

PAC Systems T2550 PAC Tutorial



User Guide

HA029723 Issue 2

November 2012

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CHAPTER 1 DATA RECORDING AND ARCHIVING

Data Recording and Data Archiving is used to create a record of selected fields from an instrument. The recorded field values can be archived and displayed at a later date. The purpose is to provide

- General audit records (for subsequent analysis with MS Excel, for instance)
- Quality control of product and plant
- Performance monitoring

The main sections are how to

- Data recording in the instrument strategy
- Data archiving in the instrument strategy

The recorded data can then be displayed on a chart using **Review**.

Note The following instructions assume the FTP Server has already been installed. However, instructions for installing an FTP Server are supplied in Appendix A.

1.1 WHAT ARE DATA RECORDING AND DATA ARCHIVING ?

Recording data is the process of writing groups of values, data recording groups, of selected block fields in the database to Data Recording files, .uhh, in an instrument's non-volatile internal flash memory. This memory is maintained during a power outage. The data stored in the .uhh files can be examined using **Review**.

Note The Data Recording configuration is only applied after the configuration has been downloaded with the database file, .dbf.

Archiving data is the process of pushing the recorded values from the internal flash memory to .uhh files in an archive directory on an FTP Server. FTP is a commonly used file transfer mechanism. An instrument will operate as an FTP Client to up to three FTP Servers for the purpose of transferring .uhh files from the instrument to a remote computer using FTP. Archived .uhh files can be automatically imported in to **Review** from the directory on the configured FTP Server, see *FTP (File Transfer Protocol) Server section*.

- *Displaying* data is the process of creating a chart from the .uhh files stored in the FTP Server. A chart can be output as an electronic file, and/or a printed hard copy providing a physical record of the selected field values recorded in the instrument.

Note Review can be configured to pull files directly from the instrument, but this is not recommended.

1.2 QUICK START TO DATA RECORDING

These instructions assume that the instrument firmware and the required Licence (D10 to D90) are already installed.

To configure the instrument data recording,

- 1 Open the database file, .dbf, of the instrument using LINtools Engineering Studio. Click

Start > Programs > ... > LINtools Engineering Studio

*Note The **Get me started** dialog may appear if LINtools was not opened via a .dbf. This dialog allows you to use one of the more common options when starting LINtools.*

When the .dbf opens, the blocks are displayed on the worksheet and the **Data Recording Configurator** icon appears in the Contents pane, and allows more precise configuration of fields.

- 2 Open the block to display the block fields in the **Object Properties** pane. Select the required field and right-click to display the context menu.

- Alternatively, select the **Block** containing the fields that you want to record, and right-click to display the context menu.

- 3 Select the **Add to Data Recording** command, then the **New Group** command from the context menu.

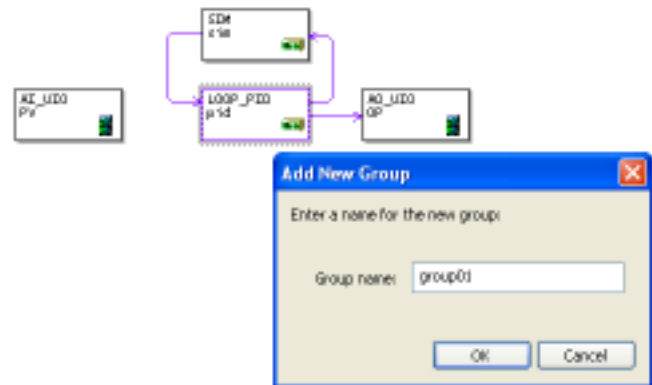
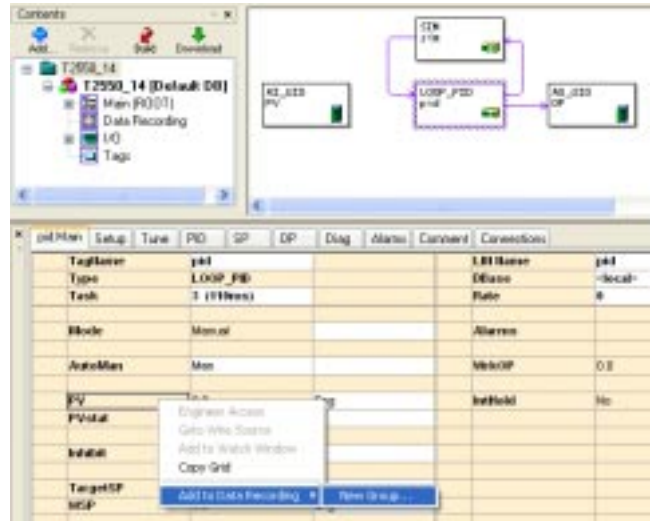
- 4 A **New Group** dialog appears. Enter a name and press **OK** to confirm.

The name is used to identify the data recording group when displaying selected values.

- 5 When the group name is confirmed, the **DataRec** compound automatically appears on the .dbf worksheet. It contains all the blocks required for Data Recording, an RGROUP block used for controlling and managing the associated data recording group, and two diagnostic blocks used to help if problems occur.

- If a specific field was selected, it will be recorded in this group.
- If a block was selected, a default selection of its' fields will be recorded in this group.

- 6 Select the **Data Recording Configurator** icon, then the **Fields** page to show the fields that will be recorded, as below.



Field Name	Group	Description	Format	Colour	Min/Max	SpanLow	SpanHigh	ZeroLow	ZeroHigh	Active	Inactive
pid/VtrOP	group01	pid/VtrOP		Green	0.000000	1.800000	0.000000	100.00000			
pid/FV	group01	pid/FV		Red	0.000000	1.800000	0.000000	100.00000			
pid/VSP	group01	pid/VSP		Blue	0.000000	1.800000	0.000000	100.00000			

1.2 QUICK START TO DATA RECORDING (Cont.)

Data Recording and Data Archiving are configured using LINtools Engineering Studio. The Data Recording features are enabled in **LINtools** when data recording is supported by the instrument. Additional Groups can be added using a context menu from a Block or Field in the database, or via the **Groups** page in the Data Recording grid. Fields are added to Data Recording Groups using a context menu command in the database editor or from the **Blocks** page, or **Field** page in the Data Recording Configurator. The completed configuration is saved and automatically downloaded with the database file, .dbf.

Note The context menu also allows a selected Data Recording Group to be deleted or a data value to be removed from a data recording group.

To support Data Recording, a DataRec compound is automatically created when the first field(s) is selected. It contains all blocks required for data recording, an RGROUP block, an RARCDIAG block and an RMEMDIAG block.

- The RGROUP block provides run-time control and monitoring of the Data Recording, and identifies an individual Data Recording Group. Each group of recorded values is associated with a single RGROUP block.
- The RARCDIAG block provides monitoring and diagnostics information for both primary and secondary modules of an I/O subsystem when archiving recorded data to a specified FTP Server via FTP.
- The RMEMDIAG block provides monitoring and diagnostics information about the flash memory in both primary and secondary modules of an I/O subsystem used for historical storage of recorded data.

The Data Recording and Data Archiving process is shown below.

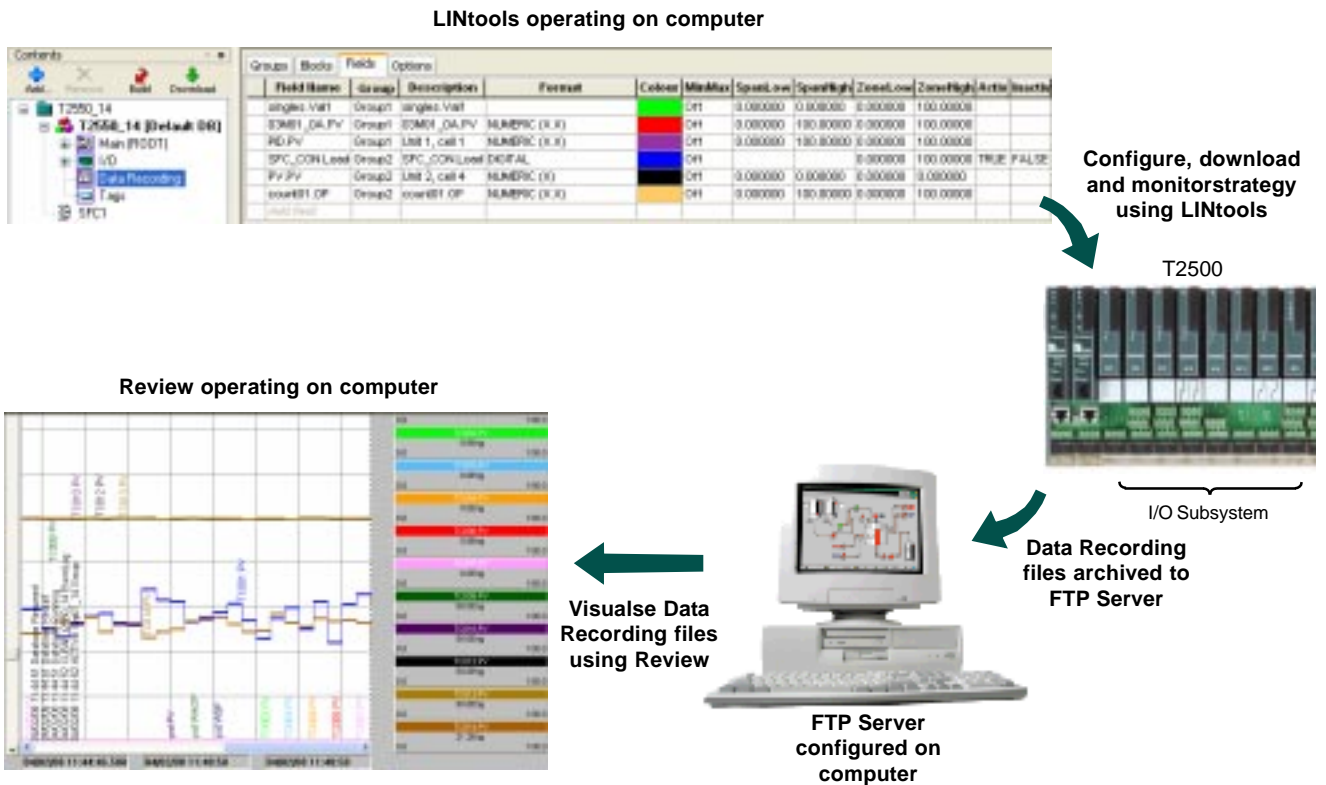


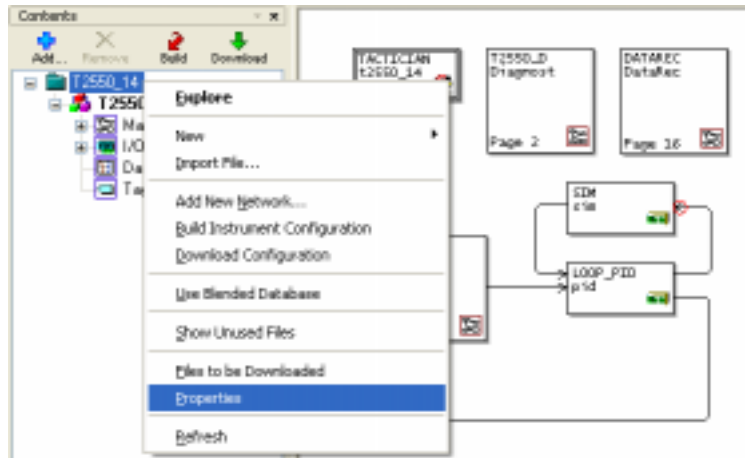
Figure 1-1 Data Management Configuration

1.3 QUICK START TO DATA ARCHIVING

The image shown here is an example of how the **Instrument Options** page should appear when finally configured.

To configure the instrument data archiving,

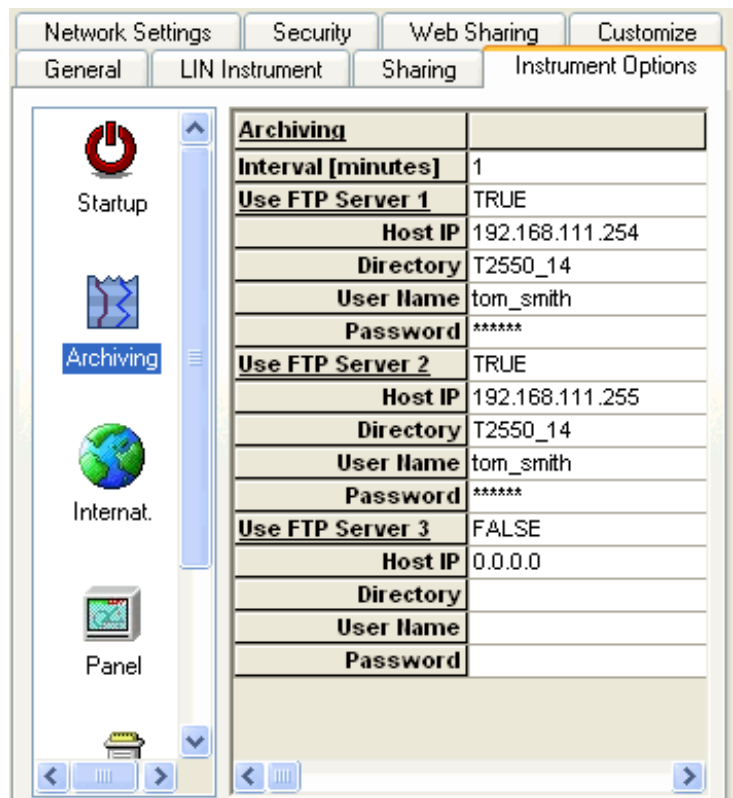
- 1 Select the Instrument configuration folder in the Contents pane in LINtools Engineering Studio, and right-click to display the context menu. Select the **Properties** command to open the **Instrument Properties** dialog.
- 2 The **Instrument Properties** dialog appears. Select the **Instrument Options** page to display the configuration parameters for various aspects of the instrument, e.g. HMI settings, Modbus or Profibus ports configuration, etc.



- 3 Select the **Archiving** category. This shows parameters associated with archiving configuration.

Define the FTP Servers as required, i.e. FTP Server 1, FTP Server 2 and FTP Server 3.

- Enable the **Use FTP Server 1**. Set this TRUE to enable the recorded values to be archived to the FTP Server configured at the specified IP address (**HostIP**), see *FTP (File Transfer Protocol) Server section*.
- Set the **Host IP**. This is the IP address of the FTP Server.
- Set the **Directory** path. This is the directory path to the archive directory in the defined FTP Server.
- Set the **User Name**. This is the user name required to access the archive directory in the defined FTP Server. This is used in conjunction with the password configured below (**Password**).
- Set the **Password**. This is the password associated with the corresponding User Name required to access the archive directory in the FTP server. This displays the **Enter New Password** dialog.



