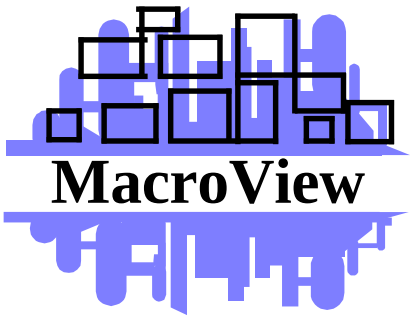

Navigator

User Manual

Last Modification Date:September 2006

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1 Navigator Overview

The Navigator provides an easy-to-use framework to enable users to find their way around the various applications in a typical process control or SCADA site. It is a true application enabler. It responds to the various user keystrokes and mouse commands, executing the selected applications in an easy-to-understand point and click environment.

1.1 What is the Navigator?

The Navigator is:

- A set of modules or tools designed to manage the flow of information between the applications and the user. It is an intelligent graphical framework for running applications.

Each tool or module:

- Consists of a group of Meta scripts and display widgets.
- Is represented graphically by a particular area of the screen.
- Accepts its input from the mouse, keyboard (via a key table), Touch screen or other applications.
- Has clearly defined associated variables.
- Can send messages to other Navigator tools or set Navigator variables.
- May be used to launch applications and send messages to the applications.

1.2 Reasons for Having the Navigator

In a typical ***MacroView*** site, there is a vast amount of information that must be handled and processed by a wide variety of personnel with differing backgrounds and skill's.

It is the function of the Navigator to present the information to these users and provide the users with the tools to efficiently move through this information. In summary, the Navigator:

- Presents the information in a clear graphical interface so that the user can easily see and manipulate the data.
- Presents the information in an organized structure. This helps users find the information of interest quickly and enables it to be easily maintained.
- Provides tools for the users to quickly locate the information for analysis and also tools that can be used to manipulate the presentation of the information to highlight process problem areas for example.
- Organizes the windowing structure for the user. This means that the number of windows and their placement is always under control and key information is not hidden.
- Provides a means of quickly and efficiently adding new applications and covering more areas of the plant. This means that the system can grow as the process becomes more and more under control.
- Provides a means of adding optimization applications such as SPC, Log Books, and Control Room Organizer. These types of applications can result in significant improvements in efficiency, quality and production.

1.3 Documentation

This document is the Navigator User Manual. The sections of the manual are described briefly below.

In summary, the chapters include:

Navigator Overview: Describes the general format of the Navigator Package and it also describes functions of the various areas within the presentation.

What's New: Describes the new features added since the 3.0.4 release.

Navigator Modules: Discusses the various modules such as the Scratch Pad that are closely related to the Navigator.

Navigator Pop-ups: Describes the various kinds of Pop-ups that can be invoked from the Navigator.

Standard Applications: There is a section for each of the standard ***MacroView*** applications. These include:

- Trends
- Alarms
- Groups
- Details

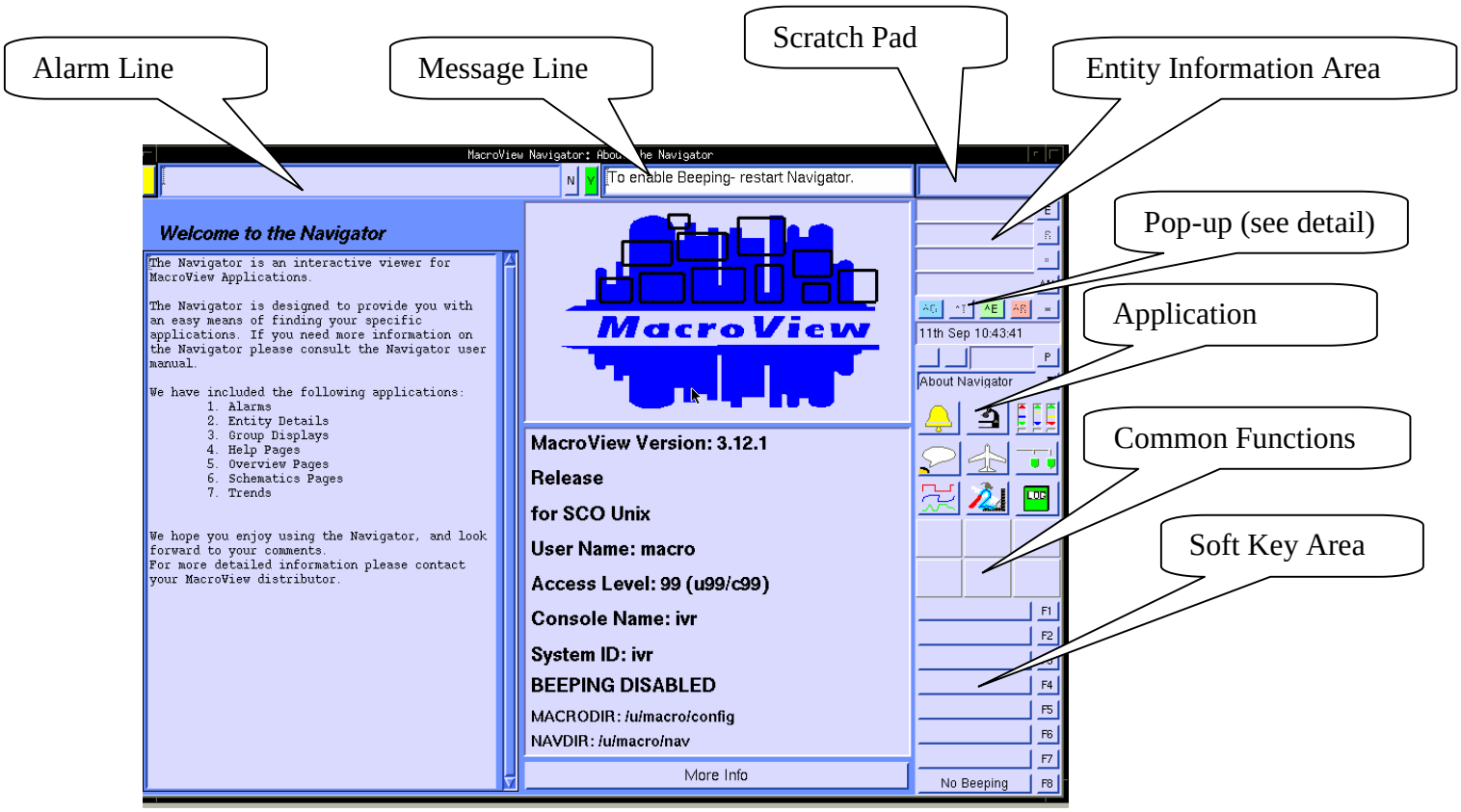
Navigator Reference: This chapter documents the Navigator files and file structures.

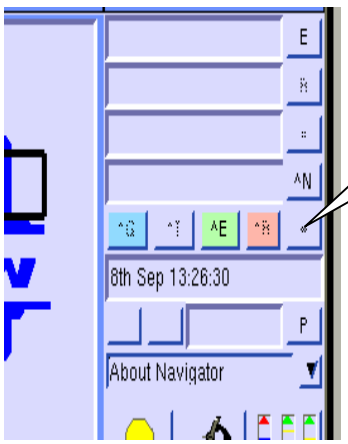
1.4 Further Reading

Please see the Operator Reference for a concise summary of the operations of the Navigator. This document is intended for users who do not need to know the background details of the system and are only interested in ***using*** the system. For engineers, the ***MacroView*** Engineering Manual details the ***MacroView*** system on top of which the Navigator operates.

1.5 Navigator Layout

The diagram below indicates the Navigator layout.

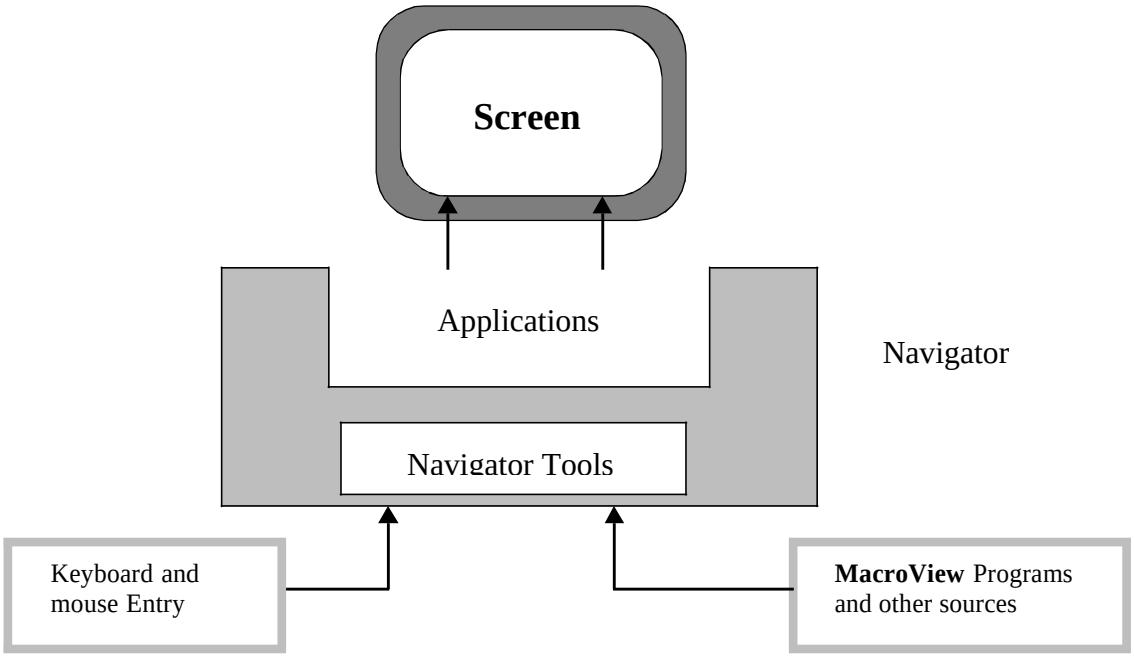




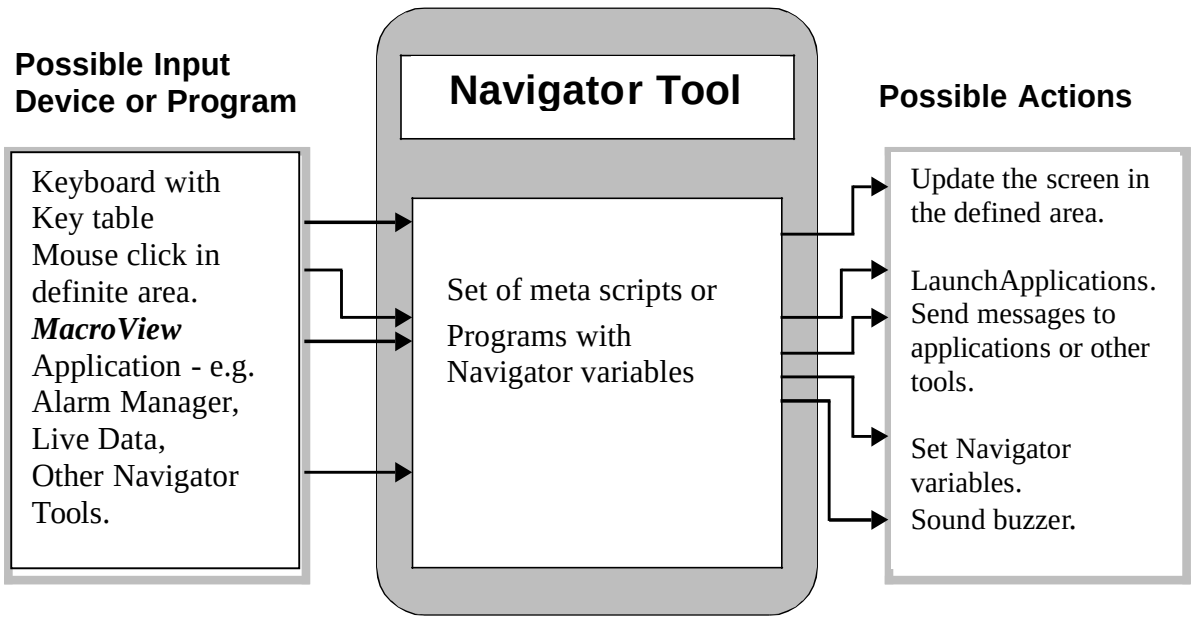
Pop-up Line
To display Group, Trend and Attribute information. Of the Entity in the Scratch Pad.
Also used for I/O pop for address information.

1.6 How it works

The Navigator consists of a series of clearly defined tools and modules that are available. To control the flow of information between the user and the application.



Each Navigator module has a set of clearly defined functions and variables.



2 Navigator Modules

This chapter discusses the various modules that are closely associated with the ***MacroView*** Navigator.

The first section of the chapter provides a summary of the modules and the remaining sections describe a single module in detail.

For convenience, these sections have been arranged alphabetically.

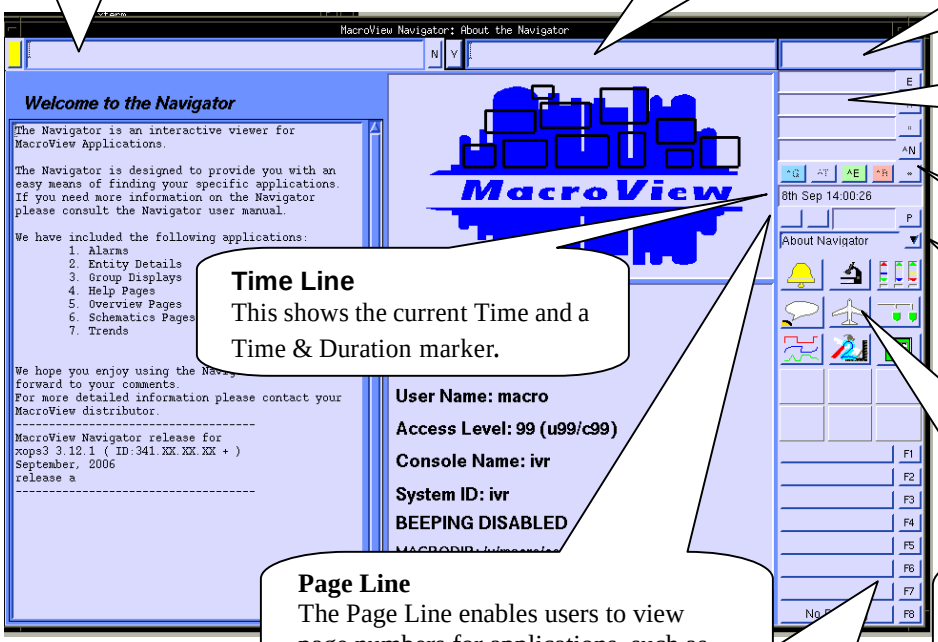
2.1 Navigator Module Summary

Each Navigator tool has defined characteristics and functions. It may be used strategically
by the selected application to display information or gather the user commands. These Navigator tools are covered:

- Alarm Line
- Message line
- Scratch Pad
- Entity Information Area
- Pop-up Line
- Time Line
- Page Line
- Application Line & Application Matrix
- Common Functions
- Soft keys
- Navigator Pages (About & Quick Access)
- Key Table

The following diagram shows most of the Navigator modules.

2.2 Navigator Module



Alarm Line
A Single line display shows most recent alarm. You can delete alarms and call up alarm pop-up from

Message Line
Various messages and prompts appear in this window. A color change signifies a new message has arrived.

Scratch Pad
The Scratch Pad is the primary means of inputting data to the Navigator.

Entity Information Area
This shows key information about the single selected entity.

Pop-up Line
This controls the various pop-up windows

Time Line
This shows the current Time and a Time & Duration marker.

Application Line
Applications are presented for selection in a pull- down combo box.

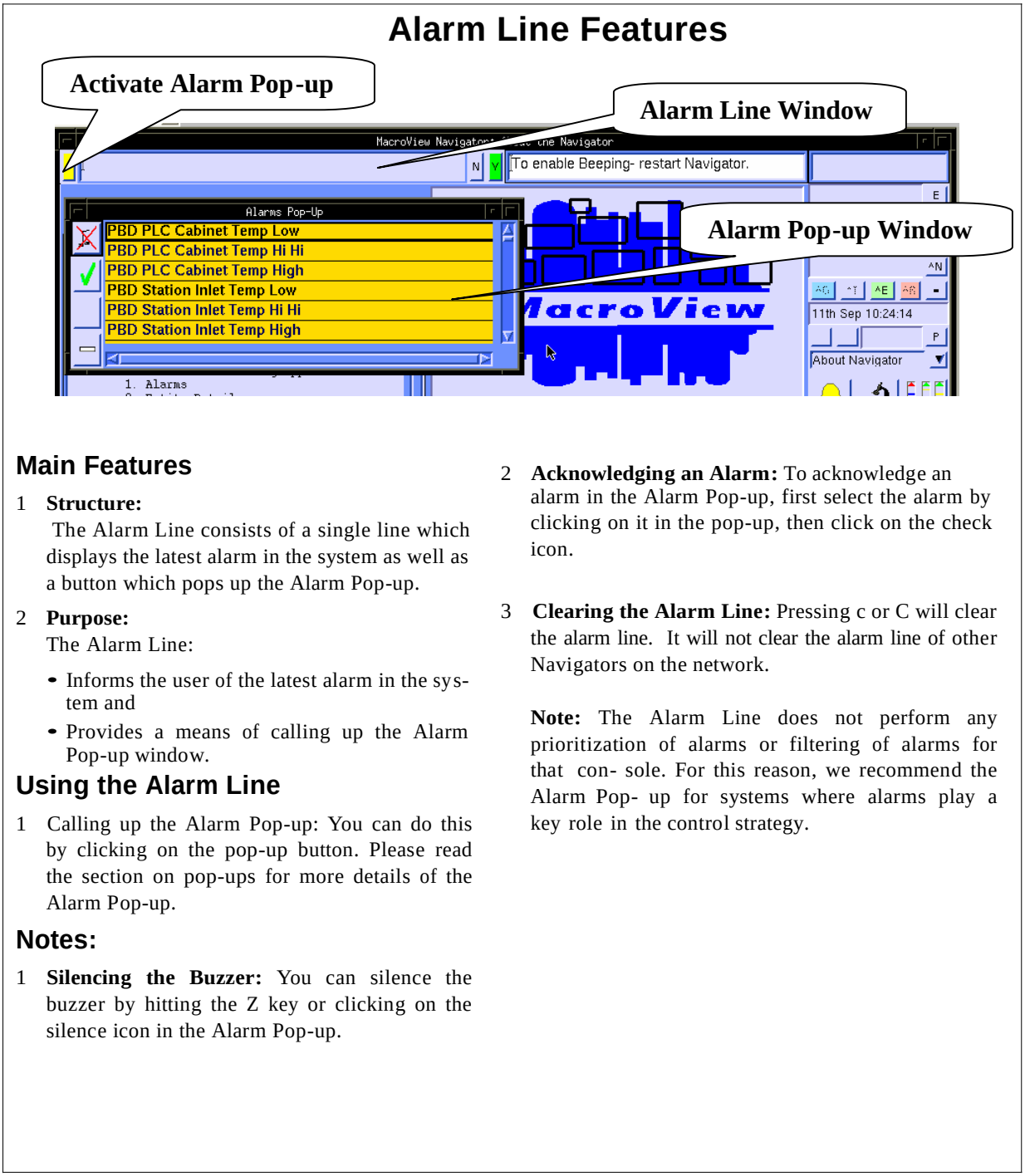
Page Line
The Page Line enables users to view page numbers for applications, such as trends etc.

Application Matrix
An icon is associated with the most-used applications
Launch the application by clicking **once** on the icon.

Functions and Soft Key Area
Common Functions may be assigned to these soft keys, which correspond to the function keys on the key board.

Alarm Line

The diagram below shows the main features of the Alarm Line.



Main Features

1 **Structure:**
The Alarm Line consists of a single line which displays the latest alarm in the system as well as a button which pops up the Alarm Pop-up.

2 **Purpose:**
The Alarm Line:

- Informs the user of the latest alarm in the system and
- Provides a means of calling up the Alarm Pop-up window.

Using the Alarm Line

1 Calling up the Alarm Pop-up: You can do this by clicking on the pop-up button. Please read the section on pop-ups for more details of the Alarm Pop-up.

Notes:

1 **Silencing the Buzzer:** You can silence the buzzer by hitting the Z key or clicking on the silence icon in the Alarm Pop-up.

2 **Acknowledging an Alarm:** To acknowledge an alarm in the Alarm Pop-up, first select the alarm by clicking on it in the pop-up, then click on the check icon.

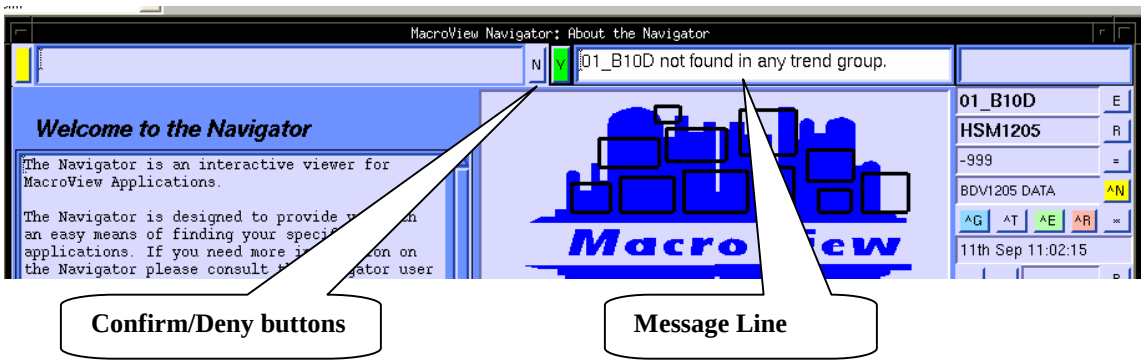
3 **Clearing the Alarm Line:** Pressing c or C will clear the alarm line. It will not clear the alarm line of other Navigators on the network.

Note: The Alarm Line does not perform any prioritization of alarms or filtering of alarms for that con- sole. For this reason, we recommend the Alarm Pop- up for systems where alarms play a key role in the control strategy.

Message Line

The diagram below shows the main features of the message line.

Message Line Features



Main Features:

1 **Structure:** The message line contains the most recent message for the operator.

2 **Purpose:** The message line:

- Acts as the main mechanism to display messages to the Navigator user.
- Prompts the user to enter values into the scratchpad area.
- Is used to get Yes/No answers to questions such as mode changes, etc.

3 **Message Area:** This is where the messages appear.

4 **Confirm/Deny buttons:** These buttons are used to confirm or deny an operation such as a mode change. They achieve the same function as the Yes (Y) and No (N) keys.

Using the Message Line:

1 **Message appears:** When an active message appears in the window, the message line background changes color.

