Quick Start Description

This getting started guide describes the basic actions required to connect and communicate to instruments, chart values from those instruments and configure alarms on those data values.

Before using this guide ensure that a CAL Controls instrument is connected to the PC and has valid initial settings before continuing. If the instrument is displaying LEV5 then the instrument initial settings need to be defined, see owners manual for details.

For more information consult the application guides for wiring and connecting instruments and communications.

Quick Start Installation and Troubleshooting

The CALgrafix application is installed from the CDROM automatically when the CD is inserted. If after inserting the CD the application does not automatically install run the "SETUP.EXE" file located in the root of the CDROM drive.

Installed along with the application are help documents and utilities for use when setting up a DCOM installation. These are installed under "Program Files\CAL Controls\CALgrafix\DrDCOM"

Under the CALServer application directory are new instrument template files, stored in the "Template" sub-directory. Users of existing CALServer applications will need to re-create their applications with these updated templates for use with CALgrafix.

The instrument displays are blank at startup and will remain blank if the communications link is not functioning correctly. To verify this either verify the communications activity at the target instrument (see manual for details) or open the server application and use the View/Ports menu to select a port and view the statistics.

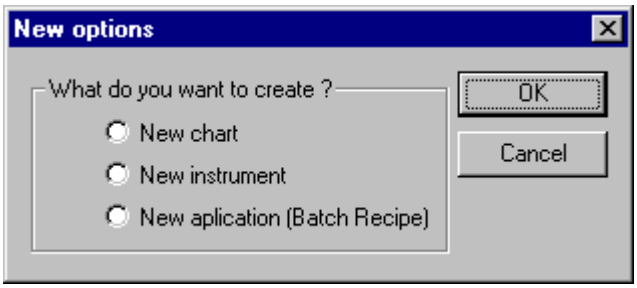
If the instruments displays go blank occasionally or the message "Error reading settings from device" is seen then the servers communication settings may need to be changed. This is normally only the case if a RS232-RS485 converter is in use on a chain of more than twenty instruments. To change the communications settings to fix these problems open the server application and use the File/Ports menu to access the setup of the required port. In the port setup is a setting called the "Transaction Gap", this value is used to slow data transfer to allow RS232-RS485 converters to operate correctly. The default value for this setting is 20ms, for a malfunctioning link this value should be increased to 35ms or greater.

For a link without a RS232-RS485 converter this value can be reduced to 0ms to improve the communications speed to the connected instruments.

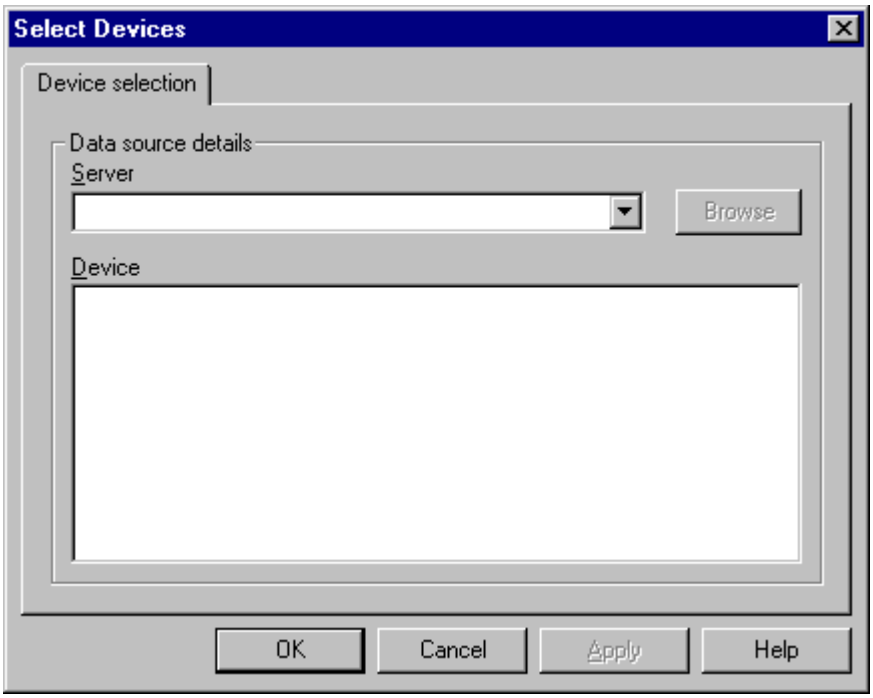
Go to this website and download the software launcher
https://www.west-cs.com/resources/software-temp-control/cal-products-software/

Adding a new instrument

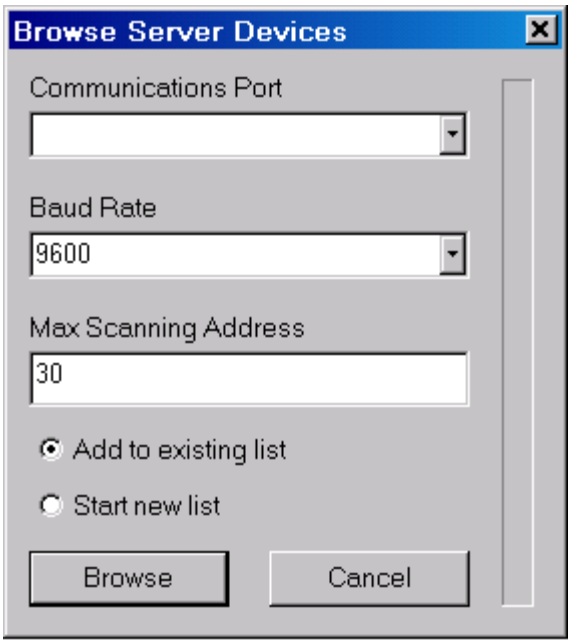
To add a new instrument to the application select "New" from the File menu which will open the New options dialog



Select the New instrument option and press OK which will open the Select devices dialog.



Select the "CALControls.CALServer" OPC server from the dropdown server list. Then click on the Browse button which will open the Browse server devices dialog.



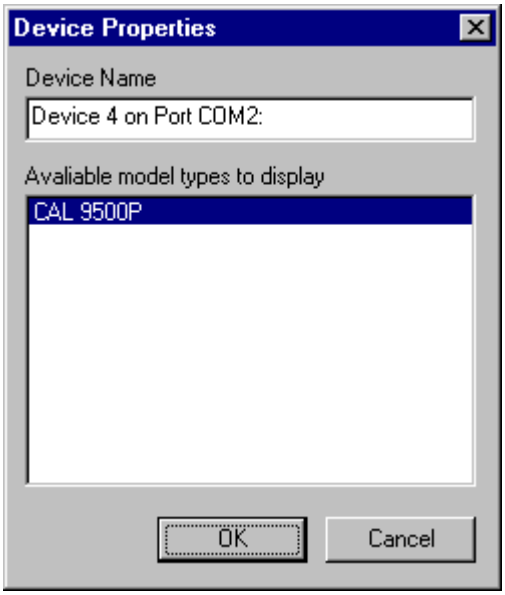
Select the communications port which is connected to the CAL Controls instrument and the communications baud rate. You may also specify the highest ModBus address to scan for devices on, this defaults to 30 but can be set as 1 to 254.