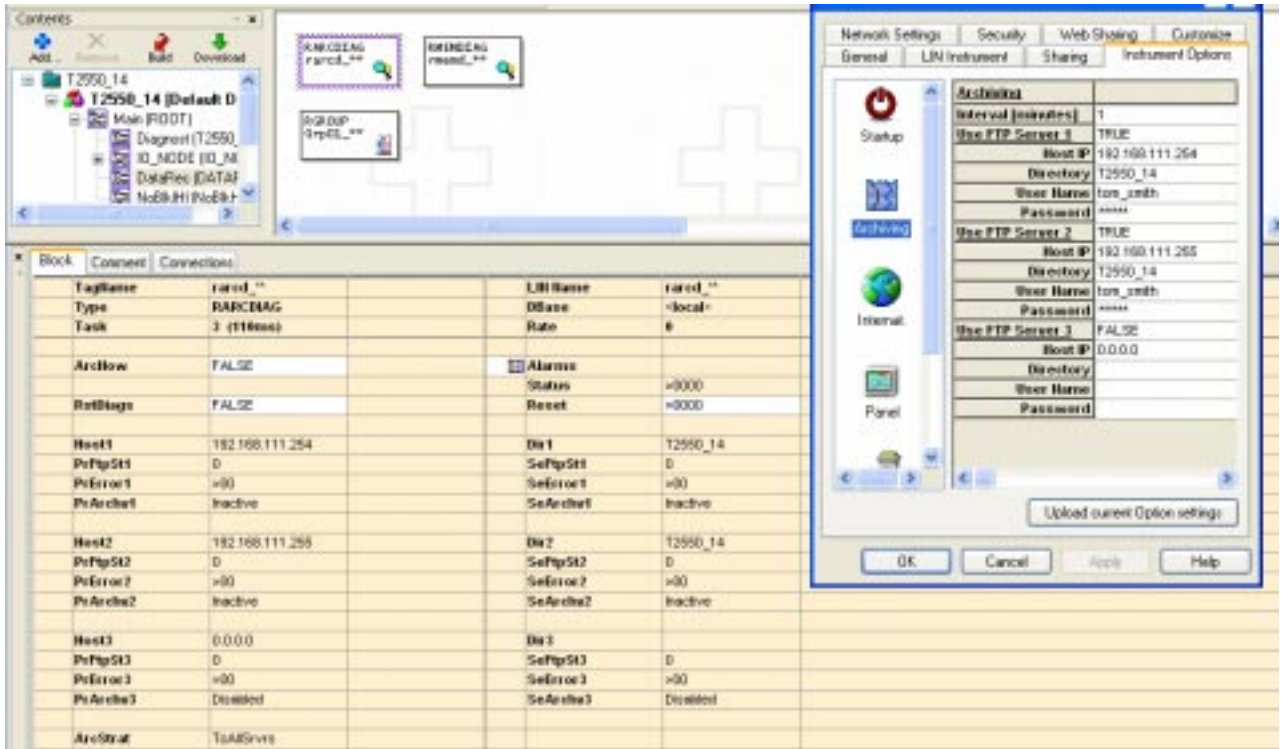
Note The example shows a Tom Smith Windows User account is being used to access the FTP Server when archiving the .uhh files.

1.3 QUICK START TO DATA ARCHIVING (Cont.)

- 4 Press **OK** to confirm the changes to the instrument configuration. Before the **Instrument Properties** dialog can close further dialogs appear.
 - A dialog is displayed requesting that the changes are downloaded to the instrument. Press **Yes** to confirm. operate as a duplex unit synchronise the primary and secondary modules.

Note Inspect the RARCDIAG block in the DataRec compound to diagnose problems that occur when archiving, see Troubleshooting section.

The following image is an example of how the .dbf and **Instrument Properties** dialog should appear.



1.4 HOW TO...

In this section, you will be guided through additional tasks used to configure the recording. These tasks will help you when configuring the data recording in the instrument, and include instructions for changing how a field will appear when displayed on a chart, and creating a chart.

1.4.1 Add fields to a data recording group

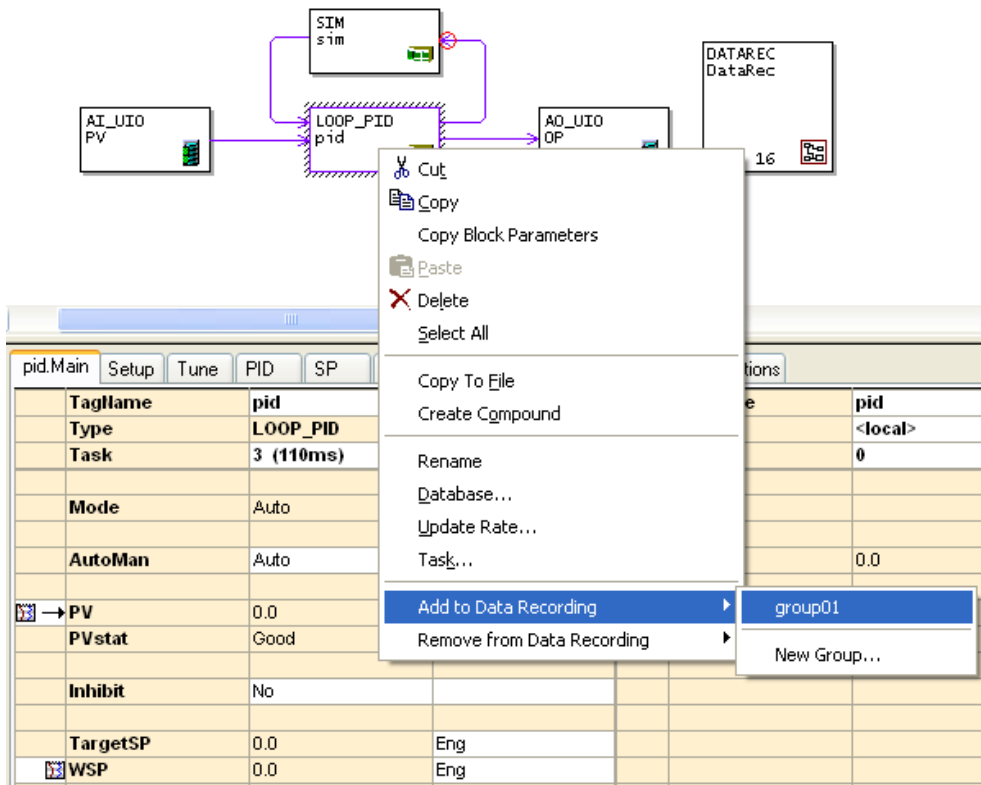
Further fields can be added to existing data recording groups, or to new groups. As fields are added and new groups are created the recording time of each group in the instrument will reduce, as shown in the **(Est.) Memory Duration** column on the **Groups** page of the **Data Recording** grid.

The **Add to Data Recording** command is available on a context menu when,

- single or multiple compounds or blocks are selected in the Function Block Diagram, or the Block list view
- A field is selected in the **Object Properties** pane
- single or multiple compounds, blocks, or fields are selected in the **Find** dialog

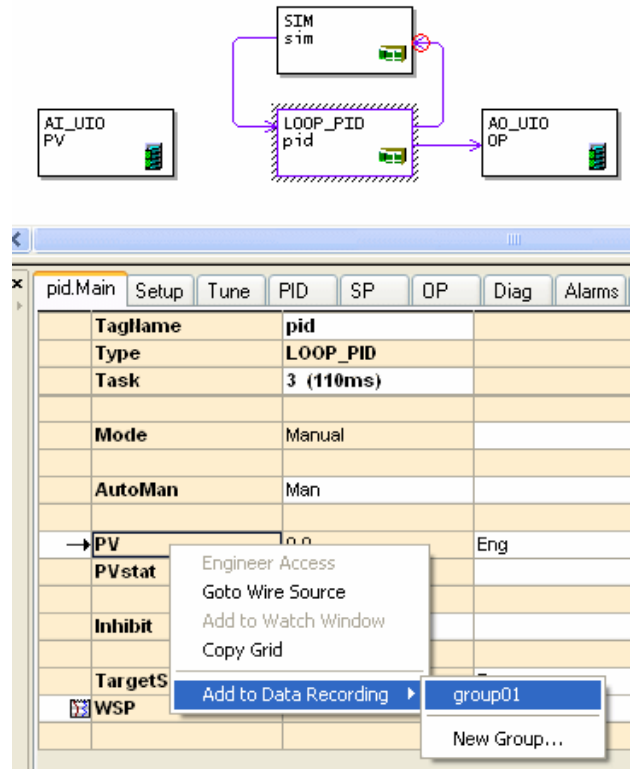
Default fields and specific fields can also be added to a data recording group using a picklist available from the **Blocks** page and **Fields** page of the **Data Recording** grid, respectively.

If the command is selected from a compound or block, a default selection of fields from the block(s) will be added to the specified data recording group. The default selection will always include all the Alarms in the block. You can also add all the default selection of fields from multiple blocks by selecting multiple compounds or blocks.



1.4.1 Add fields to a data recording group (Cont.)

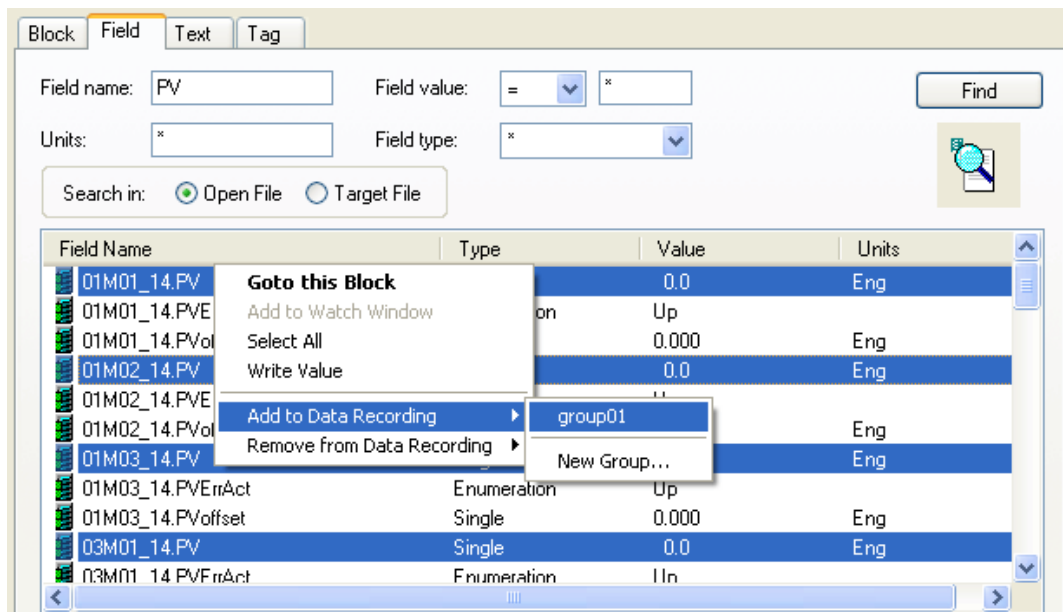
If the command is selected from a field in the **Object Properties** pane, only the selected field will be added to the data recording group.



Using the **Find** dialog allows you to quickly find and select a field with the same or similar name in multiple blocks and add them to the data recording configuration. This is an easy way to quickly add many fields to the recording, e.g. after finding all the PV fields in the database, you can add them all to the recording with one click. This allows you to add the,

- default fields of blocks that matched the search criteria
- only specific fields that matched the search criteria

Note You can also add blocks and fields to the recording using the Blocks page or Fields page of the Data Recording Configurator, as appropriate.



1.4.1 Add fields to a data recording group (Cont.)

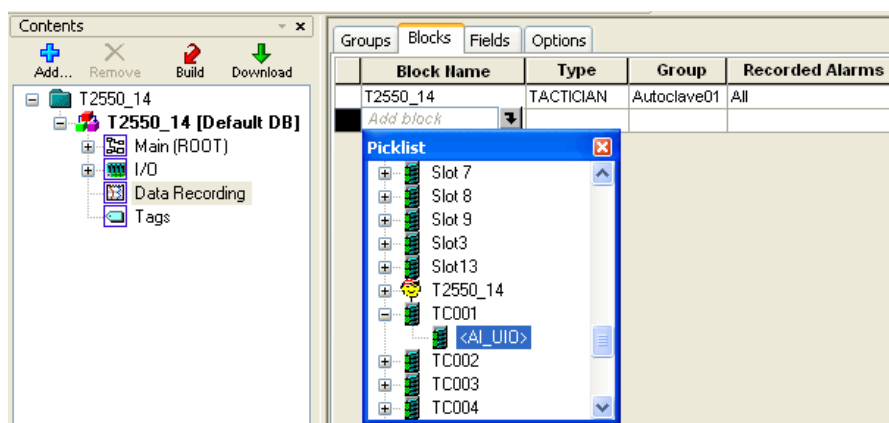
When the **Data Recording** grid is open, you can use the **Blocks** page to add default fields to the first available data recording group.

- Select the **Blocks** page to show information about each block in the recording.
- **Block Name** column shows the names of recorded blocks.

Click the **Add block** field and select the required block from the picklist displayed. This adds a default selection of the blocks' fields.

When the required block is selected, the **Recorded Alarms** shows **All**. This indicates that all Alarms for this block will be recorded. **Recorded Alarms** is set to **All** by default, but specific alarms can be configured by editing fields on a dialog displayed when the Recorded Alarms field is selected.

The associated block information is displayed in the **Object Properties** pane.



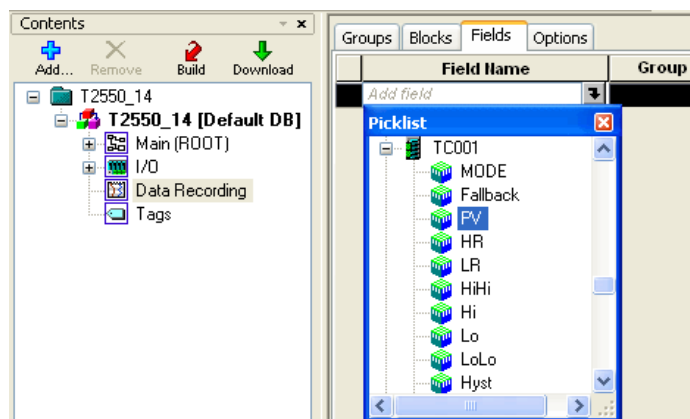
When the **Data Recording** grid is open, you can use the **Fields** page to add specific fields to the first available data recording group.

- Select the **Fields** page to show individual display information about each specific block in the recording.
- **Field Name** column shows the names of recorded block fields.

Click the Add field field and select the required block field from the picklist displayed. This adds the block field to the data recording, for the first Data Recording Group available.

Note While this page is displayed, you may want to configure the appearance of the selected field when it is displayed on a chart.