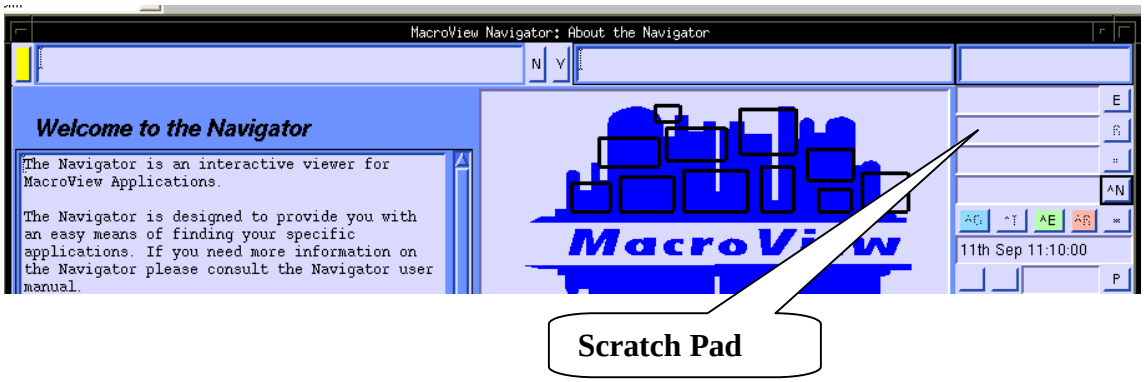
2 The message may be:

- A simple message not requiring any action. You can disregard the message or, to clear it, press the Y key.
- A request to select an entity or attribute, or to enter a value in the scratch pad. E.g. if you press the E key for entity, the message line will say "Please enter an Entity -->". You may either: (i) Enter the entity into the scratch pad and press enter, (ii) simply press enter or, (iii) click on the N button to cancel the request.
- A request to answer a yes or no question. E.g. confirming a value set request or other action.

Scratch Pad

The diagram below shows the main features of the Scratch Pad.

Scratch Pad Features



Main Features

1 **Structure:** The Scratch Pad is the main data input area for the Navigator.

2 **Purpose:** The Scratch Pad is used to enter:

- Entity and attribute names and values.
- Page numbers.
- Application names.
- Special codes.

3 **Time Out:** If there has been no activity in the Scratch Pad area for 10 seconds, it clears itself.

Using the Scratch Pad & Message Line

1 **Generally:** The Scratch Pad is used in conjunction with the Message Line as a prompting mechanism. E.g the Message Line will prompt the user to enter an entity name or page number.

2 **Confirm and Deny:** If you have entered a value to be set in the system, the message line may ask you to confirm the value before it is written to the field source. Press the Y key (or click on the Y button) to confirm or press the N key (or click on the N button) to deny the request. Sometimes, these buttons are used just to confirm that a message has been read.

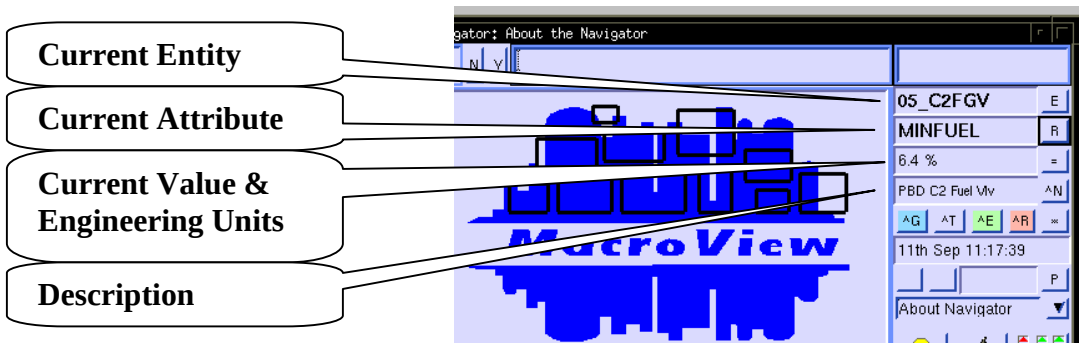
3 **Special Codes:** To select a special function, use the P (page) key and type in the code (E.g. **?**, exit, zoom).

4 **Applications:** Press the P (Page) key and type in the page name or number, or a name of an application (e.g trends, schemat). To go to a specific page of an application, type in application code then a "/" followed by a page number, name, or "?" (e.g. help/3, overview/floor1, schemat/?).

Entity Information Area

The diagram below shows the main features of the Entity Information Area.

Entity Information Area Features



Main Features

1 **Structure:** The Entity Information Area consists of 4 lines of information about the current selected entity.

2 **Purpose:** The Entity Information Area is used:

- To display key information about the current entity.
- As the "reference" entity for other applications. E.g. when the Detail application is called up, it will display detailed information about the selected entity.

Using the Entity Information Lines

1 **Viewing Entity Information:** 4 lines of the selected entity are shown. The values are updated every 2 seconds.

2 Selecting a different Entity or attRibute:

- Click on the E or R buttons (respectively) or press the E or R button on the keyboard.
- Enter the new Entity or attRibute in the Scratch Pad.

3 Changing the value of the attribute:

- Click on the = button or press the = key.
- Enter the value and press the return key.
- At this stage, for particular entities, you may be asked to confirm the change. Just press the Y key (or acknowledge button on the message line) to acknowledge or press the N key (or deny button on the message line).
- Some changes may be logged to historical messages, depending on how the entity and attribute are configured.

4 Clearing the Entity Information Area:

- Press the Control and C keys.

5 Using the Entity and Attribute pop-ups:

- Press the ^E (Control E key) or click on the Entity pop-up button to call up the Entity pop-up. Now use the filter in the pop-up or just double-click on an entity name. This will send the entity to the Entity Information Area.
- Press the ^R (Control R key) or click on the Attribute pop-up button to call up the Attribute pop-up. Just click on the attribute name of interest in the pop-up to send it to the Entity Information Area.

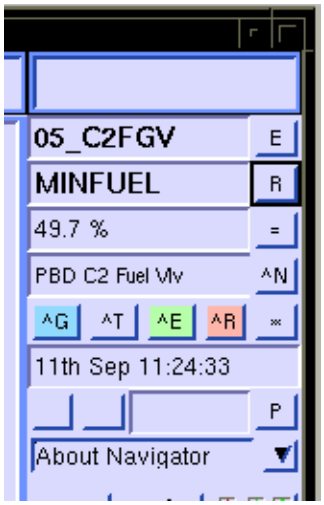
Note: The Navigator may be configured to omit the engineering units for any attribute which does not contain "PV". For more information, see the Navigator configuration section of the Engineering chapter.

Pop-up Line

The diagram below shows the main features of the Pop-up Line.

Pop-up Line Features

Pop-up Line



Pop-up Line Components include:

- ^G **Group** pop-up.
- ^T Single pen **trend** pop-up.
- ^N **Note:** Entity information pop-up.
- ^E A pop-up used to search for an **entity**.
- ^R **attRibute** pop-up.
- **Alarm** Pop-up: Click on the button next to the alarm line.
- **Time** Pop-up: To set the marker time in the time-line, press I on your keyboard.
- **Zoom** Pop-up: Press ^Z on your key-board
- \- **Close** pop-ups: closes all above pop-ups.

Main Features

1 **Structure:** The pop-up line consists of a series of small icons on a single line of the tool box. Each pop-up button pops up the associated display in the defined area.

2 **Purpose:** A convenient way to bring up the various pop-up windows.

3 **Group Pop-up:** A group faceplate for the current selected entity appears in the left-most area of the screen.

4 **Trend Pop-ups:** Same as for the group. If the point is trended, the pop-up uses the historical data. (*Otherwise, no pop-up will appear.)

5 **Note Pop-up:** This is a small yellow window that displays the documentation field of the entity (if it exists) in the lower left corner of the window. If there is no documentation for the entity, the ^N button will remain grey and the pop-up will not appear.

6 **Entity search:** The pop-up is used to search and select specific entities.

7 **Attribute pop-up:** The pop-up is used to select attributes for the scratch pad.

8 **Alarm Pop-up:** The alarm pop-up appears below the alarm line.

9 **Time Marker Pop-up:** A convenient means of selecting the time for the time marker.

10 **Zoom Pop-up:** A way of using ***MacroView***'s Pan & Zoom functionality on almost any Application Page.

11 **Close:** Closes all above pop-ups.

Using the Pop-up Line

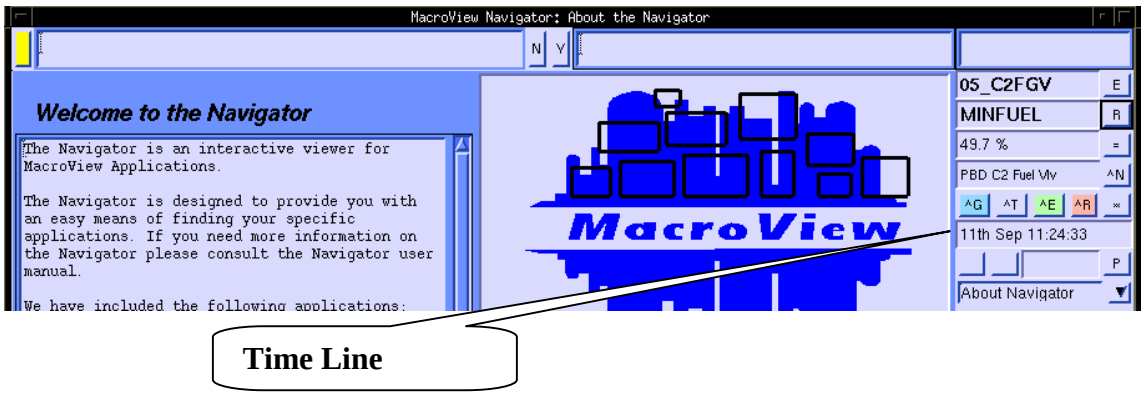
1 **Activating:** Simply click on the relevant pop-up.

2 **Closing:** Close the pop-up with the pop-ups's close button. The close pop-ups button may also be used.

Time Line

The diagram below shows the main features of the Time Line.

Time Line Features



Main Features

1 **Structure:** The Time Line is implemented as a stack of 3 time related values. (i) The current time, (ii) A time marker and (iii) a duration marker. You can set the time marker with the time pop-up. ***Please read the Time Pop-up section in the Pop-up chapter for more information on the Time Pop-up.***

2 **Purpose:** The Time Line is the main mechanism of showing time-related information.

3 **Current Time:** This is the current time shown with one second resolution. It reflects the servers internal clock.

4 **Time Marker:** This is used by various applications as a temporary storage. For example, clicking on an alarm will result in the time stamp going to the Time Marker. The marker can then be used in the Trend Application to locate the same instant in time that the alarm occurred.

5 **Duration Marker:** This is conceptually the same as the Time Marker - with the exception that it represents a period of time.

Using the Time Line

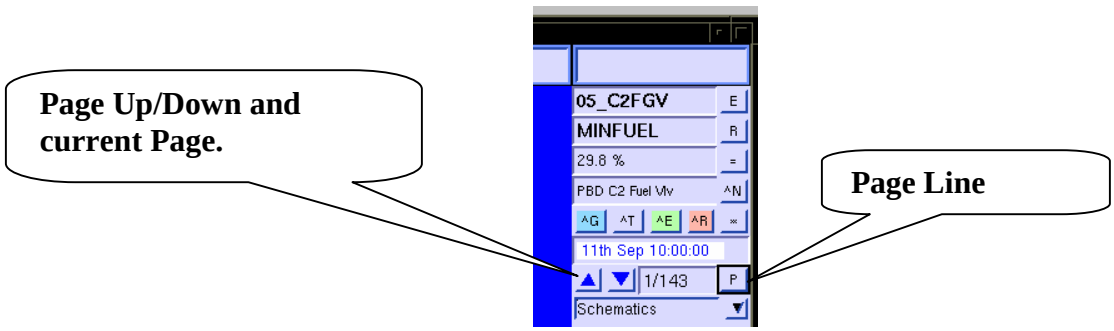
1 **Toggling the Time Line:** The user may toggle between the three modes of presentation by clicking on the Time Line. The Time Marker will appear in Blue and the Duration Marker will appear in Red. Both Markers have white backgrounds.

2 If you set the time line to show a time or duration marker, after a short period, the time line will revert back to the current time.

Page Line

The diagram below shows the main features of the Page Line.

Page Line Features



Main Features

1 **Structure:** If the application is a paging application, the Page Line displays the current page number and the total number of pages in an application where appropriate (Applications may or may not be paging applications). It also provides icons to page up and down and also to initiate the "Please enter a page -->" dialog in the message line.

2 **Purpose:** The Page Line is the primary mechanism for moving to different pages in the application.

Using the Page Line

1 **Page Up and Page Down:** Just click on the relevant icon to move up or down in page number. Any blank pages will be skipped. You may also use the Page Up or Page Down keys on the key- board.

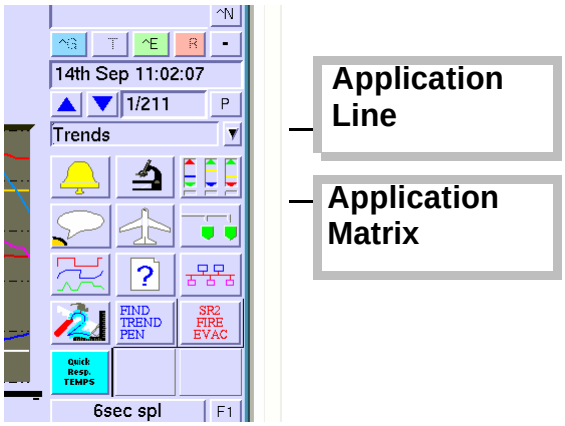
Note: These will be blank when the application is not a paging application.

2 **Go to a particular page:** Click on the P icon (or press the P key) to start the "Please enter a page -->" dialog in the message line. Note that you may enter a page number or a file name. Some examples are:
"1"
"tanks"
"trends/5"
"overview/pumps"
"schemat/?"

Application Line and Application Matrix

The diagram below shows the main features of the Application Line and Application Matrix.

Application Line and Application Matrix Features



Main Features

1 Structure:

- The Application Line is a pull down combo box of all the applications available to the user. Some of the applications in the pull down list may also have icons in the application matrix.
- The Application Matrix is a matrix of icons, each representing one of the applications available to the Matrix.

2 **Purpose**:

- The Application Line provides a means of starting applications. In particular, it includes applications that do not have associated icons in the Application Matrix.
- The Application Matrix provides a quick way to launch frequently used applications.

Using the Application Line

1 Starting an application:

- Click on the down arrow, the list of available applications will appear.
- Click on the application to start the application and leave the list in the "pulldown" position ***or*** double click on the application to start the application and hide the list.
- To hide the list: Click on the arrow or click anywhere on the Application Line.
  Note: Re-selecting the current application will not cause the current application to be re-started.

Using the Application Matrix

1 Starting an application:

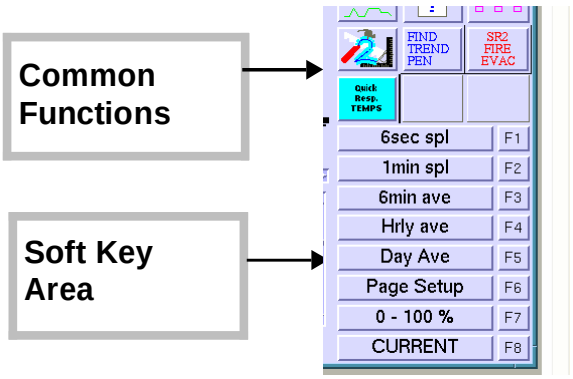
- Simply click **once** on the relevant icon in the Application Matrix.

  Note: The Navigator may be configured to replace the application matrix with a set of text buttons or a blank area. This is usually done where speed is a concern, e.g. a remote connection over a modem. For more information, see the Navigator Engineering section.

Common Functions & Soft Key Area

The diagram below shows the main features of the Soft Key Area.

Common Functions & Soft Key Area Features



Main Features

1 **Structure:**

- The Six Common Function buttons are located just above the Soft Keys.
- The Soft Keys are a block of keys at the base of the tool bar. The function keys may be invoked from the keyboard. Certain applications may change the soft key colors or disable certain softkeys.

2 **Purpose:**

- The Common Function buttons allow one click access to several commonly used actions.
- The Soft Keys provide a flexible means of invoking functions from an application and under control of the application.

Using the Common Function Buttons

1 **Menu:** Pressing this button displays the current application's menu page.

2 **Home:** Pressing this button displays the Navigator pages Quick Access screen.

3 **More:** If there are more application icons installed than will fit in the Application matrix, pressing this button will show more icons. If there is sufficient space available, this button will be unnecessary and disabled.

4 **Print:** Pressing this button will send a screen dump of the entire navigator to a printer.

5 **Custom:** This button may be configured in the Navgator Defaults to perform a commonly used function.

6 **Exit:** Pressing this button brings up the exit screen. If so configured, a password may be requested.

Using the Soft Keys

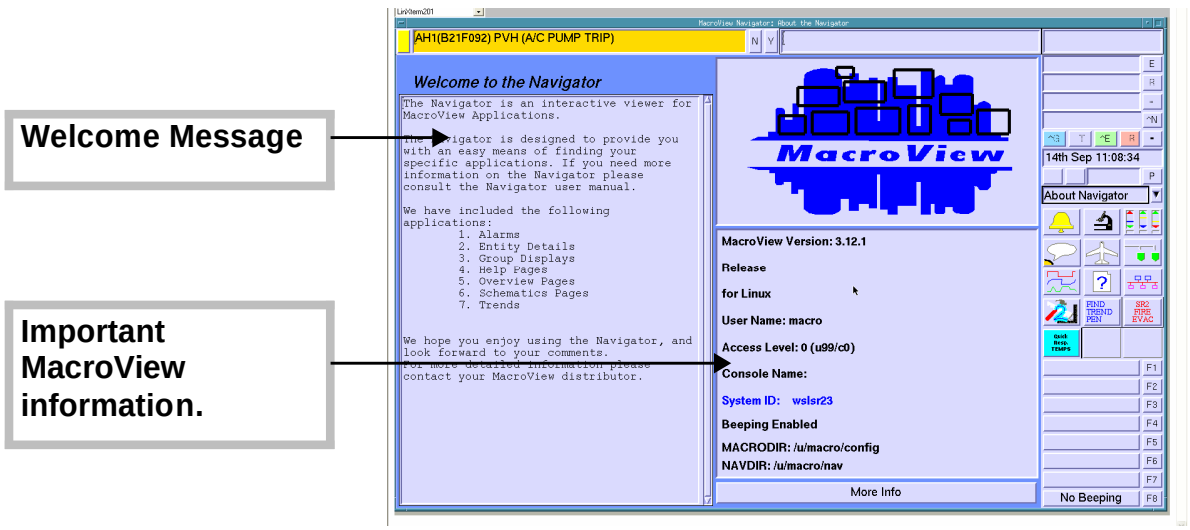
1 **Invoking the function:** There are several ways of selecting a softkey:

- Click on the relevant soft key button.
- Click on the soft key label button.
- Press the associated function key on your keyboard.

Navigator Pages - About the Navigator

The diagram below shows the main features of the Navigator Pages About the Navigator screen.

About the Navigator Features



Main Features

1 **Structure:** The "About" (About Navigator) screen consists of:

- A Welcome message
- The ***MacroView*** logo
- Important information relating to the ***MacroView*** system which has been started

2 **User Welcome:** This screen offers information for a first time user and provides a summary of some of the installed applications.

3 **Important Information:** This window provides information for support and maintenance people to trace versions, etc. The information includes:

- The MACRODIR and NAVDIR environment variables. These relate to some of the important ***MacroView*** configuration files.
- The version number, Release ID and Operating system as recognized by the Navigator.
- The Unix user name that will be used to determine whether the user has sufficient security to run certain applications.
- The Console name which is likewise used to restrict unauthorized writing of set points, etc.
- The system ID of the ***MacroView*** server.
- Whether the buzzer has been disabled.
- The current server port being used.

Using the About Navigator Screen

1 **Calling Up the Screen:** The screen is the first screen to be displayed and may be called up at any stage from the application line. Just click on the application line and then double click on the "About Navigator" line.

2 **More Info:** Click on the More Info button to get the information that relates to the release of the package and the ID number that was installed.

Key Table

The diagram below summarizes the allocation of functions to the keyboard keys. Some of these allocations may be modified by changing the settings in the keys.ini file.

Key Table Assignments

System Keys

(Not configurable)

?	Go to menu page
-	Close all Navigator Pop-Ups
=	Prompt user for value
^a ^A	Go to System Alarms page
a A	Go to Alarms page
b B	Screen Back
c C	Clear Alarm Line
^c ^C	Clear Scratch Pad
d D	Go to Detail pages
e E	Prompt user for an entity
^e ^E	Display entity pop-up
^g ^G	Display faceplate pop-up
k K	Ramp up value in scratch pad
^k ^K	Fast ramp up value in scratch pad
l L	Ramp down value in scratch pad
^l ^L	Fast ramp down value in scratchpad
m M	Go to Operator Guides page
^m ^M	Go to Internal Errors page
n N	Deny current message in message area (NO)
^n ^N	Display entity notes pop-up
p P	Prompt user for page
r R	Prompt user for attribute
^r ^R	Display scratch pad entity's attribute pop-up
u U	Branch Up (groups, trends)
x X	Acknowledge (alarms)
^x ^X	Exit ***MacroView***
y Y	Confirm current message in message area (YES)
z Z	Silence beeping
F1 - F8	Soft Key 1 - Soft Key 8
Page Up	Next Page
Page Down	Previous Page
Home	Select Application Line

User defined keys

(keys.ini) and defaults

! @ # $ % ^ &	
*	RUN ../bin/prtscrn for screen dumps
( )	
^b ^B	
^d ^D	
f F	
^f ^F	
g G	Go to Groups pages
h H	Go to Help pages
^h ^H	Go to online Help page
i I	Display time modification pop-up
j J	
^j ^J	
o O	Go to Overview pages
^o ^O	
^p ^P	
q Q	
^q ^Q	
s S	Go to Schematics pages
^s ^S	
t T	Go to Trends pages
^t ^T	Display Trends pop-up
^u ^U	
v V	
^v ^V	
w W	
^w ^W	
F9	Set attribute to MV
F10	Set attribute to SV
F11	
F12	

3 Pop-up Overview

This chapter discusses the functions of the various pop-ups. These pop-up windows are designed to provide frequently needed information in a convenient format. The pop-ups may be accessed directly by clicking on the pop-up icon (usually in the pop-up line) or by pressing the associated hot key.

3.1 Summary of Pop-ups

Each Pop-up is described separately (and arranged alphabetically) in this chapter. The table below summarizes the various pop-ups that are available with the Navigator.

