

SpecView Plus is a low cost, auto-configuring SCADA package which communicates with control and monitoring instruments from the worlds leading suppliers.

Designed for people who have better things to do than configure software, SpecView features:

- *Quick Start Automatic Configuration*
 - *Instrument Views - more than just "faceplates"*
 - *Graphical User Interface*
 - *Trend Charts - Unlimited Charts and Unlimited Pens*
 - *Bar Charts*
 - *Data Logging with Custom Reports*
 - *Recipe System*
 - *Historical Replay of Complete Screens*
 - *Strategy Controller for Automation*
 - *Event Logging*
 - *Alarm Monitoring*
 - *Dynamic Data Exchange*
 - *Touch Screen Compatible*

**Configure SpecView yourself
in minutes - not days**

**At a fraction of the cost of
conventional SCADA**

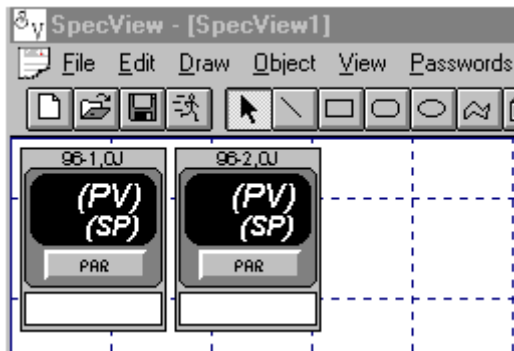
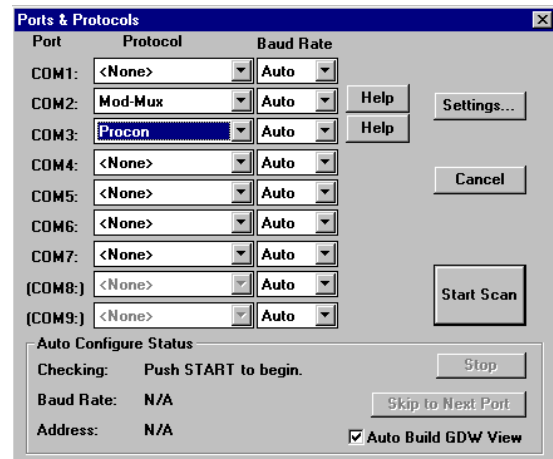
Auto Configuration

Start SpecView and tell it what type of instruments are connected to each serial port.

A context sensitive help button appears by each port selected that accesses specific help for the instrument type chosen.

SpecView (with the multi port option) supports up to *nine* communications ports! Each may use the same or different protocols.

When the "Start Scan" button is clicked SpecView will send out test messages to the instruments to determine which type they are.



Instrument Views

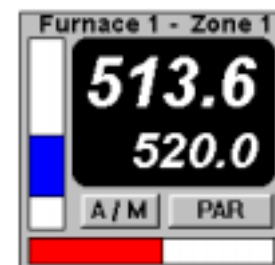
As each instrument is found, an "Instrument View" appears on the screen. These are special SpecView "objects" that will display one or more parameters of the instrument.

These ones show a controller and will display the Process Value and the Set Point numerically and a bar graph of the Output power. Some also show deviation from set-point.

Run Time & Instrument Views

Entering the Run Time mode starts the communications with the instruments. This instrument view has bar charts for deviation and output power.

Instrument Views can be renamed with logical names. There are no limits to the names; any number of any characters and spaces are allowed.



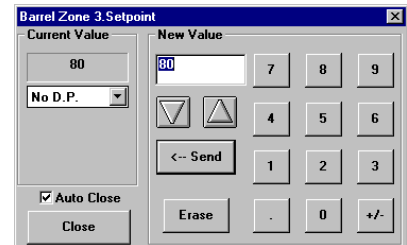
Accessing Instrument Parameters



Clicking the "PAR" button displays the parameter list for the instrument.

This picture shows the "Short List" being displayed. What parameters are restricted from the short list can be customized by the user and access to the full list limited by password access level.

Any adjustable parameter may be changed from SpecView. Simply double-click on it and the appropriate data entry box appears:



Graphical User Interface

Graphics have long been emphasized by SCADA software. So much so, that days or weeks are spent creating photo like images. How valuable these detailed graphics are is questionable. However, a graphical representation of the machine or process can serve a very important function: presenting the data to the user in an unambiguous way.

