

PLANTSCAPE SERVER OPERATIONS

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SESSION OBJECTIVES

At the completion of this section of the course the student will be able to:

- Describe the function of the eight main display areas of a Station
- Demonstrate basic Windows operations relevant to Station
- Describe the two security modes of PlantScape Stations
- Change security levels on a Station configured for Station Based Security
- Log on to a Station configured for Operator Based Security
- Describe the major page navigation facilities available within PlantScape Server
- Describe and use the major system page types, Point Detail, Groups and Trends
- Demonstrate the methods for manipulating analog, status and configuration fields
- Identify alarm conditions
- Perform alarm handling operations
- Request a Report that has been configured by others

REFERENCES

Knowledge Builder: Guides→ Operators Guide

Station Online Help

Station

Introduction

The Station program provides the man-machine interface for the PlantScope Server.

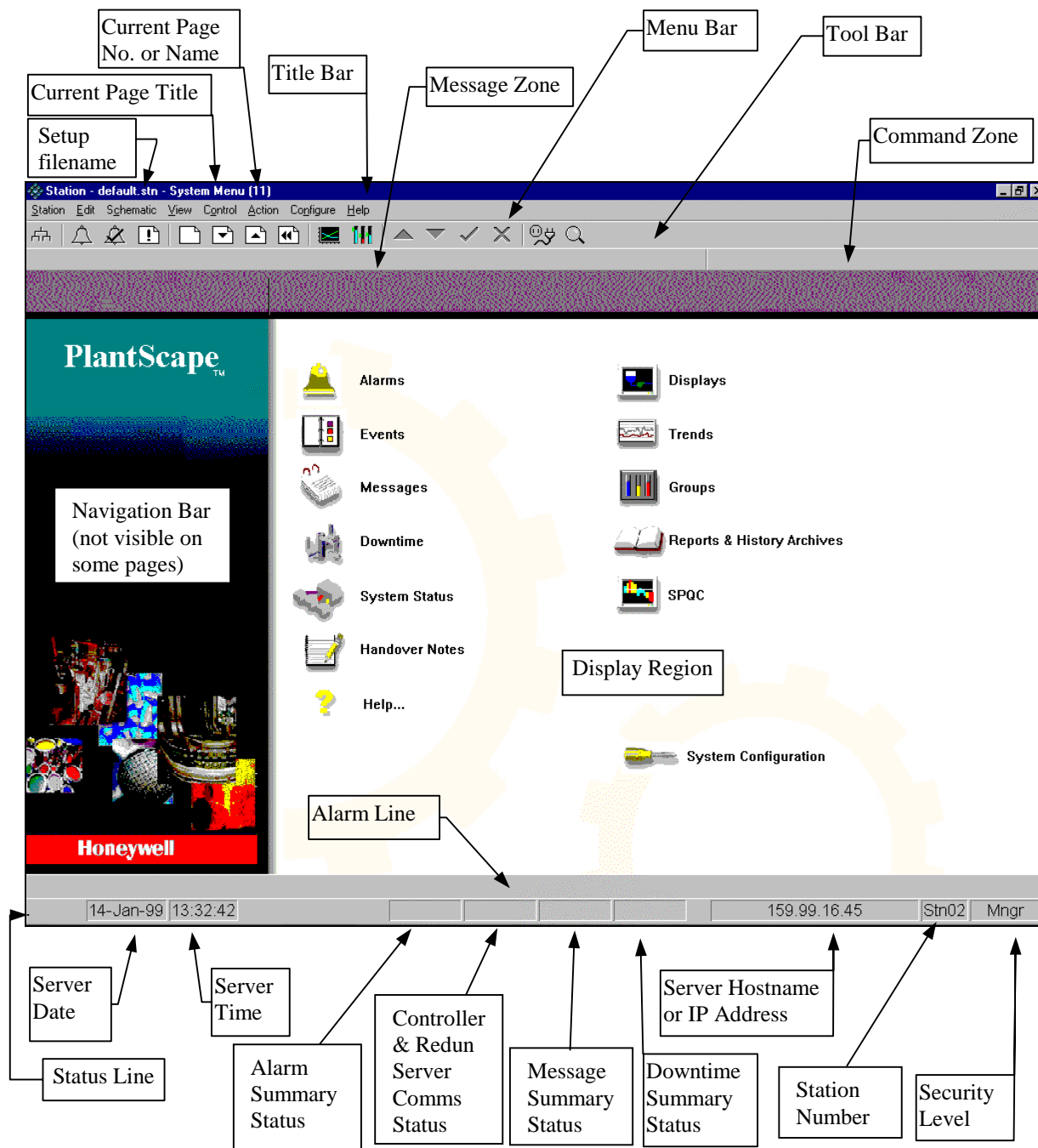
The program can run in the PlantScope Server, in a separate PC (which might also be referred to as a “Station”), or both of these.

Since it only provides the operator with a view of the process, the Station program does not have to be running for the PlantScope Server to be performing its tasks.

Window Layout

When the Station program is running it provides a “window” in which it displays the data requested by the operator.

The Station window has the following main features:



Station.....continued

Title Bar	Shows current Station set-up file, page title, and the page name or number being displayed.		
Menu Bar	This consists of a series of pull down menus. A default configuration of menus is supplied but they can be re-defined readily by the user.		
Tool Bar	A row of graphical pushbuttons which perform a variety of display and control functions.		
Message Zone	An area of the screen where PlantScape Server prompts for data input or displays messages.		
Command Zone	An area used for entering commands and responding to prompts for data input.		
Display Region	The greatest portion of the screen displaying either a system page or a custom graphic.		
Navigation Bar	Displays hyperlinks to other pages. Always visible on Configuration pages, but not on all operations pages.		
Alarm Line	Displays either the newest or the oldest highest priority unacknowledged alarm.		
Status Line	Displays current system status information:		
	Server Date / Time	Date and time of the PlantScape Server	
	Alarm Summary Status	Flashing Red	Unacknowledged alarm(s) present
		Steady Red	Acknowledged alarm(s) present
		Blank	No alarms present
	Comms Summary Status	Flashing Cyan	Unacknowledged Non-Hybrid Controller comms alarm(s) present
		Steady Cyan	Acknowledged comms alarm(s) present
		Blank	No comms alarm(s) present
	Message Summary Status	Flashing Green	Unacknowledged message(s) present
		Steady Green	Acknowledged message(s) present
		Blank	No message(s) present
	Downtime Summary Status	Flashing Yellow	Unacknowledged downtime occurrence(s) present
		Steady Yellow	Acknowledged downtime occurrence(s) present
		Blank	No downtime occurrence(s) present
	Server Hostname	Hostname or IP address of PlantScape Server to which this Station is connected	
	Station Number	Station Number to which this Station is connected	
	Security Level	Security access level accessed by, or granted to, the current Station user	

Lab Exercise - Starting Station for Windows

Introduction

Proceed with the lab exercise listed below. Ask your instructor for any assistance if you are not sure what you are expected to do.

Start Station





In these steps, you will learn how to start, and connect, Station in the Microsoft Windows (NT or '95) environment.

Step	Action
1	Ensure Station is running and connected to Stn0#.
2	If you are running Station on a PlantScape Client go to step 3, if on the PlantScape Server go to step 4.
3	Start another Station by choosing: Start→Programs→PlantScape Client Software →Station Go to step 5
4	Start another Station by choosing: Start→Programs→PlantScape Server→Station
5	This operation will fail with the error message: Unable to connect Static station busy Why? Discuss with your instructor.
6	Click CANCEL and minimise the empty Station window.
7	On the original Station window choose: Station→Exit. When prompted: Are you sure you want to exit Station? choose OK to close this first copy of Station.
8	Maximise the second (empty) copy of Station by clicking on the icon on the task bar. Choose Station→Connect or click on Server Hostname in the Status Line. In the dialogue box select the setup file default.stn and choose Open to connect this copy of station to the server.

Display Linking Techniques

Summary



PlantScape Server provides a variety of methods for enabling the user to move readily from one page to another.
The following summary is included here for reference.
Most of the methods will be described in more detail later in this section of the course.

Pag <i>nnn</i> <F5> <i>nnn</i>  <i>nnn</i>	Entering any of these commands will display page number <i>nnn</i> or name <i>nnn.dsp</i> .
FileName	To display a named page enter its filename. The “.dsp” extension need only be entered if the filename is comprised of only numeric characters.
<u>Hyperlink</u>	Some summary pages have lists names of further pages displayed as underlined blue text. Clicking on any of these will display the associated page.
Grp <i>nnn</i> <F6> <i>nnn</i>  <i>nnn</i>	Entering any of these commands will display Group number <i>nnn</i> .
Tnd <i>nnn</i> <F7> <i>nnn</i>  <i>nnn</i>	Entering any of these commands will display Trend number <i>nnn</i> .
<Page Up> <Page Down>	Available from the toolbar and the keyboard. Displays the next numerically sequential page, or, displays the next set of data requiring the same page, for example, a Group or Trend. The option available depends on the current page number being displayed. Either option can be configured for custom graphics.
User Created Graphical Pushbutton	Using Display Builder it is possible to create pushbuttons on custom pages which, when clicked, display a specified page.
Function Keys	The Station keyboard contains a number of user programmable function keys which can be configured to, for example, display a specified page.
Prior Display <F8> 	Available from the toolbar and from the keyboard function keys this feature allows the recent pages displayed to be re-displayed in reverse order. The number of recent pages that can be remembered is configurable, the default is 9.

Lab Exercise - Navigation

Introduction

On successful completion of this exercise the student will be able to display a specified page number using the methods listed on page 8 of this Student Guide.

Step	Action
1	View the Display Summary by choosing: System Menu→Displays
2	Display page 303 by clicking on the corresponding page number or description.
3	Display page 301 by pressing <F5> and entering 301
4	Display page 302 by clicking  and entering 302
5	Display the Product Output page (a named page) by entering: productoutput
6	Locate the custom buttons Blending, Holding Tanks and Product Processing which have been configured to link directly to other pages. Click on Holding Tanks . Note the new page description and number in the title bar.
7	Click  or press <F8> several times and note that the pages displayed are the reverse sequence of those you have just been viewing.
8	Use <Page Up> and <Page Down> to view the pages 301, 302, and 303. Note that named pages cannot be viewed in this way unless they have been configured to respond to these keys.

Data Display

Overview

Throughout the many system displays, and the variety of Custom Graphics, the ways in pieces of data are displayed are limited to those described below.

Analog Data Fields

The value of an analog parameter can be displayed in the following ways:

as a boxed or plain numerical value ,


as a dynamically filled object, for example, a tank level or bar indicator,
or,

as a sequence of shapes linked to the parameter value.

Status Data Fields

The value of a status parameter can be displayed in the following ways:

as a boxed or plain state description CLOSED,

as a boxed or plain state value ,

as a combobox (if the parameter is OP) 

or,

as a sequence of shapes linked to the state value.

Selecting a Field

To select a field click on it with the left mouse button.

The field will be highlighted and its name and value will be displayed in the message area.

If the access to the data is available the selected field will be displayed with a black background.

A white background indicates that no access is available.

Attention

A black background does not necessarily imply that the current user has the authority to change the selected data field, this will be validated after the new data has been entered (see next page).

Data Entry


Modifying an Analog Field

There are three methods of changing an analog data value:

1	Select the field, enter the desired value and press <Enter>.
2	Select the field and, from the toolbar or keyboard, use Raise (▲, <F9>) or Lower (▼, <F10>). Each function will raise or lower the selected analog value by 1% of full scale.
3	Select the field and use either of the function keys Fast ▲ Fast ▼ Raise: ▲<Alt>+<F9> Lower: ▼<Alt>+<F10> Each function will raise or lower the selected analog value by 10% of full scale. (This percentage is configurable from the system wide configuration).

Modifying a Status Field

There are three methods of changing a Status field:

1	Select the combo box and choose the required option from the resulting drop-down menu. 
2	Select the combo box and choose Raise (▲, <F9>) or Lower (▼, <F10>) to drive the OP to the corresponding state as indicated on the Point Detail under the Scanning tab.
3	Select any displayed parameter of the required point, choose Control→Select Output and choose Raise (▲, <F9>) or Lower (▼, <F10>) to drive the OP to the corresponding state as indicated on the Point Detail under the Scanning tab.

Control Confirmation

Any of the above methods of modification will require confirmation if the associated point has the “Control Confirmation” option enabled.

Operations Security

Introduction

There are two different ways in which a Station may be configured to limit the functions available to different operators.

They are called Station Based Security and Operator Based Security.

The selection of which mode is to be used is made during the hardware build process for each individual station. Thus each station would operate in either Station Based Security or Operator Based Security.

Station Based Security

Station Based Security provides 4 levels of access, Oper, Supv, Engr, and Mngr.

Each level provides progressively more access to the PlantScape Server.

When a station is connected to the PlantScape Server the default access level is Oper.

The Supv, Engr and Mngr levels each have a password (minimum 4, maximum 6 characters) assigned to them by the system administrator, using the utility **paswr**.

Each station connected to a single PlantScape Server may have a different set of passwords.

Changing Access Level in Station Based Security

Step	Action
1	Enter the command: psw<Enter> or, click on the current security access level at the bottom right of the Station window. Station will then display the prompt: Enter Password
2	Enter the appropriate password (which is case sensitive) to change to the desired security access level. An incorrect password entry, or pressing the <Enter> key without entering a password, will cause a change to the Oper level.

Continued on next page

Operations Security.....continued

Operator Based Security

Operator Based security provides 6 levels of access:

Lvl1, Lvl2, Oper, Supv, Engr, and Mngr (in increasing level of access).

Each operator has a unique ID (4 characters maximum), a password (5 or 6 characters) and is assigned to one of the 6 levels of access and to a control level.

A control level is a number between 0 and 255. Every point built in a PlantScape Server also has a control level assigned to it.

In order to be able to control a point an operator must have a control level equal to or greater than the control level of the point.

Depending on the local system administration methods the PlantScape Server may prompt the operator periodically for a new password.

Additionally the operator may request to change his/her password at any time.

Signing On to a Station

Step	Action
1	On connection each Station configured to Operator Based Security displays the prompt SIGN-ON and the security level indicator is blank.
2	The operator enters his/her ID and password in the format: <i>Operator_ID,Password<Enter></i> where <i>Operator_ID</i> and <i>Password</i> are known by the operator. <div><p>Attention <i>Operator_ID is <u>not</u> case sensitive, Password <u>is</u>.</i></p></div> The Station will then display the Security Access Level assigned to this operator.

continued on next page

Operations Security.....continued

Operator Based Security

.....continued

Logging out of a Station

To log out of a Station enter the command:

bye<Enter>

The security access level indicator will be blanked and the SIGN-ON prompt will be displayed.

Changing your own password

An operator may change his/her password at any time by entering the command **chgpsw**.

An operator is not able to change another operator's password using **chgpsw**, even if he/she has Mngr access level.

Step	Action	
	System Prompt	Operator Input
1		chgpsw
2	Enter old Password	<i>old_password</i>
3	Enter new Password	<i>new_password</i>
4	Re-enter new Password	<i>new_password</i>
5	Password accepted	

Changing another operator's password

Only an operator with Mngr access level is able to change the password of other operators.

This is done from the corresponding Operator Configuration page.

This will be dealt with in a later section of this course.

continued on next page

Operations Security.....continued

Access Level Table

The following table indicates the actions allowed at the various levels of access:

	Lvl1	Lvl2	Oper	Supv	Engr	Mngr
View Startup page						
Display pages						
Request Reports						
Acknowledge Alarms						
Peruse files						
Change Service or Status						
Point control (SP, OP, MD)						
Change Oper level fields						
Use most configuration pages						
Build reports						
Change Point Engineering Parameters						
Assign Function Keys						
Assign print functions						
Change System wide Configuration						
Change Supv level fields						
Change Engr level fields						
Assign Areas to Stations						
Display Pages and Points outside Area						
Change Mngr level fields						

Lab Exercise - Operations Security

Introduction

The purpose of this exercise is to demonstrate the differences between the two Station security methods, Station Based and Operator Based.

You will also change the password for your Operator ID.