Table 1: Summary of Pop-ups

Pop-up	Description	Hot Key
Alarm	Provides a small window showing the top lines of the alarm page. The filter and ordering is identical to the alarm page. Alarms may be acknowledged from this pop-up and buzzers may be silenced.	none
Group	This provides a single group faceplate for the entity in the scratch-pad. If a specific faceplate for that entity does not exist, the generic faceplate will be shown.	CTRL-g, CTRL-G
Entity Search	This pop-up can be used to browse through a list of configured entities. A filter enables you to find an entity or a group of entities that satisfy a given criterion. By double clicking on the entity name in the pop-up, it is placed in the scratchpad.	CTRL-e, CTRL-E
Attribute	This pop-up can be used to browse through a list of attributes for the entity currently in the scratchpad. By clicking on the attribute name in the pop-up, it is placed in the scratchpad.	CTRL-r, CTRL-R
Trend	The trend pop-up shows the trend for the entity in the scratchpad. If the entity is not trended, no trend will be shown. The pop-up also provides the ability to change sample times and pan back and for-ward in time using the scroll bar.	CTRL-t, CTRL-T
Note	Provides a small window (Note) showing the documentation field for the entity selected in the scratchpad.	CTRL-n, CTRL-N
Time	Provides a simple means to enter and modify time and duration markers. These markers are held in the "time line" and may be used to locate particular events in a trend display, for example.	i, I
Pan & Zoom	The Pan & Zoom pop-up provides the ability to use ***MacroView's*** Pan and Zoom functionality on any Application graphic.	CTRL-z CTRL-Z

Pop-up	Description	Hot Key
Application	The application pop-up (actually, a pull down menu) provides a list of applications available from the Navigator. It is activated from the application line. You can get the list to appear by pressing the HOME key and using the down arrow key (followed by the enter key) to select the application.	Home followed by down arrow

Table 1: Summary of Pop-ups

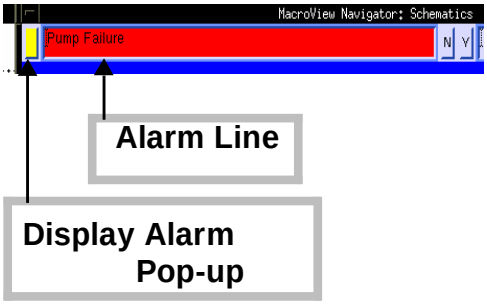
Most of the pop-ups are activated from the pop-up line. For more information, see the Pop-up Line section in the Navigator Modules chapter.

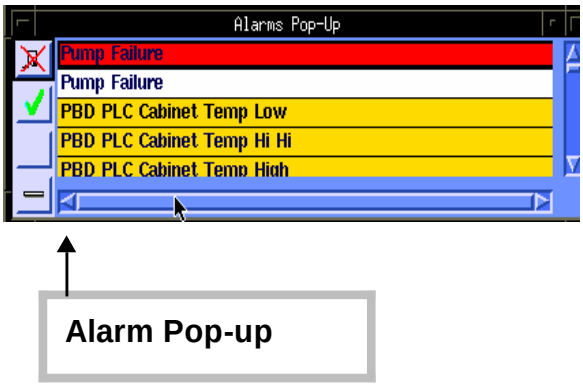
3.2 Pop-up Features

Alarm Pop-up

The diagram below shows the main features of the Alarm Pop-up.

Alarm Line and Alarm Pop-up Features





Main Features

1 **Structure:** The Alarm Pop-up consists of a browse on the alarms database and icons to silence, acknowledge, and clear alarms. There is also a close icon.

2 **Alarm Pop-up purpose:** The Alarm Pop-up:

- Allows alarms to be monitored while viewing any screen.
- Allows alarms to be silenced, acknowledged, and cleared while viewing any screen.

Using the Alarm Pop-up

1 **Acknowledging alarms:** To acknowledge an alarm in the **Alarm pop-up**, first select the alarm by clicking on it in the pop-up, then click on the check icon.

2 **Clearing an alarm:** If this functionality is enabled, clear an alarm by selecting an acknowledged alarm, and pressing the X icon in the pop-up.

3 **Silencing the buzzer:** Press the silence (musical note) button to silence the buzzer.

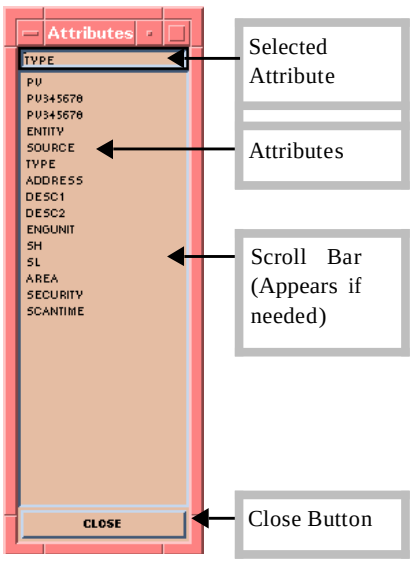
4 **Alarm Pop-up Filtering:** The pop-up uses the same filtering and ordering settings as the main alarm application.

Note:
If the clear button is not visible, the ability to clear alarms has not been enabled.
The default ordering and filtering settings may be changed. For more information on the clear button and default settings, see the engineering section of the Alarms chapter.

Attribute Pop-up

The diagram below shows the main features of the Attribute pop-up.

Attribute Pop-up Features



Main Features

1 **Objective:** Provides a simple means to find an attribute of the entity in the scratchpad and to place that attribute name into the scratchpad.
For more information on the Scratch Pad, please see the relevant section in the Navigator Overview chapter of this document.

2 **Structure:** The Attribute Pop-up consists of a scrollable list of attributes of the entity in the scratchpad. The selected attribute is shown at the top of the list. **Note:** The scroll bar will only appear if there is insufficient room to show all the attributes at one time.

3 **Call-up:** Press the CTRL-R key or click on the ^R key in the Pop-up line.

4 **Closing the pop-up:** Close the Pop-up by either (i) clicking on the Close Button, (ii) by clicking on the minus icon in the Pop-up Line, or (iii) pressing the minus sign on the keyboard.

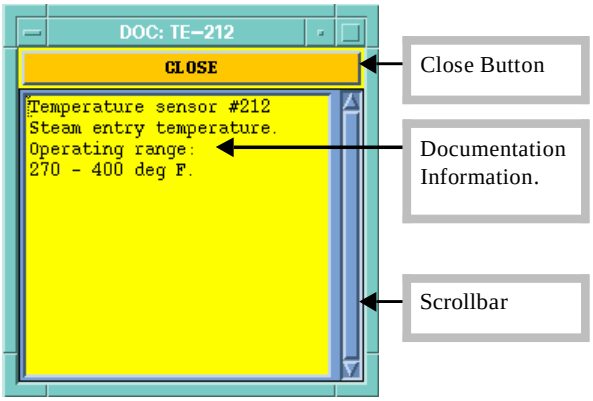
Using the Attribute Pop-up

1 **Selecting an attribute:** Use the scroll bars to move through the list of attributes. When you have found the attribute of interest, click on the attribute to write the attribute into the scratchpad.
Note: If you already know the name of the attribute, you can press the R key (or click on the R button in the scratchpad) and type it directly into the message line. (Please see the section in the Navigator Overview chapter of this document.)

Note Pop-up

The diagram below shows the main features of the Note or Comment Pop-up.

Note Pop-up Features



Main Features

1 **Structure:** The Note Pop-up consists of a scrollable text area that contains the document comment field of the entity in the scratchpad.

2 **Purpose:** The Note Pop-up provides a means of seeing the free format textual information that can be associated with every entity.
Typically, this information may consist of maintenance or operating procedures as well as information relating to the physical position of the sensor.

3 **Call-up:** Press the CTRL-N key or click on the ^N key in the Pop-up line.
Note: The ^N button will be highlighted yellow if the entity in the scratchpad has a Note attached to it. If there is no data associated with the entity and the button is grey, then pressing ^N will not bring up the Note Pop-up.

4 **Closing the pop-up:** Close the Pop-up by either (i) clicking on the Close Button, (ii) clicking on the minus icon in the Pop-up Line, or (iii) pressing the minus sign on the keyboard.

Using the Note Pop-up

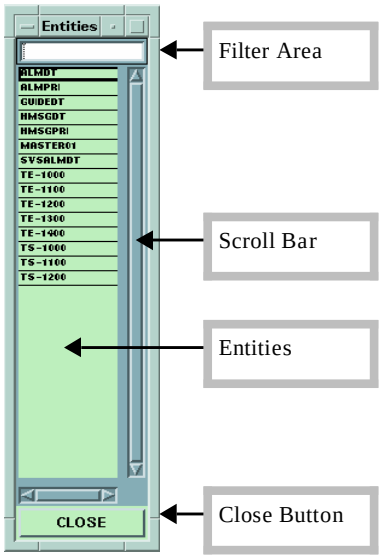
1 **Scrolling through the Text:** Just use the scrollbar to see the documentation.

2 **Read only**: Note that you cannot modify the text in the Note pop-up. This has to be done from the engineering Configurator.

Entity Pop-up

The diagram below shows the main features of the Entity Pop-up.

Entity Pop-up Features



Main Features

1 **Objective:** Provides a simple means to find an entity and to place that entity name into the scratchpad.
For more information on the Scratch Pad, please see the relevant section in the Navigator Overview chapter of this document.

2 **Structure:** The Entity Pop-up consists of a scrollable list of entities sorted alphabetically which satisfies the optional filter criteria.

3 **Call-up:** Press the CTRL-E key or click on the ^E key in the Pop-up line.

4 **Closing the Pop-up:** Close the Pop-up by either (i) clicking on the Close Button, (ii) clicking on the minus icon in the Pop-up Line, or (iii) pressing the minus sign on the keyboard.

Using the Entity Pop-up

1 **Entering a filter:** In the Edit Area at the top of the pop-up, type in those characters you know are in the entity name that you are searching for and then press the enter key. The pop-up will display only those entities that have that combination of letters contained within the entity name.
Note: The filter is not case sensitive and you may not use wild cards.

2 **To Clear the Filter:** Just clear the filter area with the backspace key and press the enter key. The pop-up will show the full list of entities.

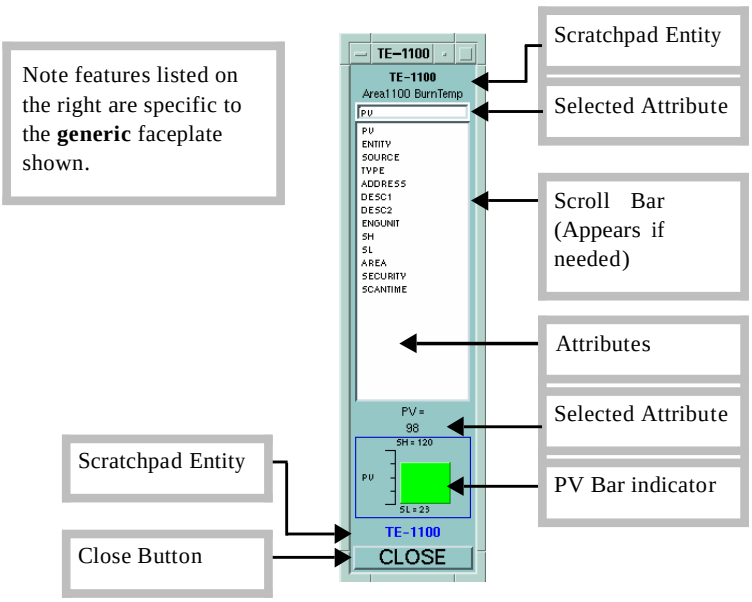
3 **Selecting an Entity:** Use the scroll bars to move through the list of entities. When you have found the entity of interest, double click on the entity to write the entity into the scratchpad.

Note: If you already know the name of the entity, you can press the E key and type it directly into the message line when prompted. (Please see the Message Line section in the Navigator Overview chapter.)

Group Pop-up

The diagram below shows the main features of the Group Pop-up.

Group Pop-up Features



Main Features

1 **Objective:** Provides a means of showing a single group style faceplate of the entity that is in the scratchpad.
For more information on the Scratch Pad, please see the relevant section in the Navigator Overview chapter of this document.

2 **Structure:** The Group Pop-up will be the standard group faceplate associated with the type and source of the entity in the scratchpad. If there is no group faceplate, then the generic faceplate (shown above) will be displayed. For more information on how the faceplate is retrieved and associated with the type, please see the Groups Chapter in the engineering manual.

3 **Call-up:** Press the CTRL-G key or click on the ^G key in the Pop-up line.

4 **Closing the Pop-up:** Close the Pop-up by either (i) clicking on the Close Button, (ii) clicking on the minus icon in the Pop-up Line, or (iii) pressing the minus sign on the keyboard.

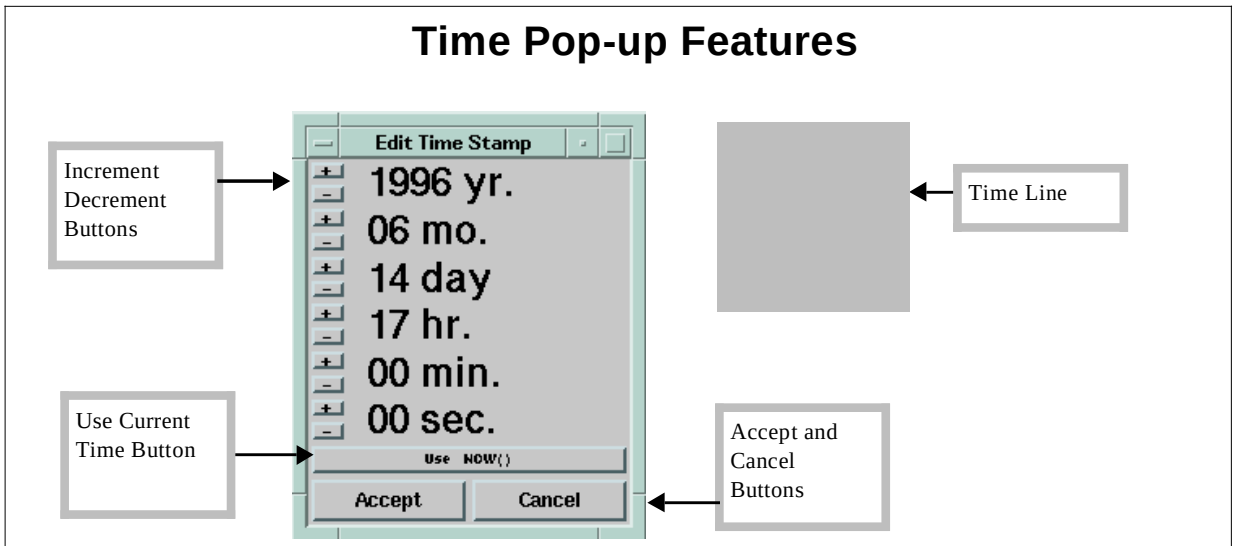
Using the Group Pop-up

1 **Type Faceplate:** These are faceplates associated with the ***type*** and ***source*** of the entity in the scratch-pad.

2 **Generic Faceplate:** The example shown is the generic faceplate. To get more information on an attribute, just click on the attribute name in the list. At that point, the selected attribute will appear in the lower window and it will also be reflected in the scratchpad.

Time Pop-up

The diagram below shows the main features of the Time pop-up.



Main Features

1 **Objective:** Provides a simple means to enter and modify time markers. These markers are held in the "time line" and may be used (for example) to locate particular events in a trend display.

For more information on the Time Line, please see the relevant section in the Navigator Overview chapter of this document.

1 **Structure:** The Time Pop-up consists of a list of entries for each time element that can be incremented or decremented using small increment or decrement keys.

2 **Call-up:** Press the I key (I stands for Input). Note that the Time Pop-up will initially come up with the time the Navigator was started but with the minutes and seconds zeroed.

3 **Closing the Pop-up:** Close the Pop-up by either (i) clicking on the Accept or Cancel Button, (ii) clicking on the minus icon in the Pop-up Line, or (iii) pressing the minus sign on the keyboard.

Using the Time Pop-up

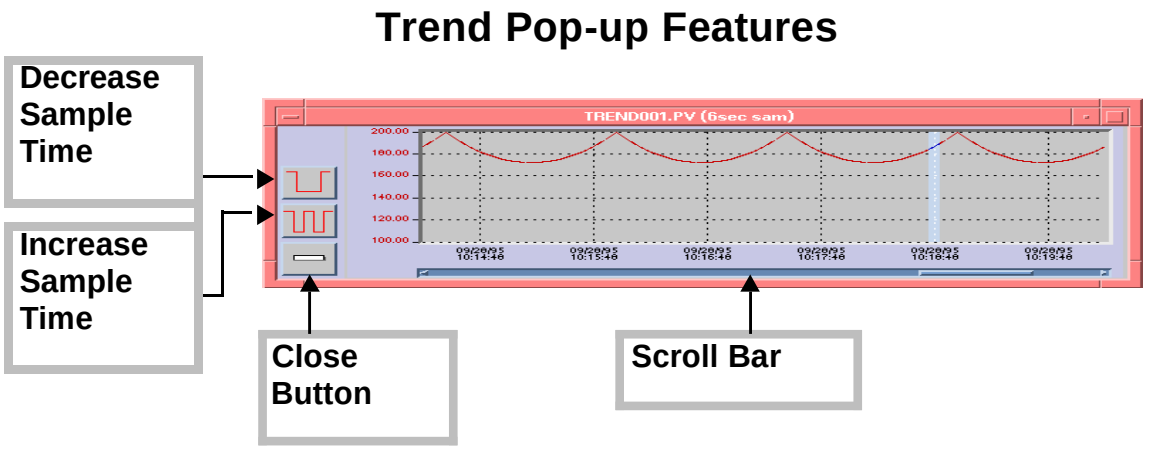
1 Click on the appropriate button to increase or decrease the selected time entry. For example, to increase the day, click on the + button next to the day.

2 Press the Use Current Time button to use the current time for the settings.

3 When you are happy with the time-stamp, click on the accept button and the time stamp will be written into the time marker of the Time Line. (Or click on the Cancel Button to go back to the original time stamp.) The Time Line will show the new Time Stamp.

Trend Pop-up

The diagram below shows the main features of the Trend pop-up.



Main Features

1 **Objective:** The trend pop-up shows the trend for the entity in the scratchpad. If the entity is not trended, no trend will be shown. The pop-up also provides the ability to change sample times and pan back and forward in time using the scroll bar.

2 **Structure:** The diagram above shows the main elements of the trend pop-up.

3 **Call-up:**

- First ensure that you have an entity and attribute in the scratchpad that has been trended. I.e. historical data is being collected on that entity. The entity must also appear in a trend group.
- Now press the CTRL-T key or click on the Trend icon (^T) in the Pop-up Line.
- If the entity is being trended, the pop-up will appear. (If not, a message will appear informing you that there is no trend data.)

4 **Closing the pop-up:** Close the Pop-up by either (i) clicking on the close Button, (ii) clicking on the minus icon in the Pop-up Line, or (iii) pressing the minus sign on the keyboard.

Using the Trend Pop-up

1 **Panning and Zooming:** Use the scroll bar to Pan back to earlier historical data. You can zoom by either rubber-banding across the surface of the chart or by dragging the scales. The function of the chart is similar to the chart in the Trend Application. For more information, please see the Trend Application Chapter.

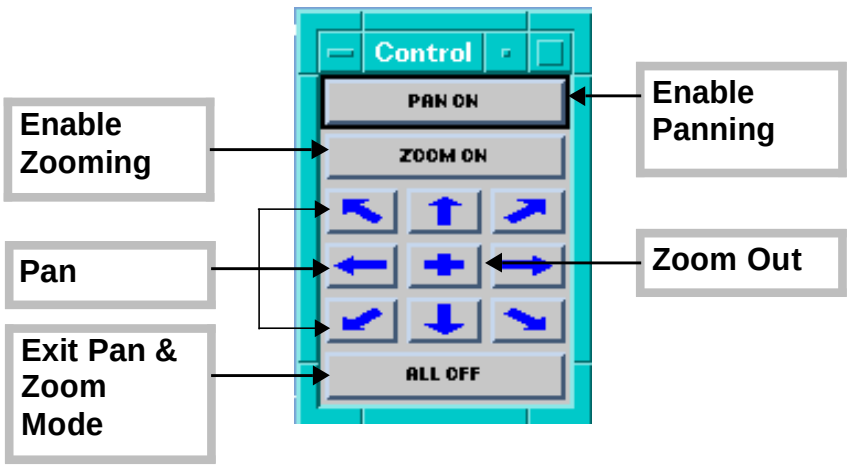
2 **Changing sampling times:** Just click on the "increase sample time" or "decrease sample time" icon to move up or down in the sample time.

3 **Note:** The trend pop-up can not be used while the Trend application is active.

Pan & Zoom Pop-up

The diagram below shows the main features of the Pan & Zoom Pop-up.

Pan & Zoom Pop-up Features



Main Features

1 **Objective:** Provides a means of using ***Macro-View***'s pan and zoom functionality on almost any Navigator Application screen.

2 **Structure:** The Pan & Zoom Pop-up consists of several buttons. These include

- Pan On: Enables panning on the current Application.
- Zoom On: Enables zooming on the current Application.
- Pan (arrow) Buttons: Pan in their respective directions.
- Zoom Out (+) Button: Zooms out 50%.
- All Off: Exits pan and zoom mode, closes pop-up.

1 **Call-up:** Press the CTRL-Z key or press P and when prompted for a page, enter "zoom".

2 **Closing the Pop-up:** Close the Pop-up by either (i) clicking on the All Off Button, (ii) clicking on the minus icon in the Pop-up Line, or (iii) pressing the minus sign on the keyboard.

Using the Pan & Zoom Pop-up

1 **Select Graphic:** Go to the graphic you wish to zoom in on.

2 **Bring up Pan & Zoom Pop-up:** Press the Zoom On button, and optionally the Pan On button as well.
Note: Pressing just the Pan On button will enable panning, but without zooming enabled, not much can be done.

3 **Zoom In:** Draw a rectangle around the area you wish to zoom in on by clicking at one corner, and dragging to the opposite corner.
Note: The aspect ratio of the area defined is not important, ***MacroView*** will maintain the correct aspect ratio.

4 **Pan:** Panning may be done by pressing the Pan arrow buttons, or using the scroll bars which appeared on the edges of the Application when panning was enabled.

5 **Exit Pan & Zoom Mode:** When done, click on the All Off button to exit pan and zoom mode.

4 Trend Application

4.1 Overview

- The Trend Application runs within the Navigator Application framework and com- plies with the standard Navigator Application interfacing requirements.
- The Trend Application consists of pages of pre-configured multi-pen charts that may display ***MacroView*** historical data as well as database information.
- The configuration of the Trend application is provided within the application itself.