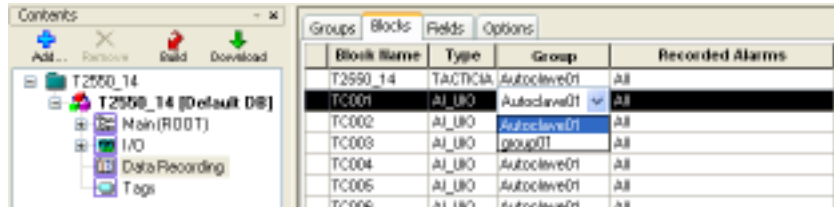
You can remove fields from the data recording configuration by right-clicking the field in the **Object Properties** pane or the **Find** dialog and selecting **Remove from Data Recording** command. You can also select compounds and block in the Function Block Diagram, or the Block list view and use the **Remove from Data Recording** command to remove all the selected blocks' fields from the specified data recording group.



1.4.2 Change the data recording group

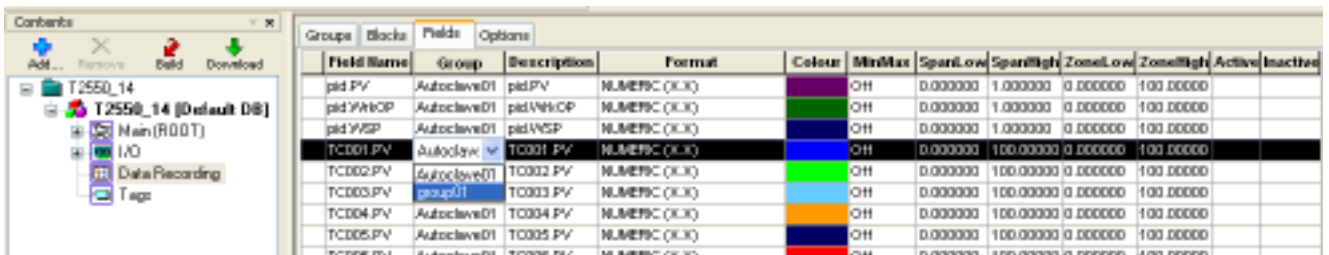
When the Data Recording grid is open, you can use the **Blocks** page, see below, to change the data recording group of default fields.

- Select the **Blocks** page to show information about each block in the recording.
- **Group** column lists all Data Recording Groups in the instrument strategy. Click the associated **Group** field and select the required Data Recording Group from the picklist displayed. The fields will be recorded in the specified group after the configuration has been downloaded.



When the Data Recording grid is open, you can use the **Fields** page, see below, to change the data recording group of a specific field.

- Select the **Fields** page to show individual display information about each specific block in the recording.
- **Group** column lists all Data Recording Groups in the instrument strategy. Click the associated **Group** field and select the required Data Recording Group from the picklist displayed.



1.4.3 Configure the recorded Alarms

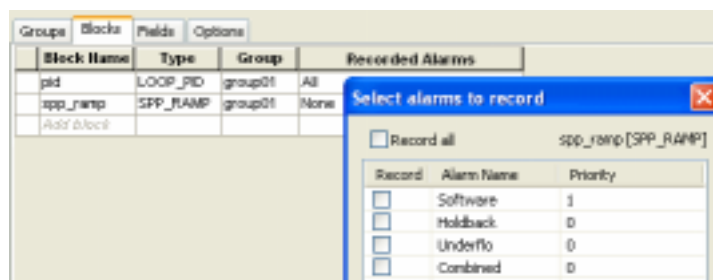
The **Blocks** page of the **Data Recording Configurator** in LINtools provides the ability to edit the block configuration, to specify which alarms should be recorded for each group.

- Select the **Blocks** page to show information about each block in the recording.
- Select the relevant **Recorded Alarms** field to reveal the **Select alarms to record** dialog. This dialog provides the selection of individual Alarm parameters from the selected block.

Set **Record All** to indicate that all Alarms will be recorded.

Set individual Alarm parameters to indicate that only the defined Alarms recorded.

This column shows the Alarm parameters that will be recorded for this block.



1.4.4 Configure the appearance of recorded field

The **Fields** page of the Data Recording Configurator contains parameters used to configure the default appearance of a recorded field, when displayed on a chart.

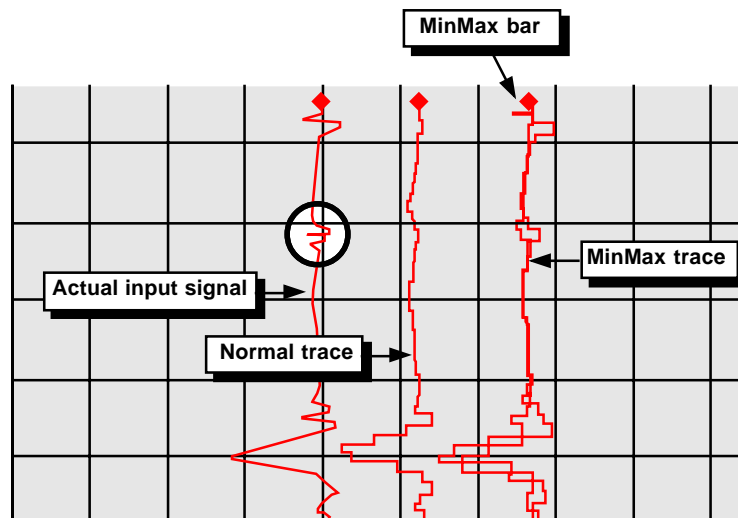
Editing the parameters on this page allows you to define how you want the trend to be displayed in **Review**.

Note These parameters may not have to be configured because LINtools and Review automatically layout the trends with default parameters.

- **Field Name** column shows the names of recorded block fields. Use the relevant field to change or add a field to the recording.
- **Group** column shows the Data Recording Group in which each field is recorded. Use the relevant field to change the data record group of the field to the recording.
- **Description** fields show a description used to identify the associated field value when displayed in **Review**. The description can be up to 16 characters, but must be unique within a group. You can change the default *block.field* name by clicking this field and entering a the required text.
- **Format** fields show the format of the associated field value when displayed in **Review**. The format selection is dependant on the *block.field* type. You can change this by clicking this field and selecting the required format from the picklist.
- **Colour** fields show the colour of the field value (trend) when displayed in **Review**. You can change this by clicking this field and selecting the required colour from the picklist.
- **MinMax** fields enables (On) or disables (Off) the **MinMax** recording for the field. This operates by measuring the input signal each time the block is updated, and saving the maximum and minimum values at the end of the period of trend update. When the trend is updated, both maximum and minimum values are traced on the chart, i.e. two traces are produced for the value.

You can use **MinMax** to record the minimum and maximum values of a field over the sample period rather than a sample at the end. If **MinMax** is OFF, during slow recording speeds it is possible that the field, between samples will pick up a spike or brief disturbance in the value, but that this disturbance will not be recorded, even though it may trigger an alarm.

If **MinMax** is On, recording intervals can be slowed while any spikes or anomalies in the field will still be recorded. However, the associated value counts as two trends in **Review** and uses twice as much memory as normal recording.

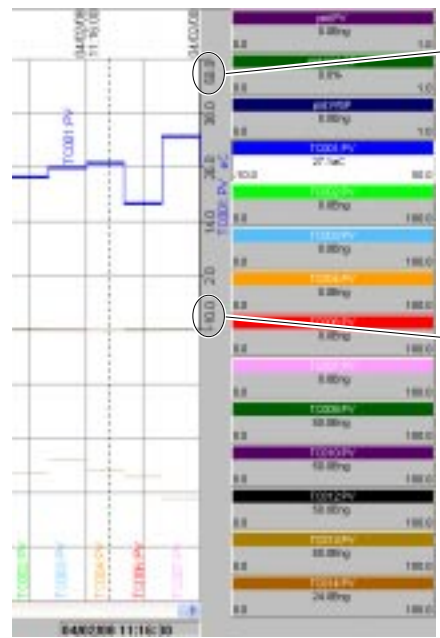


1.4.4 Configure the appearance of recorded field (Cont.)

The following example shows the **SpanLow** and **SpanHigh**, and **ZoneLow** and **ZoneHigh** parameters configured for *TC001.PV*. **SpanLow** and **SpanHigh** is set from -10°C to 50°C showing the span of the recorded value, and the **ZoneLow** and **ZoneHigh** is set from 50% to 100% showing the trace is displayed in the top half of the chart.

- SpanLow and SpanHigh fields define the span, in engineering units, displayed in **Review**. SpanLow values are displayed at ZoneLow, and SpanHigh values are displayed at ZoneHigh. If required, SpanLow can be configured with a higher value than SpanHigh to invert the trace.

Chart = ZoneHigh = 100%
ZoneLow = 0%



- ZoneLow and ZoneHigh fields define the zone on the chart that the trace will be restricted to in **Review**.
- Active and Inactive fields define text strings to represent the digital zero (0) or non-zero (1) recorded value. This is only relevant to fields recorded in a digital format. By default Active is set TRUE and Inactive to FALSE. You can change these to any 16 character value.

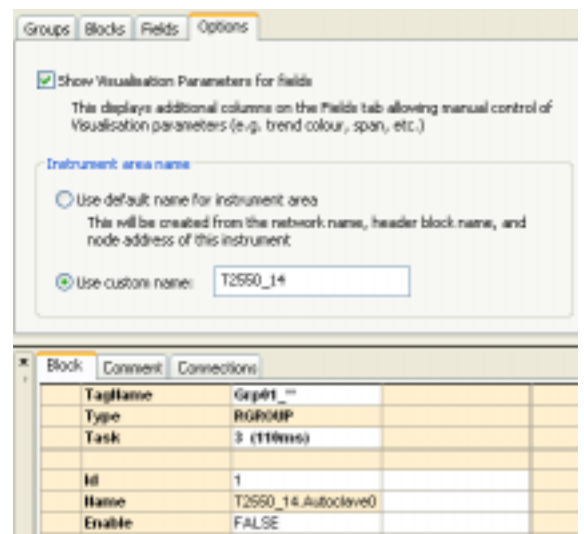
1.4.5 Configure the visualisation options

The **Options** page contains parameters used to allow customisation of individual values in the Data Recording Configuration.

- Configure the **Show Visualisation Parameters for fields**. Use this to display additional parameters that provide control of visualisation parameters that appear on the **Fields** page.
- Configure the **Instrument area name** fields. These options are used to identify the Data Recording Groups configured in this instrument. The **Instrument area name** configuration is shown in **Review** when creating a chart.

When **Use default name for instrument area** is selected, the data recording group name shown in the *Name* field in the RGROUP block remains as the name entered when the data recording group was created, but during run-time it is prefixed with the network name, node address, and Configuration (Header) block name, e.g. ELIN_01:14:T2550_14.

When **Use custom name** is selected, the associated entry precedes the data recording group name shown in the, **Name** field in the RGROUP block, and the name entered when the data recording group was created. This provides a greater level of identification of the parameters selected for data recording when using **Review**.



1.4.6 Chart recorded data

Data Recording files, .uhh , can be displayed as a trend chart using **Review**.

Note Review can be used to generate graphics and/or .csv files for display and printing of .uhh files, see Review Help file, Part no. HA 027 962 and/or the User Guide for full details.

Review can be configured to transfer .uhh files to a Review database at scheduled intervals. The Review database provides a means of displaying multiple .uhh files containing the recorded data values.

To configure the scheduled transfer of .uhh files

- 1 Launch **Review**. Click **Start > Programs > ... > Review**

Note '...' denotes the default installation path.

- 2 Select **File > Transfer > Scheduled Transfer...** to display the **Scheduled Transfer from Folders** dialog used to configure the transfer of .uhh files.

- Set **Run as Service** TRUE. This will run **Review** in the background automatically adding the .uhh files to the database. The computer user name and password will be requested for the account to be used to run the service.

- Configure the **Source Archive Folder**. For a local FTP directory, use the full path; for example, **c:\inetpub\ftproot**, by default if using **IIS FTP Server**, but this may also include an additional folder used to identify the instrument. Use the **Browse** button to select a local directory rather than typing the path.

- **Enable** the transfer of .uhh files. Set TRUE to allow the transfer of .uhh files from the defined **Source Archive Folder** to the **Review** database to be carried out automatically using the criteria defined in the **AUTOMATE** area.
- Configure the **AUTOMATE** section parameters. Enter the **Next Run** period. This is the day number and time for the first transfer to occur, automatically updating after each transfer, according to **Repeat every**, i.e. in the example scheduled transfers occur every day at 1 a.m., starting on the 14th of the month. Set the **Repeat every** period, to define the repeat period for **Scheduled Transfer**, starting from the time and day number specified in **Next Run**. Set **Also run immediately new file detected** TRUE if required. This causes **Review** to check the instrument, every minute, for new files. If a new file is detected, a transfer occurs immediately, irrespective of the automatic repeat rate setting.

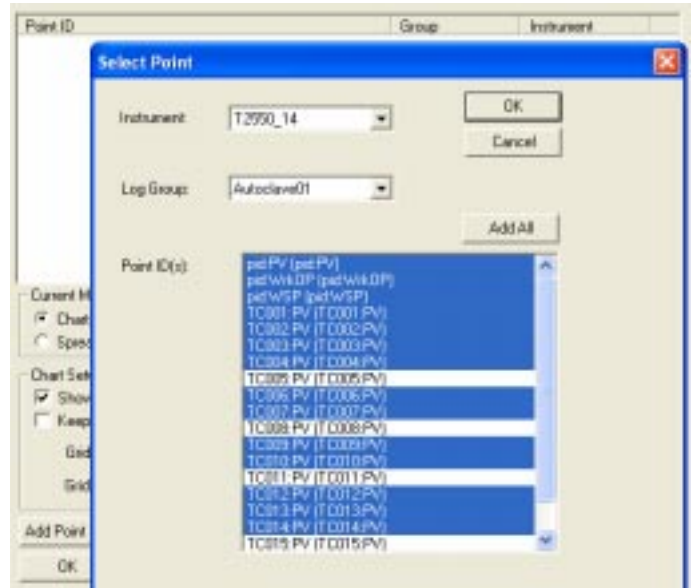
Note If Repeat every is set to 0, and Also run immediately new file detected is TRUE, a transfer occurs only when a file is closed and a new one opened, and only the closed file(s) transferred. This means that each file is transferred (and .csv files generated) only once. If Repeat every is not set to 0 and Also run immediately... is TRUE, the scheduled transfer causes all files (including open ones) to be transferred, but intermediate transfers, triggered by new file detection, transfer only closed files.

- 3 Press **OK** to confirm the configuration, and display the **Service Logon** dialog. Enter the computer user name and password of the account to be used to run **Review** as a service and, press **OK** to confirm this information. This will add the **Review** icon to the system tray on the computer.