Step	Action
1	Your Station is connected to Stn0# which has been set to Station Based Security. Your security level is Oper as indicated on the system status line.
2	Choose Configure→Hardware→Stations and click on Station 0# .
3	Click on the checkbox which activates the audible alarm for Low Priority alarms.
4	This operation will fail with the error message: Higher security level required displayed in the message zone.
5	Change the security access level of your Station by using the method on page 12. Enter the password mngr (the default password for Manager level)
6	Click on the checkbox which activates the audible alarm for Low Priority alarms. Unlike in steps 3 and 4 above the action will be successful because of your elevation to the Mngr access level.
7	Reset the checkbox which activates the audible alarm for Low Priority alarms.
8	You will now reconnect your station to one that has been configured for Operator Based Security. Choose Station→Setup . In the Server Connection area click on the ... button.

continued on next page

Lab Exercise - Operations Security.....continued

9	<p>Change the Station number to 1# and choose OK→OK.</p> <p>You are now connected to Station Stn1#.</p>
10	<p>What indicates that this station is configured for Operator Based Security?</p>
11	<p>Referring to page 13 for help, sign on using:</p> <p>Operator ID: <i>(see your Course Manager)</i> Password: 123456</p>
12	<p>Enter the command chgpsw and follow the prompts to change the password for the operator ID that you are using.</p> <div><p>Attention</p><p>Do not forget the new password in case you need to use it later.</p></div>
13	<p>Click on the security level indicator area at the bottom right of the Station window and note that, unlike in step 5 above, there is no response from Station.</p> <p>This is because your station is configured for Operator Based Security which does not allow operators to change their access level from that which is configured for them by the system administrator.</p>
14	<p>Log out of your Station by entering the command:</p> <p>bye<Enter></p>
15	<p>In order to make it easier to change from one access level to another during future exercises you will now return your station to its original connection with Station Based Security.</p> <p>Choose Station→Setup.</p> <p>In the Server Connection area click on the ... button.</p>
16	<p>Change the Station number to # and choose OK→OK and ensure that your station connects to Stn0#.</p>

Point Detail


What is a Point Detail?

The Point Detail page shows all Point related information in a standardised and comprehensive form.




Displaying a Point Detail page

There are a number of techniques which can be used to display the Point Detail page for a point depending on what you know about the point name (point ID).

Know the Point ID

Step	Action
1	<p>Enter the following:</p> <p>either: <i>Point_ID</i><F12></p> <p>or: <i>Point_ID</i> and click  on the tool bar,</p> <p>where <i>Point_ID</i> is the required point name.</p> <div>Attention Do not Press<Enter></div>

Know where to “find” the Point

Step	Action				
1	Locate the display of a parameter related to the required point (for example, a diagram of a process element on custom graphic, or an alarm line message).				
2	<table><tr><td>Either</td><td>Select the parameter and either: Click  on the tool bar, or: Press <F12></td></tr><tr><td>Or</td><td>Double click on the parameter.</td></tr></table>	Either	Select the parameter and either: Click  on the tool bar, or: Press <F12>	Or	Double click on the parameter.
Either	Select the parameter and either: Click  on the tool bar, or: Press <F12>				
Or	Double click on the parameter.				


continued on next page

Point Detail.....continued

Displaying a Point Detail page

.....continued

Know part of the
Point ID

Step	Action																																																			
1	<p>Enter the following:</p> <p>either: <i>Partial_Point_ID</i><F12></p> <p>or: <i>Partial_Point_ID</i> and click  on tool bar,</p> <p>where <i>Partial_Point_ID</i> is the known leading characters of the required point name.</p> <div><div>Attention</div><div>Do not Press<Enter></div></div> <div><div>Partial Tag Callup</div><div><div>Choose from this list of matches for the partial tag entered</div><table><thead><tr><th>Tag Name</th><th>Tag Type</th><th>Description</th></tr></thead><tbody><tr><td>LCS.TS1</td><td>Channel</td><td></td></tr><tr><td>LCS.TS1.CT</td><td>Controller</td><td></td></tr><tr><td>LCS620.CHN</td><td>Channel</td><td></td></tr><tr><td>LCS620.CON</td><td>Controller</td><td></td></tr><tr><td>LOGIC1</td><td>Status Point</td><td>OVER PRESSURE MONITOR</td></tr><tr><td>LT301</td><td>Analog Point</td><td>TANK NO. 1 LEVEL CONTROL</td></tr><tr><td>LT302</td><td>Analog Point</td><td>TANK NO. 2 LEVEL CONTROL</td></tr><tr><td>LT303</td><td>Analog Point</td><td>TANK NO. 3 LEVEL CONTROL</td></tr><tr><td>LT304</td><td>Analog Point</td><td>TANK NO. 4 LEVEL CONTROL</td></tr><tr><td>LT305</td><td>Analog Point</td><td>TANK NO. 5 LEVEL CONTROL</td></tr><tr><td>LT306</td><td>Analog Point</td><td>TANK NO. 6 LEVEL CONTROL</td></tr><tr><td>LT307</td><td>Analog Point</td><td>TANK NO. 7 LEVEL CONTROL</td></tr><tr><td>LT308</td><td>Analog Point</td><td>TANK NO. 8 LEVEL CONTROL</td></tr><tr><td>LT309</td><td>Analog Point</td><td>TANK NO. 9 LEVEL CONTROL</td></tr><tr><td>LT310</td><td>Analog Point</td><td>TANK NO. 10 LEVEL CONTROL</td></tr><tr><td>LT501</td><td>CDA Point</td><td>Level Control Tank 501</td></tr></tbody></table><div><div>Previous</div><div>Next</div></div></div></div>	Tag Name	Tag Type	Description	LCS.TS1	Channel		LCS.TS1.CT	Controller		LCS620.CHN	Channel		LCS620.CON	Controller		LOGIC1	Status Point	OVER PRESSURE MONITOR	LT301	Analog Point	TANK NO. 1 LEVEL CONTROL	LT302	Analog Point	TANK NO. 2 LEVEL CONTROL	LT303	Analog Point	TANK NO. 3 LEVEL CONTROL	LT304	Analog Point	TANK NO. 4 LEVEL CONTROL	LT305	Analog Point	TANK NO. 5 LEVEL CONTROL	LT306	Analog Point	TANK NO. 6 LEVEL CONTROL	LT307	Analog Point	TANK NO. 7 LEVEL CONTROL	LT308	Analog Point	TANK NO. 8 LEVEL CONTROL	LT309	Analog Point	TANK NO. 9 LEVEL CONTROL	LT310	Analog Point	TANK NO. 10 LEVEL CONTROL	LT501	CDA Point	Level Control Tank 501
Tag Name	Tag Type	Description																																																		
LCS.TS1	Channel																																																			
LCS.TS1.CT	Controller																																																			
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LT310	Analog Point	TANK NO. 10 LEVEL CONTROL																																																		
LT501	CDA Point	Level Control Tank 501																																																		
2	<p>Station will display a list of all the points (and any other database items) whose names start with the known characters.</p> <p>This list will include only those remote points that have been previously accessed by this Server.</p> <p>Click on the required Point ID to display its Detail page.</p>																																																			

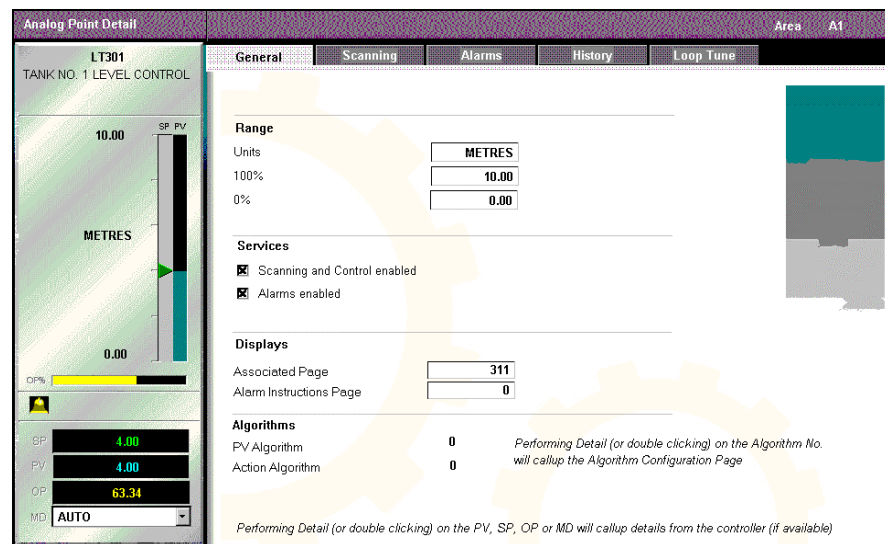
Paging through Point Details

Using <Page Down> or <Page Up> whilst viewing a Point Detail will display the next or previous Point ID in alpha-numeric order.

Non_Hybrid Controller Point Details

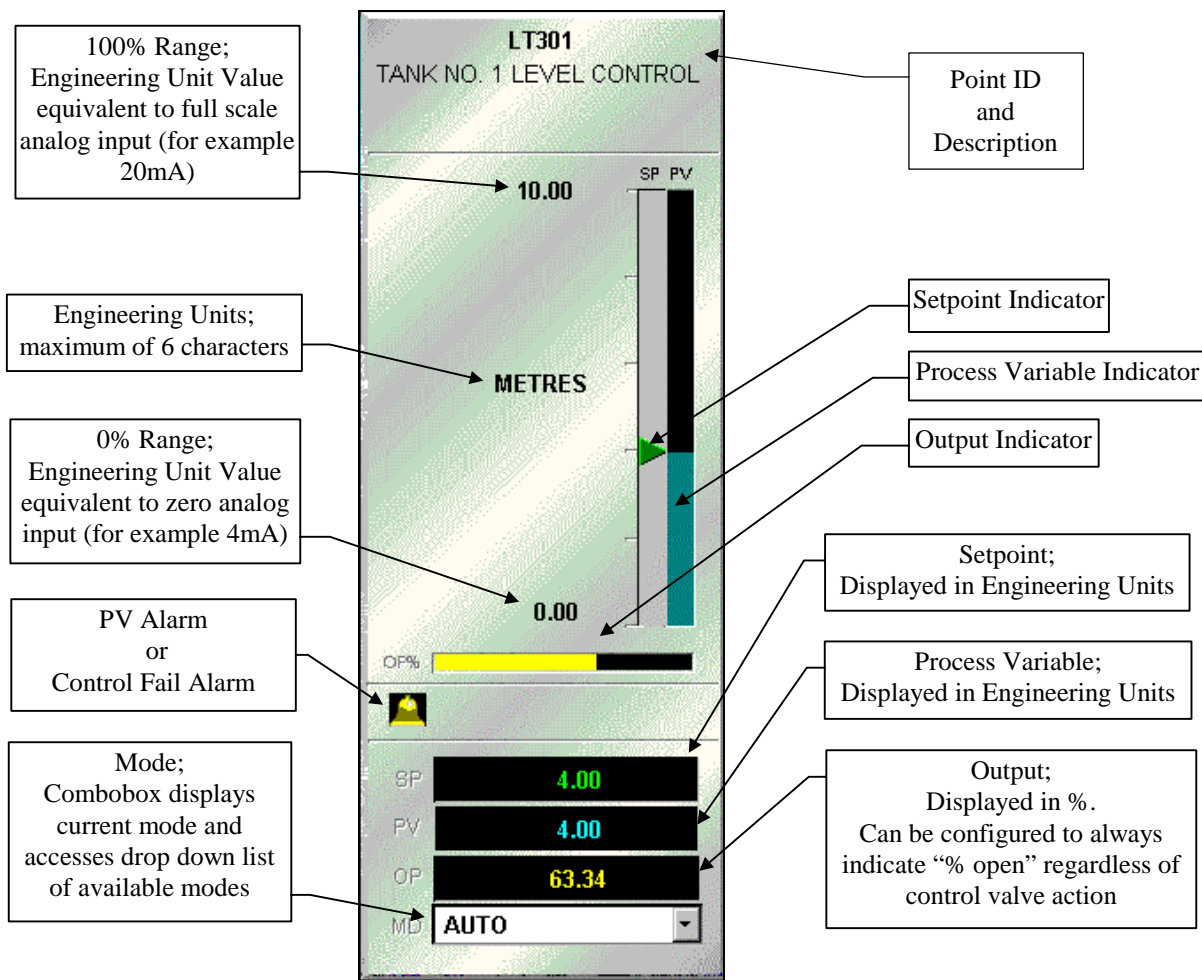
Analog Point Detail

A typical Analog Point Detail is shown below:



Face Plate

The primary analog point parameters are displayed on the face plate on the left hand side of the Point Detail. They are:



continued on next page

Non-Hybrid Controller Point Details.....continued

Analog Point Detail continued

Faceplate Colours

The parameters on the faceplate are displayed using the colours defined in the following table:

		PV Alarm Status or Scanning Status					
		Normal	Alarm	XMT High & Low	Un- reasonably High & Low	Point Scanning Disabled	Controller or Channel Disabled
Bar Display	SP	Gn/Gy					
	PV	Cy/Bk	R/Bk		Cy/Bk	Cy/Bk	Cy/Bk
	OP	Y/Bk					
Numeric Display	SP	Gn/Bk				Gy/Bk	Bk/Gn
	PV	Cy/Bk ²	R/Bk ¹	Bk/R ^{1,3}			Bk/Cy
	OP	Y/Bk					Bk/Y

Notes:

- 1 Blinking when unacknowledged
- 2 Blinking when previous alarm unacknowledged and returned to normal
- 3 Overrides Alarm display if concurrent

Colour codes used in above table are:

Code	Colour	Code	Colour
Gn	Green	R	Red
Gy	Grey	Y	Yellow
Cy	Cyan	W	White
Bk	Black		

Range

Displays, and enables changes to, the Engineering Units, the 100% Engineering Unit value, and the 0% Engineering Unit value.

Services

Checkboxes to enable/disable point and alarm processing.

Associated Page

Displays, and enables (with appropriate access level) changes to, the point's Associated Page name or number.

Algorithms

Displays the PV and Action Algorithm numbers that have been configured for the point.

The details of either algorithm can be displayed by double clicking on the associated number.

continued on next page

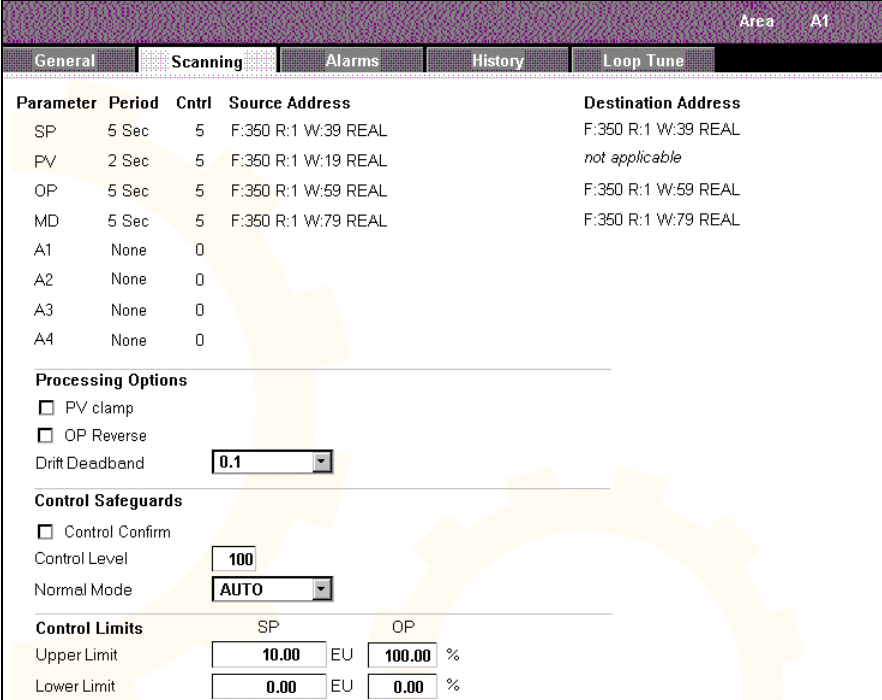
Non-Hybrid Controller Point Details.....continued

Analog Point Detail continued

Scanning

Click on the **Scanning** tab to display the point parameter Scanning and Control details which include:

Parameter addresses and scanning periods,
Processing options,
Control Safeguards, and
Control Limits.