This chapter describes:

(i) the application and it's structure

(ii) how to use the application

(iii) how to configure the application

(iv) the engineering details that an engineer would need to effectively maintain the appli- cation

Purpose

The purpose of the Trend Application is to:

(i) show historical and database information in a clear graphical format

(ii) give the user a choice of presentation styles

(iii) provide a set of tools that enable a user to easily find the information of interest

How Trend Groups are Displayed

The Trend Application:

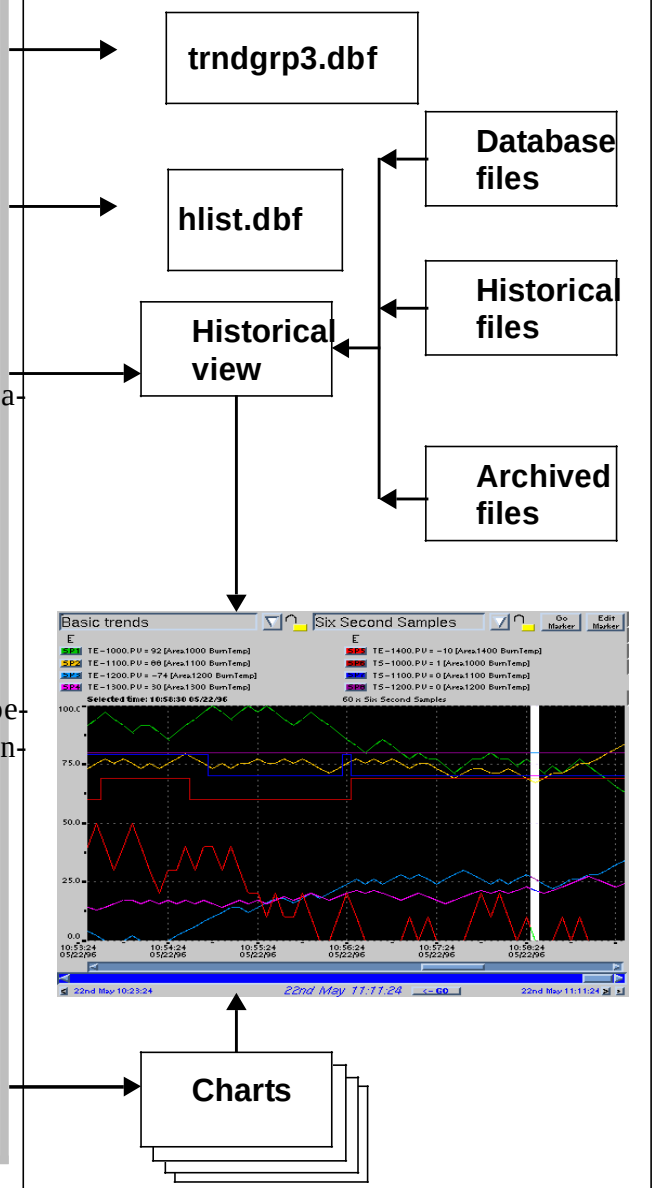
Reads the Trend Group database and chooses the historical files relating to the pre-selected sampling period.

It also finds out from the file which attributes and entities are to be displayed and checks the hlist database to see if the *entity.attributes* are historized.

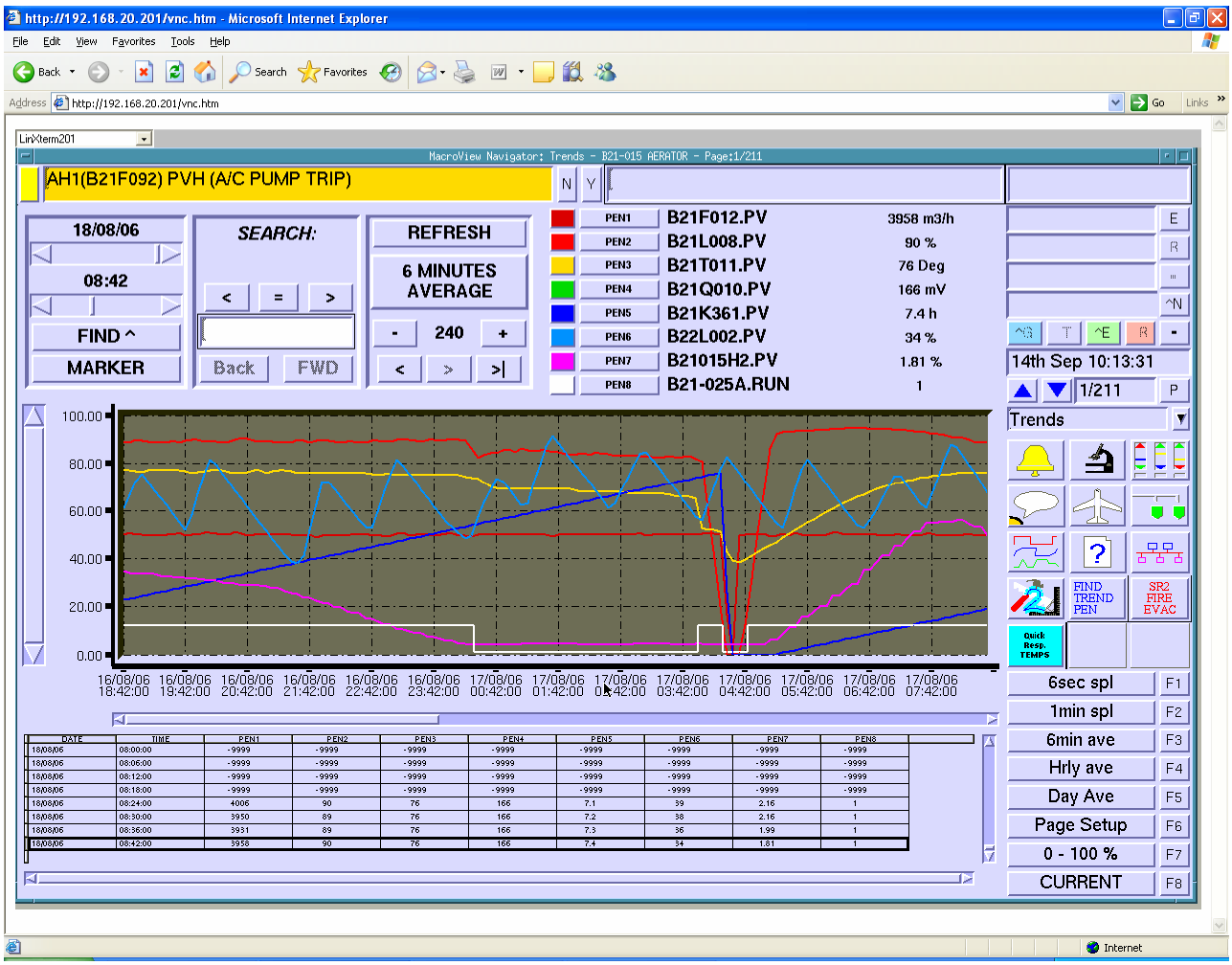
Display the trend using the scaling information from either (i) the Trend Group database (if it is specified), (ii) the Entities database, or (iii) the Type Attributes database.

User Interaction

The user may select the chart to use, the sample rate, and the time to be viewed. Specific charts will provide additional functionality such as peak search and printing.



Alternate Trend Display



4.2 Using the Trend Application

This section describes how you use the Trend Application to view the historical and database information and how to manipulate its presentation.

With ***MacroView***'s Trend Application, users can access any aspect of the Trend Application with any ***MacroView*** terminal that is connected to the network.

In a typical session, users may...

- Call up the Trend Application from the Application matrix by clicking on the trend icon
- Choose which page of the Trend group they wish to View using the Navigator Page Line. Alternatively, they may go directly to a specific page of the Trends by clicking on a pre-configured Touch Panel
- Find the area of information of interest using one of the following techniques:
  - (i) Panning through the data using the ***scroll bars***
  - (ii) Going directly to a ***specific time*** using the Time/Date selection module
  - (iii) Finding a specific disturbance using the ***Search*** module
  - (iv) Using a known disturbance to find a time of interest using the ***Dual chart trends***
  - (v) Using the ***Historical Browse*** screen to view tabular data
  - (vi) Changing ***sample times*** to a different rate so that a larger time span or a more detailed view can be obtained
  - (vii) Viewing the data in a different way using the ***Banded trends***
- Print historical data using the ***Print screen***
- Configure the Trend application's pages using the ***configuration*** screen

To make it easier to understand, the operations are shown in this document as a series of diagrams as opposed to long textual descriptions.

Note that the functions covered by the normal ***MacroView*** system are not described in detail here.

Starting the Trend Application Package

The Trend Application package is integrated into the ***MacroView*** system. To start up the Trends, either:

- Click once on the Trend Icon in the Application Matrix,

- Double click on the Trend Application entry in the Application Line,
- Press the T key on the keyboard

Alternatively, Touch Panels or Buttons may be engineered to start the Trend application within a graphic display.

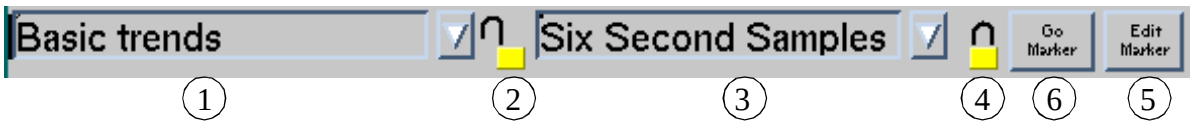
Selecting a Trend Page, Trend Chart and Sample Rate

Use the standard Navigator modules such as the Paging Line to change to the desired page number. The Trend Chart and Sample Rate are selected using the navigation menu above all trends charts.

Working with the Trends Navigation Menu

Once you have called up the trend application, you will see the trends navigation menu above the current chart. The diagram below shows the various functions you can carry out using the trends navigation menu.

Trends Navigation Menu



Main Features

Every page of trends has a default Trends Chart and sample rate. These may be overridden using the tools in the Trends Navigation Menu.

1 **Trend Chart Selection:** Lists the different trend charts available.

2 **Lock Current Chart Selection:** Locks the currently selected trend chart so that no other trend charts are shown. Clicking again unlocks the selection.

3 **Sample Rate Selection:** Lists the different sample rates available.

4 **Lock Current Sample Rate:** Locks the currently selected sample rate so that no other sample rates are shown. Clicking again unlocks the selection.

5 **Edit Time Marker:** Drag the scales away from or towards the origin so as to get a different zoom or magnification area.

6 **Go to Time Marker:** At any point, click on the "Current" Soft Key to get back to the latest record in the history. At that moment, the trend will start updating with the latest values again.

Using the Trends Navigation Menu

1 If a different trend chart is desired, select it with the trend chart selector.

2 If this trend chart is desired over the trend pages defaults, lock the selection.

3 If a different sample rate is desired, select it with the sample rate selector.

4 If this sample rate is desired over the trends pages defaults, lock the selection.

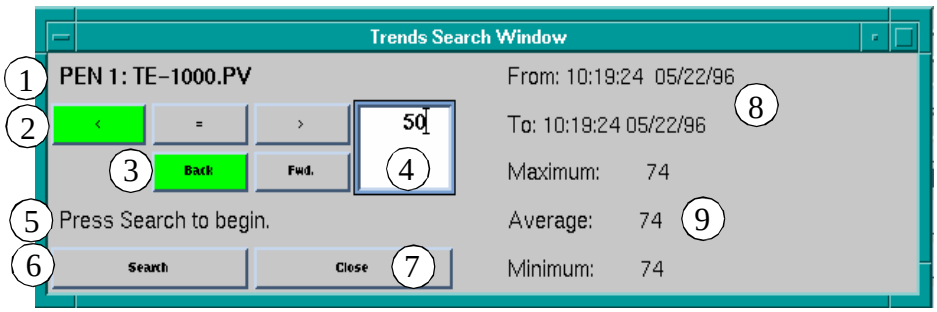
5 If you wish to edit the time in the Time Marker, press the ***Edit Marker*** button.
Note: To see the Time Marker, click on the Time Line to toggle the display. For more information on the Time Marker, see the Time Pop-up page in the Pop-up chapter.

6 If you wish to see the trend data for the time indicated in the Time Marker, press the ***Go Marker*** button.

Using the Search Window

The Search Window is used to quickly find a disturbance. Most trends pages call the Search window module with the F1 soft key. Use the procedures suggested in the diagram below.

Using the Search Window



Main Features

The search window is used to find matching or exceeding values, which are often disturbances, in a pen's history.

1 **Selected Pen:** Lists the selected pen as well as which entity and attribute this corresponds to.

2 **Search Comparison:** Press button to select type of comparison. Comparison may be:

- Less than <
- Equal =
- Greater than >

3 **Search Direction:** Specifies whether search should be backwards or forwards in time.

4 **Search Value:** The value to be used in the search comparison.

5 **Search Instructions:** This area will instruct the user on what to do.

6 **Action Button:** This button, which may have various labels is used in conjunction with the Search Instructions.

7 **Close Button:** Closes the search pop-up.

8 **Search Span:** This shows the time span covered in the search so far.

9 **Search Values:** This shows the maximum, minimum, and average values for the selected pen found so far in the search.

Using the Trends Search Window

1 Choose the direction, type and value for the search.

2 Press the search button. The current view will be searched. If the search is successful, the Search Instructions will say "Found", and you will be given the option of searching again or closing.

3 If the value is not found, when the end of the view is reached, you will be given the option of continuing.

4 Each continuation searches another entire view. The number of samples in a view varies, but is usually between 400 and 1000.

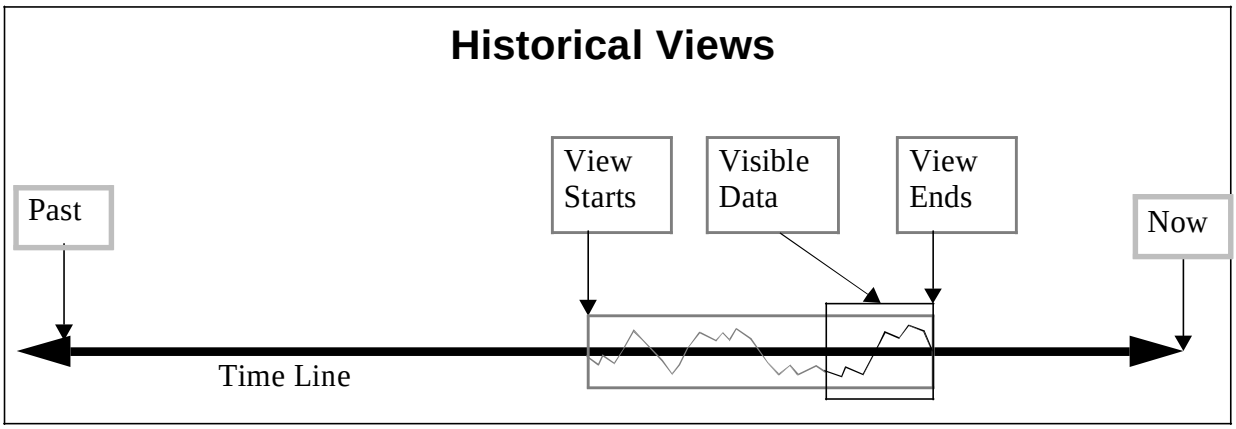
Note: The Search Window will not appear unless a pen has been selected. Use the SP buttons to select a pen.

4.3 Trend Charts

The historical data presented in the Trends application may be viewed through several different interfaces. These interfaces are the Trends Charts. The standard Trends application includes the following Trends Charts.

- Basic Trends
- Banded Trends
- Dual Chart Trends
- Print Screen
- Historical Browse
- Trends Menu

All the charts operate on the concept of the historical view. The historical view is a duration in time for which the process data has been accessed from the ***MacroView*** Historian. Tools are usually provided to search within the view, or to go to the next or previous view. Whenever you go to a specific time using the *Go Marker* functionality, a view is created with the requested time as the middle sample.



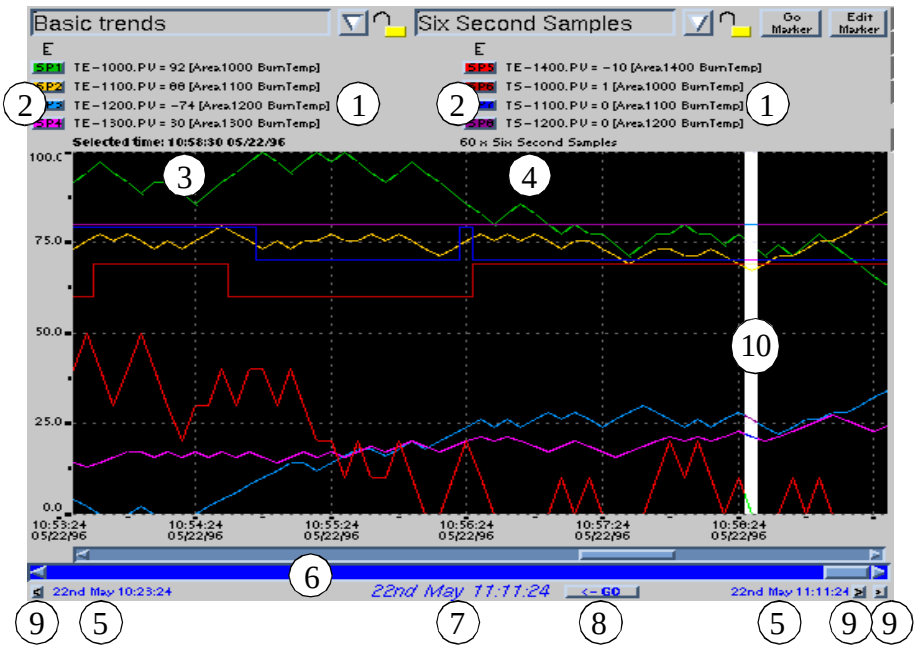
The number of samples in a view is set according to the sample rate. This is set in the Historical Specification database. The setting of this value is covered in the History chapter of the ***MacroView*** Engineering manual.

The number of visible samples is set for each trends page. For more information, see the Trends Menu and Engineering sections of this chapter.

Basic Trends

The Basic Trends screen displays up to eight trend pens in a traditional trend format.

Basic Trends



Main Features

1 **Trend Pen Information:** Lists the following information about each pen:

- Entity
- Attribute
- Value at **selected location**
- Description

2 **Trend Pen Selection:** The buttons labeled SP1 - SP8 put the selected Entity and Attribute in the *Entity Information Area* and change the chart's scales to those of the pen selected. Clicking on the E symbol will clear the *Entity Information Area* and change the chart's scales back to 0 - 100%.

3 **Time and Date of Current Selection:** This is the time and date of the **selected location**.

4 **Samples and Rate:** This is the number of samples shown, and the sample rate.

5 **Current View:** These two timestamps indicate the start and end of the current view.

6 **Time Selection Scroll Bar:** The (lower) scroll bar may be used to select a time within the current view.

7 **Time Selected:** Manipulating the time selection scroll bar changes this time stamp.

8 **Go to Selected Time:** Pressing this button displays the trend data for the selected data.

9 **View Manipulation Buttons:** These three buttons perform the following functions:

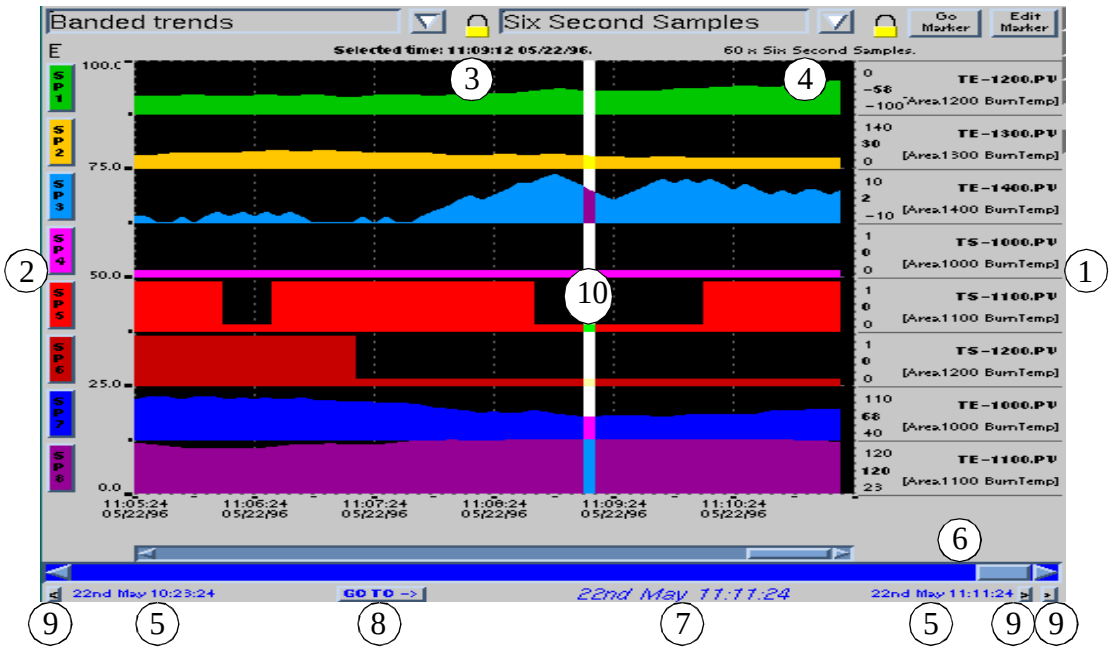
- < Go back one view
- > Go forward one view
- >| Go to the most recent view

10 **Selected Location:** The vertical band or wire bar indicates the currently selected date and time of the historical data. Clicking once on the chart selects a time and date. Double-clicking puts the selected time and date in the **Time Marker**.

Banded Trends

The Banded Trends screen displays up to eight trend pens in a banded trend format where each pen occupies its own range of the chart.

Banded Trends



Main Features

1 **Trend Pen Information:** Lists the following information about each pen:

- Entity
- Attribute
- Value at **selected location**
- Scale High and Low
- Description

2 **Trend Pen Selection:** The buttons labeled SP1 - SP8 put the selected Entity and Attribute in the *Entity Information Area* and change the chart's scales to those of the pen selected. Clicking on the symbol will clear the *Entity Information Area* and change the chart's scales back to 0 - 100%.

3 **Time and Date of Current Selection:** This is the time and date of the **selected location**.

4 **Samples and Rate:** This is the number of samples shown, and the sample rate.

5 **Current View:** These two timestamps indicate the start and end of the current view.

6 **Time Selection Scroll Bar:** The (lower) scroll bar may be used to select a time within the current view.

7 **Time Selected:** Manipulating the time selection scroll bar changes this time stamp.

8 **Go to Selected Time:** Pressing this button displays the trend data for the selected data.

9 **View Manipulation Buttons**: These three buttons perform the following functions:

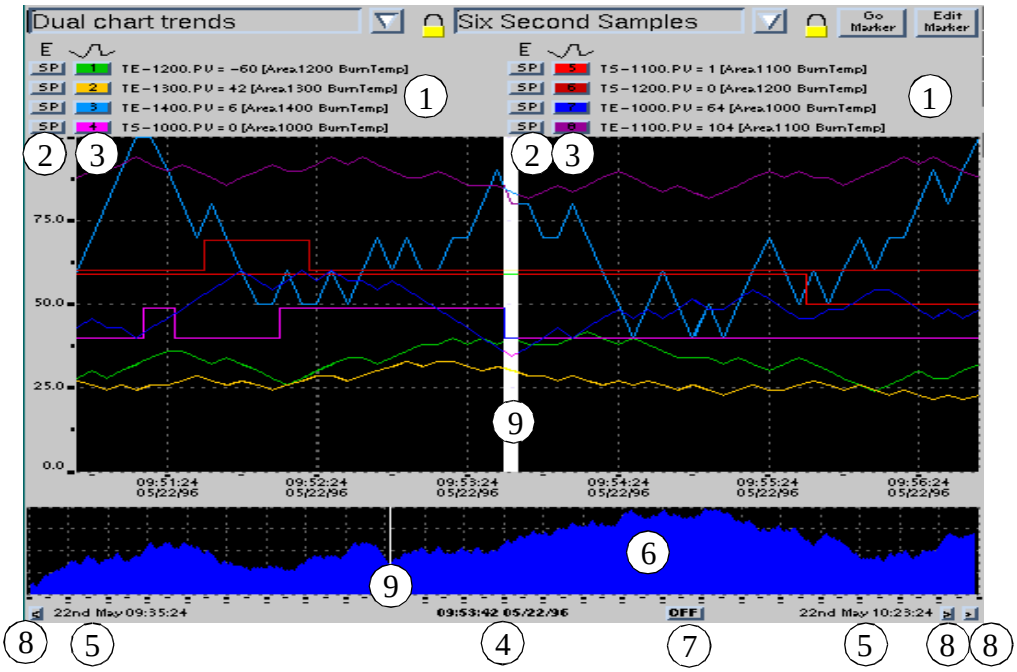
- < Go back one view
- > Go forward one view
- >| Go to the most recent view

10 **Selected Location**: The vertical band or wire bar indicates the currently selected date and time of the historical data. Clicking on the chart selects a time and date. Double-clicking puts the selected time and date in the **Time Marker**.