To add more instruments to an existing application select "Add to existing list".

To start a new list or to change the Baud rate on a communications port select "Start new list".

Press Browse and the CALServer application will attempt to the find any CAL Controls instruments connected to the specified communications port. The detected devices will be listed in the devices list of the Select devices dialog (show above).

Displayed next to each device in the devices list is the default display template of that instrument. If the instrument is not communicating correctly then the display template will be shown as "[Unknown]". To change a display template selection double click on the device name in the list, this will open the Device properties dialog.



This lists the available model types to display for the selected instrument. Select the required option and press OK.

Note: CAL 3300 and 9300 instruments models will always prompt for the user to select a display template. This can either be done in advance or pressing OK will prompt for any devices which require a display template to be selected.

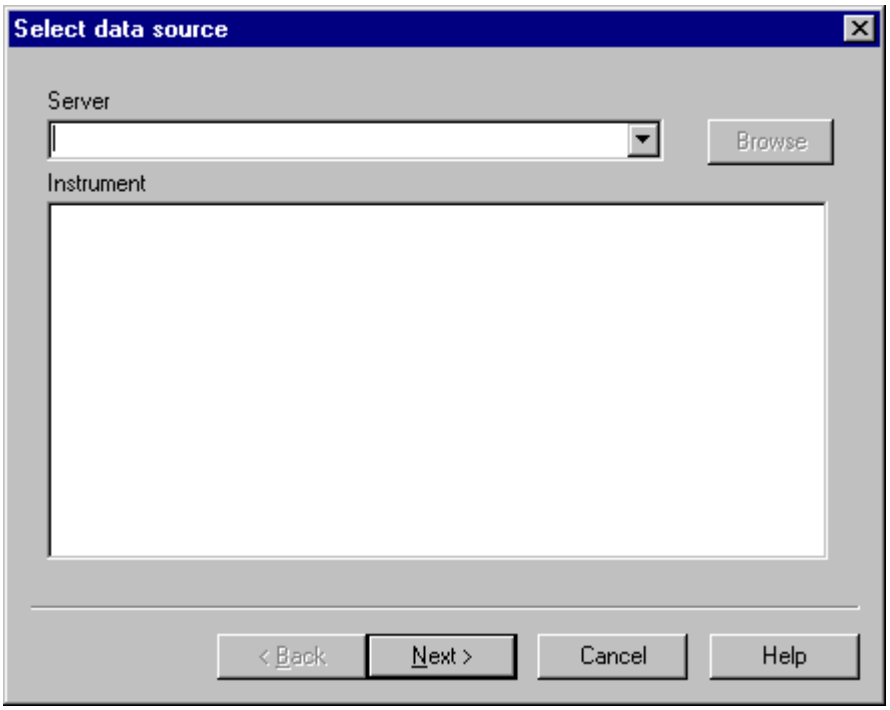
Choose any of the detected devices and press OK to complete the addition of the instrument to the application template. This will create an instrument display window for the selected CAL Controls instrument type and display template. For example;

Note: the instrument display will show LEV5 if no valid setting has been made for input sensor, display resolution or output device, these settings are configurable from instrument front panel only.

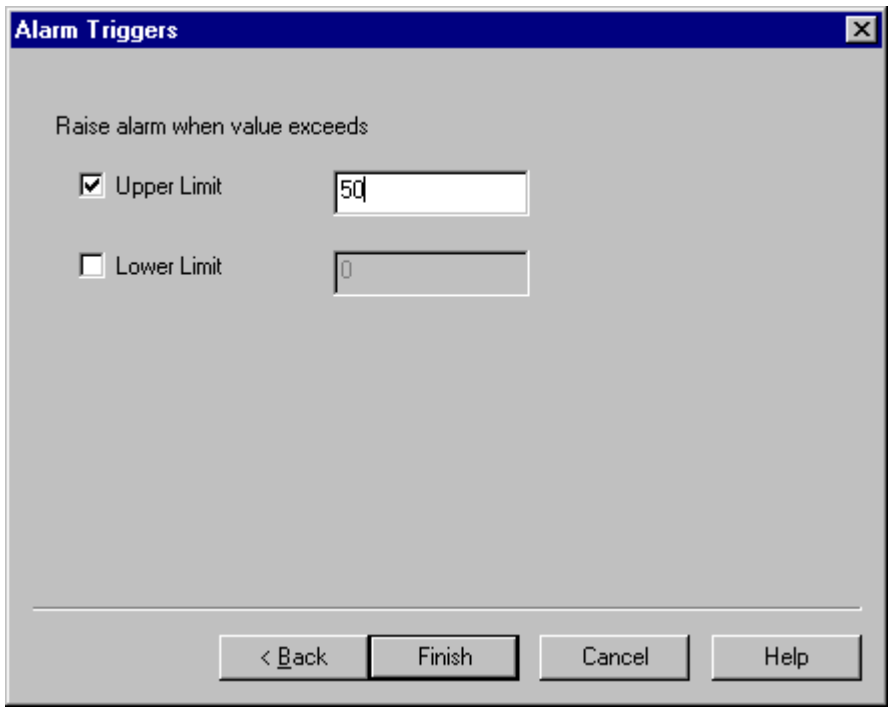
To inspect of change instrument settings see Setting instrument properties.

Adding a new alarm

To add an alarm to an application select the "Add alarm" option from the "Alarms" menu which opens the Select data source dialog.



Select the CALControls.CALServer OPC server from the dropdown server list. If no instruments appear in the instrument list then see Select devices dialog. Select a data source tag from the instrument display list and press Next, this opens the Alarm triggers dialog.

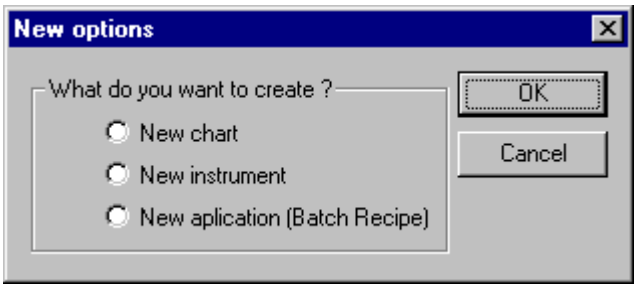


Select the required alarm trigger mode and value, or both if a band alarm is required and press finish to create the alarm.