Parameter	Period	Cntrl	Source Address	Destination Address
SP	5 Sec	5	F:350 R:1 W:39 REAL	F:350 R:1 W:39 REAL
PV	2 Sec	5	F:350 R:1 W:19 REAL	not applicable
OP	5 Sec	5	F:350 R:1 W:59 REAL	F:350 R:1 W:59 REAL
MD	5 Sec	5	F:350 R:1 W:79 REAL	F:350 R:1 W:79 REAL
A1	None	0		
A2	None	0		
A3	None	0		
A4	None	0		

Processing Options

☐ PV clamp

☐ OP Reverse

Drift Deadband: 0.1

Control Safeguards

☐ Control Confirm

Control Level: 100

Normal Mode: AUTO

Control Limits

	SP	OP
Upper Limit	10.00 EU	100.00 %
Lower Limit	0.00 EU	0.00 %

Period

The scan period for the parameter.
“None” indicates that the parameter is not scanned.
In such cases the controller probably reports changes as they occur.
Cannot be changed online.

Cntrl

The reference number of the controller in which this point’s parameters live.
Cannot be changed online.

Source Address

Address in the above controller that is scanned to retrieve the parameter’s value. Cannot be changed online.

Destination Address

Address in the above controller that is written to when the parameter’s value is updated by the operator or an application.
Cannot be changed online.

continued on next page

Non-Hybrid Controller Point Details.....continued

Analog Point Detail continued

Parameter Control Fail Alarm

When an operator writes to a parameter that has both destination and source addresses configured the server will scan the source address and compare the value returned with the value that was written. If the two values don't match, the urgent alarm

XX FAIL

(where XX is the name of the parameter)

is raised indicating that the control failed.

PV Clamp

Indicates whether PV clamping is applied to this point's PV.

Further details on PV clamping are given in this *Student Guide* - Section "System Wide Configuration".

OP Reverse

Enable this checkbox if the actuator driven by the point's OP signal is reverse acting so that the OP indication on the faceplate still shows "% open".

Drift Deadband

For point processing to occur the PV must change by at least this amount since point processing occurred last time.

The value is set empirically in "% of full scale" to provide sufficient detail in the view of the process whilst minimising the server load.

Control Confirm

If this checkbox is enabled any change made to a parameter's value by an operator will cause the message

PLEASE CONFIRM CONTROL REQUEST (Y/N)

to be displayed.

The operator should enter **Y** to confirm, or **N** to abort, the change.

This provides an extra level of security to help prevent inadvertent changes to parameter values by an operator and should only be enabled on a few selected points.

Control Level

Used in conjunction with Operator Based Security.

An Operator can only access a point for operations if his/her Control Level is equal to or greater than the point's Control Level.

Normal Mode

An Operator can perform the operation **Control**→**Normal Mode**.

Normal Mode can be configured to Manual, Auto, Cascade, and so on.

continued on next page

Non-Hybrid Controller Point Details.....continued

Analog Point Detail continued

Control Limits

The limits which are placed on operator changes to the SP and OP.

SP Limits are configured in the point's engineering units.

OP Limits are configured in %.

If the operator attempts to drive a parameter value beyond a limit the value will stop at the limit value.

Alarms

Click on the **Alarms** tab to display the point's alarm details which include:

- PV alarm settings,
- Control Fail alarm settings,
- External Change alarm configuration
- Alarm Acknowledge destination address, and
- Alarm Message configuration.

PV Limit Alarms					
	Type	Limit	Priority	Subpriority	Deadband
AL1	PV Low	1.00	High	0	1.0
AL2	PV High	9.00	Low	0	
AL3	PV LoLow	0.50	Urgent	0	
AL4	PV HiHigh	9.50	Urgent	0	
Unreasonable Value Alarm			Urgent	0	

Control Fail Alarms		
	Priority	Subpriority
PV Control Fail Alarm	Urgent	0
Control Timeout	Nil	
Control Deadband	1.0	

External Change Alarms

☐ PV

☐ Setpoint

☐ Output

☐ Mode

Alarm Acknowledgement

Controller Destination: 5

Alarm Message Index: 1 [Define Alarm Messages](#)

continued on next page

Non-Hybrid Controller Point Details.....continued

Analog Point Detail continued

PV Alarm Types

There are a number of alarm types available for analog PVs.

The following table list them and the way in which they are displayed on the faceplate and the alarm line

Alarm Type	Faceplate Acronym	Alarm Line Acronym	PV Colour
Rate Of Change (+ve and -ve)	Rate	RATE	Red on Black
Deviation Low (PV < SP, set a negative number in Limit)	Dev Low	DVLO	
Deviation High (PV > SP)	Dev High	DVHI	
Transmitter Low	XMT Low	XTLO	Black on Red
Transmitter High	XMT High	XTHI	
PV Low	PV Low	PVLO	Red on Black
PV High	PV High	PVHI	
PV Low Low	PV LoLow	PVLL	
PV High High	PV HiHigh	PVHH	
Unreasonably Low	RSN Low	RSLO	Black on Red
Unreasonably High	RSN High	RSHI	

Alarm Processing Sequence

Analog Point alarms are processed in the sequence:

Unreasonably Low / High→AL1→AL2→AL3→AL4.

Thus the preferred sequence for configuring these alarms when PV Low, PV High, PV Low Low and PV High High are all required is:

AL1: PV Low
AL2: PV High
AL3: PV Low Low
AL4: PV High High

continued on next page

Non-Hybrid Controller Point Details.....continued

Analog Point Detail continued

Alarm Limits

The Alarm limits are configured in the point's engineering units.

Alarm Priorities

Each alarm type can be configured to have one of four priorities depending on its severity

Priority	Action
Journal	Alarm recorded in the Event file and on the Alarm/Event printer.
Low	As for Journal plus alarm displayed on the Alarm Summary in grey.
High	As for Journal plus alarm displayed on the Alarm Summary in yellow.
Urgent	As for Journal plus alarm displayed on the Alarm Summary in red.

Attention

Ensure that the priority of PV High (PV Low) is lower than the priority of PV High High (PV Low Low).

Alarm Subpriorities

Within each alarm priority an alarm can be configured to have a Subpriority.

This is a number between 0 and 15, in ascending order of importance and is used, together with priority, to determine which alarm will be displayed in the alarm line.

Leave as the default of 0 if not required

Alarm Deadband

The Alarm Deadband is set to prevent the point alarm status "chattering" if the PV is oscillating about the alarm limit.

The value is set in "% of full scale".

Unreasonable Value Alarm Priority

Although the Unreasonable Alarm Limits are set on a system wide basis, the priority of each point's Unreasonable Value Alarm is configured individually.

continued on next page

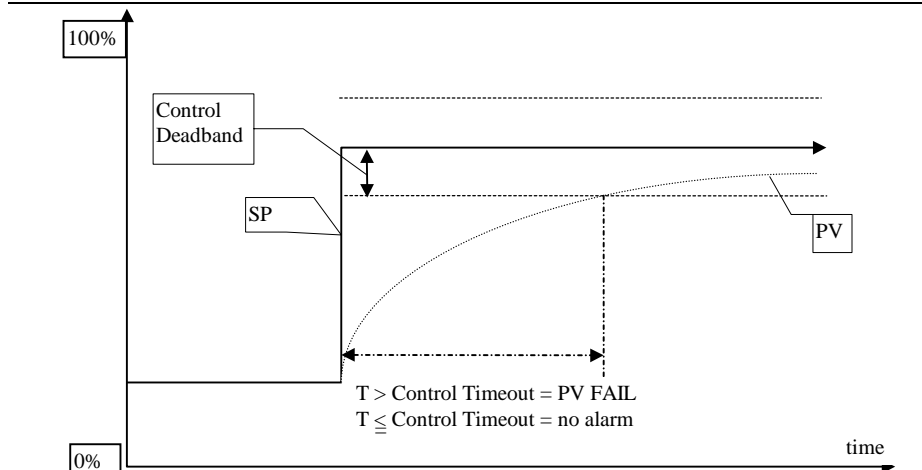
Non-Hybrid Controller Point Details.....continued

Analog Point Detail continued

Control Fail Alarm

The point can be configured to check that the PV responds to operator changes in the SP within a specified time period.

Failure to respond will raise the alarm PV FAIL.



Priority and Subpriority

Priority of the PV FAIL alarm

Control Timeout and Control Deadband

The PV is scanned every 10 seconds after the SP is changed.

If the error is greater than the **Control Deadband** after the **Control Timeout** has elapsed then a PV FAIL alarm is raised.

If Control Timeout is Nil this alarm is inactive.

External Change Alarm

Any change in a selected parameter (greater than the drift deadband for analog parameters) caused by an action external to the server will raise the alarm

XX CHNG

(where XX is the parameter name)

Controller Destination

Enables a bit to be set at the defined address and controller when an alarm is acknowledged for this point.

Alarm Message Index

The index number of the message associated with this point.

Further information on Alarm Messages will be given later in this section of the *Student Guide*.

continued on next page

Non-Hybrid Controller Point Details.....continued

Analog Point Detail continued

History

Click on the History tab to display data from the various history files (if the point has been configured for history).

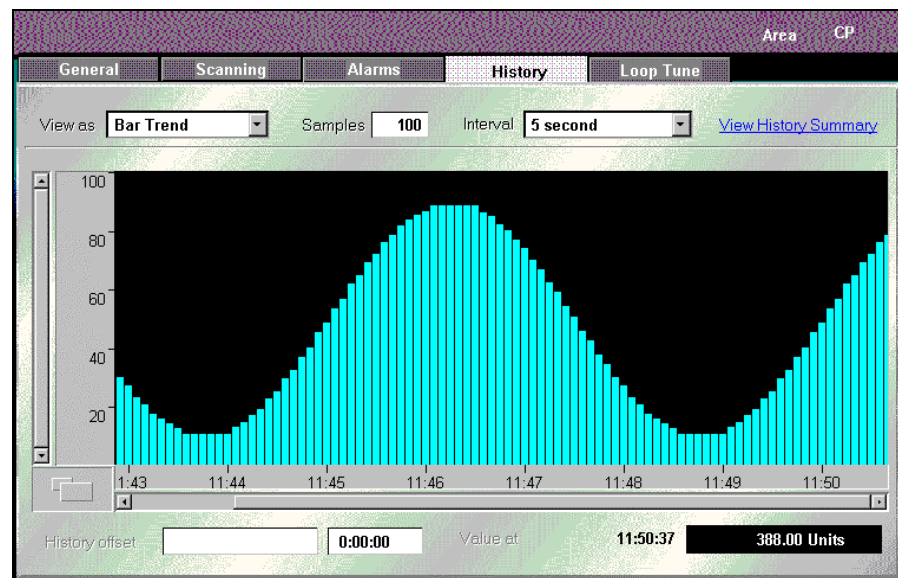
The data can be viewed as either a Bar Trend or as a Numeric table.

Bar Trend The time scale depends on the history interval and number of samples displayed, these are operator selectable at the top of the page.

The horizontal scroll bar allows the displayed time window to be moved through the data available in the history and archive files.

The history offset can be specified to display data from a specific period in history.

If the selected point has not been configured for history then data will only be available from the time when the page was initially displayed.



continued on next page

Non-Hybrid Controller Point Details.....continued

Analog Point Detail continued

Numeric History

Displays discrete values from the selected History file.

With Engr or Mngr access level the user can write to History file locations.

This feature could be used, for example, to enter laboratory results which have been taken off-line.

Attention

This page has an update period of 60s.
It can be updated manually at any time by
pressing <Esc>.

Displays the
Point Detail

Point Detail Numeric History SINEWAVE1

SYSTEM CLOCK SINEWAVE

View as Numeric History History offset 0:00:00 Interval 5 second View History Summary

20-Oct-99	13:20:30	361.00	20-Oct-99	13:18:50	50.00	20-Oct-99	13:17:10	338.00
20-Oct-99	13:20:25	346.00	20-Oct-99	13:18:45	50.00	20-Oct-99	13:17:05	353.00
20-Oct-99	13:20:20	324.00	20-Oct-99	13:18:40	52.00	20-Oct-99	13:17:00	373.00
20-Oct-99	13:20:15	308.00	20-Oct-99	13:18:35	55.00	20-Oct-99	13:16:55	386.00
20-Oct-99	13:20:10	283.00	20-Oct-99	13:18:30	62.00	20-Oct-99	13:16:50	403.00
20-Oct-99	13:20:05	267.00	20-Oct-99	13:18:25	68.00	20-Oct-99	13:16:45	413.00
20-Oct-99	13:20:00	250.00	20-Oct-99	13:18:20	80.00	20-Oct-99	13:16:40	427.00
20-Oct-99	13:19:55	225.00	20-Oct-99	13:18:15	90.00	20-Oct-99	13:16:35	434.00
20-Oct-99	13:19:50	200.00	20-Oct-99	13:18:10	106.00	20-Oct-99	13:16:30	442.00
20-Oct-99	13:19:45	184.00	20-Oct-99	13:18:05	118.00	20-Oct-99	13:16:25	446.00
20-Oct-99	13:19:40	161.00	20-Oct-99	13:18:00	138.00	20-Oct-99	13:16:20	449.00
20-Oct-99	13:19:35	146.00	20-Oct-99	13:17:55	153.00	20-Oct-99	13:16:15	449.00
20-Oct-99	13:19:30	126.00	20-Oct-99	13:17:50	175.00	20-Oct-99	13:16:10	447.00
20-Oct-99	13:19:25	113.00	20-Oct-99	13:17:45	191.00	20-Oct-99	13:16:05	444.00
20-Oct-99	13:19:20	96.00	20-Oct-99	13:17:40	216.00	20-Oct-99	13:16:00	437.00
20-Oct-99	13:19:15	86.00	20-Oct-99	13:17:35	232.00	20-Oct-99	13:15:55	431.00
20-Oct-99	13:19:10	72.00	20-Oct-99	13:17:30	257.00	20-Oct-99	13:15:50	419.00
20-Oct-99	13:19:05	65.00	20-Oct-99	13:17:25	274.00	20-Oct-99	13:15:45	409.00
20-Oct-99	13:19:00	57.00	20-Oct-99	13:17:20	299.00	20-Oct-99	13:15:40	393.00
20-Oct-99	13:18:55	53.00	20-Oct-99	13:17:15	315.00	20-Oct-99	13:15:35	381.00

continued on next page

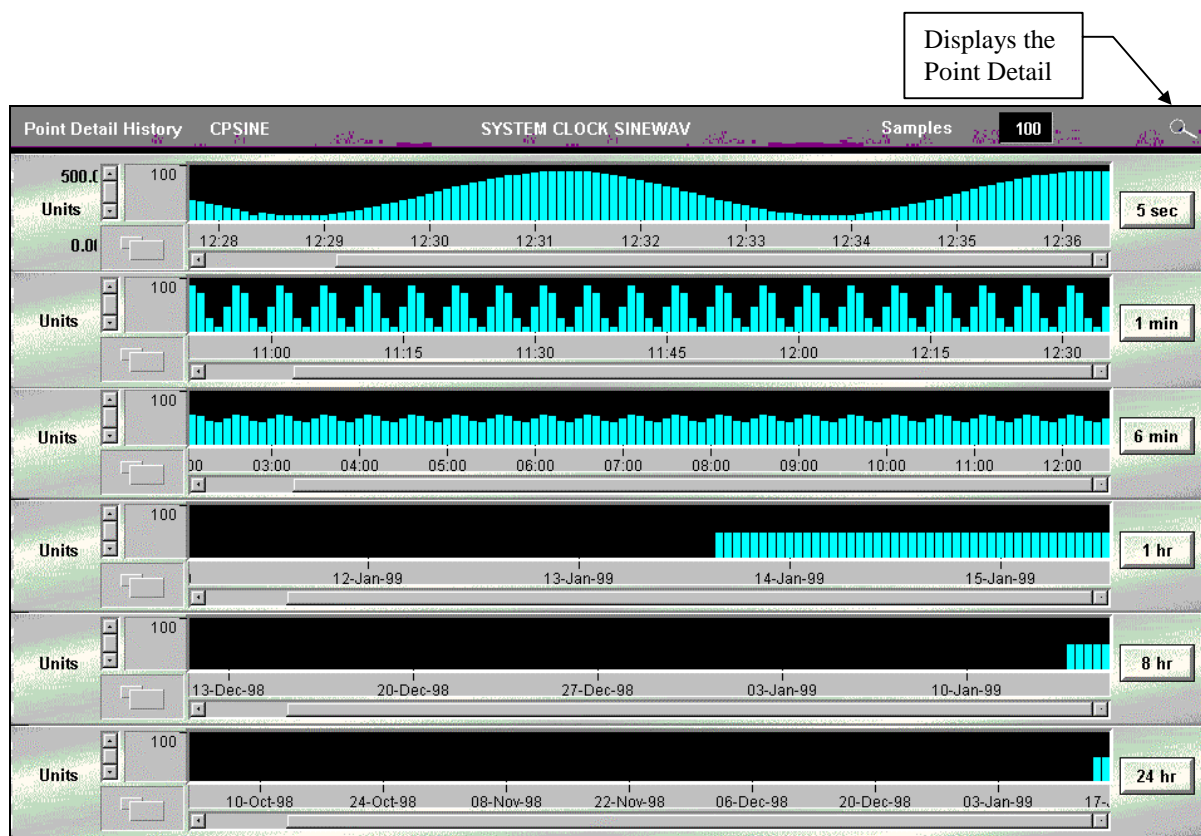
Non-Hybrid Controller Point Details.....continued

Analog Point Detail continued

Summary Click on **View History Summary** to display a summary of the Fast and Standard history files.