Dual Chart Trends

The Dual Chart Trends screen displays up to eight trend pens in a traditional format. It also shows one pen for an entire view.

Dual Chart Trends



Main Features

1 **Trend Pen Information:** Lists the following information about each pen:

- Entity
- Attribute
- Value at **selected location**
- Description

2 **Trend Pen Selection:** The buttons labeled SP put the selected Entity and Attribute in the *Entity Information Area* and change the chart's scales to those of the pen selected. Clicking on the E symbol will clear the *Entity Information Area* and change the chart's scales back to 0 - 100%.

3 **Range Chart Selection:** The buttons labeled 1 - 8 cause the bottom range chart to display the entire view for the selected pen. Clicking on the symbol will clear the range chart.

4 **Time and Date of Current Selection:** This is the time and date of the selection.

5 **Current View:** These two timestamps indicate the start and end of the current view.

6 **Range Chart:** The (lower) chart may show one pen's data for the entire view. This functionality can be useful by allowing the operator to see an important trend for a long period of time. Features in the pen's history may be used to identify where other pens should be viewed. When first displayed, the range chart will be blank. Choose a pen to view its range.

7 **Turn OFF Range Chart:** Pressing this button clears the range chart.

8 **View Manipulation Buttons:** These three buttons perform the following functions:

- < Go back one view
- > Go forward one view
- >| Go to the most recent view

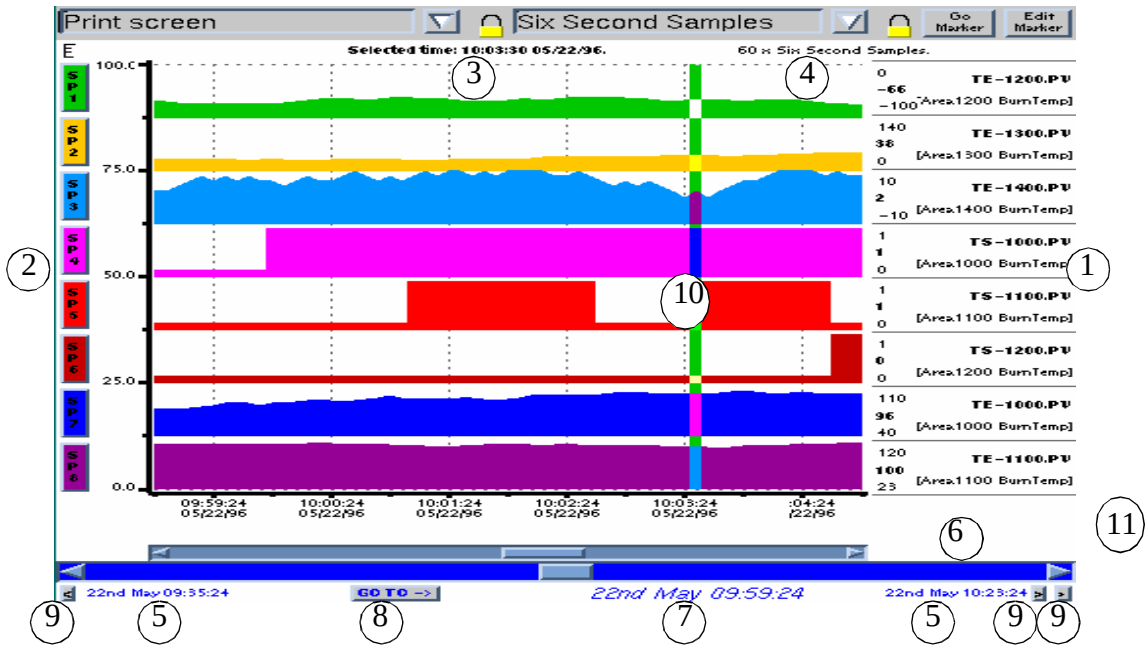
9 **Selected Location:** The vertical band or wire bar

indicates the currently selected date and time of the historical data for both of the charts. Clicking on the chart selects a time and date. Double-clicking the Range Chart will cause the main chart to display the time and date selected. Double-clicking the top chart puts the selected time and date in the **Time Marker**.

Print Screen

The Print Screen is essentially the Banded Trends screen with colors which are more suited to printer output.

Print Screen



Main Features

1 **Trend Pen Information:** Lists the following information about each pen:

- Entity
- Attribute
- Value at **selected location**
- Description

2 **Trend Pen Selection:** The buttons labeled SP1 - SP8 put the selected Entity and Attribute in the *Entity Information Area* and change the chart's scales to those of the pen selected. Clicking on the symbol will clear the *Entity Information Area* and change the chart's scales back to 0 - 100%.

3 **Time and Date of Current Selection:** This is the time and date of the **selected location**.

4 **Samples and Rate:** This is the number of samples shown, and the sample rate.

5 **Current View:** These two timestamps indicate the start and end of the current view.

6 **Time Selection Scroll Bar:** The (lower) scroll bar may be used to select a time within the current view.

7 **Time Selected:** Manipulating the time selection scroll bar changes this time stamp.

8 **Go to Selected Time:** Pressing this button displays the trend data for the selected data.

9 **View Manipulation Buttons:** These three buttons perform the following functions:

- < Go back one view
- > Go forward one view
- >| Go to the most recent view

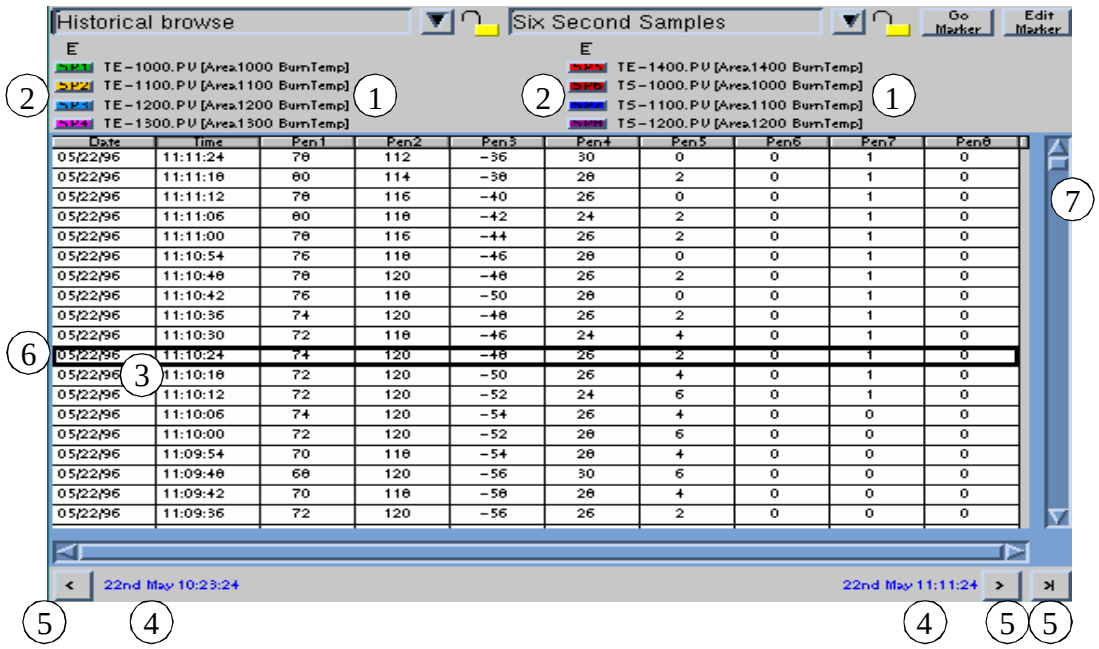
10 **Selected Location:** The vertical band or wire bar indicates the currently selected date and time of the historical data. Clicking once on the chart selects a time and date. Double-clicking puts the selected time and date in the **Time Marker**.

11 **Print Screen:** The F2 softkey will use the standard Navigator print screen method except that only the trend portion of the screen is printed.

Historical Browse

The Historical Browse screen presents historical data in tabular form.

Historical Browse



Main Features

1 **Trend Pen Information:** Lists the following information about each pen:

- Entity
- Attribute
- Description

2 **Trend Pen Selection:** The buttons labeled SP1 - SP8 put the selected Entity and Attribute in the *Entity Information Area*. Clicking on the E symbol will clear the *Entity Information Area.*

3 **Time and Date of Current Selection:** These two fields contain the time and date of the selected location.

4 **Current View:** These two timestamps indicate the start and end of the current view.

5 **View Manipulation Buttons:** These three buttons perform the following functions:

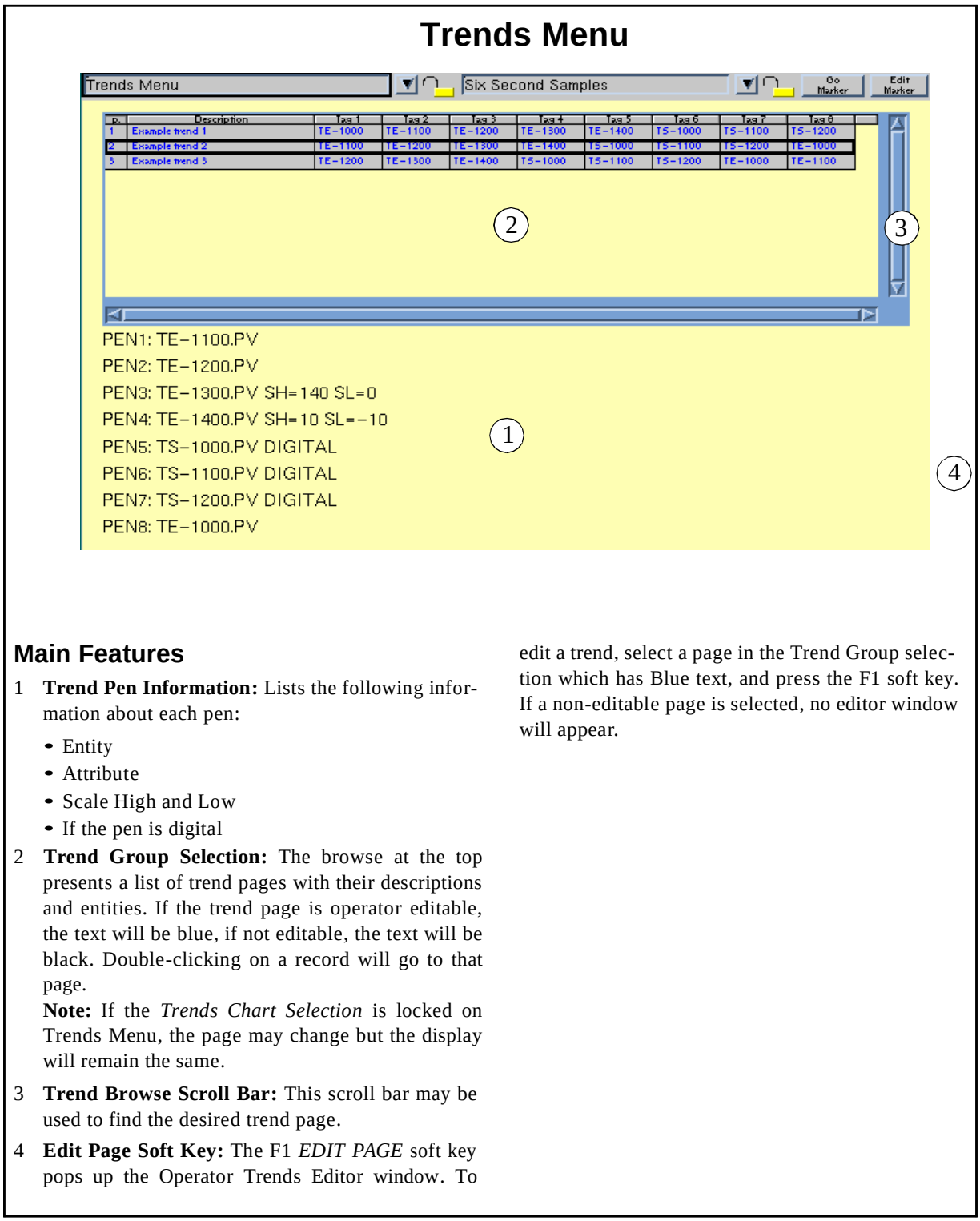
- < Go back one view
- > Go forward one view
- >| Go to the most recent view

6 **Selected Location:** The horizontal band indicates the currently selected record of the historical data. Clicking on the browse selects a time and date. Double-clicking puts the selected time and date in the Time Marker

7 **Browse Scroll Bar:** The vertical scroll bar may be used to search for data within the current view.

Trends Menu

The Trends Menu allows the viewing and selection of the trend groups database.



Main Features

1 **Trend Pen Information:** Lists the following information about each pen:

- Entity
- Attribute
- Scale High and Low
- If the pen is digital

2 **Trend Group Selection:** The browse at the top presents a list of trend pages with their descriptions and entities. If the trend page is operator editable, the text will be blue, if not editable, the text will be black. Double-clicking on a record will go to that page.
Note: If the *Trends Chart Selection* is locked on Trends Menu, the page may change but the display will remain the same.

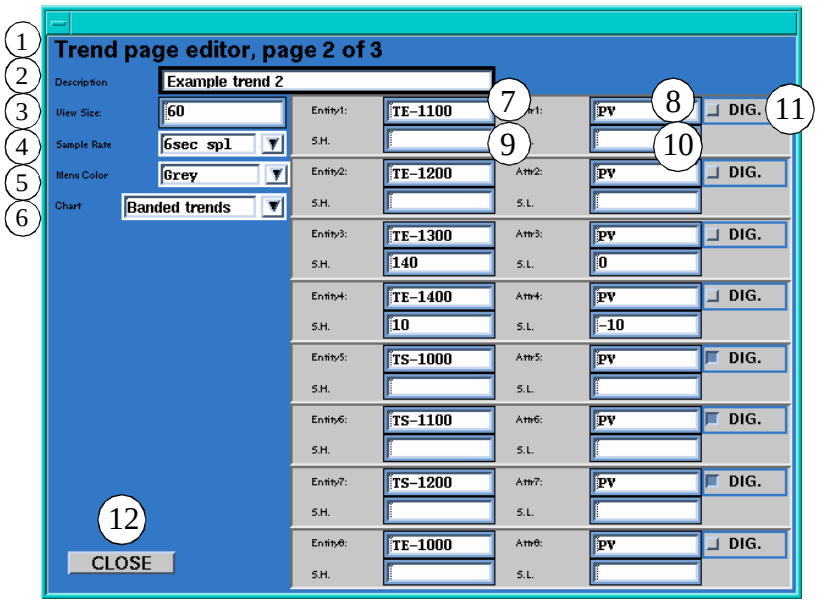
3 **Trend Browse Scroll Bar:** This scroll bar may be used to find the desired trend page.

4 **Edit Page Soft Key:** The F1 *EDIT PAGE* soft key pops up the Operator Trends Editor window. To edit a trend, select a page in the Trend Group selection which has Blue text, and press the F1 soft key. If a non-editable page is selected, no editor window will appear.

Operator Trends Editor

The Operator Trends Editor pop-up allows the limited editing of the trend groups database.

Operator Trends Editor



Main Features

The Operator Trends Editor pop-up may be used by anyone to edit those trends pages which have been configured as operator editable.

1 **Current Page Information:** Lists the current page being edited as well as the total number of pages.

2 **Trend Group Description:** The description appears in the Navigator's title bar when the page is being viewed. The description may be up to 25 characters.

3 **View Size:** The number of samples to display in the chart.
Note: The higher this value, the slower the operation of the page. Typical values are 30 or 60.

4 **Sample Rate:** The page's default sample rate. This list comes from the ***MacroView*** historical specification. For more information see the History chapter of the ***MacroView*** Engineering manual.

5 **Menu Color:** The background color of this page in the Trends Menu page. Light Colors such as White, Grey, and Yellow work best.

6 **Chart:** The Trends Chart to use for this Trends Page. Note that if quicker operation is desired, using the same chart for most pages reduces display time while changing pages.

7 **Entity:** The pen's entity must have at least one attribute historized. See the ***MacroView*** Engineering manual's History chapter for information on how to historize entities.

8 **Attribute:** The pen's attribute must be historized for the selected entity.

9 **Scale High:** The (optional) scale high for this pen. If nothing is specified, the Entity's scales are used.

10 **Scale Low:** The (optional) scale low for this pen. If nothing is specified, the Entity's scales are used. Note: If either scale is entered, they both must be.

11 **Digital:** If the value to be trended is digital or discrete, set this option.

12 **Close:** Press to close window. Changes are made as entered.
Note: Window must be closed to use Navigator. A page change may be necessary for changes to be effected.

4.4 Trend Group Configuration Tasks

This section defines how the Trend Application Package can be configured. The section is designed for an engineer to set up the system for the operators and other users. Some of the configuration tasks may be carried out using the ***MacroView*** *configurator* or from within the Navigator. (For information on configuring the application from the *configurator*, please see the ***MacroView*** Engineering Manual.) You may also configure various parameters from within the Navigator if you have the correct permissions as follows:

(i) Add a new Trend Group page or delete a Trend Group page.

(ii) Configure the individual entries within a selected Trend Group page.

Adding a Trend Group

To add a trend group, you should:

(i) First call up the trend application and press the p key. The system will respond with "Please enter a page -->". Now enter the word ***config***. The configuration screen will appear. If you do not have the relevant permissions, please see your System Administrator. A password may be required. If you are prompted for a password, press p then enter "config,<password>".

(ii) Click on the *Above* or *At Bottom* radio buttons and then click on the INSERT BLANK button to add a new record. A new record will appear in the database. Note that graphic display screens within the configuration may reference specific pages of the trends application. Adding or deleting pages may affect these links.

(iii) Using the mouse and the edit line, add a description and any other information to the trend group database.

Deleting a Trend Group

To delete a trend group, you should:

(i) First call up the trend application as in the first step of **Adding a Trend Group**.

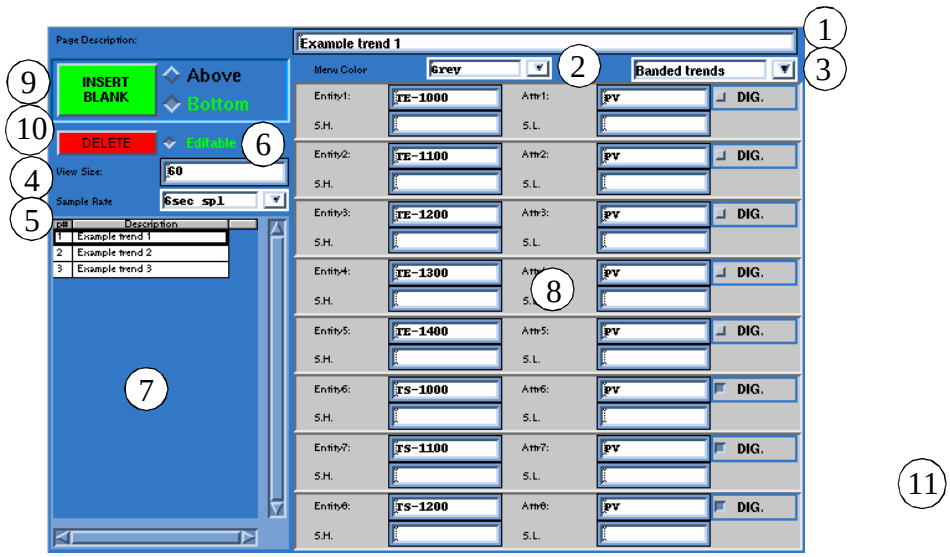
(ii) Select the record to be deleted.

(iii) Click on the *Delete* Button. The selected record will be deleted. Note that graphic display screens within the configuration may reference specific pages of the trends application. Adding or deleting pages may affect these links.

Trend Group Pages Editor

The Trend Group Pages Editor is used to add records to, delete records from, and edit records in the trend groups database.

Trend Group Pages Editor



Main Features

1 **Trend Group Description:** This description appears in the Navigator's title bar when the page is being viewed. The description may be up to 25 characters.

2 **Menu Color:** The background color of this page in the Trends Menu page. Light Colors such as White, Grey, and Yellow work best.

3 **Chart:** The Trends Chart to use for this Trends Page. Note that if quicker operation is desired, using the same chart for most pages reduces display time.

4 **View Size:** The number of samples to display in the chart.
Note: The higher this value, the slower the operation of the page. Typical settings are 30 or 60.

5 **Sample Rate:** The page's default sample rate. This list comes from the historical specification. For more information see the ***MacroView*** Engineering manual.

6 **Editable Status:** Select to make page operator editable.

7 **Trend Group Page List:** List of the pages in Trends by description.

8 **Pen Information:** This includes

- **Entity:** The pen's entity must have at least one attribute historized. See the ***MacroView*** Engineering manual's History chapter for information on how to historize entities.
- **Attribute:** The pen's attribute must be historized for this pen's selected entity.
- **Scale High:** The (optional) scale high for this pen. If nothing is specified, the Entity's scales are used.
- **Scale Low:** The (optional) scale low for this pen. If nothing is specified, the Entity's scales are used.
  Note: If either scale is entered, they both must be.
- **Digital:** If the value to be trended is digital, set this option.

9 **Insert Blank:** Press to insert a new trend page. Insertions may be either above currently selected record or at bottom.

10 **Delete Current:** Press to delete the currently selected record. There is no confirmation.
Note: Graphic display screens within the configuration may reference specific pages of the trends application. Adding or deleting pages may affect these links.

11 **Edit Defaults (F1):** Press to bring up a text editor on the trends defaults file. This file controls:

- The pen colors

4.5 Trend Application Reference

This section is designed to assist the engineer in understanding and maintaining the Trend Application Package. The section is written in a form suitable for an engineer who is familiar with ***MacroView***, meta script, and who understands database functions.

Setting Up the Application in the Navigator

The Trend Application will come pre-configured with your Navigator.