The simple graphic shown here makes it **absolutely** clear as to which end of the machine is which! Labels are not required to identify the machine parameters.

There is no limit to the number of screens in SpecView. Any or all can be "live" at the same time. (Our current user record is 150 - each with a 12 hour trend chart!).



A drawing toolkit is included with SpecView. Graphics like the one above can be created very quickly and easily.

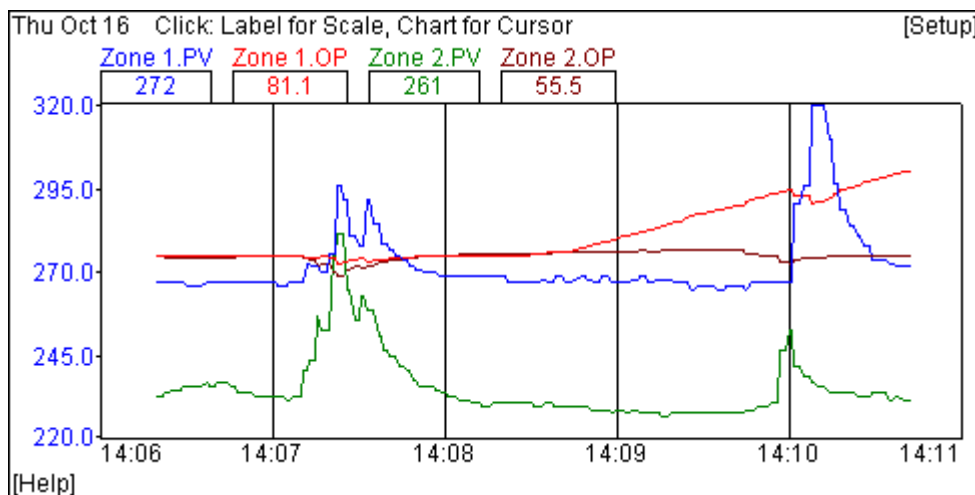
For those that require more complex images SpecView allows the use of bitmaps on any of its screens. Pictures can be scanned or drawings can be created in powerful CAD and drawing programs.

Screens may be further enhanced by animating them with "Color Dynamics". Any object may have up to five colors that change as process conditions change.



Trend Charts

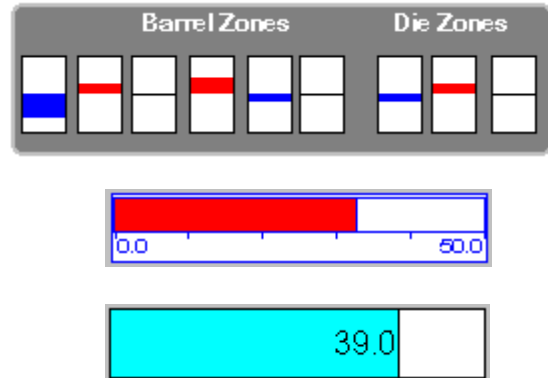
SpecView has extremely powerful trend chart capabilities. Each trace on the chart is referred to as a "pen".



- **Automatic printing - make the chart full screen for a full page print**
- Unlimited number of total charts
- Unlimited number of pens on chart
- Individual scaling for each pen
- Individual display of pen scaling (click on label and y-axis displays the scale for *that* pen)
- Unlimited number of charts on a single screen
- The same variable may be re-used on any chart
- Time spans from 1 minute to 30 days
- Numeric display of each value
- Round number time intervals
- Choice of font for labels and values (remove the text for "trace only" charts)
- Choice of colors for background and axes (black background for best contrast; white for printing)
- Optional horizontal grid
- Click on chart for exact numeric value and time
- Double-click on the chart for two cursors showing time interval and value change
- Change setup anytime: scaling, colors, time span etc.

Bar Charts

- Bar charts display data as moving colored bars:
- Horizontal or vertical
- With or without numeric values
- With or without scales
- Top/Left or Bottom/Right or Center
- Two color display for center zero (deviation)
- Adjust parameter by clicking on chart



Data Logging

SpecView saves the values of variables to disk at a time interval.