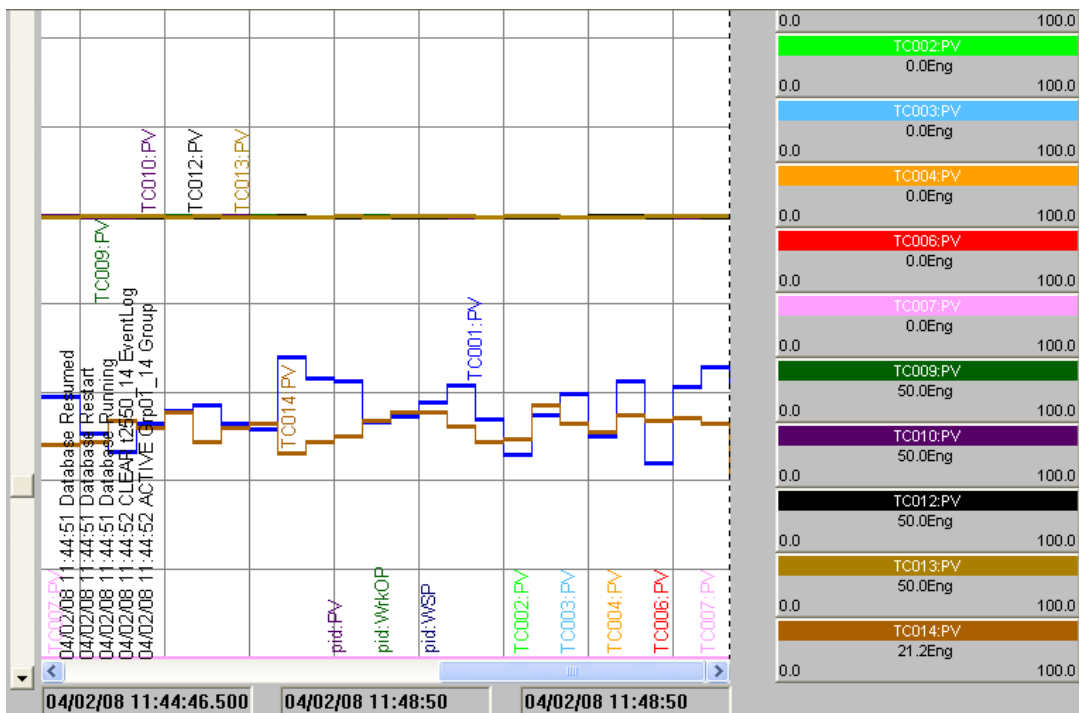
1.4.6 CHART RECORDED DATA (Cont.)

To produce a chart

- 1 Select **File > New Chart...** The **Chart Setup** dialog is displayed and provides parameters used to configure the new chart.
- 2 Press the **Add Point** button to display the **Select Point** dialog. This allows the selection of the instrument, data recording (Log) group and individual recorded values.
 - Select the **Instrument**. This is the instrument containing recorded values that can be displayed. Select the instrument from the menu. This is derived from the default instrument name or the custom name configured on the **Options** page in the **Data Recording Configurator** in LINtools.
 - Select the **Log Group**. This is the data recording group in the instrument containing recorded values that can be displayed. Select the data recording group from the menu.
 - Select the **Point ID(s)**. These are the recorded fields in the specified data recording group of the defined instrument. Select the recorded fields that you wish to display, using the <CTRL> key to select multiple recorded fields, or the <Shift> key to select a group of recorded fields and confirm using the **OK** button, or press the **Add All** button to select all the recorded fields and automatically confirm the selection.



- 3 Press the **OK** button to confirm the changes, then press **OK** to confirm the display of the chart.



1.5 TROUBLESHOOTING

Most data recording and data archiving problems can be resolved by inspecting the RMEMDIAG block and the RARCDIAG block.

Note Most of the following instructions can be tried and applied during online reconfiguration. If configuring the instrument strategy offline, remember it must be saved and downloaded to the instrument before confirming the operation.

Q Why does the Data Recording Configurator not appear in LINtools ?

A This is probably because you are upgrading an instrument. The Data Recording Configurator will only appear if the instrument firmware version supports data recording. To resolve this,

- Ensure the instrument firmware version 4.0 or later is installed in the base unit.

Note If updating from an existing .dbf, remember to change the instrument header block. Simply delete the existing header block, then drag and drop a Tactician type Configuration block, version 4.0 or later to the worksheet. Finally, rename the new header block to match the name used by the header block that was deleted. Build and download the instrument strategy.

Q Can I change the recording rate of a data recording group ?

A The recording rate is configured using the *UpdateA* field in the RGROUP block in the .dbf, and applies to all fields in that data recording group. To change this,

- Open the Database configurator, find and select the RGROUP block corresponding to the data recording group. Edit the *UpdateA* field value, and press <CR> to confirm the changes. Changing this value adjusts the intended time period between recording samples.

Q Can I record fields that change rapidly while recording at a slow update rate ?

A If you have decreased the update rate of a data recording group, and have fields that change rapidly, short duration spikes (for example) may not be recorded. Enabling the **MinMax** function, ensures that these fields can be recorded at slow recording speeds. If you want to record fields that change rapidly at slow recording speeds.

- Open the Data Recording Configurator and select the **Fields** page, then select the **MinMax** field associated with the required value to display a picklist, and select **ON** to enable this function.

When **MinMax** is enabled the minimum and maximum values of the field are recorded and saved at the end of each recording period. When the trend is shown in **Review**, both maximum and minimum values are displayed on the chart, i.e. two traces are produced for specified field.

When enabled, this counts for 2 of the 127 maximum trends in **Review**.

Q What do the question mark and asterisk characters in a message appearing in Review mean ?

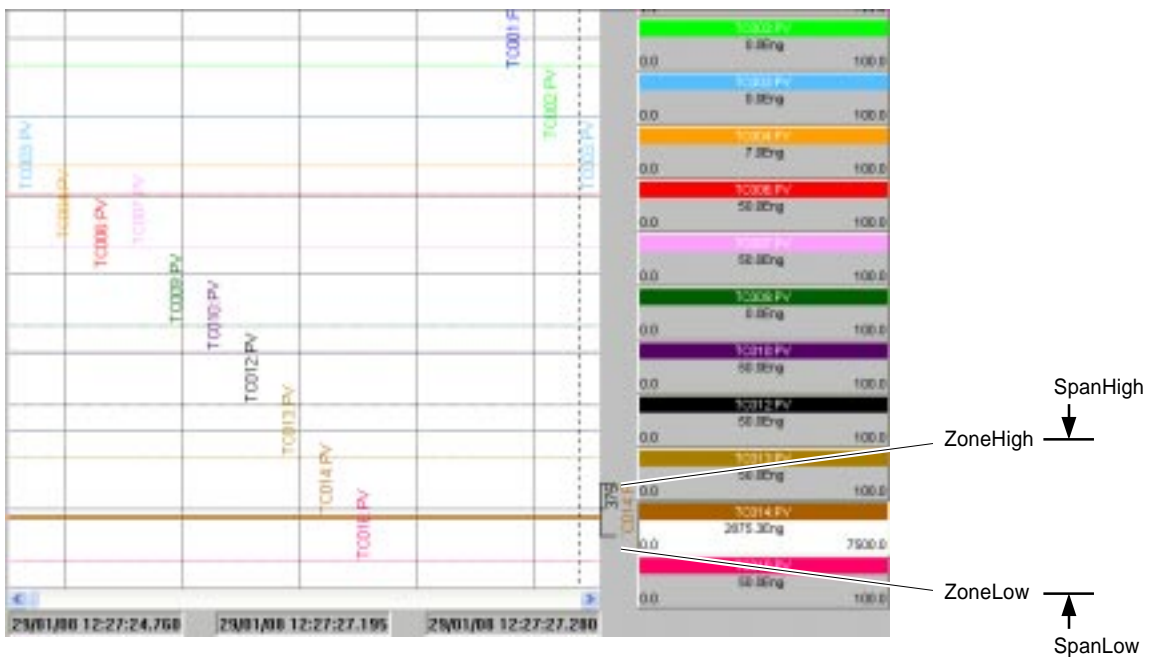
A These characters are used to indicate that the time value in a message is derived from a remote instrument and may potentially be unreliable. The remote instrument does not provide a date. The * characters appear because you are recording alarms of a block cached from an instrument that is not time synchronised to the local instrument.

1.5 TROUBLESHOOTING (Cont.)

Q Can I define the position and limits of a recorded field when displayed in Review ?

- A In **Review**, a chart is divided in to zones that can be displayed adjacently or overlaid, depending on the configuration defined in the dialog displayed when the **Settings** command from the **Options menu** is selected. The **Point Properties** dialog shows the position and limits of a recorded field. These are derived from the **SpanHigh** and **SpanLow**, and **ZoneHigh** and **ZoneLow** columns configured in the Data Recording Configurator.
- **ZoneHigh** and **ZoneLow** specifies the position of the trend on the chart, e.g. settings of 50% and 100% cause the trend to appear in the top half of the chart.
 - **SpanHigh** and **SpanLow** specifies the limits, in engineering units, of the zone to which the selected trace will be scaled.

Note If an inverted 0 is required then set SpanLow larger than SpanHigh. This will invert the trend in the zone.

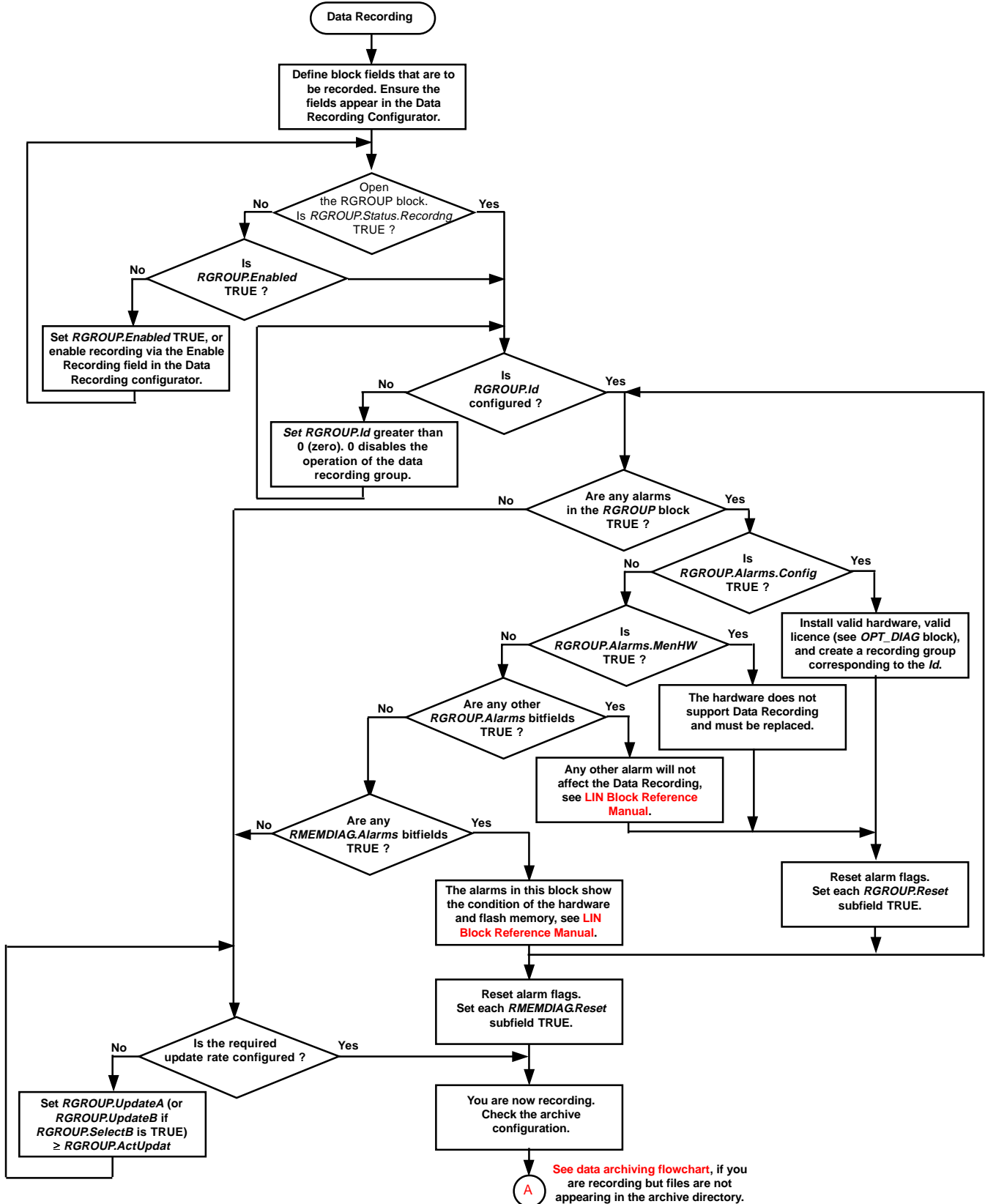


1.5 TROUBLESHOOTING (Cont.)

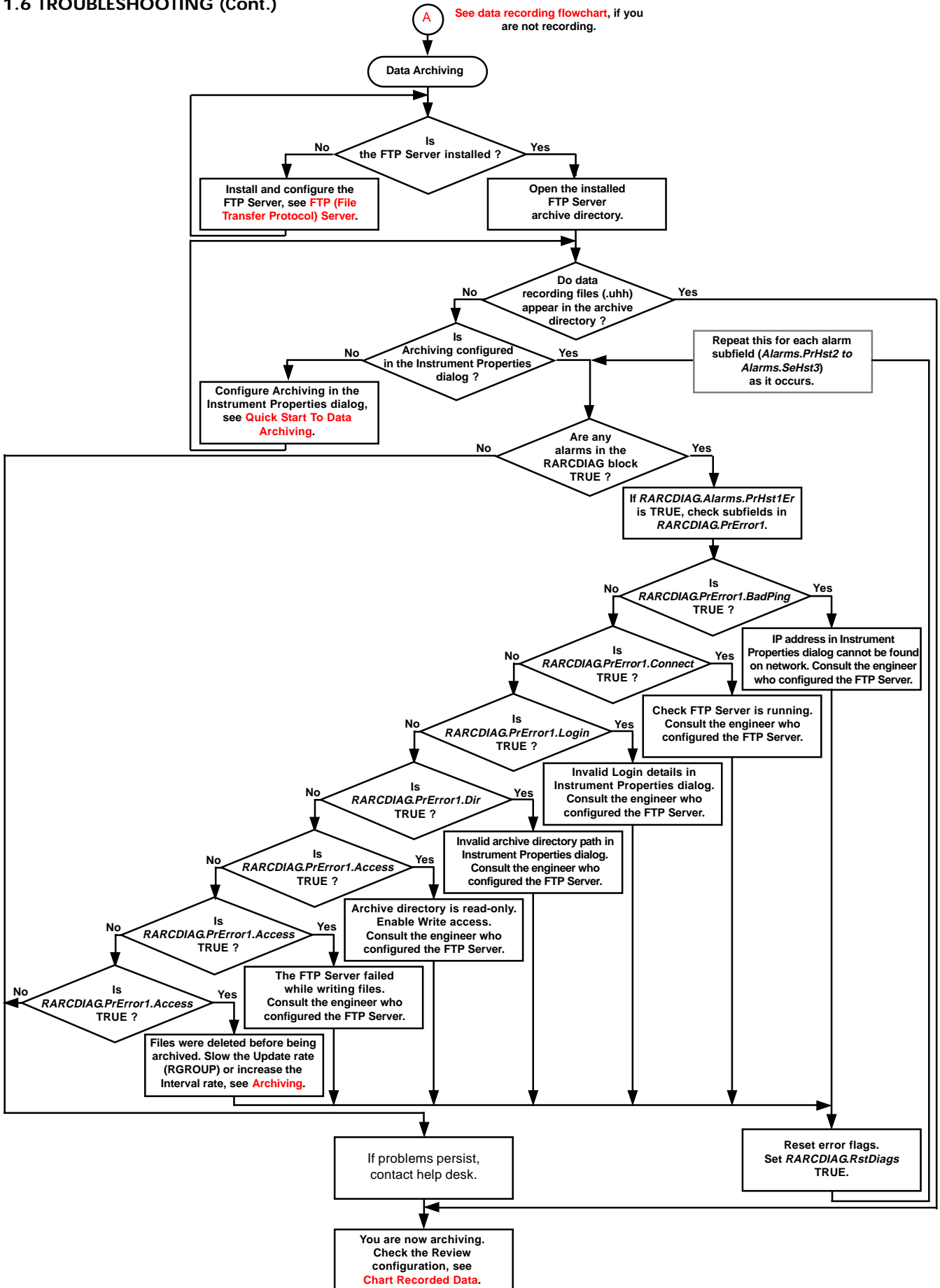
Q Why is data recording not working ?