Going Directly to a Trend Application

To go directly to a page in the Trend Groups, configure a touch panel or button with the action program:

```
SEND "SetPage(Trend,<Page#>)" TO "MessageCenter";
```

Where <Page#> is the page number desired of the trend group display.

File Structure

The table below shows the overall file structure of the Trend Application Package.

Table 2: Trend Application Package Files

Directory	Filename	Description
$MACRODIR/../trends/app1	Trend Application directory	This is where all the Trend Application files are held. These files include: • the individual meta scripts associated with the Trend Application. • the individual dgt files. • the trend group configuration database.
$MACRODIR/../trends/app1	trndgrp3.dbf	This is the Database Trend Application con- figuration database. It has one record for every trend page. The database structure is described in the following table.
$MACRODIR/../trends/app1	charts.dbf	This is the Trend Charts database. It has one record for every trend chart. The database structure is described later.
$MACRODIR/../trends/app1	<file>.dgt <file>.ms	The metafiles that define the trend applica- tion
$MACRODIR/../trends/app1/charts	<file>.dgt	The metafiles that define the trend charts

Trend Application Database Structures

This is the database structure for Trend Group Pages database.

Table 3: Trend Application Database Structure (trndgrp3.dbf)

Field	Description
TREND_DESC	Description of the page. This will be displayed in the menu, and on the Title bar when the page is selected
TAG1 - TAG8	The entity name for pen 1 through 8
ATTR1 - ATTR8	The attribute for pen 1 through 8
SH1 - SH8	Maximum visible point for pen 1 through 8
SL1 - SL8	Minimum visible point for pen 1 through 8
DIGITAL1 - DIGITAL8	Indicates a digital trace for pen 1 through 8
REFERENCE	The sample reference for initial display. Example: If the current page has reference of 0, when it is called it will draw with samples from the fist record in hspec.dbf, reference 1 will draw with the second record in hspec.dbf. In most cases, this will correspond to the REFERENCE field in hspec.dbf.
VIEW_SIZE	The number of points to display by default in a chart
DESC_COLR	The background color to show in the menu screen
EDIT_GRP	T, if editable by operators from the menu screen, F if not
TM	For future use
DT	For future use
METAFILE	Which Trends Chart to default to

This is the database structure for Trend Charts database.

Table 4: Trend Charts Database Structure (charts.dbf)

Field	Description
FILENAME	File name of chart. Files are assumed to be in $MACRODIR/../trends/app1/ charts. The contents of this field are used in the trendgrp3 database's METAFILE field.
DESCRIPT	The chart description
PENS	Future Use

Views used by the Trends Application

Table 5: Views in the Trends Application

Name	Data Type	Description
MV_TREND	Historical View	The historical view used in the main trends package
MV_HSPEC	Database View	$MACRODIR/hspec.dbf
MV_HLIST	Database View	$MACRODIR/hlist.dbf
MV_TRNDGRP	Database View	$MACRODIR/../trends/app1/trndgrp3.dbf
MV_CHARTS	Database View	$MACRODIR/../trends/app1/charts.dbf
MV_FLT_TRNDGRP	Database View	$MACRODIR/../trends/app1/trndgrp3.dbf used by pop-up trend
MV_FLT_HSPEC	Database View	$MACRODIR/../hspec.dbf used by popup trend
MV_FLT_TREND	Historical View	The historical view used in the pop-up trend window

Trend Application Graphic Metafiles

The *.dgt* files are used to display the Trend Application information. These files are located in the $MACRODIR/../trends/app1 directory. The following table describes the *.dgt* files and their functions:.

Table 6: Trend metafiles

Name	Description
flt_trnd.dgt	The popup window for the floating trend
tre_conf.dgt	Trend configuration screen
tre_page.dgt	Popup window, allows the user to continue or terminate a search
tre_srch.dgt	Allows the user to configure the settings for the current trend page

Trend Application Chart Metafiles

These *.dgt* files are used to display the Trend Application Charts. These files are located in the $MACRODIR/../trends/app1/charts directory. The following table describes the *.dgt* files.

Table 7: Trend Chart Metafiles

Name	Description
band1.dgt	Banded Trends Chart
brow1.dgt	Historical Browse
dual1.dgt	Dual Chart Trend
pop_edit.dgt	Pop-up Trend Group Page Editor.
print1.dgt	Print Screen Trends Chart
simp1.dgt	Simple Trends Chart
tre_menu.dgt	Trends Menu

Trend Application meta scripts

The *.ms* files are used to display the Trend Application information. These files are located in the $MACRODIR/../trends/app1 directory. The following table describes the *.dgt* files and their functions.

Table 8: Trend Metafiles

Name	Description
flt_trnd.ms	Meta script used by the pop-up window for the floating trend
h_view1.ms	Part one of the historical view creation meta script
h_view2.ms	Part two of the historical view creation meta script
page_ch.ms	Page change meta script
tp_init.ms	Trend page initialization meta script
tre_init.ms	Trend application initialization meta script
trends.ini	Trend preferences

5 Alarm Application

5.1 Overview

- The Alarm Application runs within the Navigator framework and complies with the standard Navigator interfacing requirements.
- There are a number of tools that are used to display and manipulate the alarm infor- mation. These tools include filters, sorting, acknowledging, etc.
- The Alarm Application is divided up into a number of pages of alarm information.
  Each page shows different types of alarms.
- Various aspects of the alarm configuration are provided from within the application itself.

This chapter describes:

(i) the application and its structure.

(ii) how to use the application.

(iii) how to configure the application and finally.

(iv) the engineering details that an engineer would need to know to effectively maintain the application.

Purpose

The purpose of the Alarm Application is to:

(i) show alarm and message information in a clear usable format.

(ii) provide a set of tools that enable a user to easily find and manipulate the information.

Main Screen

The diagram "Screen Layout" on the next page shows the main presentation features of the Alarm Application. Essentially, the application shows:

(i) a central list or browse widget of active and possibly filtered or sorted alarms.

(ii) a number of manipulation tools that surround the central area to enable the user to filter, sort and acknowledge the alarms.

(iii) a group of soft keys that enable the user to bring up other pages of alarms.

Alarm Application Screen Layout

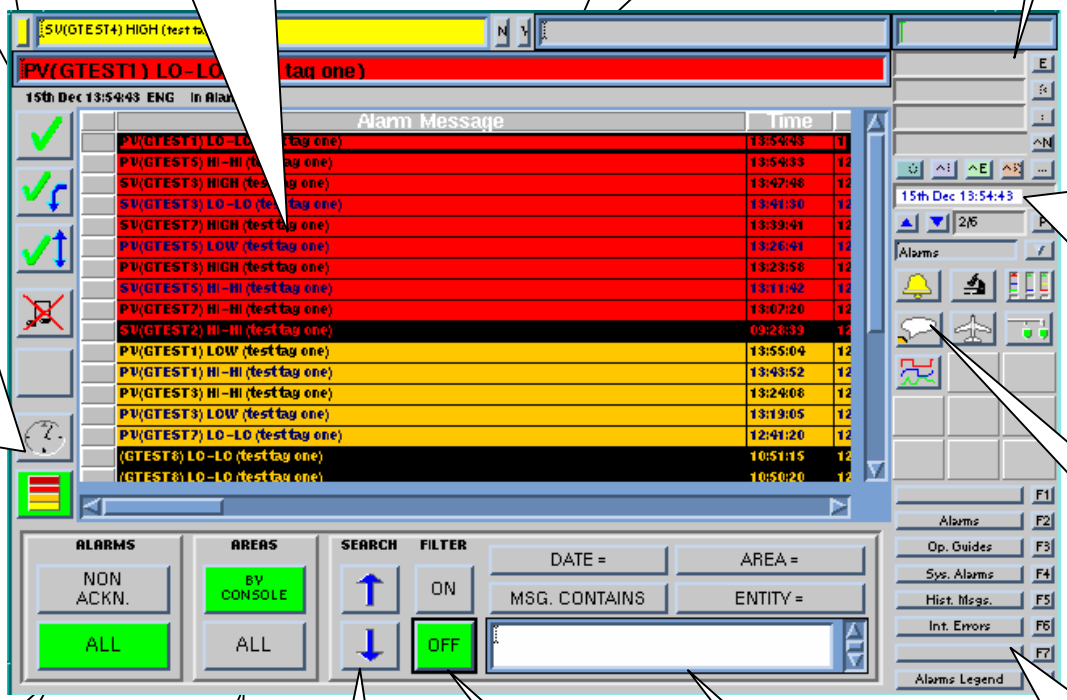
Acknowledge, Silence and Clear
These buttons are used to acknowledge lear the selected alarms and silence buzzer

Alarm Area
Displays the Alarm Message, the time and date of the alarm. Alarms may be acknowledged, sorted and filtered using other controls on the page.

Selected Alarm
The large display shows the selected alarm as well as the time, date and area. This is the alarm that may be acknowl-edged with the X or Acknowledge button.

Entity Information Area
Double clicking in browse widget displays more detailed information about the entity alarm

Date or Priority Order.
These buttons sort the alarm display in Date Time or by Priority.



Time Line
Clicking the alarm the browse widget writes the stamp here

Alarm Icon
Click on this to inv the

Acknowledge Filter
Select whether to display or hide acknowl-edged alarms.

Area Control
Choose whether to see all alarms or only those alarms relating to this

Search
Use the filter critera to search up and down through the alarms list.

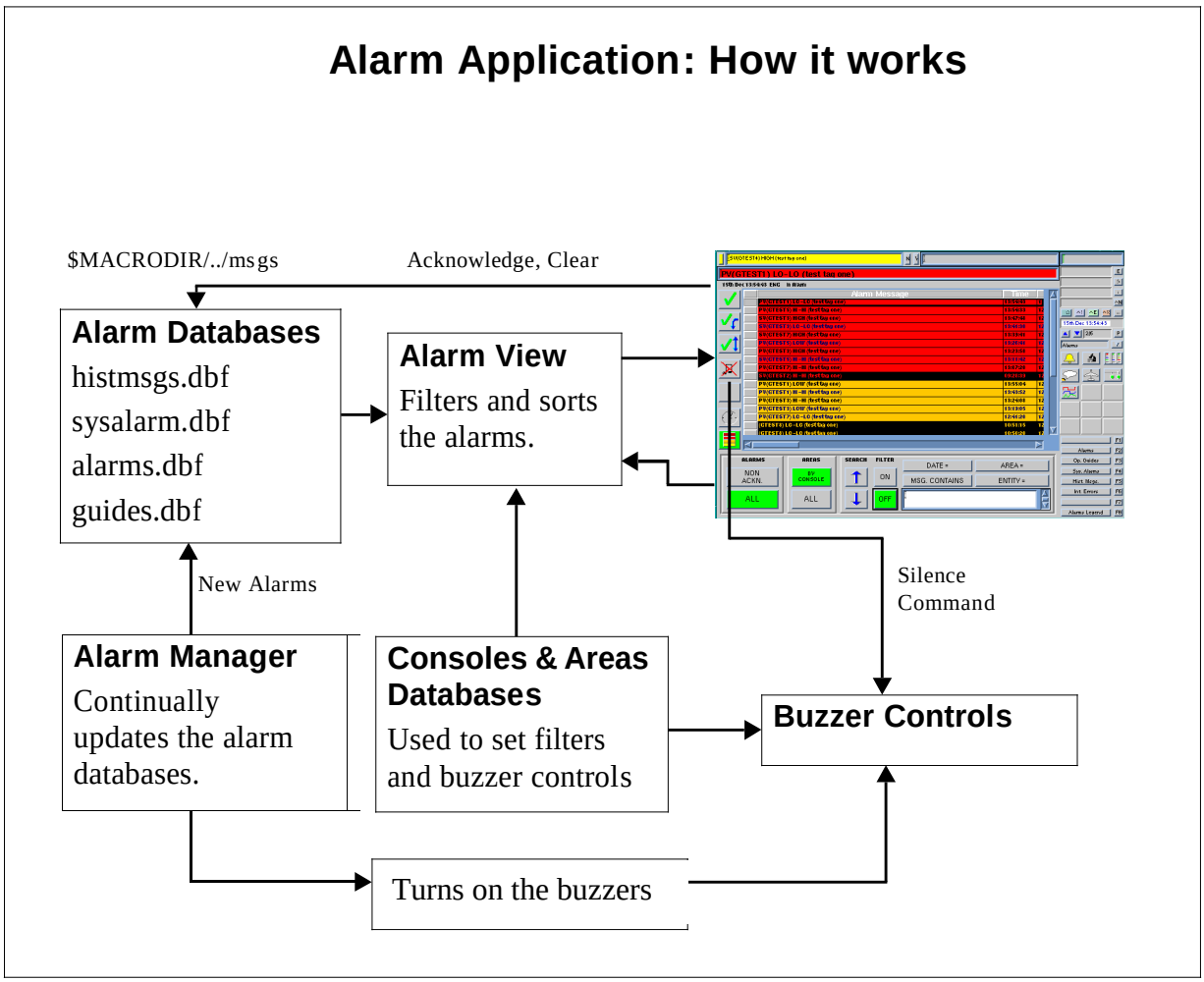
Search
Use the filter critera to search up and down through the alarms list.

Filter
Filter the alarm list by Entity, Date, Message or Area.

Soft Keys
Provide access to the other types of alarms and messages. E.g. Messages, Historical Messages, System Message, Super Find functionality.

How the Alarm List is Displayed

The alarm package continually monitors and stores alarm information in various databases
for analysis. The Engineering section of this manual and the Engineering manual provide more details about the structure of these databases. The diagram below shows how the alarms are displayed using the Alarm Application.



5.2 Using the Alarm Application

This section describes how you use the Alarm Application to view, filter and manipulate the alarms.

With ***MacroView's*** Alarm Application, users can access every aspect of the Alarm Application with any ***MacroView*** terminal that is connected to the network.

In a typical session, users may...

- Call up the Alarm Application from the Navigator application matrix by clicking once on the alarm icon.
- Choose whether to view the Alarms, System Alarms, Historical Messages, Operator Guide Messages, or Internal Errors.
- Sort and filter the alarm list using the various filtering modules.
- Silence the buzzer, and acknowledge alarms.
- View associated displays (Super Find).

To make it easier to understand, the operations are shown in this document as a series of diagrams as opposed to long textual descriptions.

Note that the functions covered by the normal ***MacroView*** system are not described in detail here.

Starting the Alarm Application Package.

The Alarm Application package is integrated into the ***MacroView*** system. To start up the Alarms Application, you may do one of the following:

- Click once on the Alarm Icon in the Application Matrix. This will take you to the main alarms page.
- Click on the Alarm Application entry in the Application Line. This will take you to the last alarms application viewed.
- Press one of the alarm keys on the keyboard. (I.e A for alarms, M for messages or Control-A for system alarms.)

Selecting the Alarm Display Page

The different kinds of alarms are arranged in pages of information. The table below shows how to get to the various alarm pages. (Note that the function keys are only valid from within the Alarms Application.) Each alarm page references a different alarm database.

Table 9: Going to the Alarm pages

Alarm Type	Fast key	Function Key	Default Page	Icon	Database
Alarms	A	F2	2	Alarm Icon	alarms.dbf
Messages	M	F3	3	-	guides.dbf
System Alarms	Control A	F4	4	-	sysalarm.dbf
Historical Messages	-	F5	5	-	histmsgs.dbf
Internal Errors	Control M	F6	6	-	None

Working with the Main Alarm Display

Once you have called up the Alarm application, you may perform various Alarm manipulations with the Alarm Display. The diagram below shows the various functions you can carry out.

Using the Alarm Display

1 **View Acknowledged Alarms:** Choose whether you want Acknowledged alarms displayed or hidden.

2 **Set Up the Order Basis:** Choose to have alarms ordered by priority or by time and date.

3 **Areas:** Choose to view all alarm areas or only those alarms associated with this console.

4 **Filter:** Find a particular alarm or set of alarms by setting up a simple filter.

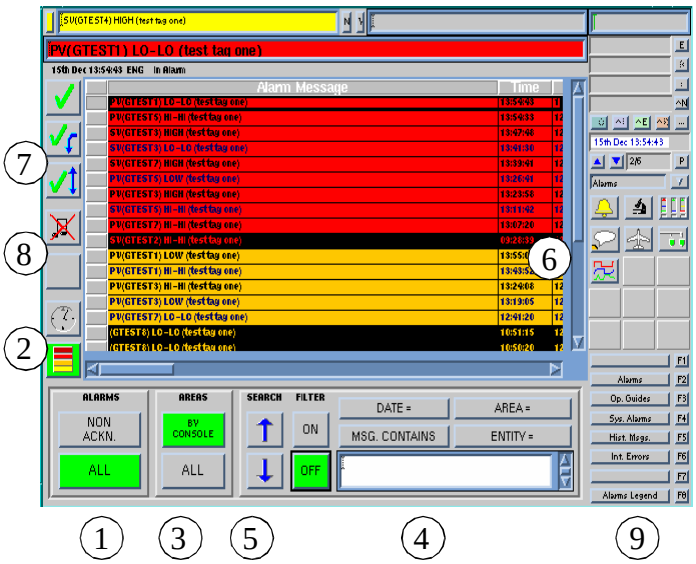
5 **Search:** for a particular alarm using a simple search criteria.

6 **Scroll bars:** Use the scroll bars to scroll through the database.

7 **Acknowledge:** the selected alarm or all the filtered alarms or all alarms below a certain record.

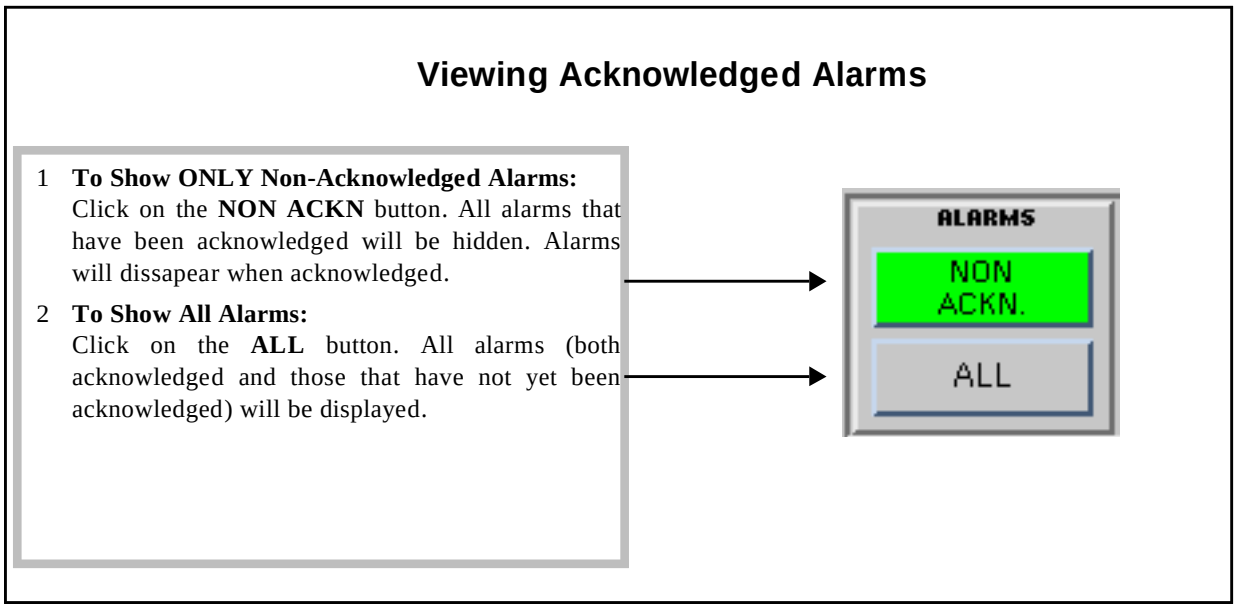
8 **Silence** the buzzer and **clear** the selected alarm.

9 **Other Types of Alarm Display:** Use the soft keys to look at Historical Messages, Operator Guides, System Alarms, Internal Errors, or to go to an associated display (Super Find).



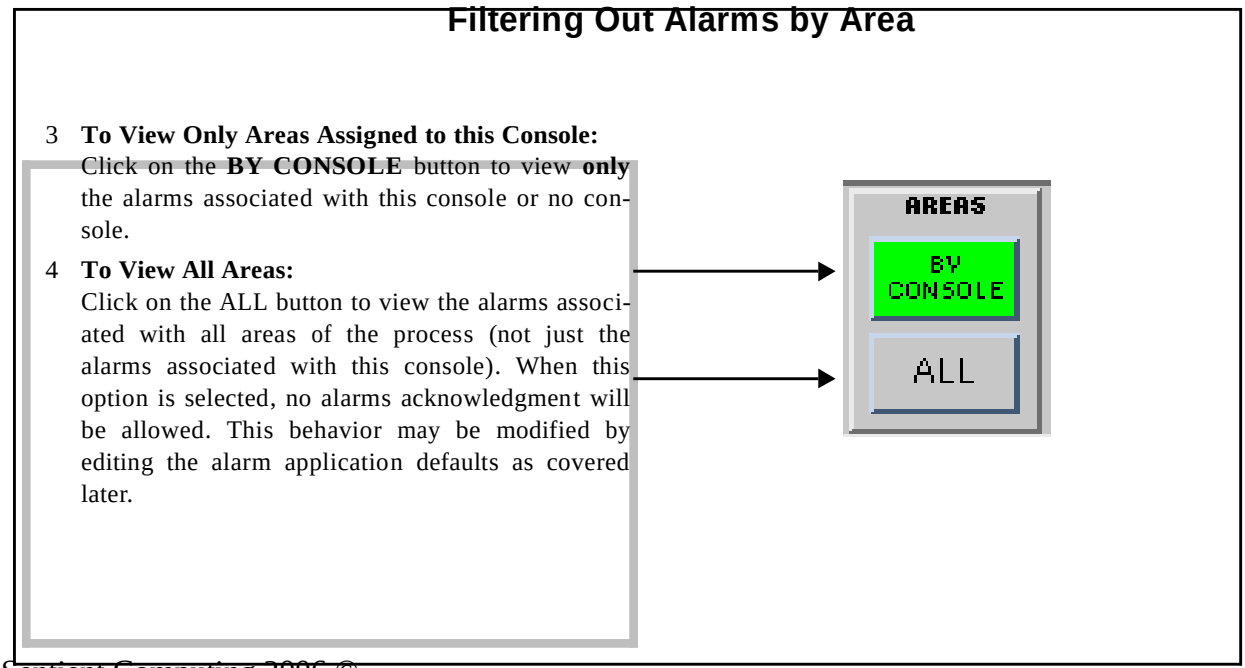
Viewing Acknowledged Alarms

You can decide whether to view or hide the acknowledged alarms as shown in the diagram below.