Each trend can be scrolled individually.

Clicking on one of the buttons on the right hand side of each trend will display the Point Detail Bar Trend for the selected interval.

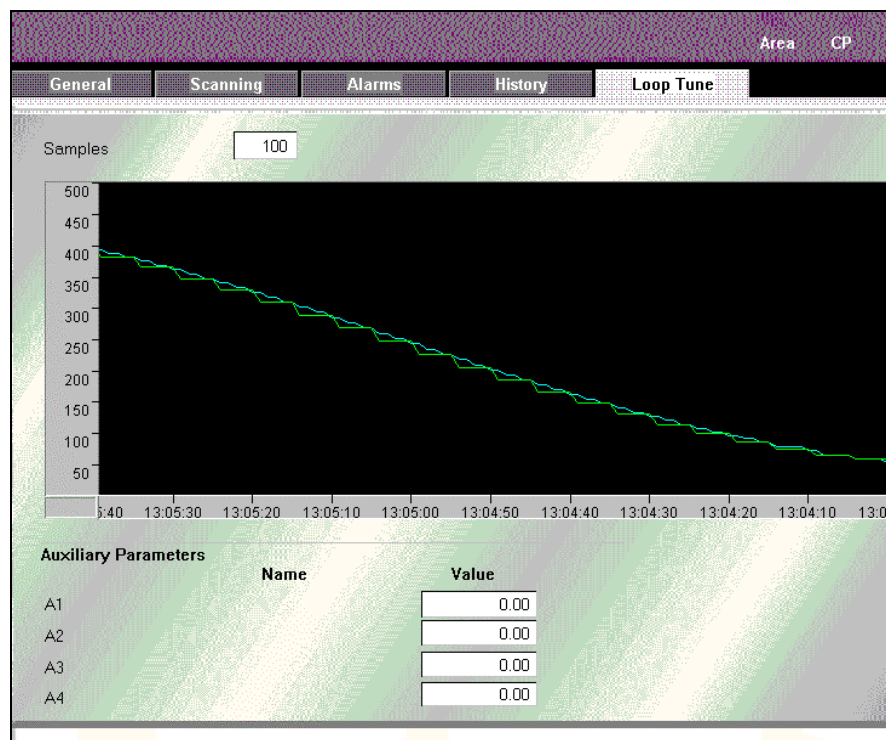


Continued on next page

Non-Hybrid Controller Point Details.....continued

Analog Point Detail continued

Loop Tune



Displays a real time “tuning” trend of SP, PV and OP with the current time at the left hand end of the window.

Also displayed are the parameters A1, A2, A3 and A4. These parameters can display, and give access to, any addressable location in the controller, for example, the PID tuning constants; Gain, Integral Action Time and Derivative Action Time.

Thus changes can be made to the loop tuning constants as required and their effect monitored.

If the Name given to AN (where $N = 1, 2, 3$ or 4) corresponds to any of the Internal Point Parameter Names listed in *Knowledge Builder: Server and Client Configuration*→Defining a Basic Point, then the value at the addressed location in the controller and the value of AN in the PlantScape Server database will track each other.

Non-Hybrid Controller Point Details.....continued

Status Point Detail

A typical Status Point Detail is shown below:

Status Point Detail Area A1

IPC0101
TANK 1 OUTLET VALVE

General Scanning Alarms History

Range
Input states 1 bit
Output states 1 bit

Services
☒ Scanning and Control Enabled
☒ Alarms Enabled

Displays
Associated Page 311
Alarm Instructions Page 0

Algorithms
PV Algorithm 0 Performing Detail on the Algorithm No. will callup the Algorithm Configuration Page
Action Algorithm 0

1 OPEN
0 CLOSED

PV 1 OPEN
OP 1 OPEN
MD MAN

Face Plate

The primary status point parameters are displayed on the face plate on the left hand side of the Status Point Detail. They are:

IPC0101
TANK 1 OUTLET VALVE

Point ID and Description

Process Variable;
Displayed as a series of LEDs indicating the range of state values (0 to 7 maximum) and their associated descriptive text.

1 OPEN
0 CLOSED

Process Variable;
Displayed as a digit (0 to 7) and a state description (for example, OPEN or CLOSED).

PV Alarm or Control Fail Alarm

PV 1 OPEN
OP 1 OPEN
MD MAN

Output;
Displayed as a single digit (0 to 3) and a state description. The combobox accesses a drop down list of the available output states.

Mode;
Combobox displays current mode and accesses drop down list of available modes

continued on next page

Non-Hybrid Controller Point Details.....continued

Status Point Detail

.....continued

Faceplate Colours

The parameters on the faceplate are displayed using the colours defined in the following table:

	PV Alarm Status or Scanning Status			
	Normal	Alarm	Point Scanning Disabled	Controller or Channel Disabled
PV	Cy/Bk ²	R/Bk ¹	Gy/Bk	Bk/Cy
OP	Bk/W	N/A	Gy/W	Bk/W

Notes:

- 1 Blinking when unacknowledged
 - 2 Blinking when previous alarm unacknowledged and returned to normal
- Colour codes used in above table are:

Code	Colour	Code	Colour
Gy	Grey	R	Red
Cy	Cyan	W	White
Bk	Black		

Range

Input states: the number of input status bits, or contacts, being monitored: 1, 2 or 3.

This determines the number of LEDs displayed on the faceplate.

Output states: the number of output status bits, or contacts, being controlled and/or monitored:
1 or 2.

Services

Checkboxes to enable/disable point scanning and alarm processing.

Associated Page

Displays, and enables (with appropriate access level) changes to, the point's Associated Page number.

Algorithms

Displays the PV and Action Algorithm numbers that have been configured for the point.

The details of either algorithm can be displayed by double clicking on the associated number.

continued on next page

Non-Hybrid Controller Point Details.....continued

Status Point Detail continued

Scanning

Click on the **Scanning** tab to display the point parameter Scanning and Control details which include:

Parameter addresses and scanning periods,
Processing options, and
Control States.

Parameter	Period	Cntrl	Source Address	Destination Address
PV	2 Sec	8	IPC0101 OP	not applicable
OP	5 Sec	8		
MD	5 Sec	8		

Processing Options

Control Level: 0

Normal Mode: AUTO

Pulse Width: Latchd

☐ OP reverse

☐ Control Confirm

Control States

Output (OP) state	Target PV state
3	??????
2	??????
1	OPEN
0	CLOSED

Period

The scan period for the parameter.

“None” indicates that the parameter is not scanned.
In such cases the controller probably reports changes as they occur.
Cannot be changed online

Cntrl

The reference number of the controller in which this point’s parameters live.

Source Address

Address in the above controller that is scanned to retrieve the parameter’s value

Destination Address

Address in the above controller that is written to when the parameter’s value is updated by the operator or an application.

continued on next page

Non-Hybrid Controller Point Details.....continued

Status Point Detail

continued

Parameter Control Fail Alarm

When an operator writes to a parameter that has both destination and source addresses configured the server will scan the source address and compare the value scanned with the value written.
If the two values don't match the alarm

XX FAIL

(where XX is the name of the parameter)

is raised indicating that the write failed.

Control Level

Used in conjunction with Operator Based Security.
An Operator can only access a point for operations if his/her Control Level is equal to or greater than the point's Control Level.

Normal Mode

An Operator can perform the operation **Control→Normal Mode**.
Normal Mode can be configured to Manual, Auto, Cascade, and so on.

Pulse Width

Displays the period of time for which the output will remain energised when controlled by the operator.

“Latched” means that the output remains energised until controlled off by the operator.

OP Reverse

If this checkbox is enabled the the state of the OP bit(s) will be inverted.

Control Confirm

If this checkbox is enabled any change made to a parameter's value by an operator will cause the message

PLEASE CONFIRM CONTROL REQUEST (Y/N)

to be displayed.

The operator should enter **Y** to confirm, or **N** to abort, the change.

This provides an extra level of security to help prevent inadvertent changes to parameter values by an operator.

This should only be enabled on a few selected points

Control States

Displays the target (or expected) PV state for each OP state.

This configuration defines the order of the options in the drop down list when the OP combobox is selected

continued on next page

Non-Hybrid Controller Point Details.....continued

Status Point Detail

.....continued

Alarms

Click on the **Alarms** tab to display the point's alarm details which include:

PV alarm settings,
Control Fail alarm settings,
External Change alarm configuration
Alarm Acknowledgement destination address, and
Alarm Message configuration.

Area A1

General Scanning **Alarms** History

State Alarms

State	Enable Alarm	Priority	Subpriority
1 OPEN	<input type="checkbox"/>	High	0
0 CLOSED	<input checked="" type="checkbox"/>	High	0

☐ Re-Alarm between Alarm States

Control Fail Alarms

	Priority	Subpriority
PV Control Fail Alarm	Urgent	0
PV Control Timeout	Nil	

External Change Alarms

☐ PV
☐ Output
☐ Mode

Alarm Acknowledgement

Controller Destination Address 8

Alarm Message Index 1 [Define Alarm Messages](#)

Alarm States

Each state can be configured to be an alarm state or not.

If point alarm processing is enabled, and all alarm states are set to disabled, then PV changes of state will be recorded in the event file.

continued on next page

Non-Hybrid Controller Point Details.....continued

Status Point Detail

.....continued

Alarm Priorities

Each alarm type can be configured to have one of four priorities depending on its severity

Priority	Action
Journal	Alarm recorded in the Event file and on the Alarm/Event printer.
Low	As for Journal plus alarm displayed on the Alarm Summary in grey.
High	As for Journal plus alarm displayed on the Alarm Summary in yellow.
Urgent	As for Journal plus alarm displayed on the Alarm Summary in red.

Alarm Subpriorities

Within each alarm priority an alarm can be configured to have a Subpriority between 0 and 15, in ascending order of importance.

Leave as the default of 0 if not required

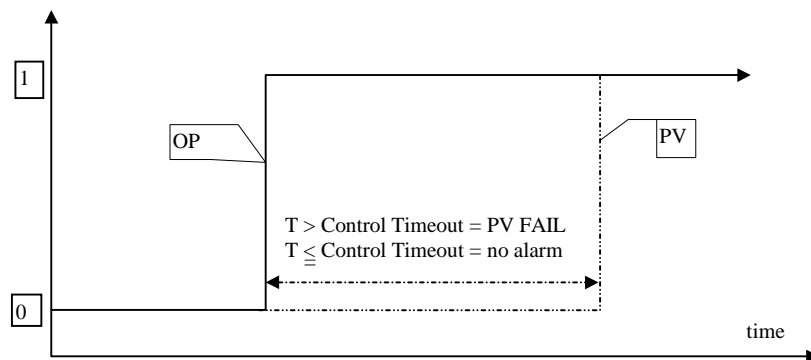
Re-Alarm between Alarm States

Where more than one state has been configured to be an alarm state, the user can configure whether or not a second alarm will be raised if the PV changes from one alarm state to another.

Control Fail Alarm

The point can be configured to check that the PV responds to operator changes in the OP within a specified time period.

Failure to respond will create the alarm PV FAIL.



continued on next page

Non-Hybrid Controller Point Details.....continued

Status Point Detail

.....continued

Control Fail Alarm

Priority and Subpriority

Priority of the PV FAIL alarm

.....continued

Control Timeout

The PV is scanned every 10 seconds after the OP is changed.

If the PV has not changed to the Target State before the **Control Timeout** has elapsed then a PV FAIL alarm is raised.

A Control Timeout of Nil indicates that this alarm is inactive.

External Change Alarm

Any change in a selected parameter caused by an action external to the server will raise the alarm

XX CHNG

(where XX is the parameter name)

Alarm Message Index

The index number of the message associated with this point.

Further information will be given later in this section of the *Student Guide*.

Alarm Acknowledge Destination

Enables a bit to be set at the defined address and controller when an alarm is acknowledged for this point.

Non-Hybrid Controller Point Details.....continued

Accumulator Point Detail

An Accumulator Point Detail is shown below:

Area AC

General Scanning Alarms History

Range

Units

100%

Raw Value

Meter Factor

Scale Factor

Rollover Value

Services

☒ Scanning and Control Enabled

☐ Alarms Enabled

Displays

Associated Page

Alarm Instructions Page

Algorithms

PV Algorithm Performing Detail on the Algorithm No.

Action Algorithm will call up the Algorithm Configuration Page

Face Plate

The accumulator point PV is displayed on the face plate on the left hand side of the accumulator Point Detail.

The PV is displayed as cyan number in engineering units and as a vertical cyan bar.

Range

Displays, and enables (with appropriate access level) changes to, the

Units: *6_characters_maximum*

100%: value of PV that will cause the PV bar on the face plate to display full scale

Raw Value: current PlantScape Server database value of the counter being scanned in the controller (cannot be changed by any operator)

Meter Factor: described in section 3, of this *Student Guide*

Scale Factor: described in section 3, of this *Student Guide*

Rollover Value: Value at which the counter in the controller will “rollover” to zero

Other Fields

All the other fields are similar to the Analog Point Detail described earlier.

Hybrid Controller Point Details

Overview

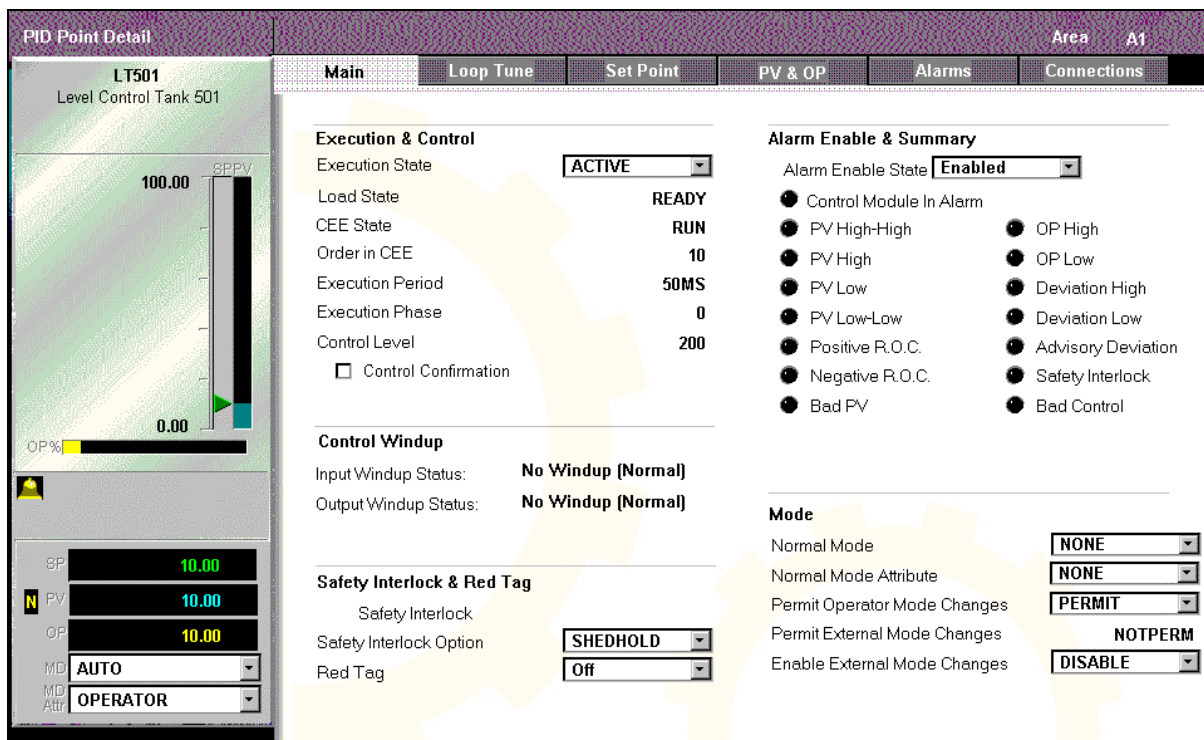
There are no limits to the number or variety of parameters that can be contained within a Hybrid Controller point.