A This could be due to one of many problems, some depending on whether configuring a new or existing database.

Use this flow chart to diagnose the problem.



1.6 TROUBLESHOOTING (Cont.)



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CHAPTER 2 SETPOINT PROGRAM

This section describes the Setpoint Programmer facility supported by this instrument.

The purpose of a Setpoint Programmer is to control and manage the target value that an automatic control system, e.g. PID controller, will aim to reach.

Example

A boiler control system might have a temperature Setpoint, that is a temperature the control system aims to attain in the system.

The main topics covered are as follows:

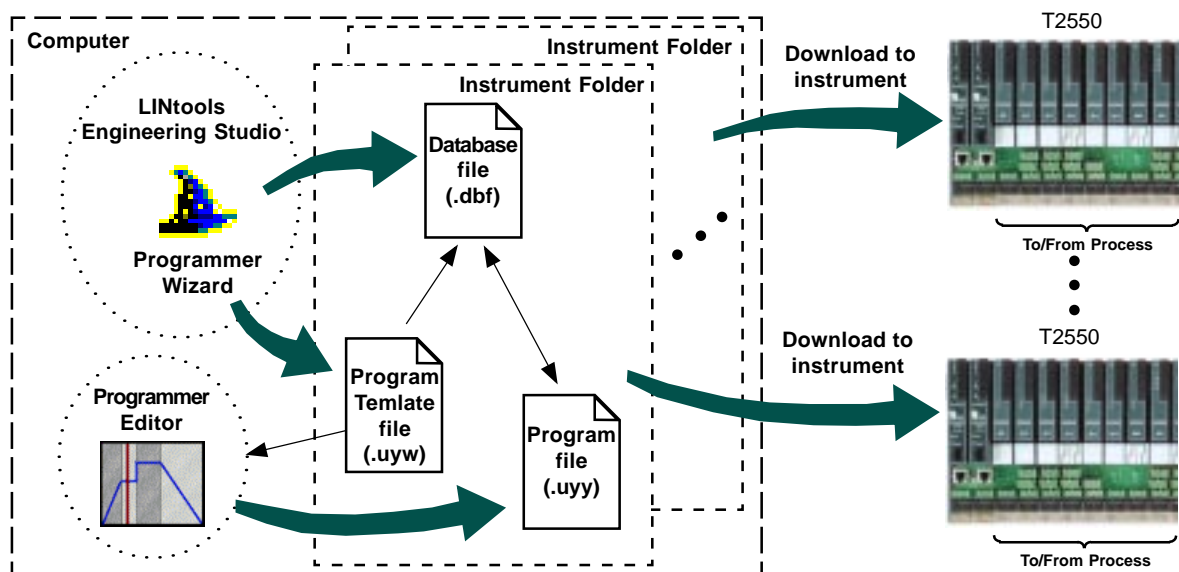
- Setpoint Program Configuration ([section 2.1](#))
- Quick Start To Configuring Setpoint Programming Blocks ([section 2.2](#))
- Quick Start To Configuring A Channel Profile ([section 2.3](#))
- Quick Start To Controlling A Program ([section 2.4](#))
- How To... ([section 2.5](#))
- Troubleshooting ([section 2.6](#))

2.1 SETPOINT PROGRAM CONFIGURATION

The Program Template file (.uyw) describes the structure of a Programmer, the number of Channels and corresponding names, the number of Digital Events, Wait Conditions, Exit Conditions, and User Values, and how each Channel is presented in the Programmer Editor. The description contained in the Program Template file is then used to ensure the Program file (.uyy) corresponds to each Programmer's structure. The names of individual process variables (Profiled Channels), digital event outputs and user values defined in the Program Template file are all shown in the Programmer Editor used to generate the Program. The Program Template file must be modified using the Programmer Wizard in LINtools.

The Program Template file can be referenced by a local instrument or any other instrument on the same network. This allows the same Program Template file to apply to multiple instruments.

The following diagram shows all system configuration components required for a Programmer application.



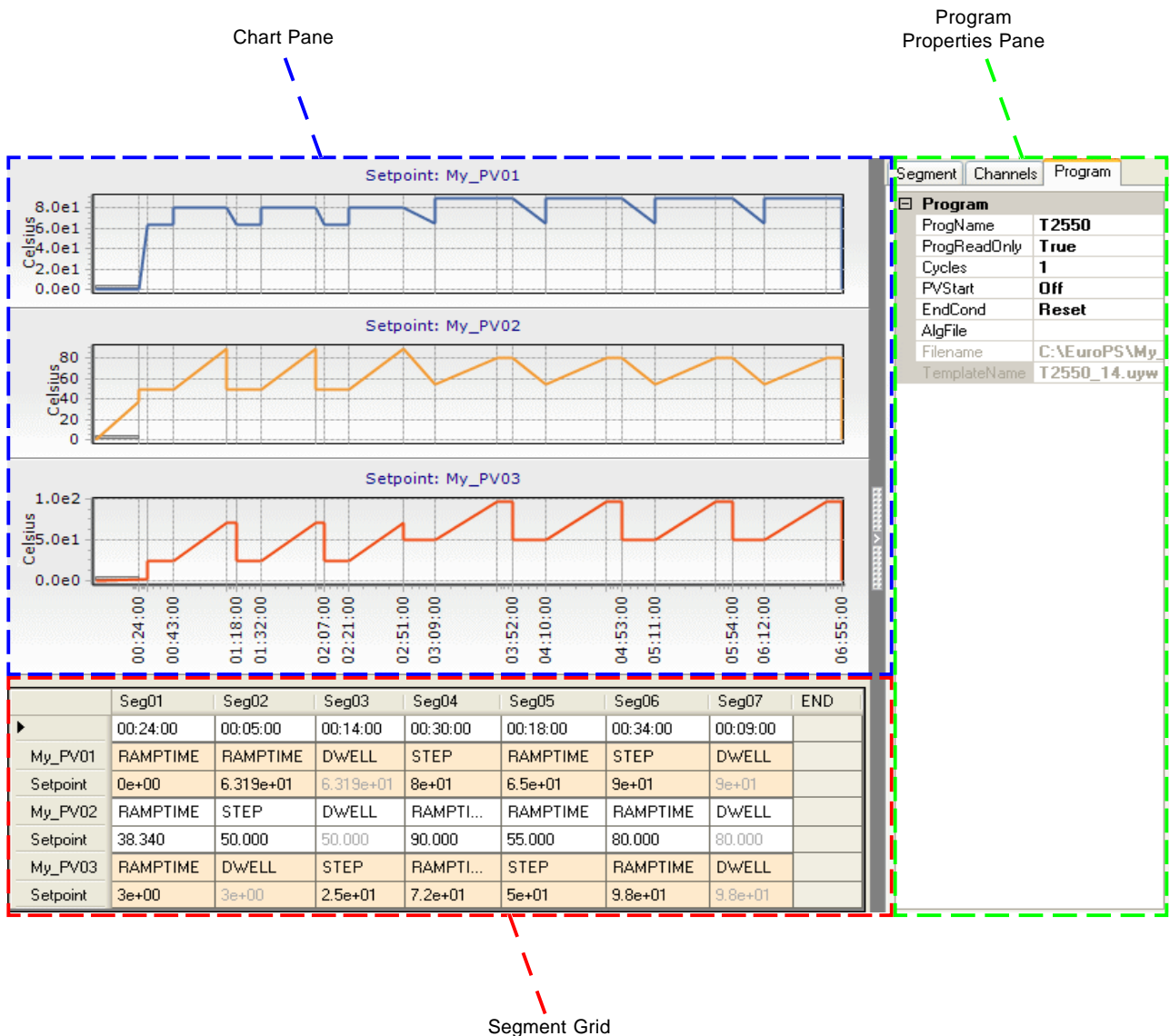
Note This configuration could equally apply to the T820 Controller variant.

2.1.1 Programs

This instrument supports single and multi-channel Programs. This is defined by the number of Name entries in the Profiled Channels page of the Programmer Wizard. The Chart pane in the Programmer Editor shows a maximum of three Profiled Channels, the first two Name entries in the Programmer Wizard correspond to the two most upper Profiled Channels the other Profiled Channel displayed in the lowest Chart position is the one selected in the Segment grid. The lowest Chart position can also show a Digital Event Output, or User Values by selecting it from the Properties pane, see below.

- A single channel Program, i.e. the control of one input value from the plant/system, supports Step, Dwell, RampRate, RampTime, and End Segment types. The Profiled Channel appears in the upper most Chart position, allowing Digital Event Output, and User Values to be displayed in the remaining Chart positions.
- A multi-channel Program, i.e. the control of more than one input value from the plant/system over an identical time period, supports Step, Dwell, RampTime, and End Segment types, but does not support RampRate Segment type. The first two Profiled Channels always appear in the upper most Chart positions in the order defined in the Programmer Wizard, and in the lowest Chart position displays the selected information as stated above.

The following image shows a multi-channel program.



2.2 QUICK START TO CONFIGURING SETPOINT PROGRAMMING BLOCKS

These instructions assume that the instrument is correctly wired to the plant/system and is operating normally, the database file, .dbf is already open, and all existing blocks and compounds are displayed on the worksheet.

Note For the purpose of this exercise, we will only configure one PID control loop to one Profiled Channel. If using multiple PID control loops in the strategy, wire each PID control loop to a PROGCHAN block.

1 Launch the Programmer Wizard from the Tools menu.

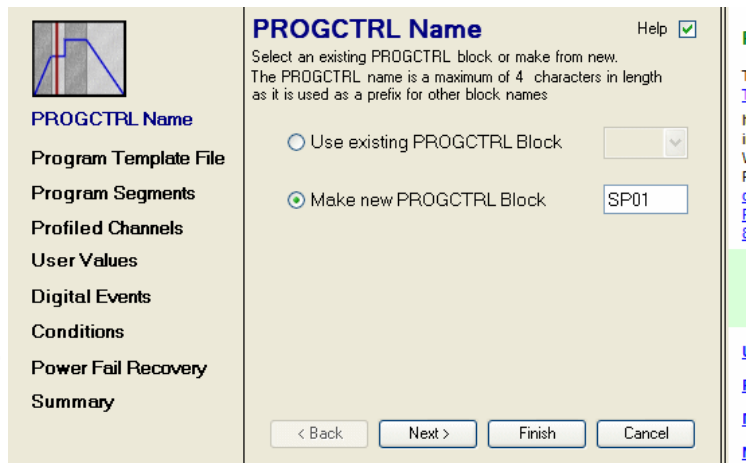
The Programmer Wizard is used to configure a Program Template file and create and edit the blocks in the PROG_WIZ compound.

Note Block fields are described using blockname.page.field.subfield format. Pages have been used in some blocks to increase the number of required fields, but are only visible in the Object Properties pane.



2 Complete each page, providing as much information as necessary to configure the Program Template file and the PROG_WIZ compound. For the purposes of this exercise set

- Make new PROGCTRL block to SP01
- Program Template file to T2550_14
- 3 Profiled Channels (My_PV01, My_PV02, and My_PV03)
- 4 User Values (UserVal_01 to UserVal_04)
- 16 Digital Events (Dig_Event_01 to DigEvent_16)
- 8 Wait Conditions (Wait_01 to Wait_08)
- 8 Exit Conditions (Exit_01 to Exit_08)
- RampBack power fail recovery action



The Program Template file defines the constraints of a Program file for an instrument and how each channel profile is presented in the Programmer Editor and instrument.

The PROG_WIZ compound contains 1 PROGCTRL block, up to 8 PROGCHAN blocks, and up to 8 SEGMENT blocks per PROGCHAN block.

Note All blocks created using the Programmer Wizard are automatically named using the prefix defined on the PROGCTRL Name page.

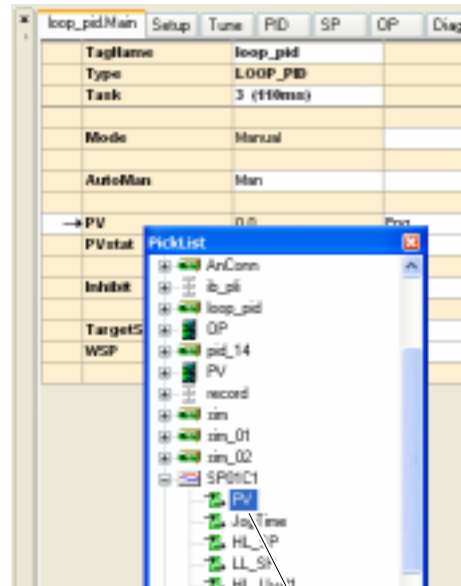
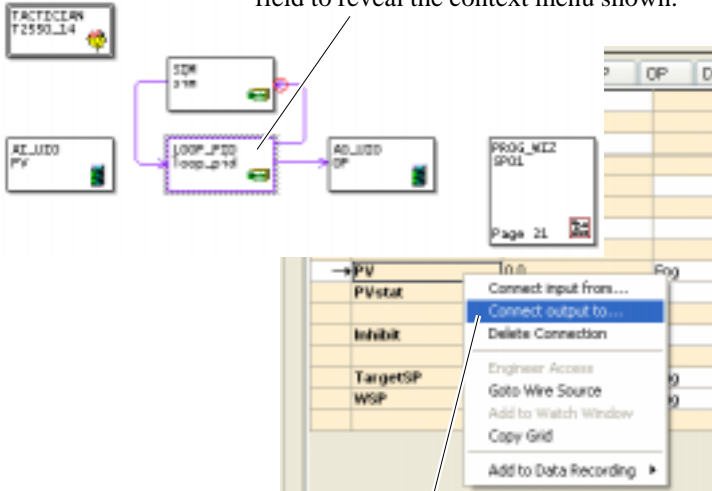
IMPORTANT To prevent erroneous Program Template file configuration always use the wizard to edit the blocks in the PROG_WIZ compound. Changing the number of Profiled Channels, Digital Events, or User Values will invalidate any Program files created with the previous version.