- The time interval is adjustable: minimum 1 second, default 1 minute or Off
- **Any** variable, including SpecView user variables, may be logged
- The data is stored in one set of files per day for easy backup and deletion
- The data is stored in binary format: **not** editable
- The stored data is used for **Log Reports** and **Historical Replay**.
- The user may add or delete variables from being logged at any time.

With Historical Replay it is probable that the user wants to log all the variables being displayed on the screen so SpecView has added a menu item to "Add **all** the variables on **this** screen" to data logging.

Event & Alarm Logging

SpecView monitors, time stamps and logs:

- All (or selected) alarms in the connected instruments
- All (or selected) actions (mouse clicks or function keys) made by the operator

This data may be viewed on the screen or included in a log report.

Log Reports

Log Reports are text files in CSV (Comma Separated Variable) format. They are generated either on demand or automatically by the **Strategy Controller**.

There are two steps to creating a Log Report:

1. Select the Log Report Format
2. Select the Start time/date and Stop time/date

The format tells SpecView:

- Which of the logged variables to include in the report
- What to call the report file
- Where to put the file
- What to use as default Start and Stop times
- Whether to include the Alarm log
- Whether to include the Event log

The report file name can be taken from an on-screen text string and so be associated with a batch or lot number or other logical name for the user.

If the alarm and event logs are included, separate CSV files are created with the same name but the extensions CSA (Comma Separated Alarm) and CSE (Comma Separated Event).

```
Time,"Zone 1.Output Power","Zone 1.Process Value","Zone 1.Setpoint"
07/06/97 00:00:00,68.9,72.7,90.0
07/06/97 00:00:05,69.2,72.7,90.0
07/06/97 00:00:10,69.1,72.7,90.0
07/06/97 00:00:15,69.3,72.7,90.0
```

Log report viewed with a text editor

Same report opened in Excel

| | A | B | C | D |
|---|----------------|---------------------|----------------------|------------------|
| 1 | Time | Zone 1.Output Power | Zone 1.Process Value | Zone 1. Setpoint |
| 2 | 7/6/97 0:00:00 | 68.9 | 72.7 | 90 |
| 3 | 7/6/97 0:00:05 | 69.2 | 72.7 | 90 |
| 4 | 7/6/97 0:00:10 | 69.1 | 72.7 | 90 |
| 5 | 7/6/97 0:00:15 | 69.3 | 72.7 | 90 |

Alarm Reports

Alarm History window viewed on screen in run-time:

| Alarm History | | | |
|-------------------|-------------------|-------------------|-------------------|
| Name | Time Occurred | Time Cleared | Time Acknowledged |
| Zone 1.High Alarm | 09/30/97 14:19:12 | N/A | 09/30/97 14:19:24 |
| Zone 1.High Alarm | 09/30/97 14:18:09 | 09/30/97 14:18:48 | 09/30/97 14:18:40 |
| Zone 1.High Alarm | 09/30/97 14:17:13 | 09/30/97 14:17:30 | 09/30/97 14:17:31 |

| | A | B | C | D |
|---|-------------------|---------------|---------------|-------------------|
| 1 | Variable | Time Occurred | Time Cleared | Time Acknowledged |
| 2 | Zone 1.Low Alarm | 9/30/97 14:56 | NA | 9/30/97 14:56 |
| 3 | Zone 1.High Alarm | 9/30/97 14:55 | 9/30/97 14:55 | 9/30/97 14:55 |
| 4 | Zone 1.High Alarm | 9/30/97 14:38 | 9/30/97 14:54 | 9/30/97 14:38 |

Alarm report file viewed in Excel.

Event Reports

SpecView can record *all* (or specified) actions made by the user. If the instruments are locked so that all adjustments are made from the computer a complete record of machine operation is kept. If the password system is used, the log-in user is also recorded.