Thus there are also no limits to what can be displayed in the Point Detail of such points.

However, to simplify the task of system configuration a number of predefined formats are provided and they will be examined here.

Typical PID Loop

A typical Hybrid Controller PID loop Detail is shown below:



Parameter Descriptions

There are too many parameters to provide an exhaustive description here.

Further information can be obtained by attending the PlantScape Controller Implementation course, and by viewing *Knowledge Builder: Control Builder Component Reference*.

continued on next page

Hybrid Controller Point Details.....continued

Typical Device Control Point

A typical Hybrid Controller Device Control Point Detail is shown below:

Device Point Detail

VLV501
Outlet Valve Tank 501

Main | Input States | Output States | Alarms | Maintenance | Connections

Execution & Control

Execution State	ACTIVE
Load State	READY
CEE State	RUN
Order in CEE	10
Execution Period	50MS
Execution Phase	0
Control Level	200

☐ Control Confirmation

Permissive & Override (P&O) Interlocks

Enable P&O Interlock Bypassing	Disabled
Bypass P&O Interlocks	Off

State | Permit | Override

S1 Open	Permit	Off
S0 Closed	Permit	Off
S2		

Alarm Information

Alarm Enable State	Enabled
--------------------	---------

Current Alarms

Type	Block/Object
Control Module In Alarm	Control Module
Function Block In Alarm	Device Ctrl.
Command Disagree	Device Ctrl.
Command Fail	Device Ctrl.
Uncommanded Change	Device Ctrl.
Bad PV	Device Ctrl.
Safety Override	Device Ctrl.
State 0 Override Interlock	Device Ctrl.
State 1 Override Interlock	Device Ctrl.
State 2 Override Interlock	Device Ctrl.
Off Normal Condition	Device Ctrl.

Safety Interlock & Red Tag

Safety Interlock	
Red Tag	Off

Parameter Descriptions

There are too many parameters to provide an exhaustive description here.

Further information can be obtained by attending the PlantScape Controller Implementation course, and by viewing *Knowledge Builder: Control Builder Component Reference*.

Hybrid Controller Point Details.....continued

Typical Sequence Control Point

A typical Hybrid Controller Sequence Control Point Detail is shown below:

PlantScape SCM Point Detail

Tank_6_SCM
SCM for Tank 506

TANK_6_SCM.MAIN
Active Handler
MAIN
Handler Type
TANK_6_SCM.STARTTANKFI
LL
Active Step
90
Time in Step [cyc]
NONE
BT RUNNING
EXEC OK
BTB
CMD NONE
MD AUTO
MD ATTR OPERATOR

Main State Diagram Recipe History Handlers

Execution & Control

Execution Status	OK
Load State	READY
CEE State	RUN
Order in CEE	10
Execution Period	50MS
Execution Phase	0
Control Level	200
Control Locks	ENGINEER
Abort Lock	OPERATOR
Control Lock	ENGINEER
Single-Step Lock	ENGINEER
Single-Step Target	NONE
<input type="checkbox"/> Control Confirmation	

Configuration Status

SCM Configuration Status	OK
SCM Configuration Code	NONE

Alarm Information

Alarm Enable State: Enabled

Type	Priority	Severity
SCM		
Step Timeout	LOW	0
Hold State	LOW	0
Stop State	LOW	0
Abort State	LOW	0
Fail State	LOW	0

Display Information

Point Detail Display	sysDtlSCMA.dsp
Group Detail Display	sysGrpSCMA.dsp
Associated Display	

Parameter Descriptions

There are too many parameters to provide an exhaustive description here.

Further information can be obtained by attending the PlantScape Controller Implementation course, and by viewing *Knowledge Builder: Control Builder Component Reference*.

Lab Exercise - Point Detail Operations

Introduction

Proceed with the lab exercise listed below.

Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Non-Hybrid Controller Point Detail Operations

The purpose of this exercise is to provide familiarity with displaying and manipulating points from a Non-Hybrid Controller Point Detail.


Step	Action
1	Display the Holding Tanks page (Page 302)
2	Select the SP of tank number # and use it to display the Point Detail of LT10#.
3	Change the SP to 8.0 metres.
4	<div>Click the Scanning and Control checkbox to take the point out of service (scanning disabled)</div> <div><div>Attention</div><div>What access level will you need?</div></div> <div>Note the change in the display of the point parameters (they turn grey when the point is off scan).</div> <div>Re-enable scanning when you have finished and return to the Oper access level.</div>
5	<div>Click on the Loop Tune tab.</div> <div>Change the SP to 5.0 metres and note the effect that this has on the Loop Tune Trend.</div>
7	Click on the Scanning tab and note the Controller, Source Address and Destination Address information.
8	Click on the Alarms tab and note the PV Alarm Type, Limit and Priority information.
9	Click on the History tab and view the 1 minute snapshot Point Detail Bar Trend.

continued on next page

Lab Exercise - Point Detail Operations.....continued

Non-Hybrid Controller Point Detail Operations

.....continued

10	Note the number of samples in the displayed time window.
11	<p>Change the view to the Point Detail Numeric History.</p> <p>Are you able to change any of the history values? What access level do you need?</p> <p>Ensure you return to Oper access level.</p>
12	Click the  button near the top right of the Point Detail Numeric History page to return to the Point Detail.
13	Display the Point Detail for the point VLV110#.
14	Select the OP combobox and change the state of the point.
15	<p>Click the Scanning and Control checkbox to take the point out of service (off scan)</p> <div style="border: 1px solid black; padding: 10px; text-align: center;"><p>Attention</p><p>What access level will you need?</p></div> <p>Note the change in the display of the point parameters (they turn grey when the point is off scan).</p> <p>Re-enable scanning when you have finished and return to the Oper access level.</p>
16	Click on the Scanning tab and note the Controller, Source Address and Destination Address information.
17	Click on the Alarms tab and note the PV Alarm Type and Priority information.

Lab Exercise - Point Detail Operations.....continued

Introduction

Proceed with the lab exercise listed below.

Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Hybrid Controller Point Detail Operations

The purpose of this exercise is to provide familiarity with displaying and manipulating points from a Hybrid Controller Point Detail.

Attention

If you are not interested in operating Hybrid Controller points then you can ignore this exercise.

Step	Action
1	<p>Display the Detail of point Tank_#_SCM and command it to Hold.</p> <p>This stops an automatic sequence from interfering with your operations.</p>
2	<p>Display the Detail of point LT50#.</p>
3	<p>Ensure the MDAttr is Operator and the MD is Automatic.</p> <p>Change the SP to 80% and observe the response.</p>
4	<p>Change the Execution State to Inactive</p> <div><h4>Attention</h4><p>What access level will you need?</p></div> <p>Note the change in the display of parameters on the faceplate to indicate this inactive state.</p> <p>Change the Execution State back to Active when you have finished and return to the Oper access level</p>
5	<p>Click the Loop Tune tab.</p> <p>Note that there is access to all the PID tuning constants.</p> <p>Change the SP to 50% and note the effect that this has on the Loop Tune Trend.</p>
6	<p>Click the Alarms tab.</p> <p>Note the alarm type, trip point, priority and severity information.</p>

Continued on next page

Lab Exercise - Point Detail Operations.....continued

Hybrid Controller Point Detail Operations

.....continued

7	<p>Click the Connections tab and note the names of the Point Detail and Group Detail display files.</p> <p>Note that these display files can be customised but this topic is not included in this course.</p>
8	<p>Change the MDAttr (Mode Attribute) to Program and note that no other parameter can now be changed from the faceplate, regardless of your access level.</p> <p>Return the MDATTR to Operator, the MD to Automatic, and the access level to Oper.</p>
9	<p>Display the Detail of point VLV50#.</p>
10	<p>Set the OP to Open.</p> <p>There will be several seconds delay before the valve is fully open, during which time the PV is Moving.</p> <p>Observe the change in indication on the faceplate.</p>
11	<p>Change the Execution State to Inactive</p> <div style="border: 1px solid black; padding: 10px; text-align: center;"><p>Attention</p><p>What access level will you need?</p></div> <p>Note the change in the display of parameters on the faceplate to indicate this inactive state.</p> <p>Change the Execution State back to Active when you have finished and return to the Oper access level</p>
12	<p>Click the Alarms tab.</p> <p>Note the alarm type, time delays, priority and severity information.</p>
13	<p>Click the Connections tab and note the names of the Point Detail and Group Detail display files.</p> <p>You will learn how to customise these files during the Display Building section of this course.</p>

continued on next page

Lab Exercise - Point Detail Operations.....continued

Hybrid Controller Point Detail Operations

.....continued

14	<p>Change the MDAttr (Mode Attribute) to Program and note that no other parameter can now be changed from the faceplate, regardless of your security access level.</p> <p>Return the MDAttr to Operator and the security access level to Oper.</p>
15	<p>Display the Detail of point Tank_#_SCM and command it to Restart.</p> <p>Observe the effects of the sequence on LT50# and VLV50# (view the page named Tanks501).</p>

Areas

What is an Area?

A PlantScape Server can be configured to use Areas to limit access to the database for any user whose security level is lower than Mngr.

The sections of the database that are affected by Areas are:

- the displaying of Point Detail pages
- the displaying and acknowledging of Alarms
- the displaying of Custom Schematic pages.

An Area is identified by a two character code; for example, A1.

When points are built they can each be assigned to an Area.

The Area ID is displayed at the top of the Point Detail page.

Points not assigned to a specified Area, and non-Point alarms (for example, a communications alarm) are assigned to the default “System” Area.

Such a point is identified by having its Area ID set to the first two characters of the Point ID, or the assigned System Area Code.

Area Access limited to Operators or Stations

Access to each Area can be assigned, or inhibited, to each Operator or Station (depending on whether Operator Based or Station Based Security is being used) individually.

If Areas are enabled Operators or Stations (depending on whether Operator Based or Station Based Security is being used) can only view Alarms, Point Detail pages and Custom Displays for the Areas assigned to the Operator or Station.

If these points go into alarm only operators or stations with the appropriate Area access will be able to view and acknowledge the alarm.

When custom schematics are created access to them can be limited to a specific Area.

Mngr overrides Areas

Operators or stations with Mngr access level are not affected by Area access limitations. They have full database access.

Lab Exercise - Areas

Introduction

Proceed with the lab exercise listed below.

Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Examine effect of Areas on the display of Point Detail pages and Alarms

This exercise will demonstrate the effect that Station / Operator Area Assignment has on the user's access to Point Detail pages and Alarms.

On the first run through you will use the Mngr access level and it will be demonstrated to you that you can access ALL points regardless of which Area they have been allocated to.

You will then repeat the exercise using the Oper access level and it will be demonstrated to you that you can access only those points which are in Areas which have been allocated to your Station.

Step	Action
1	Ensure you are at the Mngr access level.
2	Display the Point Detail for points LT10# and VLV110# and note that each point is allocated to Area A# (where # is your Station number).
3	Display the Station Area Assignment page for your Station by: either Choose Configure→Areas and then click Station Area Assignment or Choose Configure→Hardware→Stations then choose your Station then click on the Area Assignment tab or Choose System Menu→System Configuration→Areas then click Station Area Assignment
4	View the Station Area Assignment page for your Station and note that only Areas S1 and A# are enabled.

continued on next page

Lab Exercise - Areas.....continued

**Examine effect of
Areas on the display
of Point Detail pages
and Alarms**

.....continued

5	Display page 302 and note that you are able to select and operate the parameters of any of the tanks, regardless of the Areas to which they have been allocated. This is because you are at the Mngr access level.
6	Change to the Oper access level.
7	Repeat step 5 above and note that it is only possible to access the parameters of the tank that is allocated to an Area that has been assigned to your Station. This is the Areas function in action.

Groups

What is a Group?

A group is a collection of up to 8 points of any type.
Any point can be allocated to any group.
A point can be allocated to any number of groups.

Configuring a Group

With Supv access choose either:

System Menu→System Configuration→Groups
and choose the required group

or:

Configure→Groups
and choose the required group

Enter a **Group Title** and up to eight **Point IDs**.

For each point also define the **Parameter** to be displayed on the Group Trend and Group Numeric History.

To restrict configuration access to Engr or Mngr security access level check this box

System Configuration

Group 8 Various Point Types

Definition

Title Various Point Types

	Point IDs	Parameter	Point Descriptions
1	LT301	PV	TANK NO. 1 LEVEL CONTROL
2	CPSINE	PV	SYSTEM CLOCK SINEWAVE
3	DevCtl_04	DEVCTLA.GPV	
4	VLV501	DEVCTLA.GPV	Outlet Valve Tank 501
5	LT501	PIDA.PV	Level Control Tank 501
6	Tank_1_SCM	??????	SCM for Tank 501
7	IPC0101	PV	TANK 1 OUTLET VALVE
8	CEE0101	NUMPARRSPAVG	

☐ MNGR or ENGR security level required to change group

[View Group](#)

Configuring a Group

After completing the group configuration choose **View Group** to display the Group Detail.

.....continued

continued on next page

Groups.....continued

Group Page Formats

The format used to display each point's faceplate on a Group page depends on the point type.

For the three Non-Hybrid Controller point types predefined formats are supplied. Customised formats can be used if required.

Since there are no limits to the number or variety of parameters that can be contained within a Hybrid Controller point there are also no limits as to how such points can be displayed in Group pages.

However, to simplify the task of system configuration a number of predefined formats are provided and they will be examined briefly here.

More detail on the variety of parameters available can be obtained by attending the PlantScape Controller Implementation course.