2.2 QUICK START TO CONFIGURING SETPOINT PROGRAMMING BLOCKS (Cont.)

3 Connect the control loop to the appropriate Setpoint Program Channel. Start with the PV output from the LOOP_PID block to the PROGCHAN block.

i) Select the LOOP_PID block and display the Object Properties pane. Click the PV field to reveal the context menu shown.

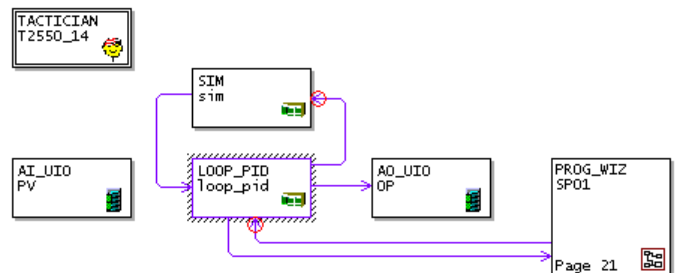


ii) Select the **Connect output to...** command to display the picklist of available blocks.

iii) Locate and expand the PROGCHAN block, then select the PV field.

4 Add the remaining wiring connections shown below. Table 2-1 lists all the source and destination fields that should be interconnected in this strategy, and summarises their functions. Repeat for each Program channel.

Note The following table uses a (Block type) blockname.page.field.subfield format to show source and destination wiring. Pages have been used in some blocks to increase the number of required fields, but are only visible in the Object Properties pane.



Source	Destination	Function
Control Loop configuration		
(AI_UIO) PV.PV	(LOOP_PID) loop_pid.Main.PV	Process Variable (PV) from the T2550 input module in to the LOOP_PID block. For testing purposes, this can be sourced from the PV field of a SIM block.
(LOOP_PID) loop_pid.Main.WrkOP	(AO_UIO) OP.OP	PID control output OP to the T2550 output module
Programmer configuration		
(LOOP_PID) loop_pid.Main.PV	(PROGCHAN) SP01C1.Monitor.PV	PID control loop PV in to the Programmer channel (PROGCHAN) block for using the control loop PV
(LOOP_PID) loop_pid.Main.WSP	(PROGCHAN) SP01C1.Monitor.SP	PID working setpoint in to the Programmer channel (PROGCHAN) block for the operating setpoint of the control loop
(PROGCHAN) SP01C1.Monitor.CurrSP	(LOOP_PID) loop_pid.SP.AllSP	Current setpoint generated by the locally-running setpoint program in to the LOOP_PID block's remote setpoint input
(PROGCHAN) SP01C1.Monitor.StateFlg.ChActive	(LOOP_PID) loop_pid.SP.AllSPEn	Enables the use of an setpoint. This is not a setpoint configured locally in the LOOP_PID block.

Table 2-1 Strategy wiring data

2.2 QUICK START TO CONFIGURING SETPOINT PROGRAMMING BLOCKS (Cont.)

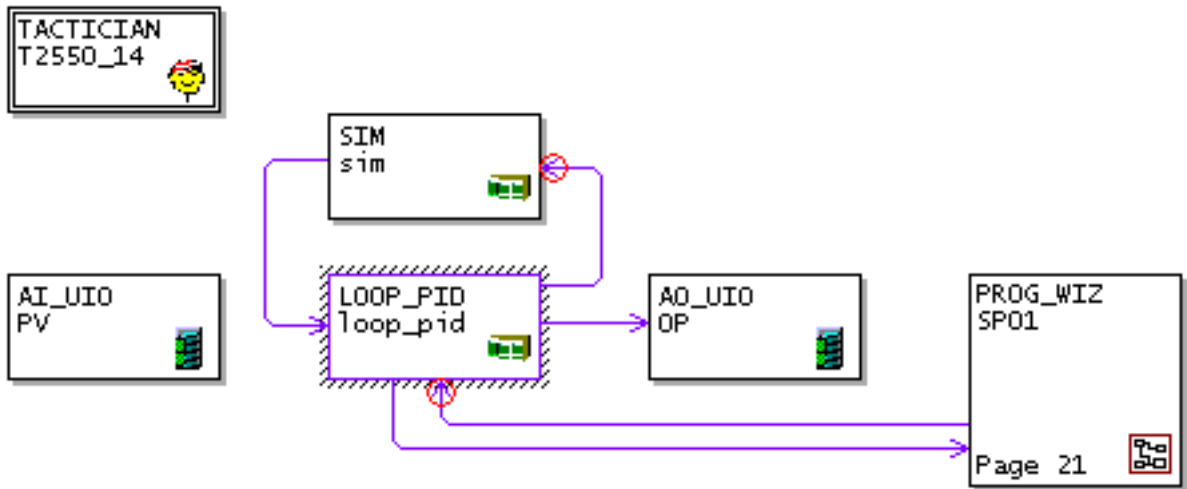
- 5 Edit the block fields. The following table lists the fields that should, as a minimum, be edited from their default values. Most PROG_WIZ compound block fields are automatically populated via the Programmer Wizard. For completeness, all edited fields are shown in the table.

Note For the purpose of this exercise, we will only configure one PID control loop to one Profiled Channel. Repeat this for each PID control loop as required.

Block.Page.Field.Subfield	Value	Function
Control Loop configuration		
(LOOP_PID) loop_pid.PID.TI1	5.00	Sets the PID integral time constant to 5 seconds, to improve control
(LOOP_PID) loop_pid.Alarms.Lo	20.00	Sets the loop_pid's PV output 'low absolute' alarm at 20. The <i>loop_pid.Main.Alarms.Lo</i> is asserted when <i>loop_pid.Main.PV</i> falls below 20.
(LOOP_PID) loop_pid.Main.Alarms.Lo	1	Enables the 'low absolute' alarm on the loop_pid's PV output
Programmer configuration		
(PROGCTRL) SPO1.File.ProgFile	T2550	Shows the name of the Program file associated with the Program Template file shown in (<i>PROGCTRL</i>) <i>SPO1.File.TmplFile</i> .

Table 2-2 Values for non-default block fields

The following figure shows a single PID control loop and the wiring to a PROGCHAN block within the PROG_WIZ compound. This represents a single Profiled Channel in the Programmer Editor.



You should now have configured the database to control the setpoint of one PID loop.

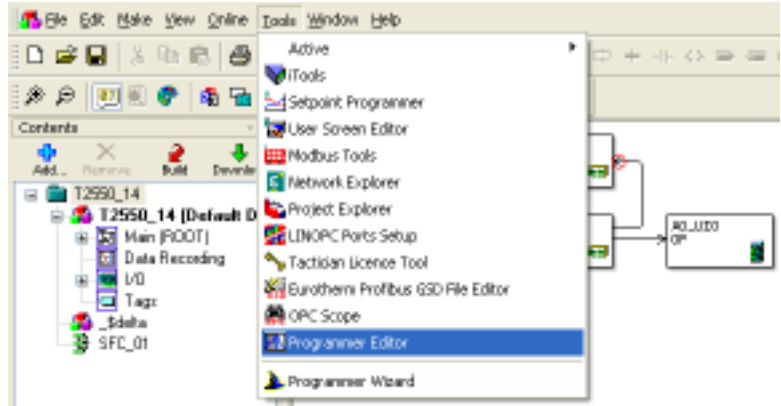
2.3 QUICK START TO CONFIGURING A PROGRAM

These instructions assume that the database file, .dbf is already open, and all existing blocks and compounds are displayed on the worksheet.

- 1 Launch the Programmer Editor from the Tools menu in LINtools. Alternatively, use

Start > Programs > ... > Programmer Editor > Programmer Editor

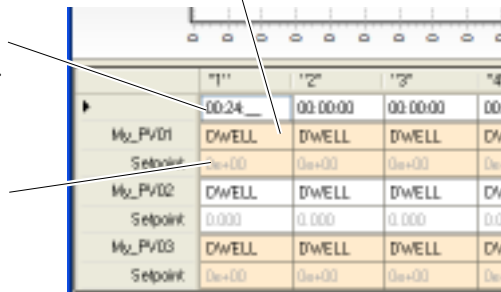
- If the Program file does not exist, select **File > New** to display the **Choose a Program Template** dialog. Navigate to the required Program Template file (in an instrument folder) and press **Open** to create a null operation Program file.
- If the Program file already exists, select **File > Open**. Navigate to the required Program file and press **Open**.



Remember You can also use the context menu in the Object Properties pane to create and open a Program file.

- 2 Configure the Channel Profile. Start by creating the required number of Program segments using the **Insert Segment** button in the Toolbar. The following figure shows 4 or more segments have been created. The last Segment is always a read-only END segment.

- ii) Configure the duration of each segment.
Not applicable to RampRate segments.
Enter a duration in hours, minutes, seconds (49 days, 17 hours, 02 minutes, 47 seconds max).
- i) Configure the **Segment type**.
Select the method used to control the setpoint value from the menu.



- iii) Configure the target setpoint value. This is the value at which the next segment will start.

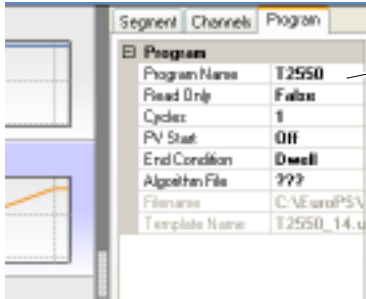
Tip! If the duration should be 1 day or more, enter a number greater than 24, and then edit the field as required.

Segment type	Graphic	Function
Step		The setpoint steps instantaneously from its current value to a new value.
Dwell		The setpoint remains constant for a specified period.
RampTime/RampRate		The setpoint ramps linearly, from its current value to a new value, either at a set rate (RampRate, single channel Programs only), or in a set time (RampTime).

Table 2-3 Segment types

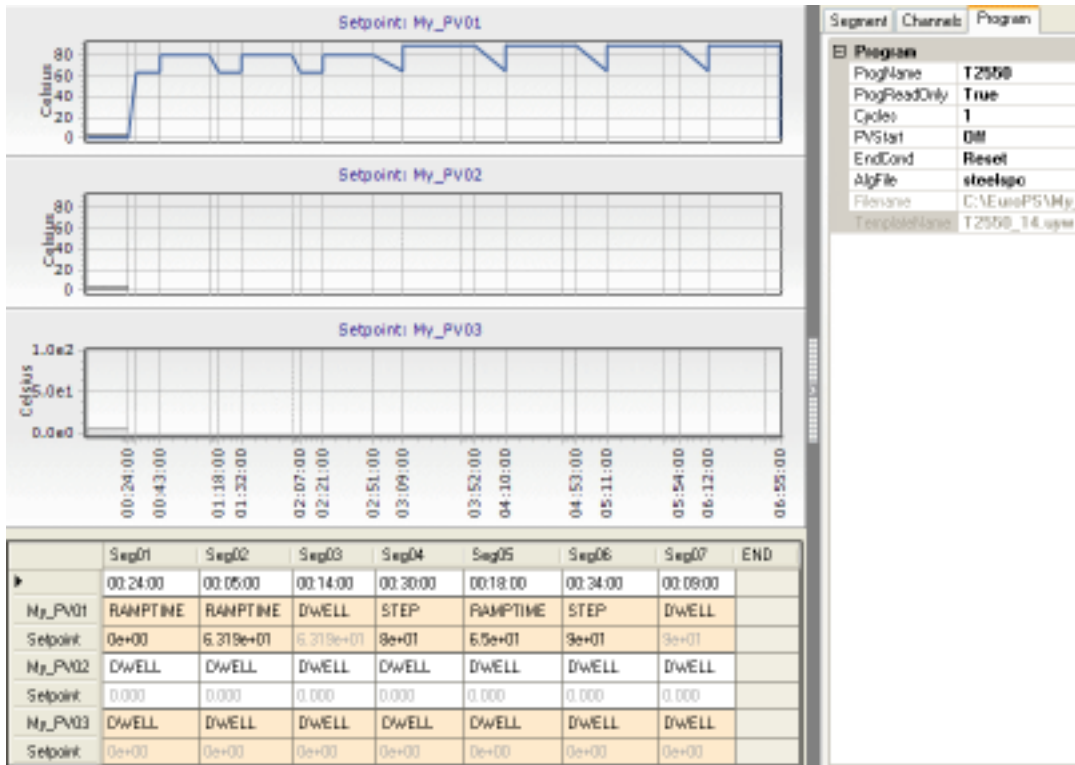
2.3 QUICK START TO CONFIGURING A PROGRAM (Cont.)

- 5 Configure the Program Properties. The Program Name should, as a minimum, be edited from the default value. Further configuration depending on the application may be required, but is beyond the scope of this section, see *How to...* section.



- i) Select the Program Name parameter and enter a name used to identify the Program.
- ii) see *How to...* section

- 6 Save the Program file, and return to LINTools. The Program file should look something like the figure below.



- 7 In LINTools, save the database file to update the download list, and download the instrument configuration using the Download button in the Contents pane. The Program Template file and the Program file will automatically be downloaded to the instrument along with the database file.

2.4 QUICK START TO CONTROLLING THE PROGRAM

These instructions assume that the database file, .dbf, the Program Template file, .uyw, and the Program file, .uyy, have already been downloaded to the instrument, and the database is running.

In the Programmer Editor

- 1 Connect to instrument using **Connect** command. This will attach to instrument and reveal a number of buttons below the Segment grid and Status page.



Note The configured segments will not be displayed until the Program is started.

- 2 In LINtools, set *PROGCTRL.File.Load* TRUE. This will load the Program file defined in *PROGCTRL.File.ProgFile*.
- 3 Press the **Start** button to run the Program, see *Programmer Editor Help file*. Observe as the Program Status area changes to Green to indicate the Program is running. A scrolling vertical bar is used to show the current position of the Program.

As the Program starts each segment, the **Program History** area records the configuration applied to the segment, and any configured operations and user interactions, i.e. a configured Wait condition, or the HOLD button is pressed. A date and time reference is included with each operation.

Note The Channel Setpoints area shows the current segment type in operation.

- 4 Use the buttons to control the Program currently running. Press
 - HOLD** to freeze the current setpoint value and the Program at its current position. The Program Status area changes to Amber to indicate the Program is in a HELD state.
 - RESTART** to remove the HELD status and continue the Program from the current setpoint value and its current position in the Program. The Program Status area returns to Green to indicate the Program is running.
 - SKIP** to move to the next segment immediately using the current setpoint value.
 - ADVANCE** to move to the next segment immediately setting the current setpoint value equal to the target setpoint.
 - JOG** to display a list of time periods used to change the current position of the segment. This can be used to increase or decrease the length of the current Dwell or Step segment. This is only enabled if the setpoint value in all segments are not ramping.
 - REDO** to repeat the current segment. This is enabled if the Program is in a Held state.
 - ABORT** to terminate the current Program. The Program Status area returns to Grey to indicate the Program is in Idle state.