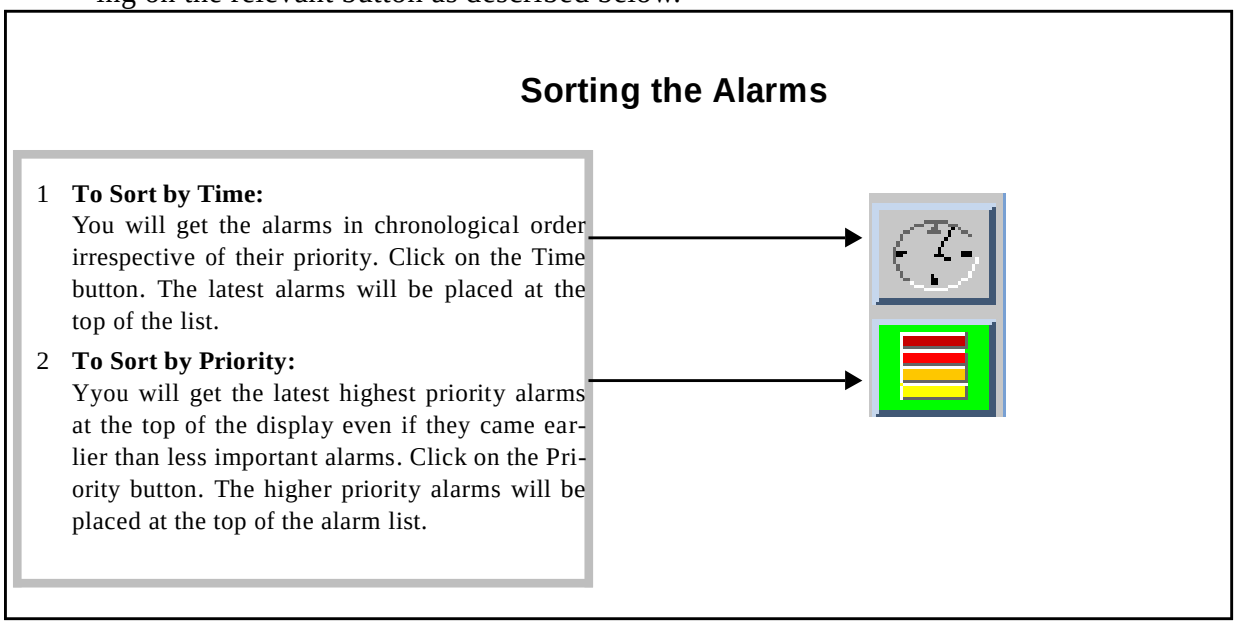
Filtering Areas

You can decide to see alarms from all areas or only those alarms that are in the area assigned to the console you are on. The description below shows how to select these options.



Sorting the Alarms

You can sort the alarm summary by Priority (normal mode) or by Time and Date by clicking on the relevant button as described below.



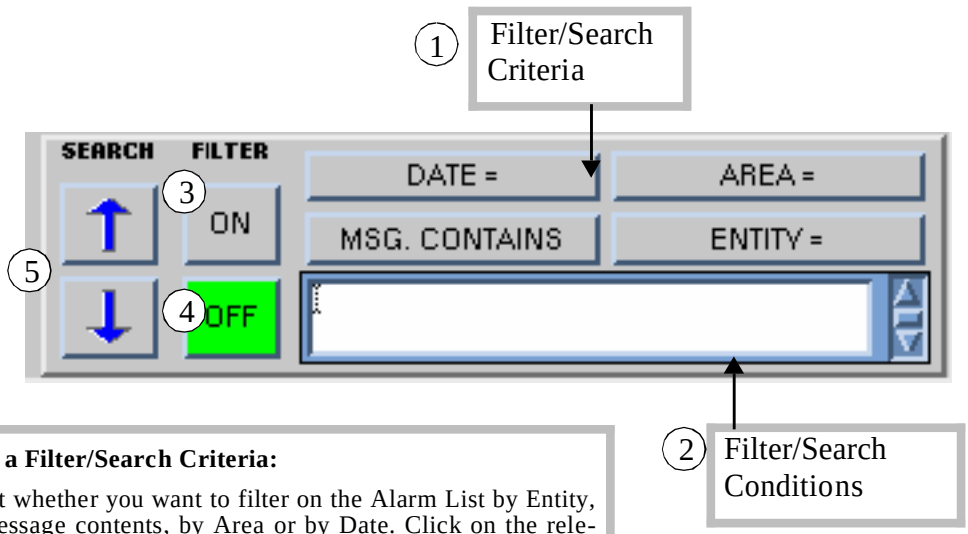
Engineering Considerations:

You can decide whether the system starts up in Time-sorted order or Priority-sorted order by modifying the alarm messages initialization script. See the configuration and engineering section of this chapter for details.

Filtering the Alarms

You can set up filters to selectively view alarms using the procedures shown in the diagram below.

Filtering Alarms



1 Choose a Filter/Search Criteria:

- Select whether you want to filter on the Alarm List by Entity, by Message contents, by Area or by Date. Click on the relevant button.
- The button will go green to show it has been selected and the value from the current alarm will show in the condition window next to the button.

2 Modify the Filter/Search Condition:

- Overwrite the filter condition if necessary. For example, if the Entity name says FIC100 and you want to see all alarms with FIC in their message, click on MSG CONTAINS and enter FIC into the window.

3 Filter the Alarms List:

- Click the FILTER "ON" button to filter the Alarm List according to the conditions you have set up.

4 Turn the Filter Off:

- Click on the OFF button to turn the filter off. The Alarm list will once again return to its unfiltered state.

5 Search through the Alarm List:

- Use the same filter condition and the up and down arrows to search through the alarm list to find the next alarm where the filter is satisfied.
  Note that the Search buttons will be disabled when the filter is ON.

Acknowledging and Deleting Alarms

There are special buttons to acknowledge and clear alarms. The diagram below describes how this is done.

Acknowledging and Clearing Alarms

1 **Set up the Alarm Display:**
Choose whether you want (a) the alarms ordered by priority or time, (b) acknowledged alarms displayed (c) all alarms, etc.

2 **Select an Alarm:**
Using the scrollbars or Search tools, select an alarm to be acknowledged.

3 **Acknowledge the Alarm:**
By clicking on the acknowledge button, the alarm will be removed from the display (if you have the acknowledged alarms hidden or if the alarm is "out of alarm") and the next alarm in the list will be displayed.

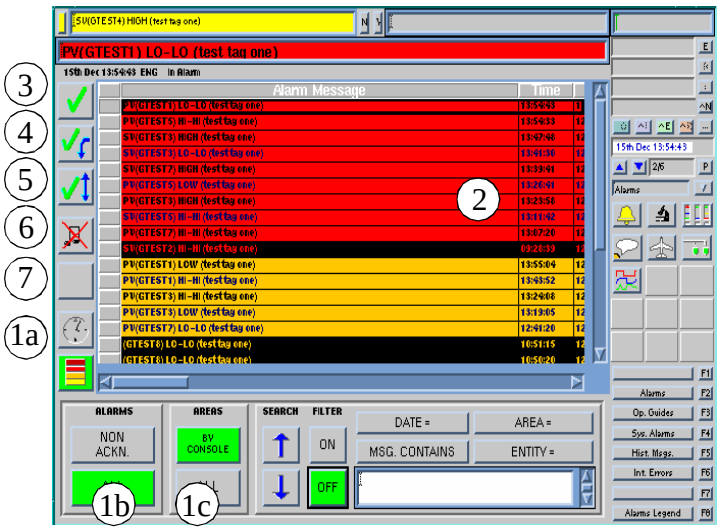
4 **Acknowledge Alarms Up to a Time, or Below a Priority:**

- *If you have time ordered* alarms, this button will acknowledge all alarms before and including the selected alarm.
- *If you have priority ordered* alarms, this button will acknowledge all alarms appearing below the selected alarm in the list inclusive.

5 **Acknowledge All Displayed Alarms:** Just click on the ***acknowledge all*** alarms button to acknowledge all the alarms shown.

6 **Silence the Buzzer:**
You can silence the buzzer by clicking on the Silence Button or pressing the Z Key.

7 **Clear Alarms:** You can clear alarms which have been acknowledged but are still "in alarm" by selecting the alarm to be cleared and pressing the X icon. (Only visible if you are allowed to clear the alarms).



Viewing an Alarm's Associated Display (Super Find)

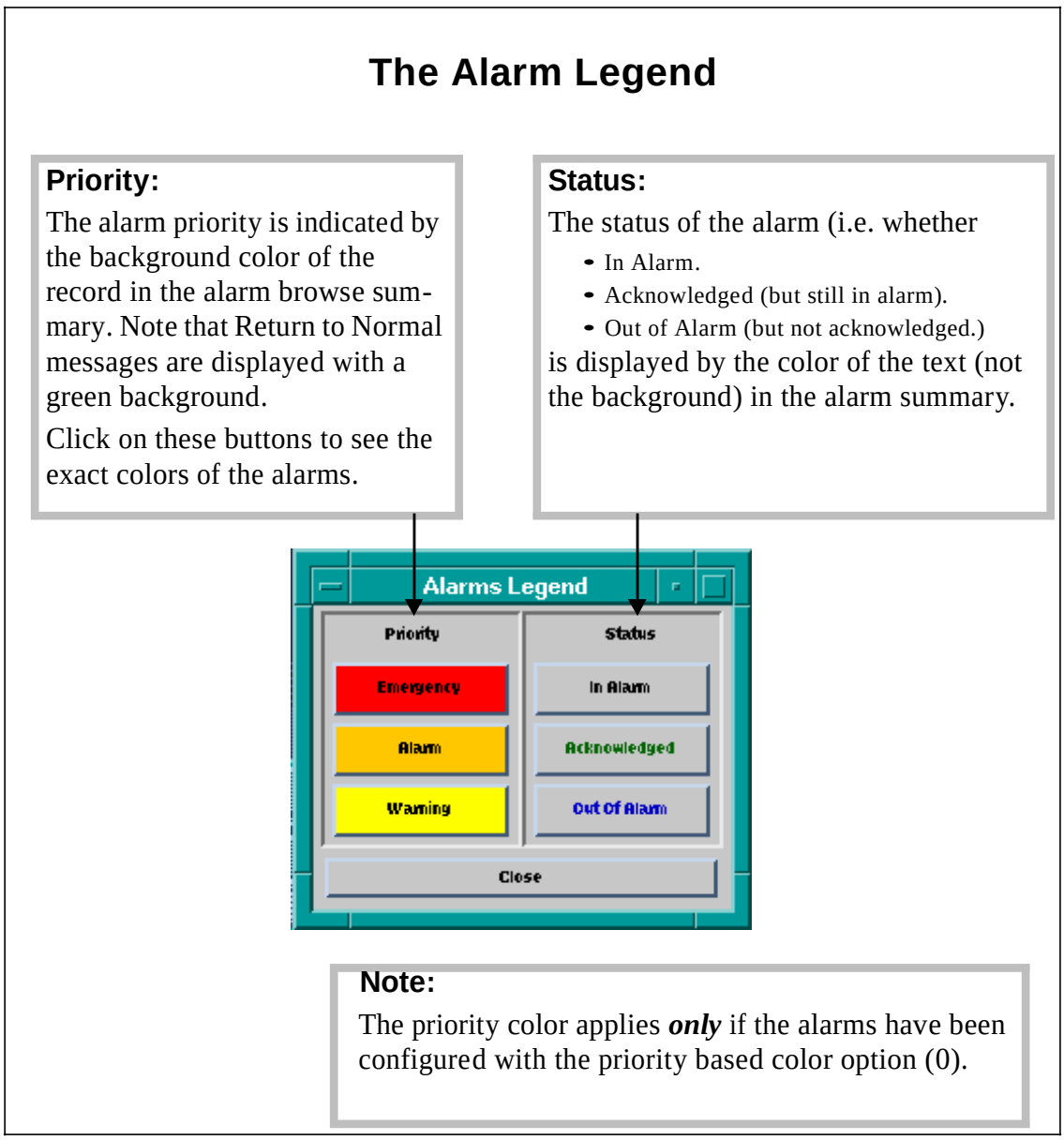
Every alarm may have an associated display. For example, a pump alarm might have as its associated display, the page showing the pump. This functionality is called Super Find.

If an alarm has an associated display, the line above the browse area will include a string such as "Associated Display: schemat/pumps". This example indicated that the selected alarm is associated with the schematics page "pumps". To go to this page, press "^f" on the keyboard, or the F7 soft key.

Alarms Priority Colors

To view the Alarm Priority Colors:

- Just click on the Alarms Legend Icon or press the F8 function key.
- At this point, the pop-up window shown below will appear showing the current alarm priority color scheme.



Changing the Priority Color Scheme

Please see the configuration and engineering section of this chapter. The alarm colors are set in the defaults file.

5.3 Alarm Configuration and Engineering Tasks

This section defines how the Alarm Application Package can be configured as well as engineering tips with regards to the alarms application. The section is designed for an engineer to set up the system for the operators and other users. Most of the tasks are optional. i.e, you may use the Alarm Application as it comes or, if you desire, you may tailor the system to more closely meet your needs by carrying out these optional tasks. In a typical scenario, the following tasks may be carried out:

(i) Configure the alarms in the Engineering Configurator. This is covered in the Engineering Manual. All operations relating to the configuration of alarms generation are done with the engineering configurator.

(ii) Configure the start up options for the alarms screens.

(iii) Configure other screens such as schematics to jump to alarms.

Start Up Options

You do this by ***first*** calling up the alarm screen, ***secondly*** pressing the P key (for page) and then entering the page name "**`config`**". This allows you to add pages to the alarms application. Note that adding pages to the alarms application is only recommended to engineers with a high level of meta script knowledge.A password may be required. If you are prompted for a password, press p then enter "config,<password>".

To change the alarms defaults, press the "Set Defaults" soft key. A text editor pop-up will appear. By editing the settings in this file, the Alarms application's behavior may be modified. Parameters which can be changed include:

- The default Alarm colors.
- Allowing the clearing of alarms, system alarms or operator guides.
- Default to ordering by priority or time (alarms and historical messages).
- Default to showing or hiding acknowledged alarms for alarms, system alarms or operator guides.
- Whether to use area based alarms, and if so whether to default to showing all areas or just those for the viewing console.
- If all entities have an ACKN attribute, this attribute can be set to 1 when an alarm is acknowledged.
- Acknowledgment of alarms, system alarms, or operator guides recorded to historical messages.

After making any changes, the Navigator must be restarted for the changes to take effect.

Engineering Considerations

The Alarm application may be started from a Button or Touch Panel from within a graphic display with the command

```
SEND "SetPage(alarms)" TO "MessageCenter";
```

To go to the main alarms screen of the alarms application, use

```
SEND "SetPage(alarms/alarms)" TO "MessageCenter";
```

To go to the system alarms page, use

```
SEND "SetPage(alarms/sysalarm)" TO "MessageCenter";
```

To go to the operator guides page, use

```
SEND "SetPage(alarms/guides)" TO "MessageCenter";
```

To go to the historical messages page, use

```
SEND "SetPage(alarms/histmsgs)" TO "MessageCenter";.
```

Two useful functionalities are provided for use while engineering application pages. A small "A" will appear on the Alarm Pop-up button when the internal error list contains any records. Clearing the internal error list will clear the button's label. In addition, if CTRL-M is pressed while the Alarm Pop-up is selected, the pop-up's display will change to a list of internal errors. This list can be useful to de-bug metafiles and meta scripts.

File Structure

The table below shows the overall file structure of the Alarm Application Package and other related files.

Table 10: Alarm Application Package Related Files and Directories

Directory	Filename	Description
$MACRODIR/../bin e.g. /u/macro/bin	xops3	The version 3 operations program. Since Alarm Application is an application running in the version 3 system, this program is executed to create the Alarm Application Package. Essentially, xops3 reads the .dgt metafiles to display the Alarm Application Screens.
$MACRODIR e.g. /u/macro/config		You should have all the normal configuration files in this directory such as entities.dbf etc.
$NAVDIR or $MACRODIR/../nav e.g. /u/macro/nav		Since the Alarm Application is started and displayed from the ***MacroView*** Navigator, the Navigator directory should be present.
$MACRODIR/../msgs e.g. /u/macro/msgs	Alarms Databases	This directory is where all the Alarms Databases are kept. The contents and structures of these databases are documented in the ***MacroView*** engineering manual.
$MACRODIR/../msgs/app1	Alarm Application Directory	This is where all the Alarm Application files are held. These files include: • The individual meta scripts associated with the Alarm Application, • The individual .dgt files. • The Alarm pages database.

Alarm Application Database Structures

This is the database structure for the Alarm Application.

Table 11: Alarm Application Database Structure (msgs.dbf)

Field	Description
DESCRIPT	Alarm Page Description
DISP_DESC	Display Description in title bar .T. / .F.
FILENAME	Alarm Page file name
DESC_COLR	Alarm Page color in menu page

Alarm Application Entities

These are the entities required for the Alarm Application. These entities will be copied from $MACRODIR/../msgs/app1/msg_ent.dbf to $MACRODIR/entities when the alarms application is installed. The security attribute of these entities can be used to control who can acknowledge and clear alarms, operator guides, etc.

Table 12: Alarm Application Entities

Entity	Description
ALMDT	Address: ../msgs/alarms.dbf TAG=DTTM Indexed on: dtoc(date) + time tag DTTM
ALMPRI	Address: ../msgs/alarms.dbf TAG=PRIORITY Indexed on: str(10 - priority) + dtoc(date) + time tag PRIORITY
HMSGDT	Address: ../msgs/histmsgs.dbf TAG=DTTM Indexed on: dtoc(date) + time tag DTTM

Table 12: Alarm Application Entities

Entity	Description
HMSGPRI	Address: ../msgs/histmsgs.dbf TAG=PRIORITY Indexed on: str(10 - priority) + dtoc(date) + time tag PRIORITY
SYSALMDT	Address: ../msgs/sysalarm.dbf TAG=DTTM Indexed on: dtoc(date) + time tag DTTM

GUIDEDT	Address: ../msgs/guides.dbf TAG=DTTM Indexed on: dtoc(date) + time tag DTTM

Alarm Application .dgt Files

The *.dgt* files are used to display the Alarm Application information. These files are located in the $MACRODIR/../msgs/app1 directory. The following table describes the *.dgt*
files and their functions.

Table 13: Alarm Application .dgt Files

Name	Description
alarms.dgt	Alarms Display Page (Emergency, Alarm, Warning)
errlog.dgt	Internal Errors Display Page
guides.dgt	Operator Guides Display Page
histmsgs.dgt	Historical Messages Display Page
mini_alm.dgt	Pop-Up Alarms Display
msg_conf.dgt	Alarms Application Configuration Page
msg_menu.dgt	Alarms Application Menu Page
msg_page.dgt	Part of the Alarms Application Internal Structure.
msg_leg.dgt	Alarms Color Legend Pop-up
sysalarm.dgt	System Alarms Display Page

Alarm Application Metascripts

The meta script files for the Alarms Application are located in the $MACRODIR/../msgs/
app1 directory. The following table describes the metascripts and their functions.

Table 14: Alarms Application Metascripts

Name	Description
ackn_one.ms	Run when user wants to acknowledge on alarm from Alarms Page
almview.ms	Creates view on alarms.dbf based on Filter and Order settings
area_ack.ms	When acknowledging an alarms, this meta script checks the ACKN field of areas.dbf and sets it to 1 if the acknowledged alarm's area is in the areas database.
cons_ack.ms	When acknowledging an alarm, this meta script checks the ACKN field of consoles.dbf and sets it to 1 if the acknowledging console is in the consoles database and has an entry in the ACKN field.
ext_ent.ms	When acknowledging an alarm, this meta script attempts to extract an entity from the message. If successful it checks if this entity has an ACKN attribute. If so, it sets this attribute to 1.
guiview.ms	Creates view on guides.dbf based on Filter settings.
histview.ms	Creates view on histmsgs.dbf based on Filter and Order settings.
msg_init.ms	Run on Navigator start-up, creates all views, and declares all GLOBAL variables used in Alarms Application
msgs.ini	User configurable Alarms Application preferences file. Run on navigator start-up.
silence.ms	This meta script is run whenever the user wants to silence the console beeper or an external beeper.
sysview.ms	Creates view on sysmsgs.dbf based on Filter settings

6 Group Application

6.1 Overview

The group application is the work horse of process control systems. It emulates a set of up to 8 classical control faceplates on a single page of graphics. The advantages of the group display include:
- Quick configuration of a group. (The engineer only has to specify the entity names required in the group)
- Familiar and consistent layout of presentation. (Operators quickly learn the layout of, for example, a PID controller.)
- Ability to display a large amount of dynamic live information in a concise form. Note that:
- The Group Application runs within the Navigator framework and complies with the standard Navigator Application interfacing requirements.
- The Group Application consists of pages of pre-configured multi-template graphics that display ***MacroView*** real-time information.
- The configuration of the Group application is provided within the application itself.

This chapter describes:

(i) the application and it's structure.
(ii) how to use the application.
(iii) how to configure the application.
(iv) the engineering details that an engineer would need to effectively maintain the application.

Purpose

The purpose of the Group Application is to:

(i) show pages of up to 8 faceplates of ***MacroView*** data (a faceplate is a graphical template of an entity).

(ii) provide a set of tools that enable a user to easily modify the groups.

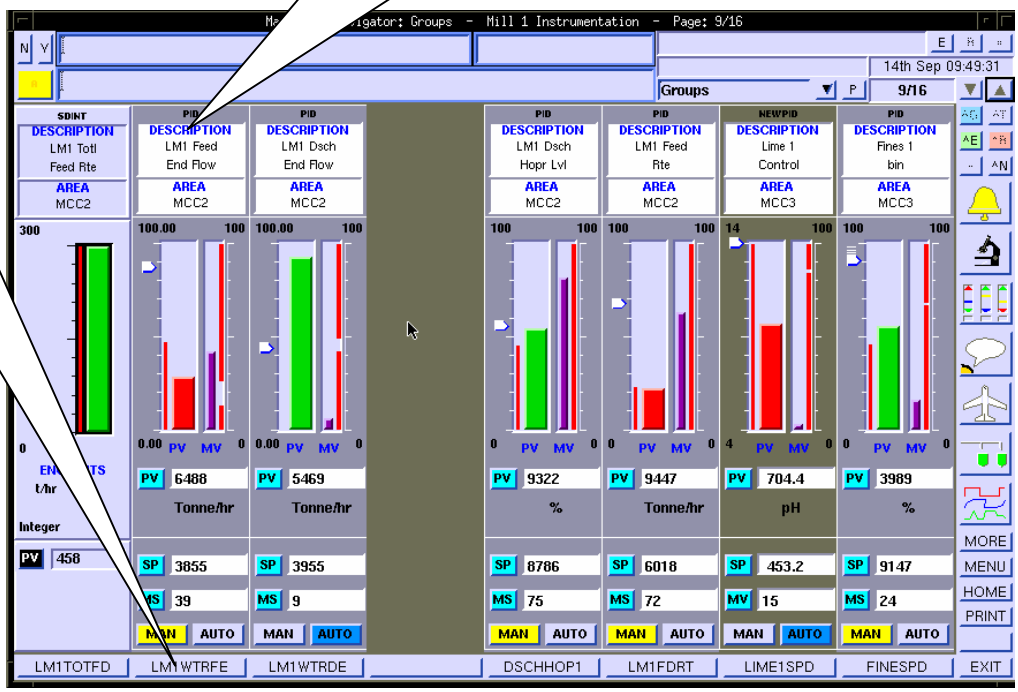
Main Screen

The diagram labelled "Group Application Screen Layout" on the next page shows the main presentation features of the group Application. Essentially, the application shows up
to 8 faceplates of information on a single page.

