/drives