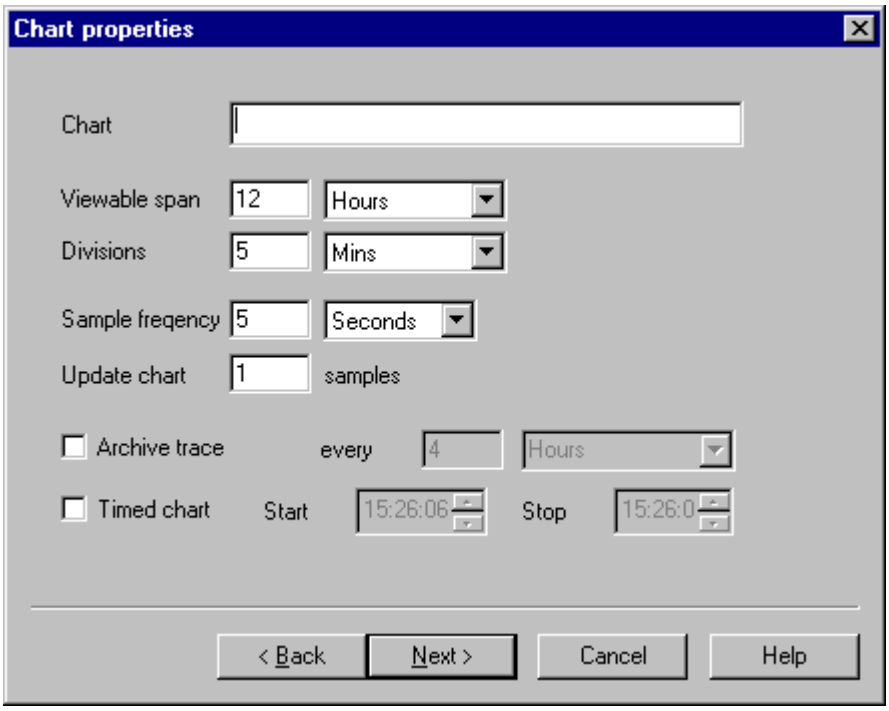
To set alarm properties for an existing alarm see Setting alarm properties

Adding a new chart

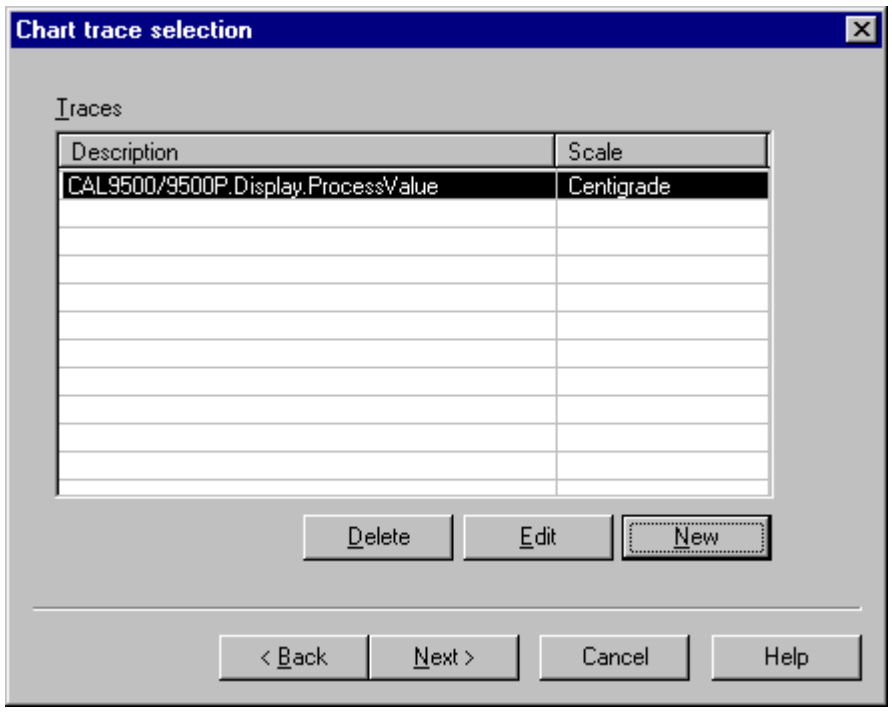
To add a new chart to the application select New option from the File menu which opens the New options dialog.



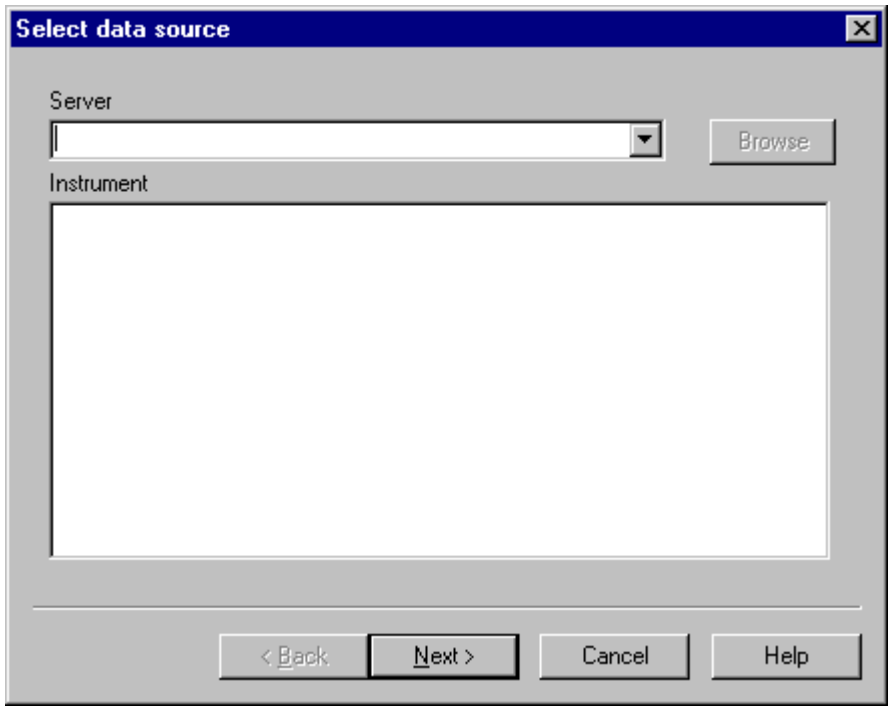
Select the New chart option and press OK which will open the Chart properties dialog.