Customising Group Page Formats


We will study how to customise Group page formats during the Display Building section of this course.

continued on next page

Groups.....continued

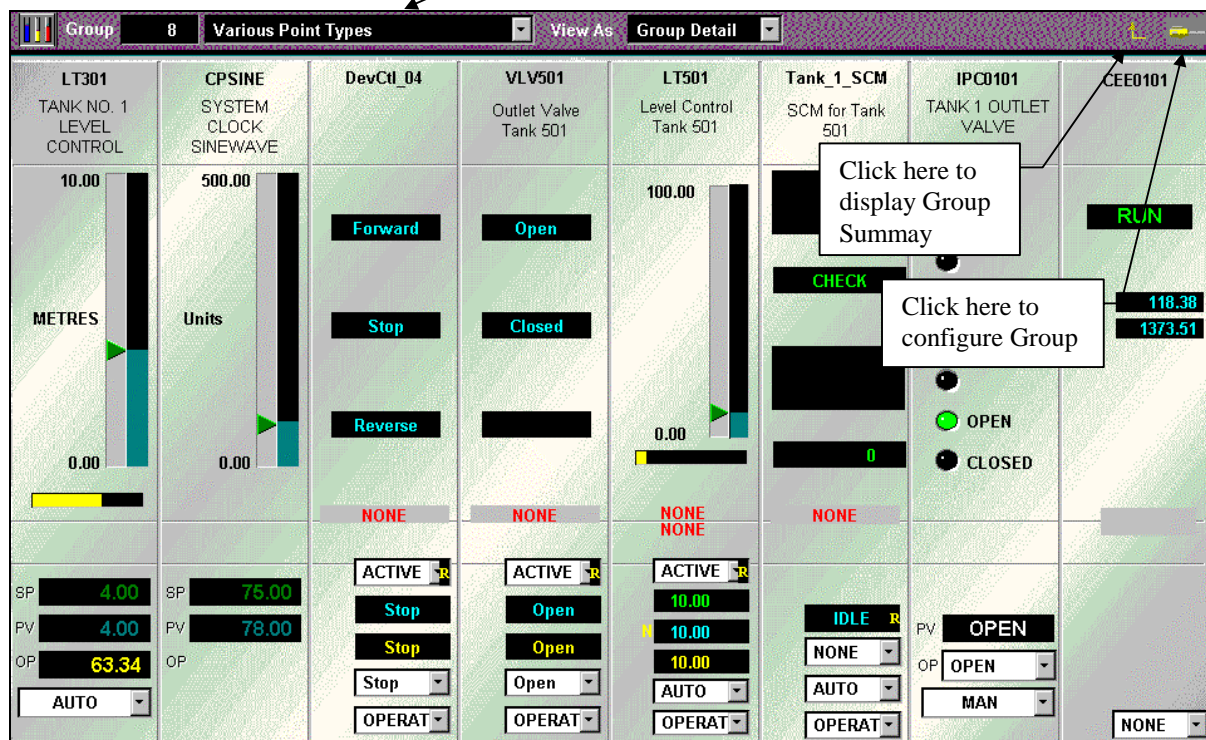
Displaying a Group

To display a Group Detail page:

- either: Choose **System Menu**→**Groups**
and choose the required group
- or: Choose  from the tool bar, followed by **nnn**
where **nnn** is the required Group number
- or: Enter <F6>**nnn**
- or: Enter **Grp nnn**
- or: Choose **View**→**Group Summary**
and choose the required group
- or: Group display function buttons can be configured into
custom graphics or function keys on the keyboard.

Use <Page Down> or <Page Up> to display the next or previous group number.

To change to another Group detail click [here](#) and choose a new Group from the list.



Group Detail

continued on next page

Groups.....continued

Group Trend

Click on the **View As** combobox and choose Group Trend to display the eight points in the Group in a line trend format:



Group Trend

This page accesses the history records (if they exist) for the respective points and displays the corresponding trends.

The vertical scale can be either percentage or engineering units as selected by the user.

The EU range used on the chart will be the greatest of all the points in the Group making points with significantly smaller ranges almost invisible on the chart.

Thus it is recommended to use % for the vertical scale unless all the points have equal, or similar, ranges.

The horizontal scale depends on the history interval and number of samples displayed, these are operator configurable at the top of the page.

The horizontal scroll bar allows the displayed time window to be moved through the history available in the history and archive files.

The **History offset** can be specified to display a specific period in history.

The **Archive directory** can be used to display data from a specific archive directory.

Group Numeric History

The **Archive directory** can be used to display data from a specific archive directory.

Group Numeric History

Lab Exercise - Group Configuration and Usage

Introduction

This lab exercise is designed to establish familiarity with Groups and to demonstrate the steps necessary to establish a new group.
Ask your Course Manager for any assistance if you are not sure what you are expected to do.



Group Configuration and Usage

These steps cover configuring, displaying, and manipulating a Group of points.

Step	Action			
1	Using the method on page 51 of this Student Guide display the Group Configuration page for Group number 1#.			
2	Add the following points to the group (if they are already in the Group reallocate them for the exercise):			
		Position	Point ID	Parameter
	Non-Hybrid Controller Points	1	VLV110#	PV
		2	LT10#	PV
		3	SINEWAVE1	PV
	Hybrid Controller Points	4	LT50#	PIDA.PV
		5	VLV50#	DEVCTLA.PV
		6	Tank_#_SCM	ACTIVELOC. STEP(1)
	<div>Attention</div> <div>You may need to change your security access level, see your Course Manager.</div>			
	3	Return to Oper access level and display the Group Detail by clicking on View Group		
4	Note the way in which the points that you allocated to the Group are displayed.			

continued on next page

Lab Exercise - Group Configuration and Usage.....continued

5	Use the View As combobox to view the Group Trend format.
6	<p>From the Group Trend change the SP of LT10# to 8.0m.</p> <p>Change the trend interval to 5 second and note the effect of the SP change on the Group Trend profile.</p> <p>Return the tank level SP to 5.0m.</p>
7	<p>Display the Group Numeric History.</p> <p>Use the scroll arrows   to scroll the trend data.</p>
8	<p>Note that navigation to other Groups is available using Group Number (select and enter the required Group Number, or use <Page Up> or <Page Down> to the next Group in number sequence) or Group Title.</p>

Trend Sets

What is a Trend Set?

A Trend Set is a collection of up to 8 point parameters of any type displayed against time on a single trend page.

Any point can be allocated to any Trend Set.

Any point parameter can be allocated to any number of Trend Sets.

Attention

Trend Set allocations are independent of Group allocations.

Trend data and History files

If a point that is allocated to a pen on a trend is also assigned to history then the displayed pen will automatically display data from the requisite history file.

If a point that is allocated to a pen on a trend is not assigned to history then the displayed pen be blank initially and will subsequently be updated in real time.

Attention

Data trended in this way will not be added to the history files.

continued on next page

Trend Sets.....continued

Configuring Trends

Unlike Group configuration, Trends may be configured from the Oper access level. This allows each operator to be allocated a personal set of trend pages.

To configure a Trend Set:

Step	Action														
1	Choose either: System Menu→System Configuration→Trends or: Configure→Trends														
2	Select either an existing trend to reconfigure, or an undefined trend to configure. Define the following parameters: <table> <tr> <td>Title</td><td>30 characters maximum</td></tr> <tr> <td>Type</td><td>see page 61 of this <i>Student Guide</i> for details</td></tr> <tr> <td>Interval</td><td>the history file from which to collect data</td></tr> <tr> <td>Range</td><td>the default vertical scale of the chart</td></tr> <tr> <td>Samples</td><td>the default number of history samples displayed</td></tr> <tr> <td>Point ID & Param</td><td>Enter up to eight Point IDs, and the required parameters, to be trended</td></tr> <tr> <td>Checkbox</td><td>Sets required security access level for reconfiguration of this trend</td></tr> </table>	Title	30 characters maximum	Type	see page 61 of this <i>Student Guide</i> for details	Interval	the history file from which to collect data	Range	the default vertical scale of the chart	Samples	the default number of history samples displayed	Point ID & Param	Enter up to eight Point IDs, and the required parameters, to be trended	Checkbox	Sets required security access level for reconfiguration of this trend
Title	30 characters maximum														
Type	see page 61 of this <i>Student Guide</i> for details														
Interval	the history file from which to collect data														
Range	the default vertical scale of the chart														
Samples	the default number of history samples displayed														
Point ID & Param	Enter up to eight Point IDs, and the required parameters, to be trended														
Checkbox	Sets required security access level for reconfiguration of this trend														
3	Click on View Trend to display the Trend page.														

System Configuration | Trend 22 | Team 2 - Multirange

Definition

Title: Team 2 - Multirange

Trend Type: Multirange

Sample Interval: 5 second

Trend range: 10.0000000 .000000000

Samples: 100

☐ MNGR or ENGR security level required to change traces

Traces

Pen on/off	PointID	Parameter	Description	Trend Range	
<input checked="" type="checkbox"/>	LT302	PV	TANK NO. 2 LEVEL CONTROL	.00000000	10.000000
<input checked="" type="checkbox"/>	IPC0102	PV	TANK 2 OUTLET VALVE	.10000000	1.10000000
<input checked="" type="checkbox"/>	CPSINE	PV	SYSTEM CLOCK SINEWAVE	.00000000	500.000000
<input checked="" type="checkbox"/>	LT502	PIDA.PV	Level Control Tank 502	.00000000	100.000000
<input checked="" type="checkbox"/>	VLV502	DEVCTLA.PV	Outlet Valve Tank 502	.00000000	10.000000
<input checked="" type="checkbox"/>				.00000000	100.000000
<input checked="" type="checkbox"/>				.00000000	100.000000
<input checked="" type="checkbox"/>				.00000000	100.000000

History

History offset: 0:00:00


Archive directory:

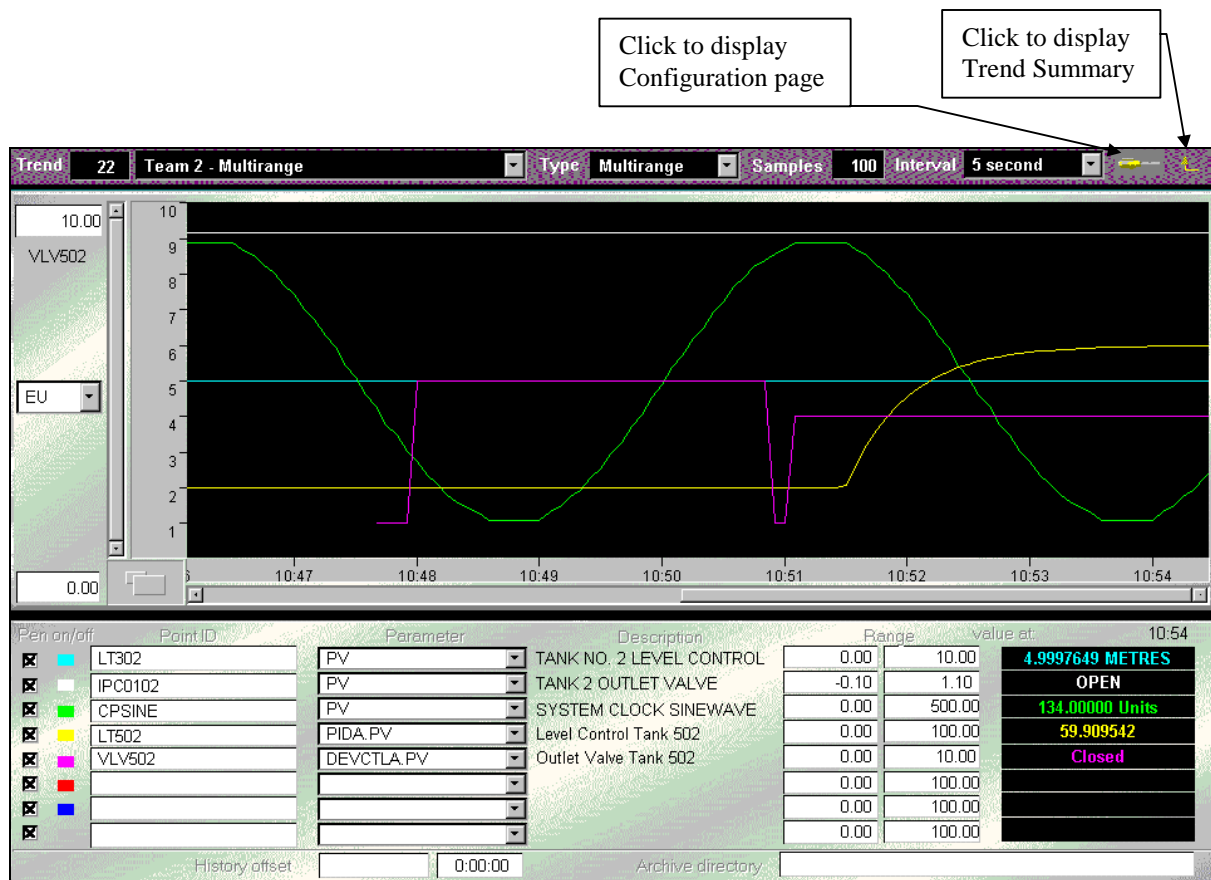
[View Trend](#)

Click to display Trend Configuration Summary

Trend Sets.....continued

Displaying a Trend Set

- Either: Choose **System Menu**→**Trends** and select the required trend,
- or: Choose  from the tool bar, followed by *nnn*
- or: Enter **<F7>nnn**
- or: Enter **Tnd nnn** where *nnn* is the required Trend number
- or: Choose **View**→**Trend Summary** and select the required trend,
- or: Trend display function buttons can be configured into custom graphics or function keys on the keyboard.



Trend page

continued on next page

Trend Sets.....continued

Trend Types

There are a number of different formats which can be used to display a Trend Set:

Multiplot	Displays up to 8 points in a line format. If vertical axis is selected to EU then the vertical axis range corresponds to that of the point with the largest range. If this causes any of the traces to become insignificant then use Multirange.
Multirange	As for multiplot, but each pen can be individually scaled in engineering units (see previous page).
Single	Displays one point using a histogram format.
Dual	Displays two points using a histogram format.
Triple	Displays three points using a histogram format.
Numeric	Displays 30 historic data samples for up to eight points in tabular format.
X-Y	Displays the defined number of samples of two points against each other.

Adjustable Fields

The vertical scale can be either percentage or engineering units as required by the operator. (See the note above concerning multiplot trends).

The horizontal scale depends on the history **Interval** and number of **Samples** displayed, these are operator configurable at the top of the page.

The horizontal scroll bar allows the displayed time window to be moved through the history available in the history and archive files.

The display of each pen, on multiplot and multirange only, can be individually enabled or disabled from the **Pen on/off** checkboxes.

The **History offset** can be specified to display a specific period in history.

The **Archive directory** can be used to display data from a specific archive directory. This function is useful for viewing archived data which is not located in the default archive directory.

continued on next page

Trend Sets.....continued

Obtaining a value readout from a Trend

In the lower right area of most of the trend types is the heading **value at:**. To its right is a time and below are point values.

When a trend is first displayed the right hand edge of the time window is the current time and this will continue to update in real time. The **value at:** time and point values will also default to current time and values.

Clicking the cursor anywhere in the time window will display a cursor at that point and the **value at:** time and point values will change to reflect those at the cursor position.

If History was unable to record a valid value (for example, point scanning was disabled, channel or controller was disabled, server was not running) then the value displayed will be

??????????

and no trend trace will be displayed.

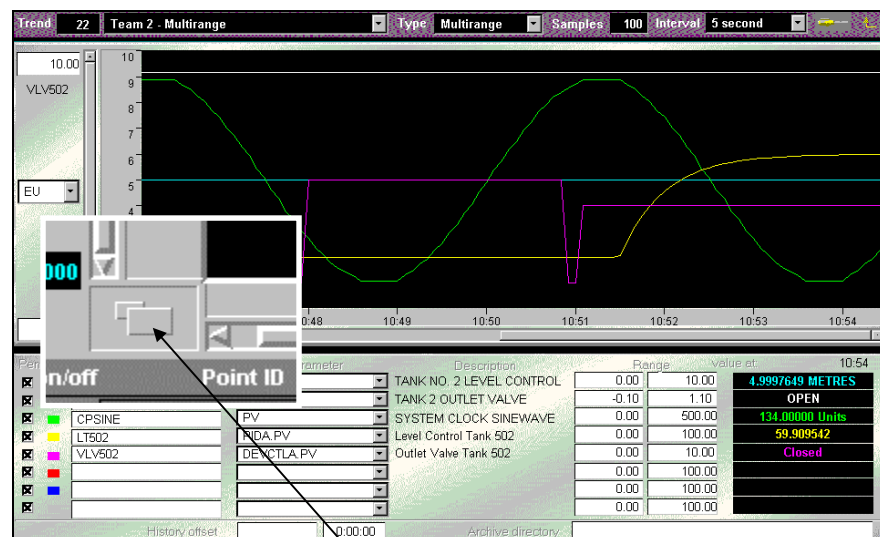
“Zooming” a Trend

To display the pens with greater graphical resolution click and drag a rectangle anywhere in the time window.

When the mouse button is released the rectangle will expand to fill the whole trend window.

This can be repeated until the display resolution limit is reached.

The trend can be restored to its original condition by clicking where indicated below:



Click here
to reset

Lab Exercise - Trend Display Configuration and Usage

Introduction

Proceed with the lab exercise listed below.

Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Trend Configuration and Usage

The following exercise provides familiarity with the general operations required to configure, view and manipulate Trends.

Step	Action			
1	Use a method on page 60 to display Trend #1, then use <Page Down> to display Trend #2 to #7 and note the differences between the different Trend types.			
2	Configure Trend #8 using a method on page number 59 with the following data:			
	Title	Trend for Team #		
	Type	Multirange		
	Interval	5 second		
	Point.Param	VLV110# PV LT10# PV SINEWAVE1 PV	VLV50#.DEVCTLA. PV LT50#.PIDA.PV	
	Samples	100		
3	Click on View Trend to display the Trend page.			
4	Set the vertical axis of the Trend to EU and ensure that the Range of each pen matches that of the corresponding point.			
5	Utilise the Pen on/off checkboxes to turn the pen off for LT10# and then turn it back on. Note the effect this has on the display of the trend profiles.			
6	Use the scroll bar at the bottom of the trend window to scroll the trend data.			
7	Set the History offset (it is recommended to set FIRST time and THEN date) to explore its effect. How far back in to history is data available? Delete the data in the Date field to clear the History offset .			
8	Use the trend zooming facility to explore its effect.			

Notifications

Events File

PlantScope Server records various types of Events. Examples are:

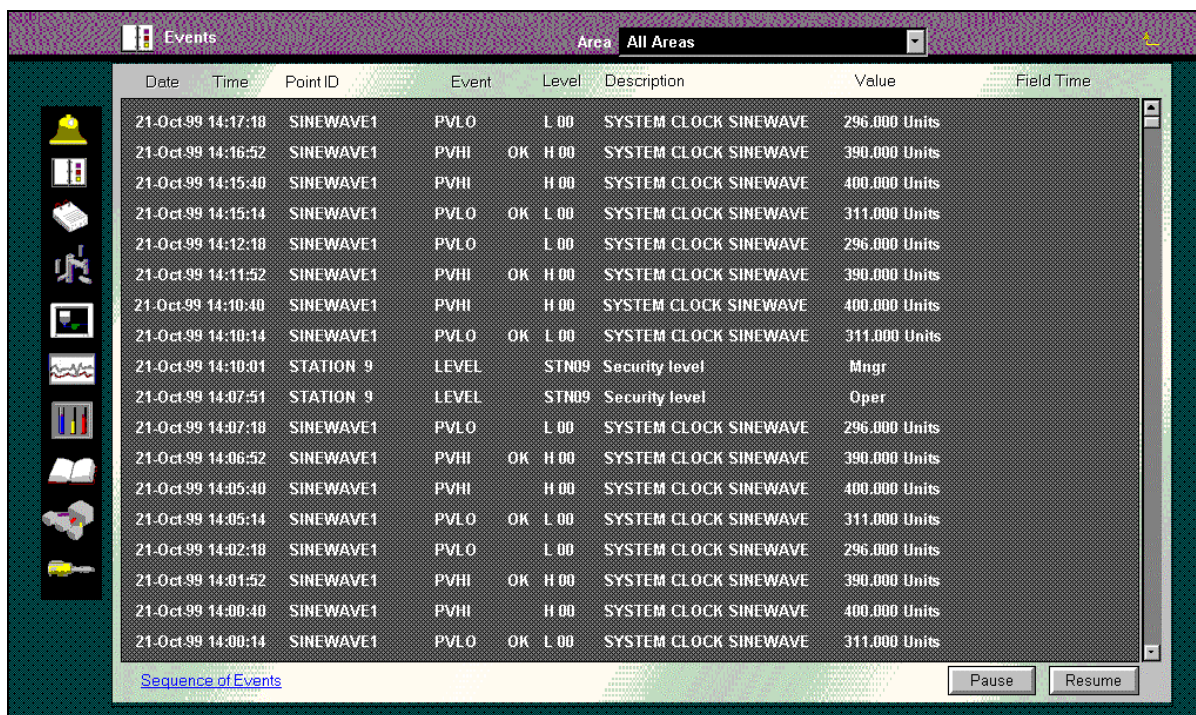
- alarm occurrences
- alarm acknowledgements
- alarm clearances
- Status point PV changes
- operator actions

To view the Events file choose:

View→Events

or

System Menu→Events



Date	Time	Point ID	Event	Level	Description	Value	Field Time
21-Oct-99	14:17:18	SINEWAVE1	PVLO	L 00	SYSTEM CLOCK SINEWAVE	296.000 Units	
21-Oct-99	14:16:52	SINEWAVE1	PVHI	OK H 00	SYSTEM CLOCK SINEWAVE	390.000 Units	
21-Oct-99	14:15:40	SINEWAVE1	PVHI	H 00	SYSTEM CLOCK SINEWAVE	400.000 Units	
21-Oct-99	14:15:14	SINEWAVE1	PVLO	OK L 00	SYSTEM CLOCK SINEWAVE	311.000 Units	
21-Oct-99	14:12:18	SINEWAVE1	PVLO	L 00	SYSTEM CLOCK SINEWAVE	296.000 Units	
21-Oct-99	14:11:52	SINEWAVE1	PVHI	OK H 00	SYSTEM CLOCK SINEWAVE	390.000 Units	
21-Oct-99	14:10:40	SINEWAVE1	PVHI	H 00	SYSTEM CLOCK SINEWAVE	400.000 Units	
21-Oct-99	14:10:14	SINEWAVE1	PVLO	OK L 00	SYSTEM CLOCK SINEWAVE	311.000 Units	
21-Oct-99	14:10:01	STATION 9	LEVEL	STN09	Security level	Mngr	
21-Oct-99	14:07:51	STATION 9	LEVEL	STN09	Security level	Oper	
21-Oct-99	14:07:18	SINEWAVE1	PVLO	L 00	SYSTEM CLOCK SINEWAVE	296.000 Units	
21-Oct-99	14:06:52	SINEWAVE1	PVHI	OK H 00	SYSTEM CLOCK SINEWAVE	390.000 Units	
21-Oct-99	14:05:40	SINEWAVE1	PVHI	H 00	SYSTEM CLOCK SINEWAVE	400.000 Units	
21-Oct-99	14:05:14	SINEWAVE1	PVLO	OK L 00	SYSTEM CLOCK SINEWAVE	311.000 Units	
21-Oct-99	14:02:18	SINEWAVE1	PVLO	L 00	SYSTEM CLOCK SINEWAVE	296.000 Units	
21-Oct-99	14:01:52	SINEWAVE1	PVHI	OK H 00	SYSTEM CLOCK SINEWAVE	390.000 Units	
21-Oct-99	14:00:40	SINEWAVE1	PVHI	H 00	SYSTEM CLOCK SINEWAVE	400.000 Units	
21-Oct-99	14:00:14	SINEWAVE1	PVLO	OK L 00	SYSTEM CLOCK SINEWAVE	311.000 Units	

Pausing Event Summary Update

To make viewing of the **Event Summary** simpler the user is able to inhibit it from being updated.

Press **Pause** to inhibit the **Event Summary** from being updated.

Press **Resume**, or display another page, to re-enable the updating.

View Events in a Specific Area Only

If the Areas function is enabled then, by default, the Event Summary will display events in all the Areas assigned to the user's Station (Station Based Security) or Operator (Operator Based Security) Configuration. By clicking on the **Area** combobox the user can limit the events displayed by choosing one of the Areas listed.

If the Areas function is not enabled then clicking on the **Area** combobox will have no effect.

Sequence of Events

For systems configured to record SOE the **Sequence of Events Summary** can be viewed by clicking on the associated hyperlink.

Extended Event Archiving

Operation

Basic operations are conducted from the Extended Event Archiving Status page which is displayed by choosing:

View→Extended Event Archiving

Extended Event Archiving

Configuration Operations Status

Control

Extended Events Collection Enabled

Status

Extended Events Archiving Status OK [Save Events to Tape for Archiving](#)

Online Extended Event File

Maximum number of records 7500

Next record number 3807

Operation

Save Events to Tape for Archiving Save

Restore Events from Tape for Playback Restore

List Saved Tapes List

View Backup Log View

Only displayed when using tape for saving Archived events

Extended Events Collection

Displays status of Extended Event Collection system. Access to Enable/Disable is available from the Configuration tab (see System Wide Configuration section of this *Student Guide*).

Status

When Extended Event Collection Operation is enabled, the Archiving Status will be one of the following:

OK	Extended Event Archiving functioning correctly
Overload	This status may occur temporarily during periods of high activity and will eventually recover to OK with no adverse effect.
Failed	The Online file is full and cannot archive because the Archive file has not been saved to tape since the previous archive.
Full Disk	There is not enough free disk space for any more events to be added to the extended events Online file. Unwanted files should be deleted from the server's hard disk drive to allow extended event archiving to resume.
Copy Mode	Only relevant to redundant systems.

continued on next page

Extended Event Archiving.....continued

Online Extended Event File

When the **Next record number** equals the **Maximum number of records** an attempt will be made to archive the online events.

Save Archived Events to Tape

If a tape drive is being used to save Archived events the operator will be alerted in two ways when an archive has occurred:

1. An alarm is generated (Urgent priority by default)
2. The message

Save Events to Tape for Archiving

will be displayed next to the Status field.

This message will clear when a Save has been performed.

Attention

Save can only be run from the Server Station since it requires operator interaction with the **ntbackup.exe** program on the server and a tape to be inserted into the tape drive.

Save Procedure

Step	Action
1	Click Save and enter Y to confirm the save request.
2	Label a new tape with the date and time as prompted. This is the date and time that the archive occurred.
3	Insert the tape into the drive and press <Enter>.
4	Ntbackup.exe is started. Follow any prompts and exit ntbackup when the save has completed. Station will display the message: Saved and verified successfully

List Saved Tapes

Displays a list of names (date and time of archive) of all the previously saved tapes.

continued on next page

Extended Event Archiving.....continued

Restore Archived Events from Tape

Copies events from a previously saved tape to the Playback directory using **ntbackup.exe**.

Attention

Restore can only be run from the Server Station since it requires operator interaction with the **ntbackup.exe** program on the server, and the tape holding the events to be restored to be inserted into the tape drive..

Restore Procedure

Step	Action
1	Click on Restore .
2	Enter Y to confirm Restore. Ntbackup will load and a window will open.
3	Choose Window → Tapes then Operations → Catalog .
4	Check the file set on the right hand side of the window.
5	Click Restore and confirm by clicking OK .
6	When the restore has completed click OK and exit from ntbackup. Station will display the message: Restored Successfully

Alarms

Alarm Annunciation


The operator is alerted to an alarm in several ways:

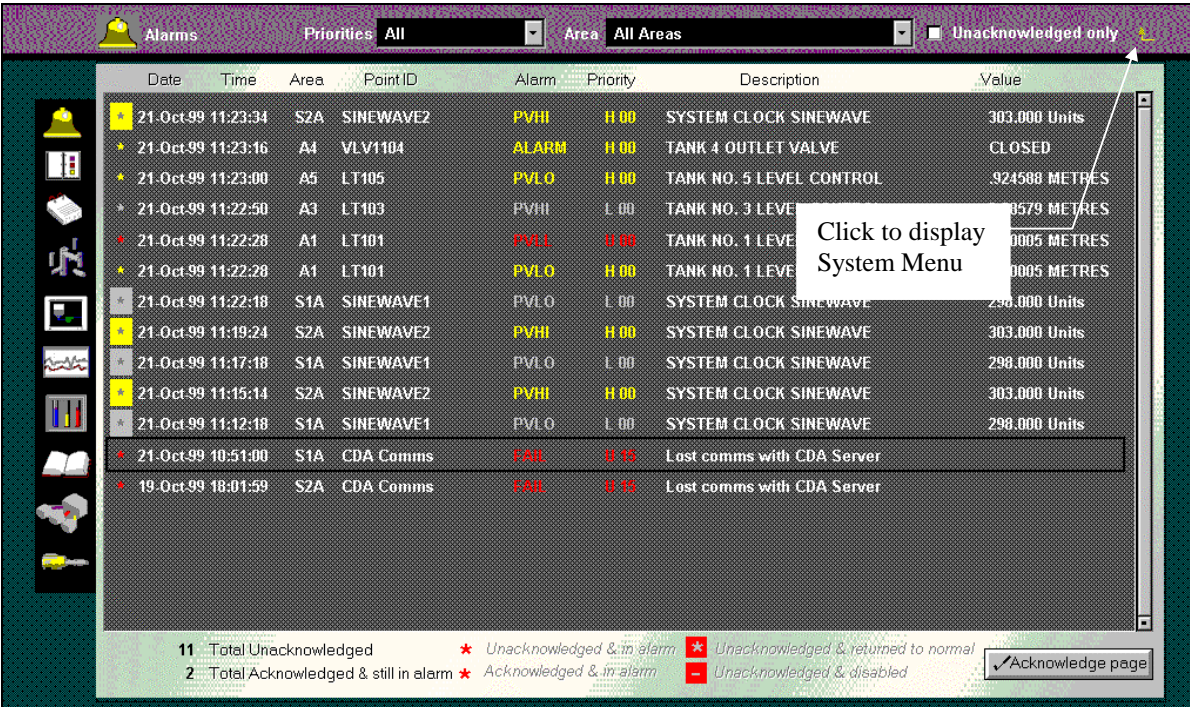
- Audible device at the Station (if configured)
- Display on the Alarm Line
- Alarm Summary Status flashing on the Status Line
- PV flashing red in any page where it is displayed

Alarm Summary

The Alarm Summary lists all current alarms in the server.

It can be viewed in a number of ways:

1	Choosing the  tool on the tool bar
2	Choosing System Menu → Alarms
3	Choosing the Alarm Block in the status line
4	Pressing <F3>
5	Choosing the pulldown menu View → Alarms



Date	Time	Area	PointID	Alarm	Priority	Description	Value
21-Oct-99	11:23:34	S2A	SINEWAVE2	PVHI	H 00	SYSTEM CLOCK SINEWAVE	303.000 Units
21-Oct-99	11:23:16	A4	VLV1104	ALARM	H 00	TANK 4 OUTLET VALVE	CLOSED
21-Oct-99	11:23:00	A5	LT105	PVLO	H 00	TANK NO. 5 LEVEL CONTROL	.924588 METRES
21-Oct-99	11:22:50	A3	LT103	PVHI	L 00	TANK NO. 3 LEVEL	8579 METRES
21-Oct-99	11:22:28	A1	LT101	PVLO	H 00	TANK NO. 1 LEVEL	0005 METRES
21-Oct-99	11:22:28	A1	LT101	PVLO	H 00	TANK NO. 1 LEVEL	0005 METRES
21-Oct-99	11:22:18	S1A	SINEWAVE1	PVLO	L 00	SYSTEM CLOCK SINEWAVE	290.000 Units
21-Oct-99	11:19:24	S2A	SINEWAVE2	PVHI	H 00	SYSTEM CLOCK SINEWAVE	303.000 Units
21-Oct-99	11:17:18	S1A	SINEWAVE1	PVLO	L 00	SYSTEM CLOCK SINEWAVE	290.000 Units
21-Oct-99	11:15:14	S2A	SINEWAVE2	PVHI	H 00	SYSTEM CLOCK SINEWAVE	303.000 Units
21-Oct-99	11:12:18	S1A	SINEWAVE1	PVLO	L 00	SYSTEM CLOCK SINEWAVE	290.000 Units
21-Oct-99	10:51:00	S1A	CDA Comms	LAB	0.75	Lost comms with CDA Server	
19-Oct-99	18:01:59	S2A	CDA Comms	LAB	0.75	Lost comms with CDA Server	

11 Total Unacknowledged * Unacknowledged & in alarm * Unacknowledged & returned to normal
2 Total Acknowledged & still in alarm * Acknowledged & in alarm * Unacknowledged & disabled

✓ Acknowledge page

Alarm Summary

continued on next page

Alarms.....continued

Alarm Summary Priority Filter

If **Individual Alarm Priority** has not been enabled on the System Wide Station Configuration page the **Priorities** checkbox will operate as follows:

Choose **Urgent Only** to display only alarms with Urgent priority,
Choose **High and Urgent** to display only alarms with Urgent or High priorities,
Click on **All** to display alarms with all priorities (Default).