Event window viewed on screen in run-time:

| Events | | |
|-------------------|------------------|--------------------------------|
| Time Occurred | Type | |
| 09/30/97 14:41:24 | Log file Convert | |
| 09/30/97 14:40:42 | Value Set | Zone 1.Proportional band 1.000 |
| 09/30/97 14:40:35 | Value Set | Zone 1.Alarm SP1 25.000 |
| 09/30/97 14:40:03 | Value Set | Zone 1.Setpoint 92.000 |
| 09/30/97 14:39:56 | Alarm Ack | |
| 09/30/97 14:39:54 | Value Set | Zone 1.Setpoint 77.000 |
| 09/30/97 14:39:43 | Enter Runtime | Area1:SPECVIEW.GDW |

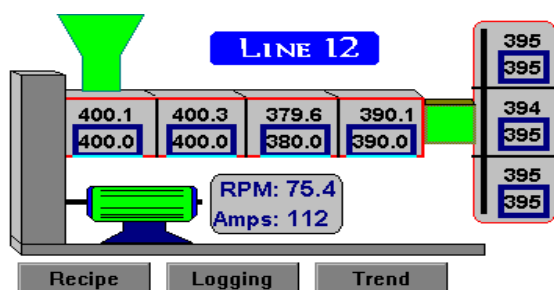
| | A | B | C | D |
|---|----------------------------|------------------|--------------------------|----|
| 1 | 09/30/97 09/30/97 14:39:54 | Value Set | Zone 1.Setpoint | 77 |
| 2 | 09/30/97 09/30/97 14:39:56 | Alarm Ack | | |
| 3 | 09/30/97 09/30/97 14:40:03 | Value Set | Zone 1.Setpoint | 92 |
| 4 | 09/30/97 09/30/97 14:40:35 | Value Set | Zone 1.Alarm SP1 | 25 |
| 5 | 09/30/97 09/30/97 14:40:42 | Value Set | Zone 1.Proportional band | 1 |
| 6 | 09/30/97 09/30/97 14:41:24 | Log file Convert | | |

Event report viewed in Excel.

Recipe System

A "Recipe" is when SpecView saves values of selected variables so they can be later reloaded to the connected instruments. Recipes give these benefits:

- Snapshot current process values when good product is being made
- Exactly reproduce previous machine setup
- Review and edit complex programmer profiles
- Eliminates operator error in setting machine parameters
- On-screen display of which recipe is loaded
- Save and reload instrument setup parameters



Each screen in SpecView can have recipes associated with it. When the recipe mode is selected a highlight appears around all the variables selected for recipes.

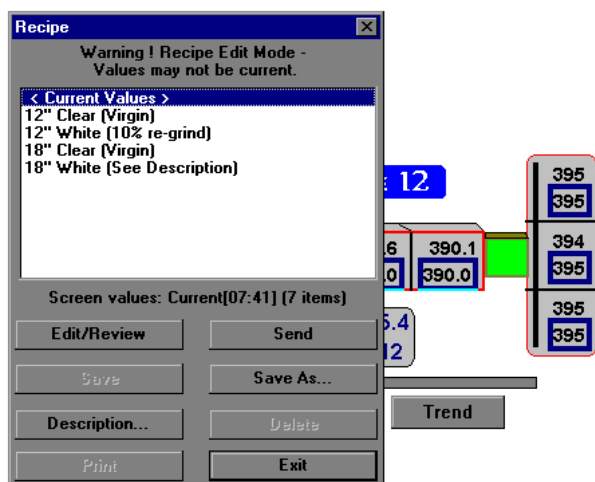
This picture shows that all the set-points on this extruder have been included in the recipe.

The values may be edited, saved or sent to the connected controllers.

This picture shows part of a programmer ramp/soak profile table.

Note that the profile parameters may be reviewed and edited *in real-time*.

| Segment Number | Loop 1 SP | Loop 2 SP | Segment Time |
|----------------|-----------|-----------|--------------|
| 1 | 120.0 | 55.0 | 00:25:00 |
| 2 | 115.0 | 90.0 | 00:15:00 |
| 3 | 120.0 | 85.5 | 02:00:00 |
| 4 | 85.0 | 90.0 | 00:45:00 |
| 5 | 85.0 | 50.0 | 00:25:00 |



Recipes names may be any length and include spaces and any special characters.

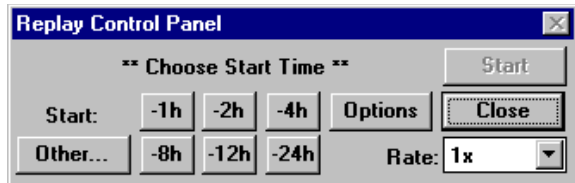
A description, which may include special instructions may be associated with each recipe.