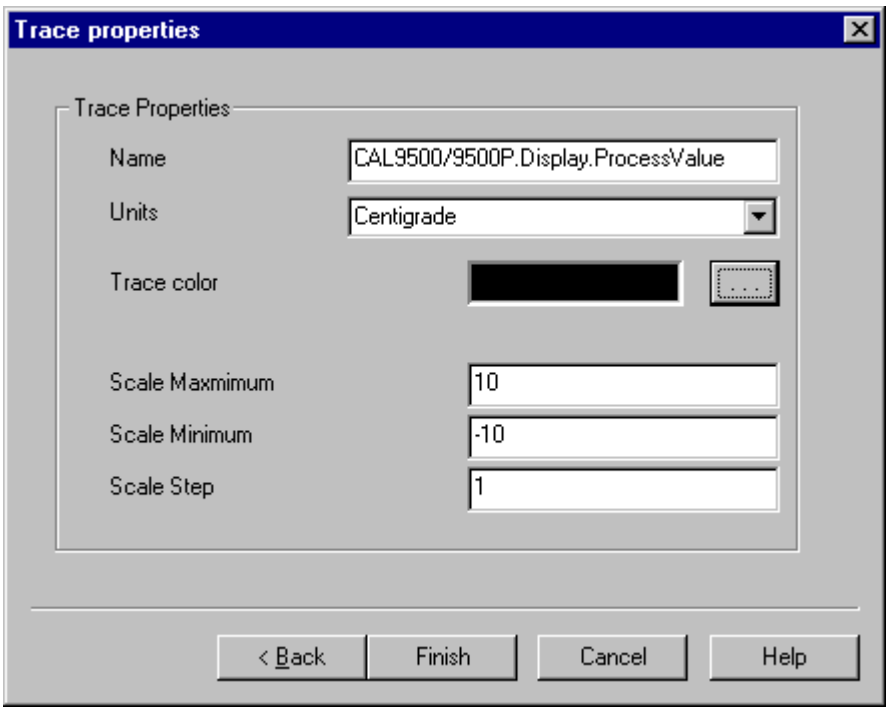
Enter the required filename for the new chart, change any other parameter values required and then press Next to show the Chart trace selection dialog.



Press the Add button to add a trace to the chart, this opens the Select data source dialog.

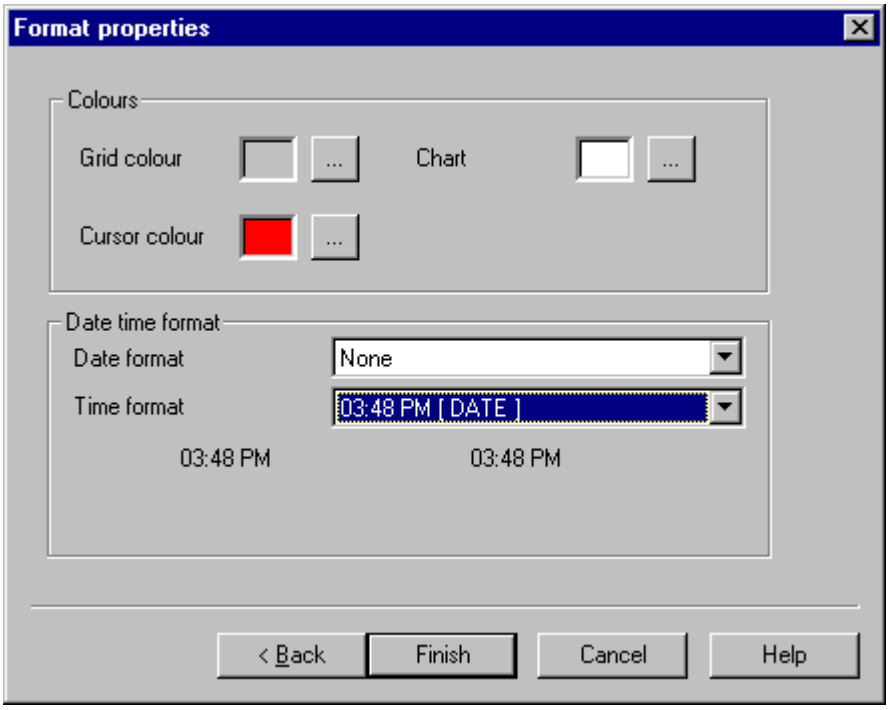


Select the CALControls.CALServer OPC server from the dropdown server list. If no instruments appear in the instrument list then see Select devices dialog. Select a data source tag from the instrument display list and press Next, this opens the Trace properties dialog.



Change the trace name and select the trace units if required and press Finish to return to the Chart trace selection dialog.

Press Next to move to the Chart properties dialog.



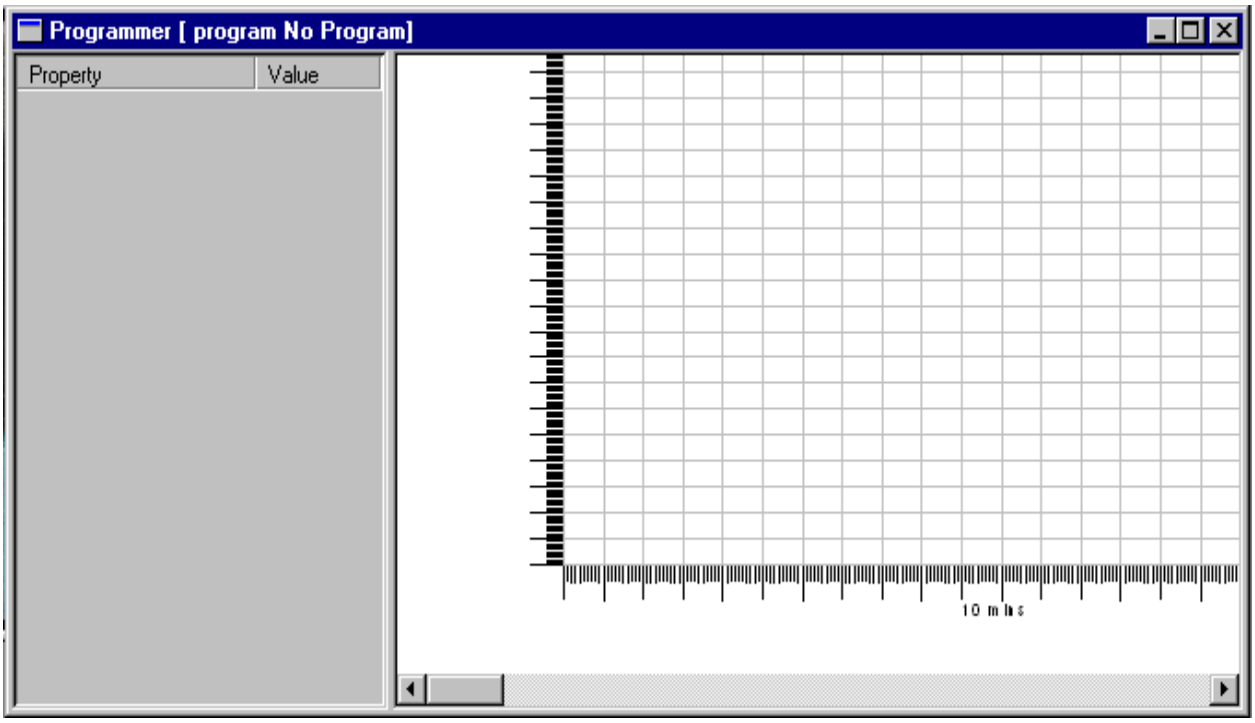
Make any required changes to the chart appearance settings and press Finish to complete the

creation of the chart.