2.5 HOW TO...

In this section, you will be guided through additional tasks used to configure elements of a Program. These tasks will help you when configuring the strategy in the instrument, and include instructions for displaying asserted Program alarms on an Eycon Visual Supervisor.

2.5.1 Organise the display of Program alarms in an Eycon

When the Eycon is used to display the control of a Program in a T2550, it is possible to show the Programmer alarms. Alarms asserted in the Programmer blocks can be automatically added to the list of Alarms shown on the Monitor display of an Eycon by using the cached PROGCTRL block and the cached PROGCHAN block as shown. These blocks will already be cached in the Eycon because this instrument may be used as the overall control of the Program.

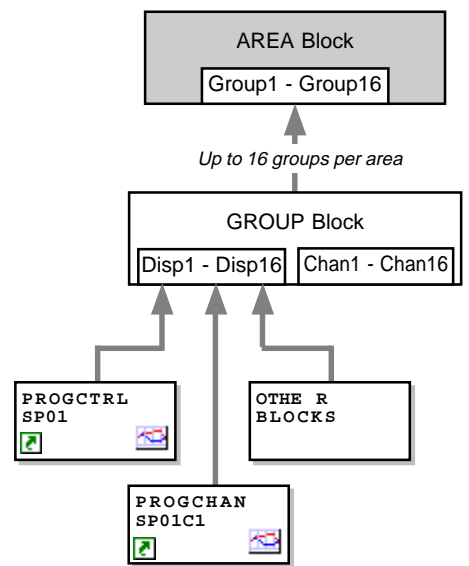
Note If a AREA block is not configured, the Eycon Alarms button on the Monitor display will only show PROGCTRL block alarms and events.

To configure the display of Program alarms

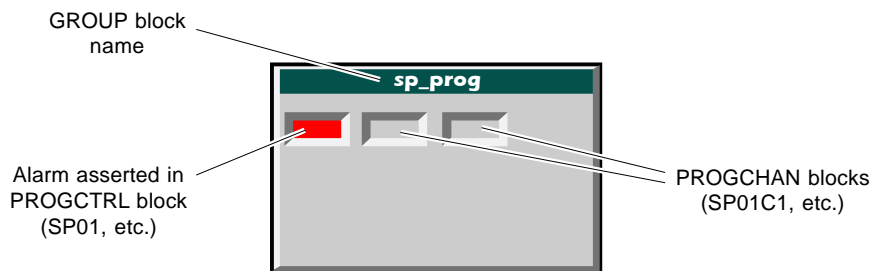
- 1 In LINtools, add an AREA block and a GROUP block (Organise category) to the worksheet. Name the blocks.
- 2 In the GROUP block populate the *Disp1 - Disp16* fields with the PROGCTRL block and the PROGCHAN block.
- 3 In the AREA block, populate a *Group1 - Group16* field as required with the relevant GROUP block name.
- 4 Save, download and run the databases in the corresponding instruments.

Any asserted alarm will now appear on the Monitor display of the Eycon when the Alarms button is pressed.

Note This also applies to any other process critical block.



EYCON FACEPLATE



2.5.2 Write User Values, and Digital Events Outputs

Configuring User Values, and Digital Events allows a specified value to be written to a wired destination as the segment is started.

- User Values are a general purpose analogue values within the limits defined in the Programmer Wizard that can be written to any Engineering Unit field (Eng).
- Digital Events are a general purpose digital values that can be written to any Digital field.

To write values in the database

- 1 In LINtools, wire the blocks as shown in the table below.

Source	Destination	Function
User Value configuration		
(PROGCHAN) SP01C1.Monitor.Uval1	(AN_CONN) an_conn.PV1	Writes the value configured in the corresponding User Value field for the required Segment of the Program to the destination block field when the segment is initiated.
(PROGCHAN) SP01C1.Monitor.Uval2	(AN_CONN) an_conn.PV2	
(PROGCHAN) SP01C1.Monitor.Uval3	(AN_CONN) an_conn.PV3	
(PROGCHAN) SP01C1.Monitor.Uval4	(AN_CONN) an_conn.PV4	
Digital Event configuration		
(PROGCHAN) SP01C1.Monitor.Event.EventOut1	(DG_CONN) dg_conn.W Field1.Bit0	Writes the On/Off configured in the corresponding Digital Event field for the required Segment of the Program to the destination block field when the segment is initiated.
(PROGCHAN) SP01C1.Monitor.Event.EventOut2	(DG_CONN) dg_conn.W Field1.Bit1	
(PROGCHAN) SP01C1.Monitor.Event.EventOut3	(DG_CONN) dg_conn.W Field2.Bit0	
(PROGCHAN) SP01C1.Monitor.Event.EventOut4	(DG_CONN) dg_conn.W Field2.Bit1	
<p><i>Note (Block type) blockname.page.field.subfield format.</i></p>		

Table 2-5-2 Wiring User Value and Digital Event outputs

Remember You can use the context menu in the Object Properties pane to wire to and from other blocks in the database.

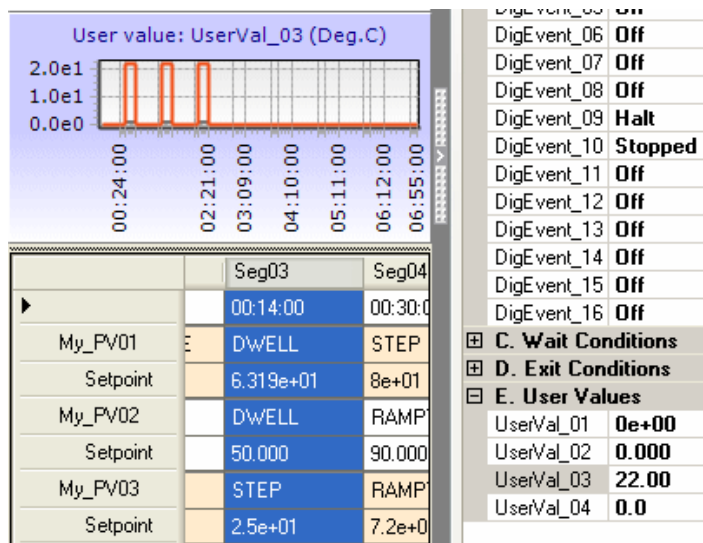
- 2 In the Programmer Editor, enter the User Value, or select the Digital Event in the required segments of the Program. These are the values that will be written to the wired destination.

When attached to the instrument, select the User Value or Digital Event to show the configured action as applied in the Program in the lowest plot in the Chart pane.

Note The User Value limits and the user configured Digital Event enumeration are defined using the Programmer Wizard in LINtools.

- 3 Save, and download the Database file, Program Template file and Program file.

Note If using a Project you may also have to build the Instrument folder.



2.5.3 Configure a Wait (or Exit) condition

Configuring a Wait (or Exit) condition controls the Program in order to ensure specific conditions are achieved before the Program can continue (or terminate).

Note If a Wait condition has been applied, the Advance and Skip buttons can be used to proceed to the next segment.

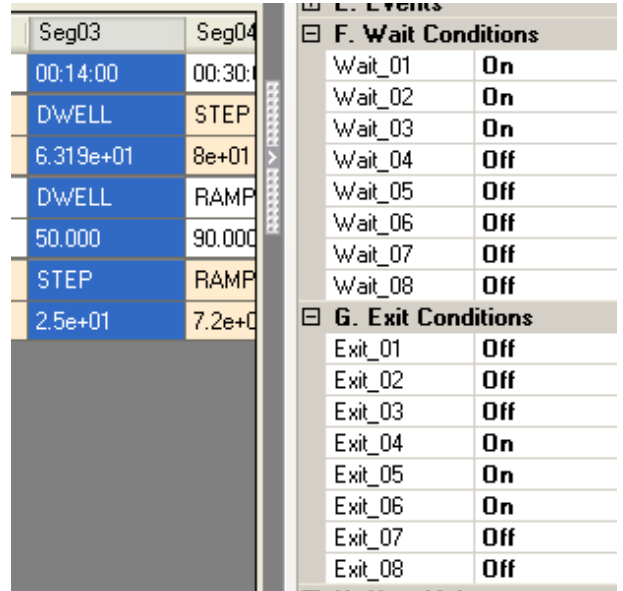
To configure the required Wait (or Exit) condition

- 1 In the Programmer Editor, set the required Wait (or Exit) conditions to On or the corresponding user configured enumeration. Only conditions set accordingly will react to changes in the strategy.

Note Exit conditions can only be applied to segments that are not ramping the setpoint, i.e. Dwell and Step.

When attached to the instrument, select the Wait (or Exit) conditions to show the configured action as applied in the Program in the lowest plot in the Chart pane.

Note The user configured enumerations are defined using the Programmer Wizard in LINtools.



- 2 In LINtools, wire the blocks as shown in the table below.

Note The SP01C1.Monitor.CurrCond.Waitn and SP01C1.Monitor.CurrCond.Exitn subfields can be wired to an appropriate block type for the strategy.

Source	Destination	Function
Programmer configuration		
(DO_UIO) di_uio01.In	(PROGCHAN) SP01C1.Monitor.CurrCond.Wait1	Writes the TRUE/FALSE value to the wired SP01C1.Monitor.CurrCond.Waitn subfield. Segments will Wait, according to the rules specified in the SP01C1.Monitor.Cond.Waitn and SP01C1.Monitor.InvCond.Waitn subfields.
(DO_UIO) di_uio01.In	(PROGCHAN) SP01C1.Monitor.CurrCond.Wait2	
(DO_UIO) di_uio01.In	(PROGCHAN) SP01C1.Monitor.CurrCond.Wait3	
(DO_UIO) di_uio02.In	(PROGCHAN) SP01C1.Monitor.CurrCond.Exit4	Writes the TRUE/FALSE value to the wired SP01C1.Monitor.CurrCond.Exitn subfield. Segments will terminate according to the rules specified in the SP01C1.Monitor.Cond.Exitn and SP01C1.Monitor.InvCond.Exitn subfields.
(DO_UIO) di_uio02.In	(PROGCHAN) SP01C1.Monitor.CurrCond.Exit5	
(DO_UIO) di_uio02.In	(PROGCHAN) SP01C1.Monitor.CurrCond.Exit6	
<p><i>Note The rules specified using the SP01C1.Monitor.Cond.Waitn (or Exitn) and SP01C1.Monitor.InvCond.Waitn (or Exitn) subfields determine how the Program will react if a Wait (or Exit) condition is enabled in a segment, see LIN Block Reference Manual.</i></p>		

Table 2-5-3 Wiring Wait (or Exit) condition inputs

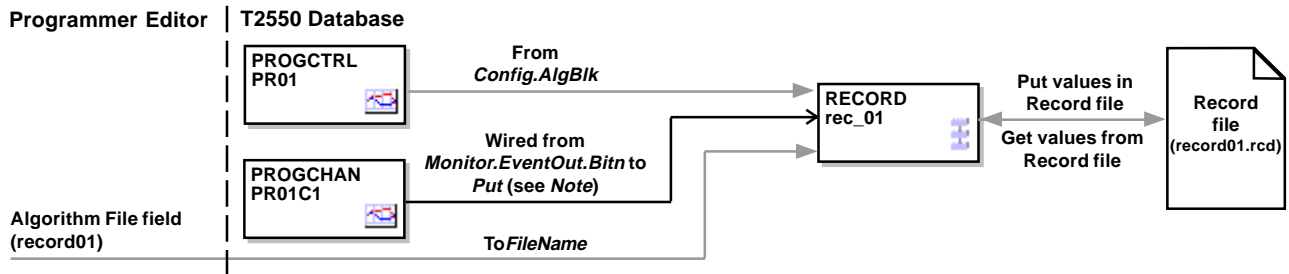
- 3 Save, and download the Database file, and Program file.

Note If using a Project you may also have to build the Instrument folder.

2.5.4 Configure Algorithm data

Algorithm data can be configured using a combination of the Algorithm File field in the Programmer Editor and the wiring of the PROGCTRL block to the SFC_CON, RECORD, RCP_SET (and RCP_LINE), or DR_REPRT blocks. These blocks hold the data used to populate the required algorithm.

The example below shows how the RECORD block can be used to read and write values to/from the Record file.



Note The Algorithm file specified in the Programmer Editor is loaded via the RECORD block. RECORD.Put can be used to write values to the Record file (.rcd) at the users discretion. RECORD.Get can be used to read values from the Record file (.rcd) at the users discretion.

Figure 2-5-4 Algorithm data control

To configure the algorithm data

- 1 In the Programmer Editor, set the Algorithm File field as required, i.e. record01, and save the Program.
- 2 In LINTools, configure the database.
 - i) Add and wire the blocks for this example as shown below.

Source	Destination	Function
Programmer configuration		
(PROGCHAN) SP01C1.Monitor.EventOut.Event3	(RECORD) rec_01.Put	This will write the values from this block to the specified RecordNo field in the Record file (.rcd) when the Digital Event is set TRUE.
(PROGCHAN) SP01C1.Monitor.EventOut.Event4	(RECORD) rec_01.Get	This will read the values from the specified RecordNo field in the Record file (.rcd) when the Digital Event is set TRUE.

Table 2-5-4a Wiring Algorithm data control

- ii) Configure the block fields as below, and ensure the Record file is in the instrument folder and included in the files to be downloaded. This will ensure the file is downloaded to the instrument.

Block.<Page>.Field.Subfield	Value	Function
Programmer configuration		
(PROGCTRL) SP01.Config.AlgBlk	rec_01	This is the RECORD block name used in conjunction with the Algorithm File field configured in the Programmer Editor.
(RECORD) rec_01.FileName	record01	Enter the name of the Record file (.rcd) used. The Record file can only be written to or read by the Record block.
(RECORD) rec_01.RecordNo	1	Enter the number indexing the values from this block in the Record file (.rcd).

Table 2-5-4b Values for non-default block fields

- 3 Save and download the files to the instrument.

Note You can also use the Network Explorer if connected, to transfer files between the instrument and the computer.

2.6 TROUBLESHOOTING

Most Program problems can be resolved by inspecting the PROGCTRL block and the PROGCHAN block.

Note Most of the following instructions can be tried and applied during online reconfiguration. If configuring the instrument strategy offline, remember it must be saved and downloaded to the instrument along with the Program Template file and Program file where applicable before confirming the operation.

Q Why does the Programmer Editor only show one END segment of the Program ?

A This is probably because the Program file did not successfully load before connecting to the instrument from the Programmer Editor.

To resolve this, in the Programmer Editor, simply close the connection to the instrument, ensure the Program file is loaded (*PROGCTRL.Monitor.State* indicates an initialised state, e.g. Idle, not Unloaded) and then press **Online Connect** again. The Program file will be displayed as expected because it loaded before connecting to the instrument.

Q Why is PROGCTRL.File.Alarms.Oob asserted ?