Group Application Screen Layout

Each faceplate shows the key information about the selected entity. The kind of information displayed as well as the format, will be determined by the template of that type.

Soft Keys
Enable you to get the information into the scratch pad, for the current display.

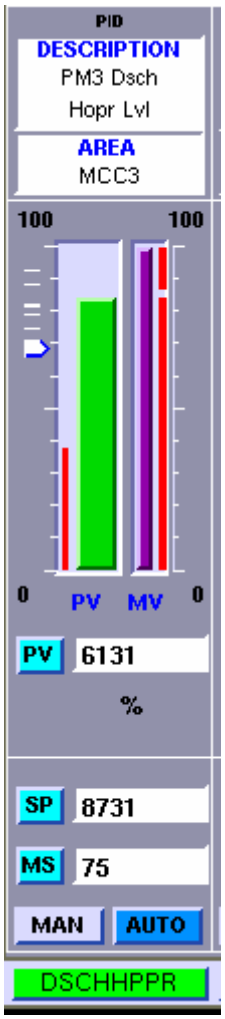


Generic Faceplates Will be used if there is no faceplate associated with a given type.

How Groups are Displayed

The Group Application:

Reads the Group database for the (up to 8) names of the entities.
It finds out from the entities database the types of the entities. The types are used to determine which faceplates are to be displayed.
For each entity:
The application locates the correct template file for the type.
This file is called $MACRODIR/groups/<sourceName>/<typeName>.dgt.
e.g. /u/macro/groups/uxl/pid.dgt.
The application then uses the data from the driver to provide the updates in the template. The templates are displayed in columns on the screen.
Optionally, alternate faceplates can be used for the same type. This feature is used when different kinds of equipment use the same type. E.g. a temperature sensor and a flow meter might both have the same source and type, but the faceplates could be specific to each function. Note that when using the group pop-up, this alternate faceplate functionality is not used.



User Interaction

The soft keys place the entity into the scratchpad as do the buttons below each faceplate. The soft keys will change color to indicate that the faceplate has been chosen.
The "?" key on the keyboard or the "Menu" button may be pressed to see a menu of the group pages.
Press the "u" key on your keyboard to "branch up". This functionality finds the next group page containing the entity currently in the scratch pad.

6.2 Using the Group Application

This section describes how you use the Group Application to view the on-line information.

Starting the Group Application Package

The Group Application package is integrated into the ***MacroView*** system. To start up the Groups, either:

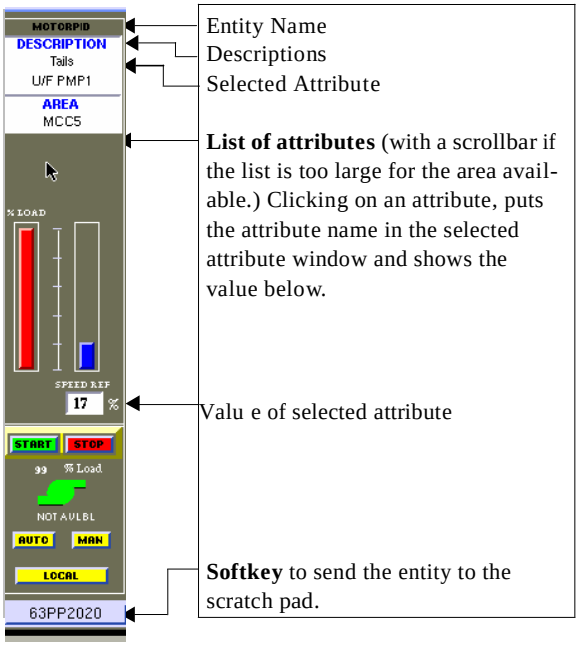
- Click on the Group Icon in the Application Matrix.
- Select the Group Application entry from the Application Line.
- Press the G key on the keyboard.
- Press the P key and when asked for a page enter “groups”.
- Press the P key and when asked for a page enter “groups/<page number>” to go to a specific page of groups. E.g. entering “groups/4” will take you to page 4 of groups.

Selecting a Group Page

Use the standard Navigator modules such as the Paging Line to change to the desired page number.

Using the Generic Faceplate

The generic faceplate is used whenever there is no template for a given type. The diagram below shows the main features of the generic faceplate.

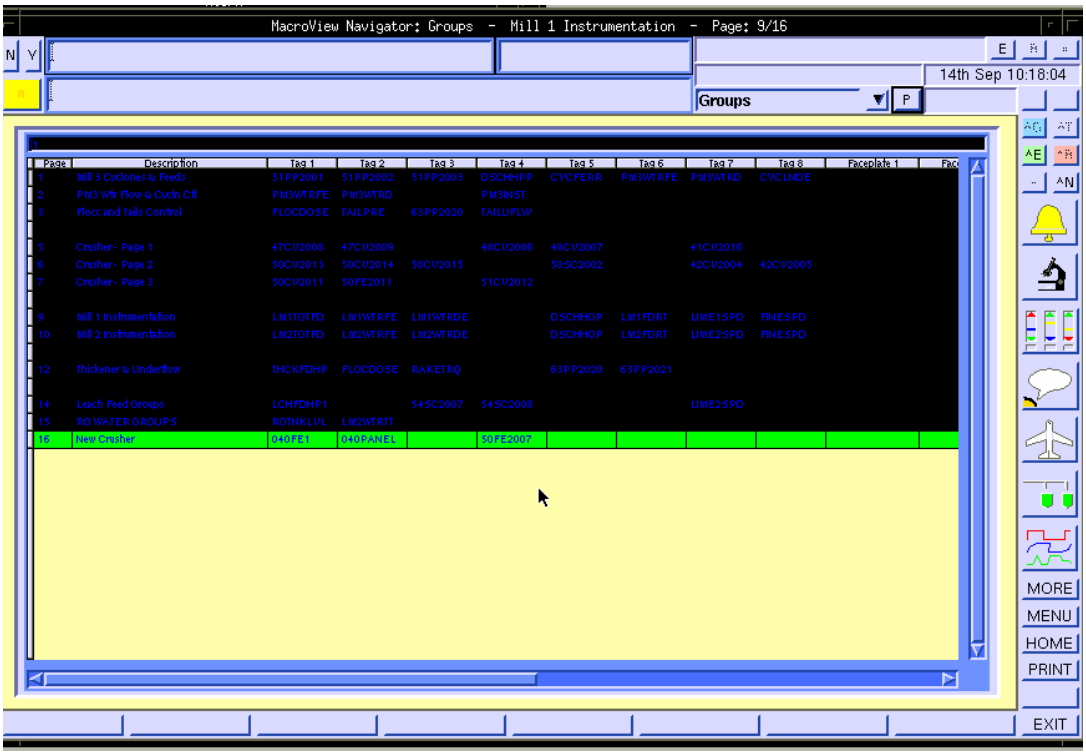


Branching Up

To find the next group page containing the entity currently in the scratch pad, press the "u" key on your keyboard.

Using the Groups Application's Menu Page

To go to the menu page of the groups application while viewing groups pages, press the "?" key on your keyboard or click on the "Menu" button. To go to a specific page, double-click its entry in the list.



Entries in the menu will have either blue or black text. Those with blue text are editable by anyone with permissions to view the groups applications. Typically, several pages will be made editable so that operators can set up screens to suit their preferences and temporary needs.

To edit a tag, select the cell you want to edit, and make the changes in the edit line above the browse. Only currently configured entities may be entered. The descriptions may also be edited.

6.3 Group Engineering and Configuration

This section defines how the Group Application can be configured. The section is designed for an engineer to set up the system for the operators and other users. The configuration tasks may be carried out using ***MacroView*** Configurator or from within the Navigator. (For information on configuring the application from the *Configurator*, please see the ***MacroView*** Engineering Manual.) You may also configure various parameters

from
within the Navigator if you have the correct permissions as

follows: (i) Add a new group page.

(ii) Edit an existing groups fields. Fields include

- Description
- Entity
- Alternate Faceplate
- User Editable
- Menu Color

(iii) Delete a group page.

Adding a Group

To add a group, you should:

(i) First call up the group application and hit the P key. The system will respond with "Please enter a page -->". Now enter the word ***config***. The configuration screen will appear. (Note if you do not have the relevant permissions, please see your System Administrator.)

(ii) Click on the *Above* or *At Bottom* radio buttons and then Click on the INSERT BLANK button to add a new record. A new record will appear in the database either
at the bottom of the list or above the currently selected entry. When adding "Above"
please add one page at a time.

Editing a Group

To edit a group, you should:

(i) Select the cell to be edited.

(ii) Edit the cells contents in the edit line at the top of the list.

The entries in the Description field appear both in the title bar when viewing the page, and
in the menu pages list.

If no entities are in any of the Tag fields, the page will be skipped when paging up or down through the group pages. The Tag fields need not all be filled in.

The Face fields allow an alternate faceplate to be used rather than the type based face plate. The file specified in the Face fields must exist in the same directory as the type based faceplates. This is typically **`$MACRODIR/../groups/<source>`**.

The Color fields control the color of the pages entry on the menu page. This coloration can
be used to identify page functions. Lighter colors are recommended for readability.

If the editable field is "T", the page will be editable from the menu page.

Deleting a Group

To delete a group, you should:

(i) Select the record to be deleted.

(ii) Click on the *Delete* Button. The selected record will be deleted.

Using the Generic Faceplate

The Navigator comes with a group template which may be used for any type. While it is usually a good practice to create a group faceplate for every type, in some cases the generic faceplate will suffice. To enable the generic faceplate for a source, the file

$MACRODIR/../groups/app1/openerr.

dgt should be copied to

$MACRODIR/../groups/<source>/openerr.dgt

Note: When using the generic faceplates, internal error messages may be generated. These messages will say that a file could not be found, and may be disregarded. The generic faceplates will work for the group pop-up without copying this file.

Engineering Tips

To go to a specific page of groups from another application, use the meta script

```
SEND "SetPage(groups/<page number>)" TO "MessageCenter";
```

where <page number> is the page to which you wish to go.

To use a pop-up faceplate in a graphic, use the following commands:

```
SEND "SetEntity(<Entity>)" TO
"MessageCenter"; SEND "FloatGroup" TO
"MessageCenter";
```

7 Detail Application

7.1 Overview

The detail application is responsible for displaying the key attributes of the entity shown
in the scratchpad. The information is shown in a template that has been designed for the type of entity. The advantages of the detail display include:

(i) No configuration. (As soon as an entity has been created, the detail display can be viewed.)
(ii) Familiar and consistent layout of presentation. (Operators quickly learn the layout of, for example, a PID controller.)
(iii) Ability to display a large amount of dynamic live information in a concise form. (iv) Where relevant, the values of the attributes may be set from within the template. Note that:

a. The Detail Application runs within the Navigator framework and complies with the standard Navigator Application interfacing requirements.
b. The Detail Application consists of a single page of information for each entity in the system. You may use the page-up and page-down keys to step through the entities in alphabetical order grouped by source.
c. The detail application has a menu page which can be seen by either:

   Going to the detail application when there is no entity in the scratch pad. Clearing the scratch pad while in the detail application. Pressing the "?" key or clicking the Menu button while in the detail application.

This chapter describes:

(i) the application and its structure.
(ii) how to use the application.

Purpose

The purpose of the Detail Application is to:

(i) show a detailed faceplate of the key attributes (generally all the attributes) of an entity in a single page format.

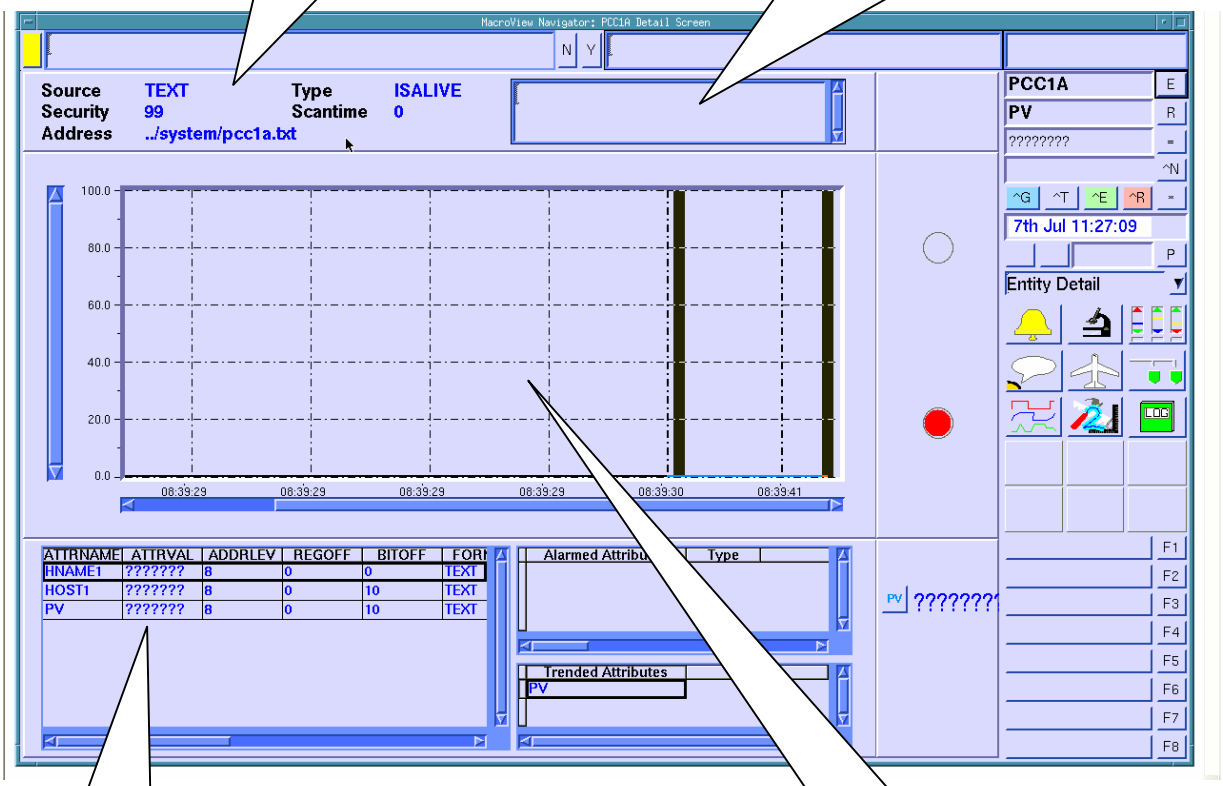
Screen Layout

The layout of each detail display will differ depending on the template of the ***type*** or structure of the entity. The diagram labeled "Detail Application Screen Layout" on the next page shows the main presentation features of the ***generic*** Detail Display. This display is used whenever a detail display for the selected type has not been defined.

Detail Application Screen Layout

Entity Information
This Area Displays information about the selected entity.

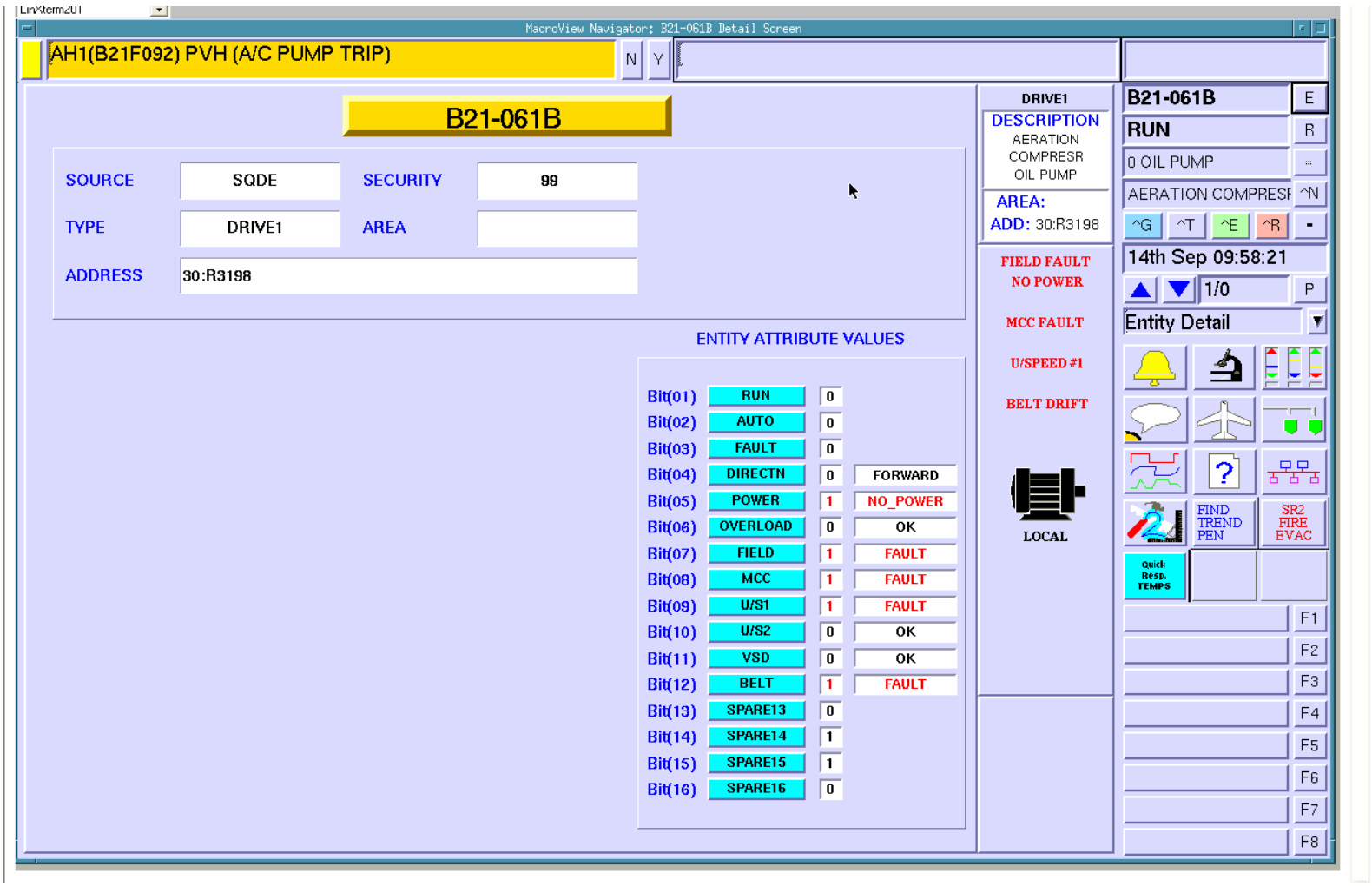
Entity Notes
This is the information held in the entity documentation field. You can also get this information by clicking on the yellow ^N button the pop-up window. This area may be edited by any user whose access level is higher than entity's security level



Current Values
Display current values of attributes.

Chart Display
Instantaneous trend display of selected point.

Example of Custom Detail Page



How Entity Details are Displayed

The Detail Application:

Reads the entity name in the entity information area.

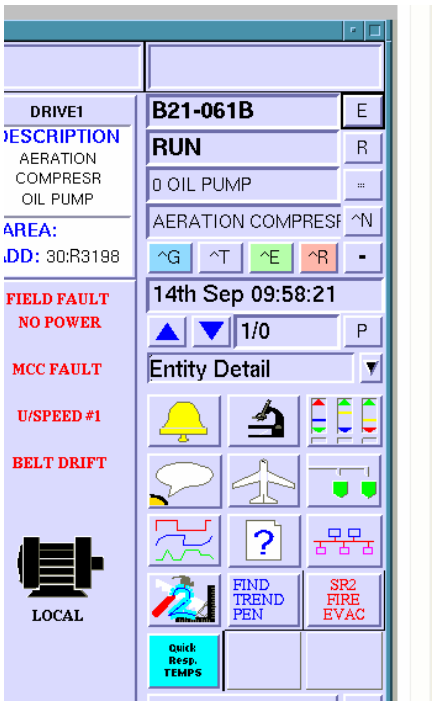
It finds out from the entities database the **type** of the entity. The type is used to determine which template is to be displayed.

The application locates the correct template file for the type. This file is called $HOME/detail/<sourceName>/<typeName>.dgt

e.g. /u/macro/detail/uxl/pid.dgt for a pid type entity of the uxl source.

If no template is found, the generic template is used.

The application then uses the data from the driver to provide the updates in the template.



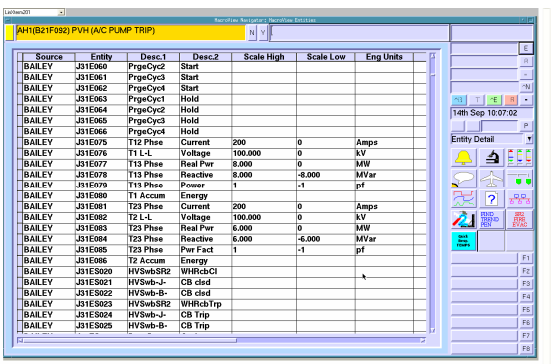
User Interaction

Changing the entity in the scratch pad will change the detail screen.

Clearing the scratch pad will display the menu page which is a list of all entities.

If an entity is green in the menu list, the current access level is higher than the entity's security level.

From the menu page, double clicking an entity in the list displays the entity's detail page.



7.2 Using the Detail Application

This section describes how you use the Detail Application to view the on-line information.

Starting the Detail Application Package.

The Detail Application package is integrated into the ***MACROVIEW*** system. To start up the
Detail Application:

- First make sure the scratch pad contains the entity whose detail you want to look at.
- Click once on the Detail Icon in the Application Matrix.
- Select the Detail Application entry in the Application Line.
- Press the D key on the keyboard.

Selecting a Detail Page

Use the scratchpad to enter the entity of interest. When you select the detail application, this will show the selected entity's detail display.

7.3 Engineering Considerations

To go to an entity's detail page from a graphic, the entity must first be put in the scratch pad. This can be done with the following meta script.

```
SEND "SetEntity(<entity>)" TO "MessageCenter";
```

The detail application may then be displayed using the following meta script.

```
SEND "SetPage(detail)" TO "MessageCenter";
```

When engineering detail displays, the scratch pad messages should be used to set values. E.g. to set a digital attribute STAT of the current entity to 1, the following meta script
could be used

```
SEND
"SetEntityAttrVal({$.ENTITY},STAT,1)" TO "MessageCenter";
```

Note that the Navigator automatically substitutes the current entity for the "$" in all detail
pages.

8 Documentation Revision Log

The following table describes the major changes to the documentation.

Table 25: Documentation Revision Log.

Date	Revision	Pages	Description of Revision
October 30th	3.04	All	Original Issue
October 31st	3.04	All	Syntax fixes
November 2nd	3.04	Many	Separated User Manual to User Manual plus Engineering Manual Solaris Release
December 14th	3.04	Many	Added new chapters for groups and details.
December 14th	3.04	All	Re-combined the User and Engineering sections.
July 12th.	3.0.5	All	3.0.5 final revisions (RyanN)
Sept 2006	3.0.6	MM, DB	Update and convert to Word