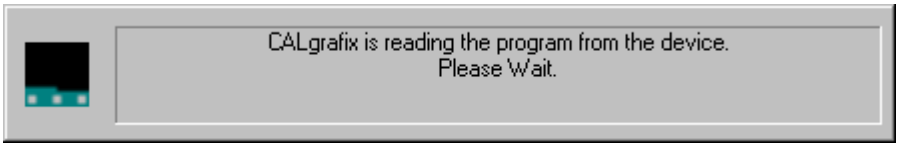
A new chart document will appear and will start charting data from the selected source. To set the chart properties see Setting chart properties.

Creating a new program

To create a new program for a 9500P type CAL instrument select the "Edit Programs" option from the "Instrument" menu which opens the Programmer document window.



It may take several seconds to load the program data from the instrument and during this period the wait dialog will be displayed.

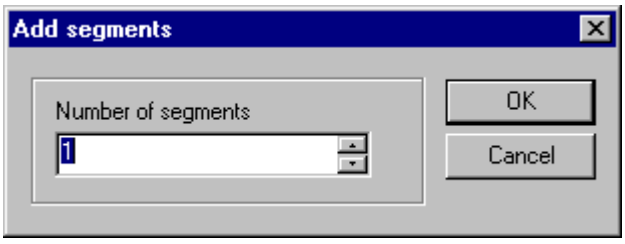


Once the program data has been loaded from the instrument select the "New Program" option from the "Programmer" menu to create a new program.

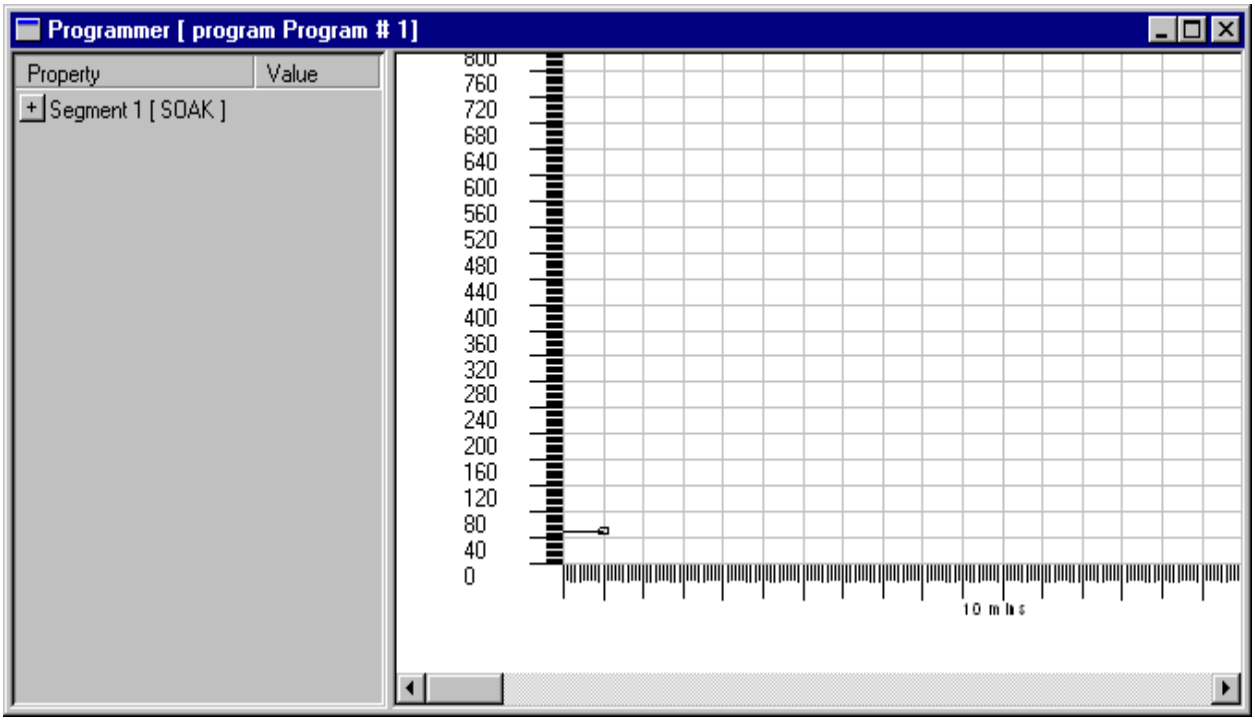
To configure the properties of the newly created program see Setting program properties.

Adding segments to a program

To add a segment to the current program select the "Add Segment" option from the "Programmer" menu, for this example select the "Ramp/Soak/Step" option which will open the add segments dialog.



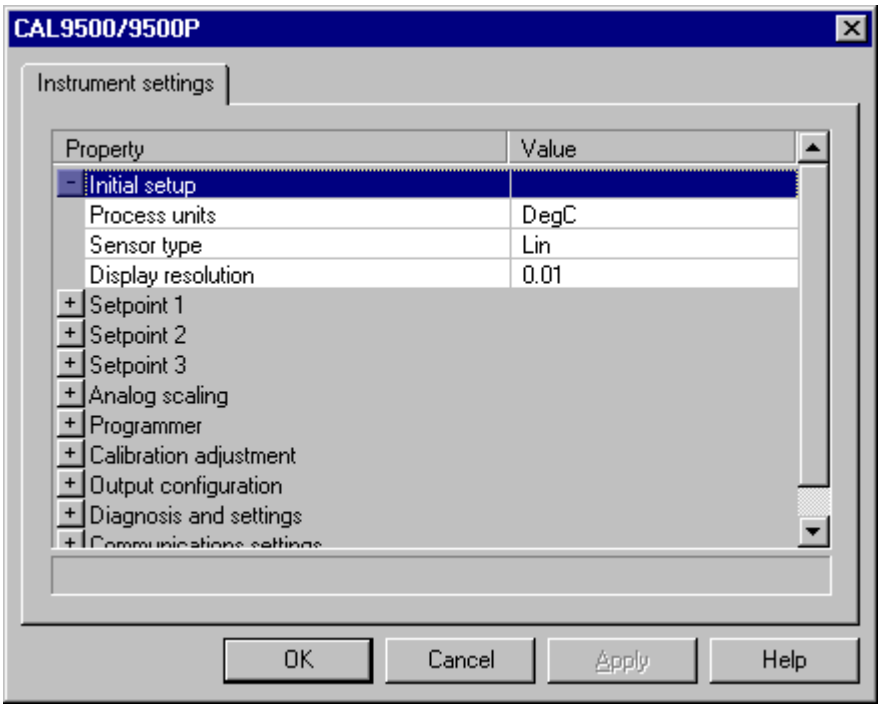
Leave the segment count at one and press OK to continue. This should change the programmer document window as shown.