If **Individual Alarm Priority** has been enabled on the System Wide Station Configuration page the **Priorities** checkbox operation will be:

Choose **Urgent only** to display only alarms with Urgent priority,
Choose **High only** to display only alarms with High priority,
Choose **Low** to display only alarms with Low priority (Default)

View Unacknowledged Alarms Only

If the **Unacknowledged only** checkbox is checked then only unacknowledged alarms will be displayed.

If the **Unacknowledged only** checkbox is unchecked then both unacknowledged and acknowledged alarms will be displayed (Default)

View Alarms in a Specific Area Only

If the Areas function is enabled then, by default, the Alarm Summary and Alarm Line will display alarms in all the Areas assigned to the user's Station (Station Based Security) or Operator (Operator Based Security) Configuration.

By clicking on the **Area** combobox the user can limit the alarms displayed by choosing one of the Areas listed.

If the Areas function is not enabled then clicking on the **Area** combobox will have no effect.

Silencing Audible Alarm

The Station Audible can be silenced regardless of which page is currently on display.

Without selecting any parameter on the screen:

either:

click on the Alarm Silence tool



or:

press <F4>.

Attention


This action will silence the audible only at the station where it was initiated.

continued on next page

Alarms.....continued

Acknowledging individual Alarms

This may be done by selecting any display field (on any page) associated with the point in alarm and then:

either: clicking on the Alarm Acknowledge tool 
or: pressing <F4>.


Attention

This action will acknowledge the alarm either on the local Server only, or on all Servers in the system, depending on configuration.

Attention

This action will acknowledge the alarm at all stations (subject to the previous note) and silence the audible at the station where the acknowledgement was initiated.
At all other stations the audible will only silence when there are no unacknowledged alarms present or when silenced from each station individually.

Acknowledging a Page of Alarms

Clicking on the  **Acknowledge page** button in the bottom right corner of the Alarm Summary will acknowledge all the unacknowledged alarms that are on view.


This action can be enabled or disabled as part of the System Wide Station Configuration.

Associated Page

An Associated Page can be configured individually for each point in the system.

As an example this page would be relevant to the selected point and provide further information concerning any possible alarm.

To use this function:

Step	Action
1	When a new alarm is displayed in the Alarm Line: either: Choose View→Associated Page or: Click  on the tool bar or: Press <F2>

continued on next page

Alarms.....continued

Associated Page

.....continued

2	<p>The Station will display the Associated Page number configured for the point in the alarm line.</p> <div><p>Attention</p><p>If there is no point in the alarm line then Station will display the message:</p><p>Point not selected</p><p>If any parameter of any point on any page is selected before the above action, then the Station will display the associated page for that point rather than the point in the alarm line.</p></div>
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Possible Alarm Response Procedures

Each user will have their own procedures on how alarms must be responded to.

The following are possible procedures on which these can be based.

Step	Action
1	Silence Alarm at your station <F4>
2	Display the new alarm's Associated Page <F2>
3	Select and acknowledge the alarm
4	Take remedial action

Step	Action
1	Silence Alarm at your station <F4>
2	Display the Alarm Summary <F3>
3	Select and acknowledge the alarm, or Acknowledge a Page of alarms
4	Display required page and take remedial action

Messages

Overview

There are other messages that can be viewed by the operator that do not get recorded in the events file.

These messages can come from one of four sources:

- TDC 3000 Multifunction Controllers
- PlantScape Server Application Programs
- Generated by a Hybrid Controller function block
- Generated by a non-Hybrid Controller point going into alarm

Viewing the Message Summary

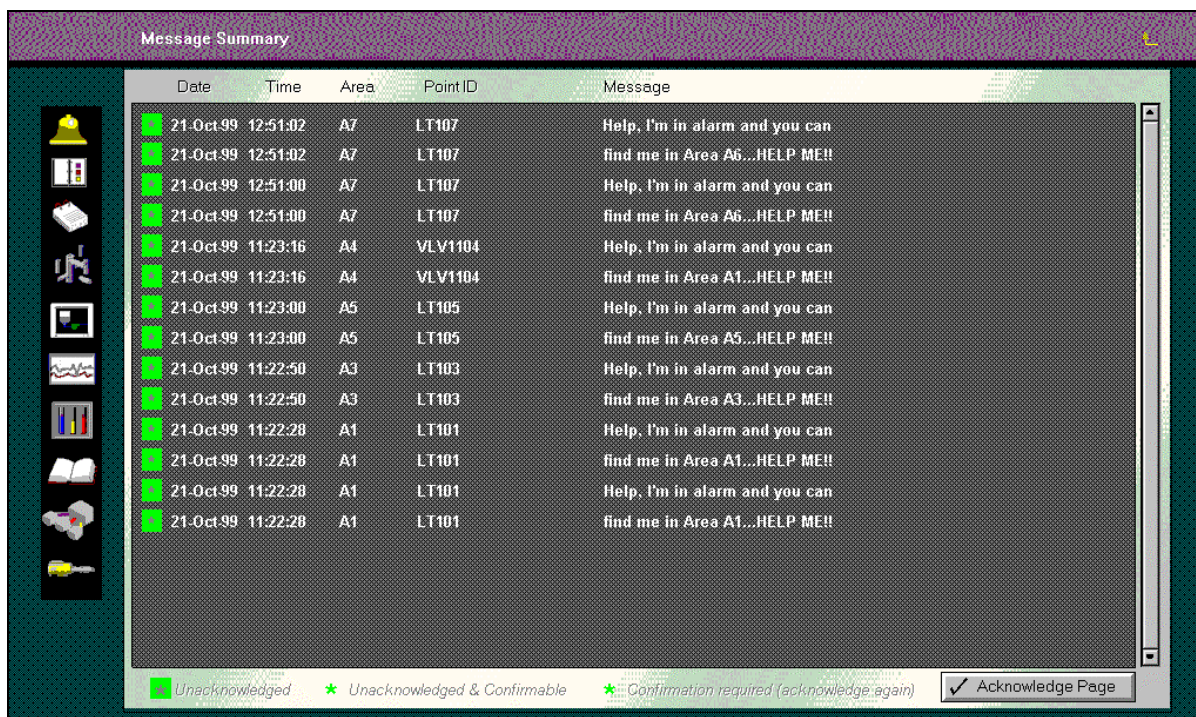
Choose the Message Block in the status line

or

System Menu→Messages

Attention

Each message consists of two contiguous entries.



Date	Time	Area	Point ID	Message
21-Oct-99	12:51:02	A7	LT107	Help, I'm in alarm and you can
21-Oct-99	12:51:02	A7	LT107	find me in Area A6...HELP ME!!
21-Oct-99	12:51:00	A7	LT107	Help, I'm in alarm and you can
21-Oct-99	12:51:00	A7	LT107	find me in Area A6...HELP ME!!
21-Oct-99	11:23:16	A4	VLV1104	Help, I'm in alarm and you can
21-Oct-99	11:23:16	A4	VLV1104	find me in Area A1...HELP ME!!
21-Oct-99	11:23:00	A5	LT105	Help, I'm in alarm and you can
21-Oct-99	11:23:00	A5	LT105	find me in Area A5...HELP ME!!
21-Oct-99	11:22:50	A3	LT103	Help, I'm in alarm and you can
21-Oct-99	11:22:50	A3	LT103	find me in Area A3...HELP ME!!
21-Oct-99	11:22:28	A1	LT101	Help, I'm in alarm and you can
21-Oct-99	11:22:28	A1	LT101	find me in Area A1...HELP ME!!
21-Oct-99	11:22:28	A1	LT101	Help, I'm in alarm and you can
21-Oct-99	11:22:28	A1	LT101	find me in Area A1...HELP ME!!

Unacknowledged * Unacknowledged & Confirmable * Confirmation required (acknowledge again) ✓ Acknowledge Page

Message Summary

continued on next page

Messages.....continued

Acknowledging individual Messages

Select the required message and:

either: click on the Alarm Acknowledge tool
or: press <F4>.



Attention

Each entry requires acknowledging separately.

Certain messages from TDC 3000 Multifunction Controllers and the PlantScape Hybrid Controllers require to be acknowledged a second time (confirmation) to remove them from the Message Summary.

Acknowledging a page of Messages

Clicking on the **Acknowledge Page** button in the bottom right corner of the Message Summary will acknowledge all the unacknowledged messages that are on view.

This action can be enabled or disabled as part of the Server Wide Station Configuration.

Lab Exercise - Notifications

Event Summary



On successful completion of this exercise the student will be able to display the Event Summary and utilise the controls available on this page.

Step	Action
1	Display the Event Summary using a method from page 64.
2	Use the scroll bars on the right hand side, and <Page Up> and <Page Down>, to scroll through the events in the event file and note the variety of entries. See your Course Manager if you do not understand any entries.
3	Reset the scroll bar to view the most recent events.
4	Change your security access level from Oper to Engr. Note that the event was added to your Event Summary.
5	Click Pause . Change your security access level from Engr to Oper. Note that the event was not added to your Event Summary.
6	Click Resume and press <Esc>. Note that Event Summary is updated with the previous event(s).

Lab Exercise - Notifications.....continued

Alarm and Message Handling

On successful completion of this exercise the student will be able to detect, respond to, and manage alarms and any messages generated by them.


Step	Action
1	Ensure that your Course Manager enables Server Wide Point Alarming and your Station's audible alarm (if available).
2	Display the Holding Tanks on page 302.
3	Change the SP of LT10# (level of tank #) to 5.0 metres. Wait for the PV to stabilise.
4	Increase the SP of LT10# to 9.3 metres causing the tank level to go into PV High alarm. Take note of the methods of annunciation used by station: <ul style="list-style-type: none">• audible (if available)• alarm line entry• PV red and flashing (Group and Detail)
5	Click on  to silence the audible (if available).
6	Display the Alarm Summary. Acknowledge the alarm from this page by selecting the alarm entry for LT10# and then clicking on the Alarm Acknowledge tool  . Note the effect on the entry for LT10#.
7	Display Group Number 1. Increase the SP of LT10# to 9.7 metres causing the tank level to go into PV High High alarm.

Continued on next page

Lab Exercise - Notifications.....continued

Alarm and Message Handling

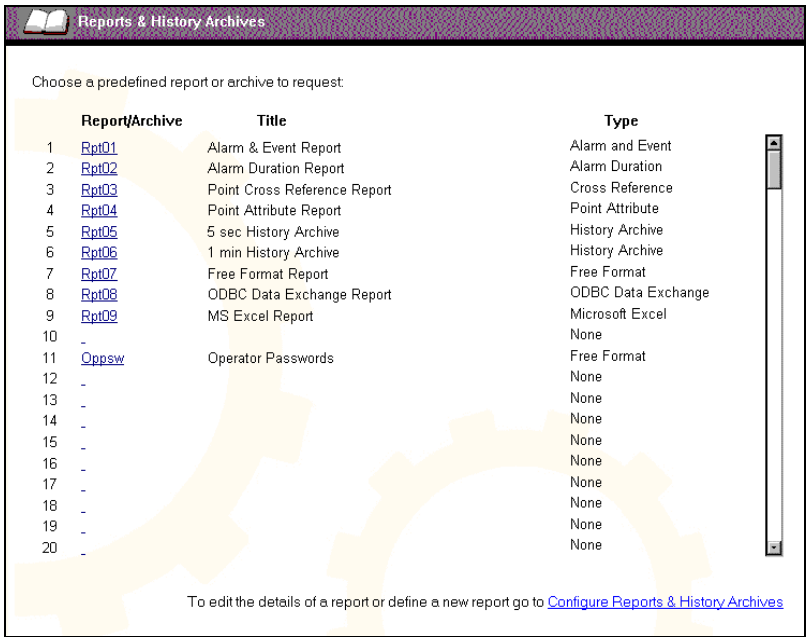
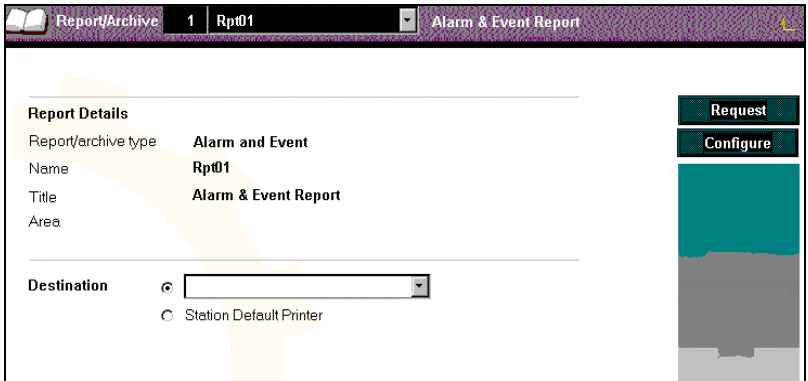
.....continued

8	<p>Display the Alarm Summary.</p> <p>Note that the PV High alarm is acknowledged whilst the PV High High alarm is unacknowledged.</p> <p>Check the Unacknowledged only checkbox and note that the PV High alarm is removed from the Alarm Summary.</p> <p>Uncheck the Unacknowledged only checkbox and then return to the Holding Tanks page (302).</p>
9	<p>Reduce the SP for LT10# back to 5.0 metres and wait for the PV to stabilise.</p> <p>Return to the Alarm Summary and note that the PV High High alarm is indicated as being unacknowledged but no longer in alarm.</p> <p>Acknowledge the alarm</p>
10	<p>Display Group Number 2.</p> <p>Set the OP of VLV110# to CLOSED</p> <div data-bbox="730 966 1347 1113" style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Attention</p> <p>Ensure the valve is in the correct Mode for operation</p> </div> <p>The CLOSED state of VLV110# has been configured to be an alarm condition.</p>
11	<p>Set the OP of VLV110# (Tank Outlet Valve) to OPEN.</p> <p>Press <F2> or click  to display the associated page of VLV110# (page 31#).</p>
12	<p>Display the Alarm Summary.</p> <p>Acknowledge all the alarms by clicking ✓ Acknowledge page.</p>
13	<p>Display the Message Summary.</p> <p>Acknowledge all the messages by clicking ✓ Acknowledge Page.</p>

Requesting Reports

Requesting a Report

To request a report follow this procedure:

Step	Action
1	<p>Display the Report and History Archives Summary by:</p> <p>either: choose System Menu→ Reports and History Archives</p> <p>or: choose Action→Request Report</p> 
2	<p>Scroll to the required Report and select it to display the Report Details:</p> 
3	<p>Define the printer to which the report will be sent by choosing either the Station Default Printer, or by clicking in the combobox and choosing any printer listed.</p> <p>If no printer is specified then the report output will be displayed in the Station window from where it was requested.</p>
4	<p>Click Request to demand the report.</p>

Requesting Reports.....continued

Alternative Method to Request a Report Enter the command **rpt n** (where n is the report name or number)

Report Types

Various report types are available.
They are listed here for your information:

Alarm Event	Enables the selection of records from the Events file according criteria such as start and finish time, operator ID, Point ID, Alarm Priority.
Alarm Duration	Provides a summary of how long points were in an Alarm state during a selected time period.
History Archive	Provides a method of copying selected history files to an Archive directory.
Point Cross Reference	Gives information of where in the system Points appear, for example which Trends, Groups and Displays.
Point Attribute	Lists Points with one of the following attributes: <ul style="list-style-type: none">• Alarming or Scanning inhibited,• whose PVs have “Bad Values” (that is, there have been data acquisition errors), or• whose Modes are Manual.
Free Format	Has the facility to access any Point parameter and perform arithmetic functions. If printed output is produced then it can be formatted by the writer.
ODBC Data Exchange	Enables the exchange of data between the Server realtime database and an ODBC compatible database.
Sequence of Events	Only available for points which are sourced from a Honeywell TDC 3000 PIU.
Downtime Duration	Enables the selection of Delays from the Delay file according to criteria such as Category, Reason, and start and finish time. This report type is only applicable if the Downtime Analysis option has been implemented.
Microsoft Excel	Enables a MS Excel spreadsheet to be opened, its contents actioned and a copy made, each time the report runs.