Specific recipes may be loaded from *any* screen by clicking a button, further reducing the chance of operator error.

H

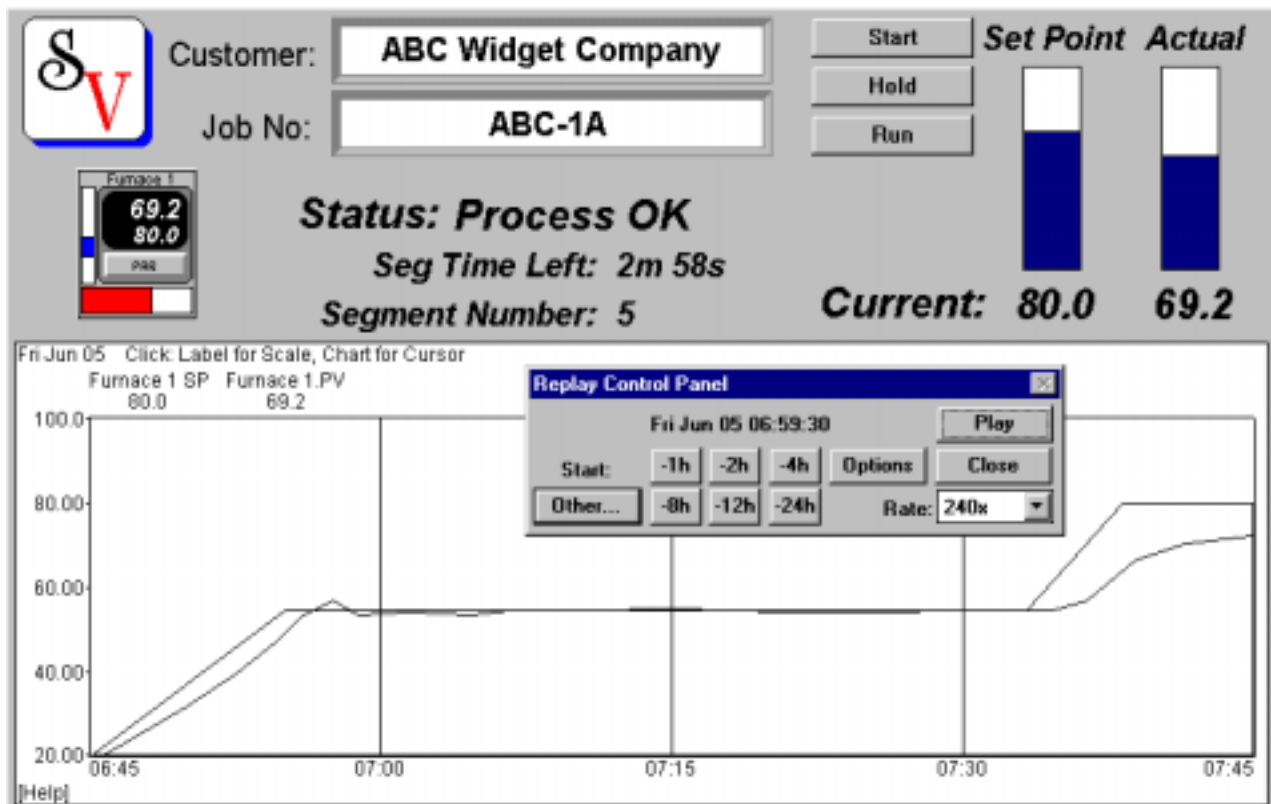
istorical Replay (Option)

Reviewing data by creating a log report and then analyzing it using another program can be very useful. But to get an "Instant Replay" of what the conditions were at a given time by looking at the same screen can be much faster and easier.



When Historical Replay is selected SpecView makes a copy of *the current screen you are looking at*. A "Replay Control Panel" appears and the user selects the start time for the replay. Specific buttons are provided for going back 1, 2, 4, 8, 12 & 24 hours. The "Other.." button displays a list of *all* the data log files on the disk and the user chooses a start time and date.