To set the segment properties see Setting segment types and properties

Setting instrument properties

To inspect of change instrument settings select "Properties" from the "Instrument" menu which will open the Instrument settings dialog.



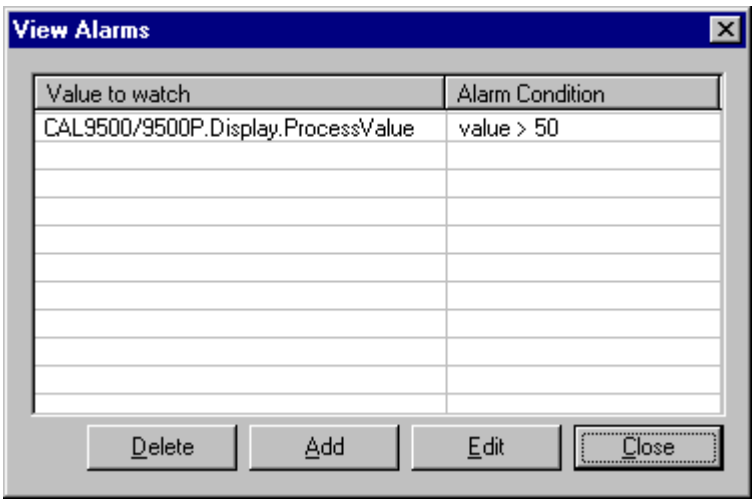
Settings groups can be open and closed by double-clicking on the plus and minus symbols of the left of the list.

Each value can be changed by double-clicking on the value and either selecting a new value from the provided list of typing a new value.

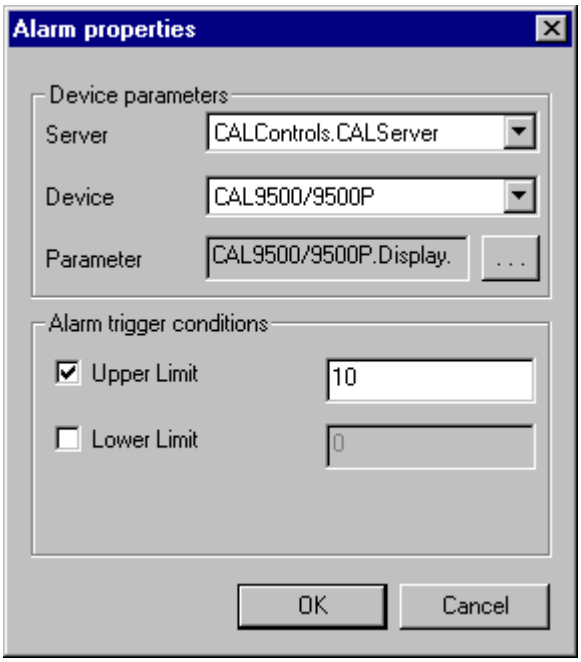
Pressing Apply or OK will send these new settings to the instrument.

Setting alarm properties

Select the "Alarm Settings" option from the "Alarms" menu which opens the View alarms dialog.



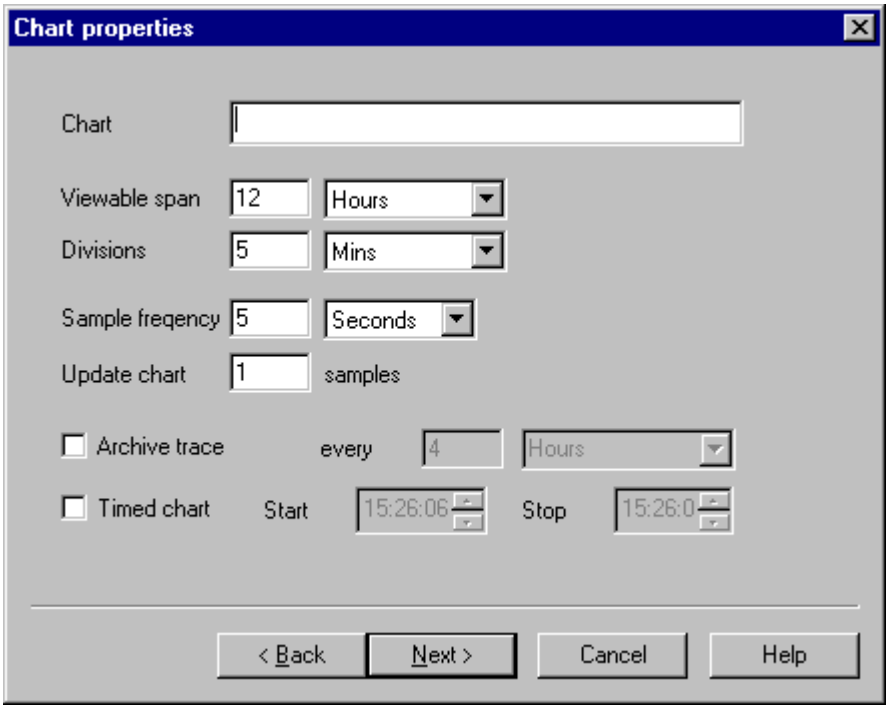
This dialog allows alarms to be added and deleted and alarm properties to be changed by selecting an alarm from the list and pressing the Edit button which opens the Alarm properties dialog.



This dialog allows the alarm data source and trigger conditions to be changes as required.