A This is the Out of bounds alarm. It is used to show that a *PV* value in the Program has exceeded the Low and/or High Alarm value, as determined by the rules specified by the *PROGCHAN.Monitor.HbType* subfields in conjunction with the **Holdback + Alarm Value** configured in the Programmer Editor.

Note An Out of bounds alarm remains asserted until the Program is reset, and the Program is in the Idle state.

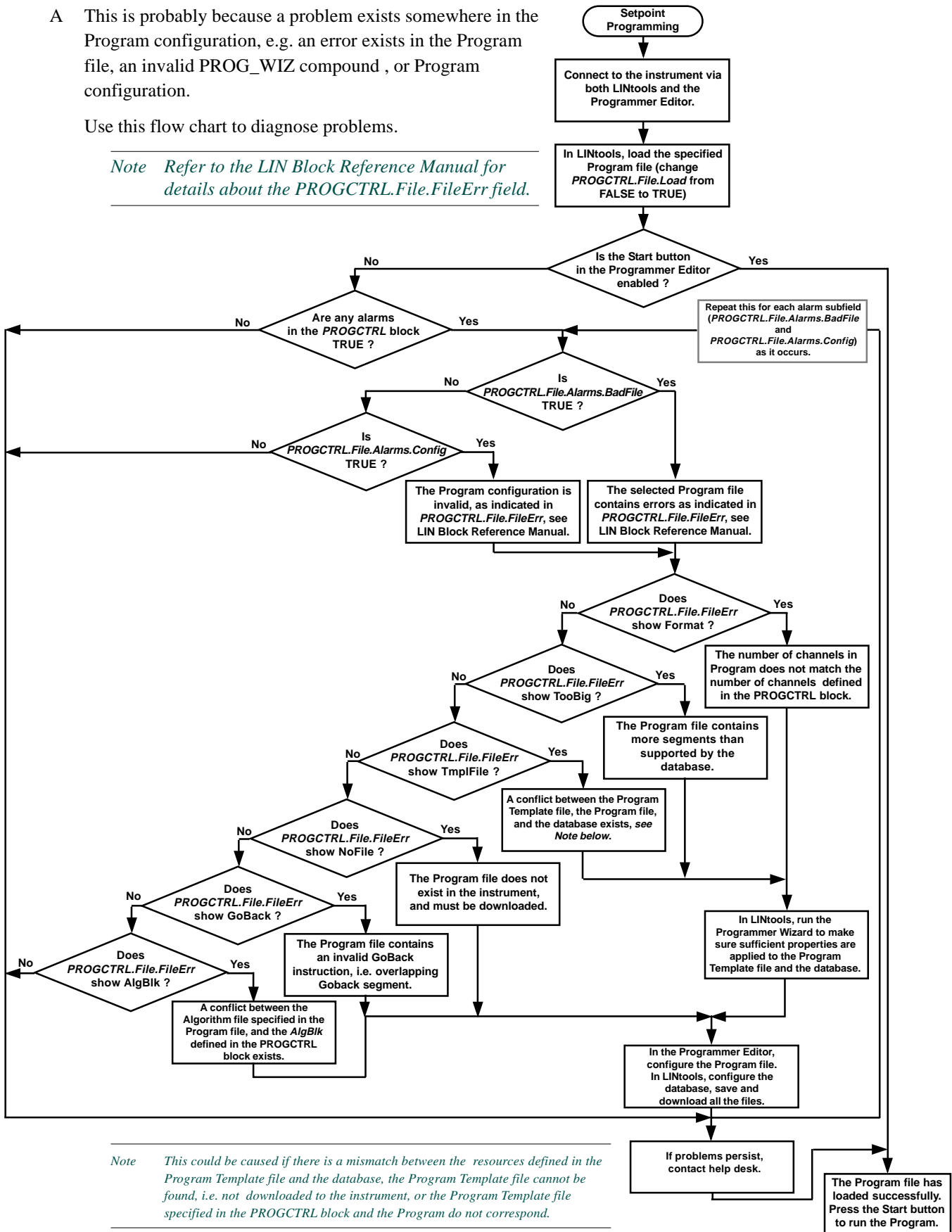
2.6 TROUBLESHOOTING (Cont.)

Q Why does the Program file fail to load ?

A This is probably because a problem exists somewhere in the Program configuration, e.g. an error exists in the Program file, an invalid PROG_WIZ compound, or Program configuration.

Use this flow chart to diagnose problems.

Note Refer to the LIN Block Reference Manual for details about the PROGCTRL.File.FileErr field.



Note This could be caused if there is a mismatch between the resources defined in the Program Template file and the database, the Program Template file cannot be found, i.e. not downloaded to the instrument, or the Program Template file specified in the PROGCTRL block and the Program do not correspond.

APPENDIX A FTP (FILE TRANSFER PROTOCOL) SERVER

If the instrument is connected, as part of a Ethernet Network, the Data Recording files, .uhh, can be archived to a defined FTP Server. Using the **Instrument Properties** dialog, .uhh files are pushed from the instrument to an archive directory configured in a specified FTP Server.

Note A number of FTP Servers are available. This section describes the installation and configuration using the default settings of the Internet Information Services (IIS) FTP Server supplied with the Windows XP Operating system, see Microsoft IIS Documentation help file for details.

A1.1 ADDING AN FTP SERVER

For the purpose of these instructions, we will assume that the computer is using a Windows XP Operating System and has an IP Address of 192.168.111.254.

To install an FTP Server

- 1 Launch the Windows Control Panel. Click **Start > Control Panel**.
- 2 Open the **Add/Remove Programs** dialog, then select **Add/Remove Windows components** from the left column. This launches the **Windows Component Wizard**.
- 3 Select the **Internet Information Services (IIS)**.

Note Ensure the File Transfer Protocol (FTP) Service is selected, by pressing the Details button to display the Internet Information Services (IIS) dialog used to select this service.

- 4 Use the Next button to continue the **Windows Component Wizard**. This launches the install process and displays a confirmation dialog when complete. This installation creates the default file structure required for FTP.

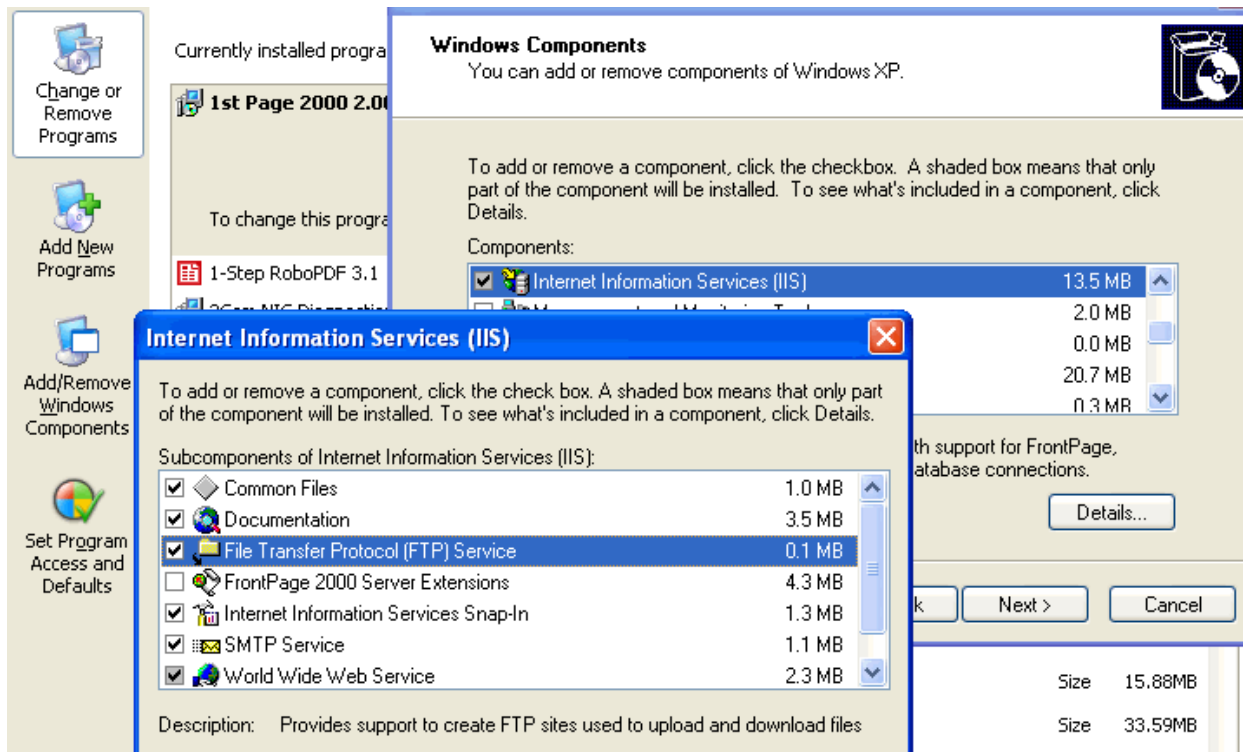


Figure A1-4 Install the FTP Site

A1.1 Adding AN FTP SERVER (Cont.)

Now that the server has been installed, it must be configured

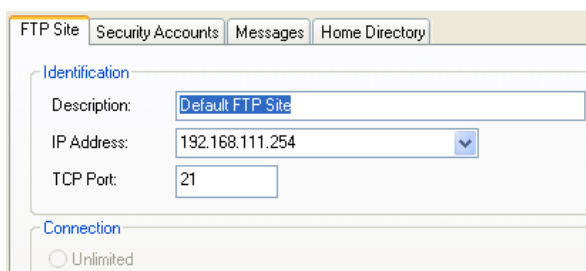
- 1 Launch the Windows Control Panel. Click **Start > Control Panel**.
- 2 Open **Administrative Tools**, then launch the **Internet Information Services (IIS)**.
- 3 Expand the **Local Computer** icon and the FTP Site icon to display the **Default FTP site** folder.
- 4 Select the **Default FTP site** folder to show the context menu and select **Properties** to display a dialog. Use this dialog to set the identification parameters for your server. The server and domain names and the IP address are optional.
 - Select the **FTP Site** page. This allows you to configure the identification for the FTP Site.

Description. This name is primarily for identification and organizational purposes, and does not need editing.

IP Address. This is the IP address of the local computer connected to the network.

TCP Port. This determines the port on which the service is running.

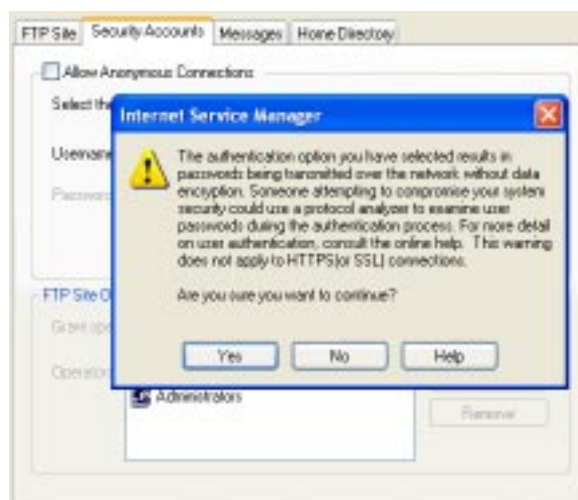
IMPORTANT *The TCP Port must be set to 21.*



- Select the **Security Accounts** page. This allows you to configure remote access to your specified FTP Server.

Allow Anonymous Connections. Set **Allow Anonymous Connections** FALSE to only allow connections to the FTP Server from Windows User accounts that exist on this computer. When FALSE all parameters are disabled, greyed out.

Note **Anonymous connections, Allow Anonymous Connections set TRUE, are permitted, but not recommended**

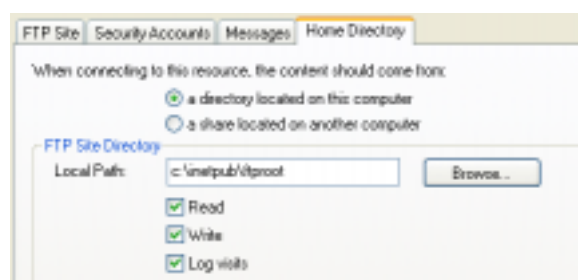


- Select the **Home Directory** page. This allows you to configure the path to the FTP directory or destination URL. The syntax must match the selected path type,

For a local FTP directory, use the full path; for example, **c:\inetpub\ftproot**, by default. Use the **Browse** button to select a local directory rather than typing the path.

For a network share, use a Universal Naming Convention (UNC) server and share name; for example, **\\Webserver\Htmlfiles**.

Note **The Write box must be set TRUE.**



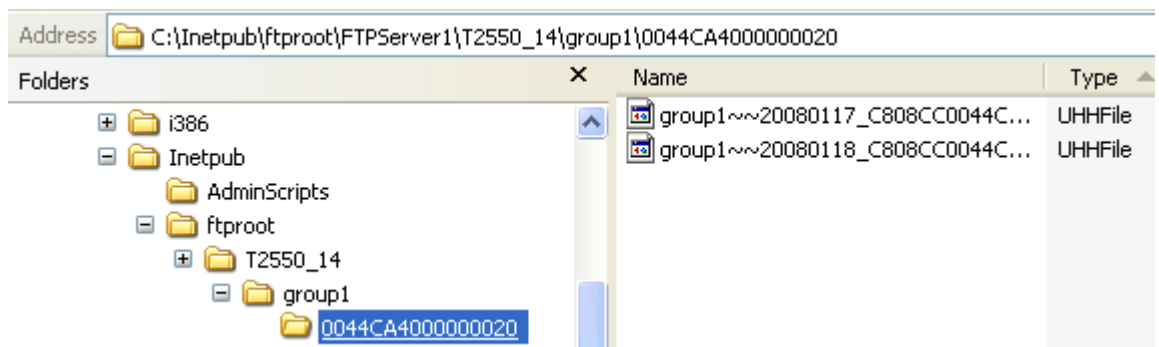
- 5 Press **OK** to confirm the changes to the configuration of the FTP Site and to close the **Properties** dialog.

1.4 Adding AN FTP SERVER (Cont.)

Check to see if files are transferring,

- 1 Open Windows Explorer. Click **Start > Programs > Accessories > Windows Explorer**.
- 2 Locate and open the FTP directory configured in the Home Directory page of the **Default FTP Site Properties** dialog. This will be at **c:\inetpub\ftproot** if the default was used.
- 3 Open the folder used to identify the instrument generating .uhh files, as configured in the **Instrument Properties** dialog, and the folder identifying the group of values recorded in this .uhh file.
- 4 With the **c:\inetpub\ftproot** FTP directory open, .uhh files appear as they are transferred from the instruments' internal flash memory.

Note Sub folders can be created in the default **c:\inetpub\ftproot** FTP directory, but this must also be configured in the **Directory** field of the **Archiving** category in the **Instrument Properties** dialog.



IMPORTANT If the .uhh files are not appearing in the configured archive directory, open **LINtools** and inspect the **RARCDIAG** block. This will provide information for diagnosing why the .uhh files are not being archived.

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