The "Rate:" selection controls the replay rate with selections of 1x (real time speed), 10x, 60x, 120x, 240x and Max. At the Max rate, the trend charts are filled in as fast as the computer can get the data from the disk. 24 hours of data can be replayed in a few seconds!

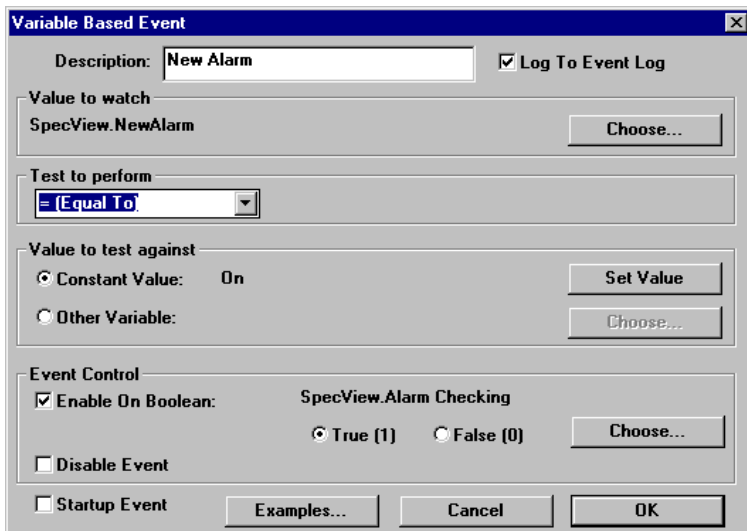


Note that *all* logged data is replayed, not just the trend chart. Numeric values, bar charts and text strings all replay. The best analogy is a video recording of the screen, replayed with an adjustable fast forward!

Strategy Controller (Option)

The Strategy Controller is a simple yet powerful feature that lets the user automate operations and implement advanced control functions. Uses include:

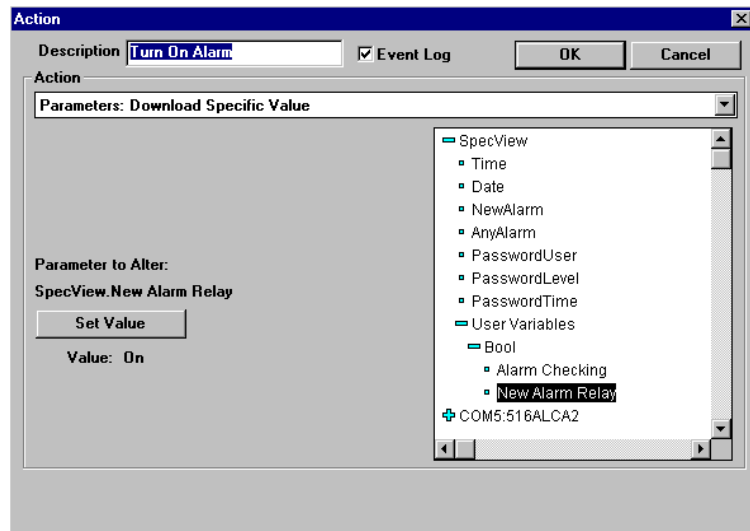
- Automatic loading of Recipes
- Downtime analysis
- Turning on an output based on an event (e.g. Any New Alarm)
- Setting multiple set-points based on a master set-point
- Increment multiple set-points by entering a single up/down value
- Cascade control
- Ratio control
- Timers
- Counters



First an event is defined, which may be based on time/date or the value of a variable. Then one or more actions are associated with the event.

Then the action(s) are defined that are to be performed when the event becomes true.

When multiple actions are defined they will be executed in a definable order. Some instruments require several actions to be performed in sequence in order to perform certain tasks. The Strategy Controller can be used to reduce these multiple actions to a single click on a button.



Dynamic Data Exchange (Option)

With this option SpecView acts as a DDE server to other Windows applications. Real time data can be read from SpecView and written ("Poked") back into SpecView.

Passwords

SpecView has a powerful password system with:

- Five levels of user access
 - Any individual variable, button or feature may be locked
 - Disable Window controls
 - Adjustable timeout to Locked or Operator level
 - Event logging of password activity
 - Restrict Instrument View access to Short List only
 - Hierarchical or non-hierarchical access at different levels
 - Password disable feature for development
-

Minimum Requirements and Upgrading SpecView

SpecView Plus is a 16 bit Windows application that will run on Windows 3.1/3.11, Windows 95/98. It will run on Windows NT with the addition of a special driver available from SpecView. However, the communications throughput with NT is significantly reduced. A 32 bit version will be available early in 1999.