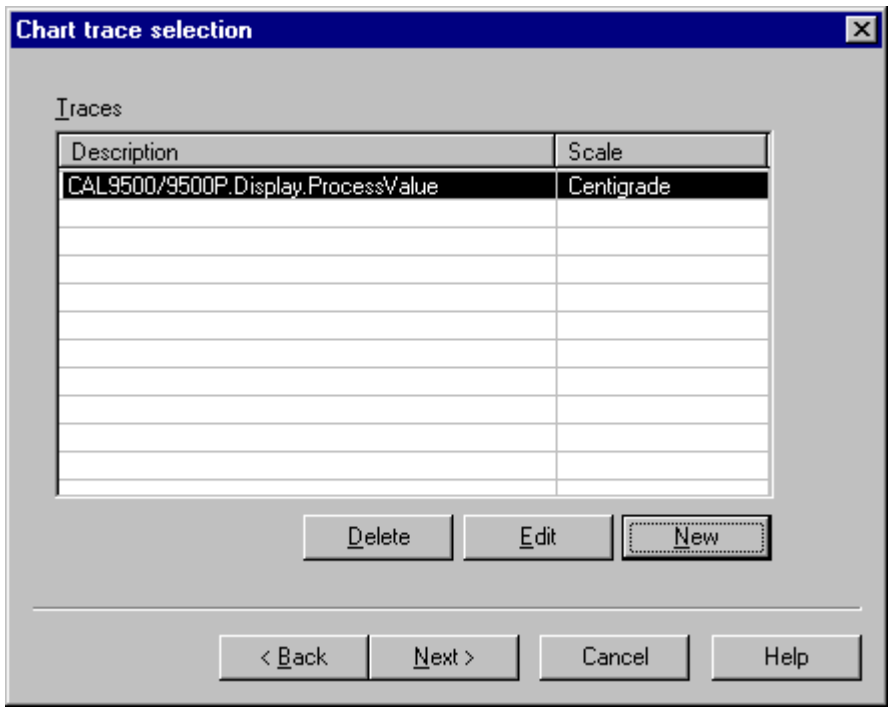
Setting chart properties

To set chart properties select the "Properties" option from the "Chart" menu which opens the Properties tabbed dialog. The Properties tabbed dialog contains three pages, the Chart properties dialog.



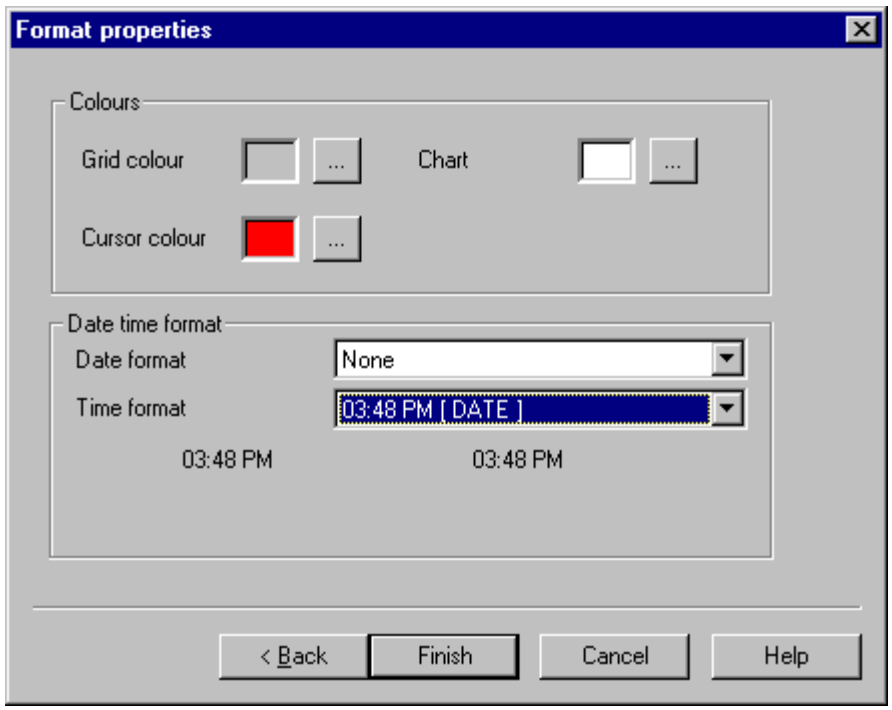
Which contains the properties for the chart including the timescale settings, the update frequency and archive and timed chart control.

The next page is the Chart trace selection dialog.



Which is used to add, remove traces and set trace properties using the ? Modify Trace Details dialog.

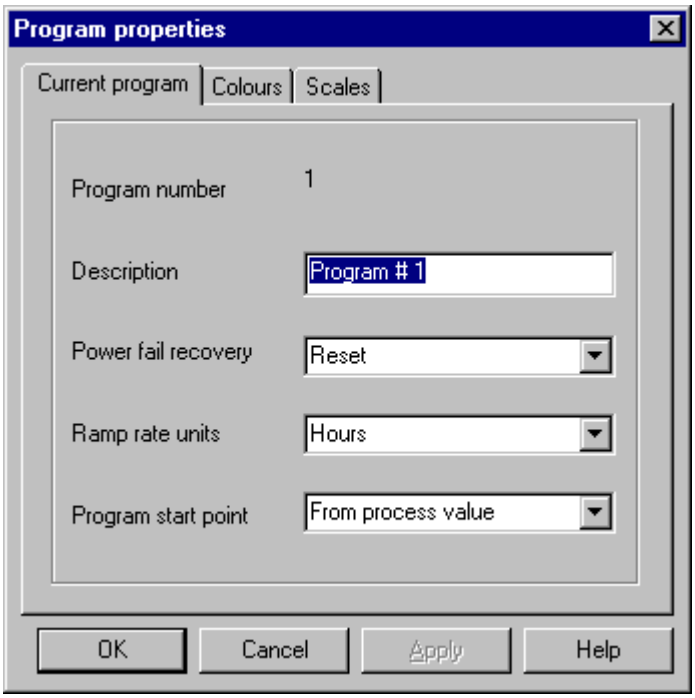
The last page is the Format properties



Which contains the properties for the chart presentation colors and formats.

Setting program properties

To configure the properties of a program select the "Properties" option from the "Programmer" menu which opens the Program Properties tabbed dialog.



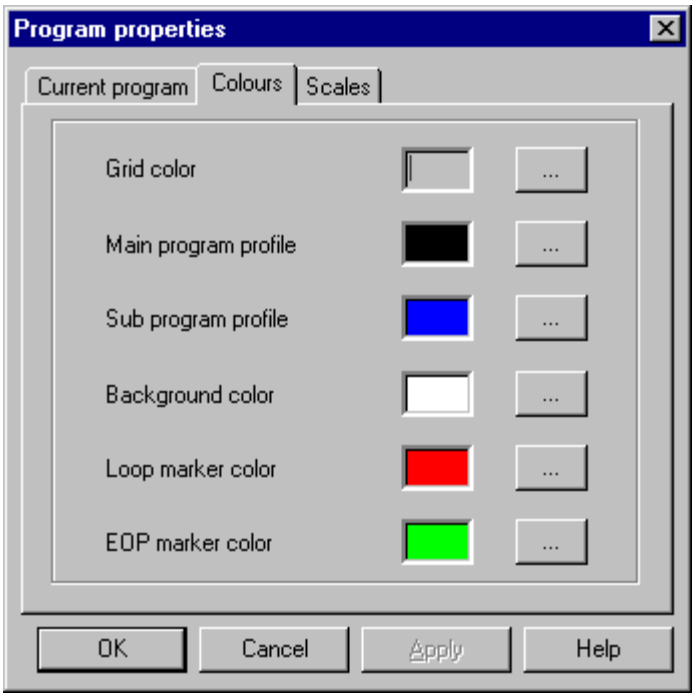
The first page contains settings for the current program.

The program number show the program number the instrument front panel would display and cannot be changed.

The program name should be set to a name which describes the process that the program will perform e.g. "Extruder warmup cycle" .

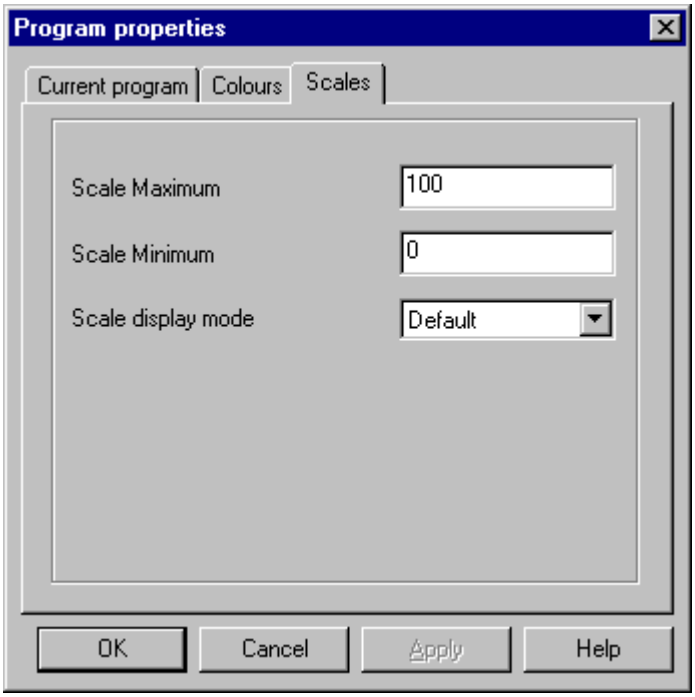
The powerfail recovery, ramp rate units and program start point should all be set to the desired values.

The second page of this tabbed dialog is the Program Colors dialog.



This allows the appearance of the program graphical trace to be changed.

The last page of this tabbed dialog is the Program Scales dialog.



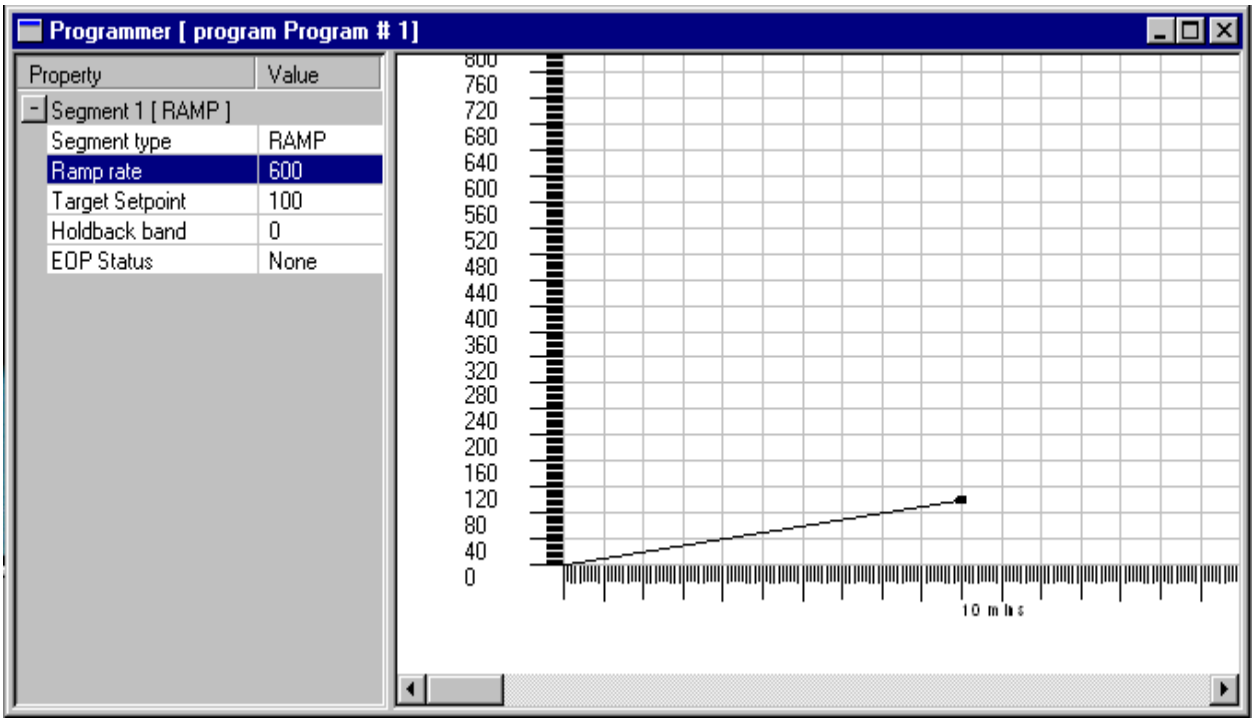
This allows the setpoint value (y axis) range to be defined and the timebase (x axis) draw method to be selected.

To add a segment to this program see Adding segments to a program.

Setting segment types and properties

Double click on the plus symbol at the left of the segment name to open the segment properties list. Next double-click on the "Segment Type" value and select RAMP from the dropdown list to change the segment type.

Set the "Ramp rate" value to be 600 and set the "Target Setpoint" value to be 100 greater than its initial value. This should change to programmer document window to something like this.



The ramp rate and target setpoint can also be changed using the graphical program trace. Left click on the line end point box and holding the left button down move the end point to a new position. The values in the ramp rate and target setpoint values will change to reflect the new program trace.

To save the new program to the instrument select the "Write program data" option from the "Programmer" menu.

For more information about the programmer document and segment settings see Setpoint Programmer

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