Any computer that runs Windows and programs such as Word or Excel should run SpecView. A minimum of a 486/66 with 8 MB RAM is recommended. If a lot of printing, log reports and strategy controller functions are implemented a Pentium class machine should be used. **Communications ports should have 16550 UARTS or better.**

SpecView Plus may be downloaded at any time from the SpecView web site at no charge. When used without a "**Dongle**" (copy protection key) there is a 10 minute limit on communications in **each runtime session**. This timer is reset each time the user enters configuration mode and returns to runtime. It is **not** necessary to restart either SpecView or the computer. No save functions are disabled.

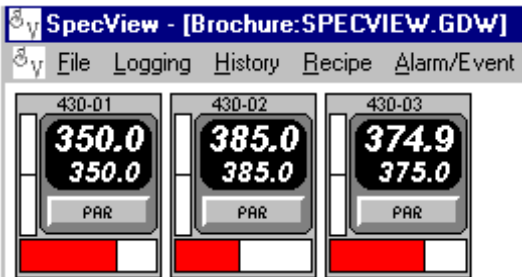
When the 32 bit version is available there will be no charge for the upgrade when downloaded via the internet. New disks and manual will be available from SpecView for a nominal charge. Additional features, such as network and remote access support will be available in the 32 bit version.

It is possible to add options to SpecView by upgrading the dongle. This can be done remotely - there is no need to send the dongle to SpecView. See the SpecView help system or manual for details.

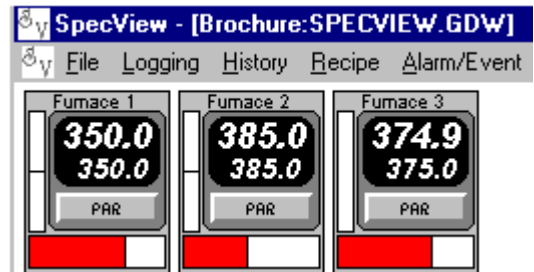
Getting Started with SpecView

Over 80% of all the SpecView in use has been configured by the end user! To set up a configuration to view several instruments on the screen, data log key values and have a trend chart for each instrument really does take less than 15 minutes. Here is what you would do...

Step 1 - Put Individual Numeric Values on the Screen



The auto detected instruments have names assigned by SpecView. These may be changed to logical names for clear identification.



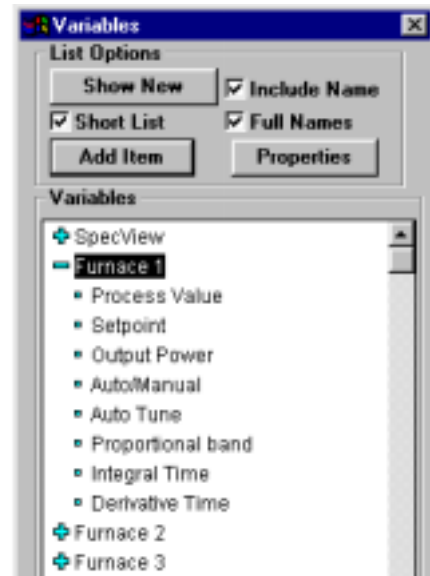
SpecView is configured using either menus or the toolbar. Tool tips identify what the function is of each tool - just move your mouse to the tool.



This tool opens the "Variable List" which is the database of all the instruments connected to SpecView.



To put a variable on the screen as a numeric value simply double click on the variable in the Variables List and it appears in the top left corner of the screen.



The "XXX" will be the numeric value of the variable in run-time.

It is simple to put the variables on the screen in a logical pattern using text labels and simple drawing objects,

| | | | |
|----------------------|-------|-------|-------|
| Prop Band | 22.0 | 8.5 | 9.0 |
| Integral | 69 | 44 | 45 |
| Derivative | 10 | 5 | 8 |
| OP High Limit | 100.0 | 100.0 | 100.0 |

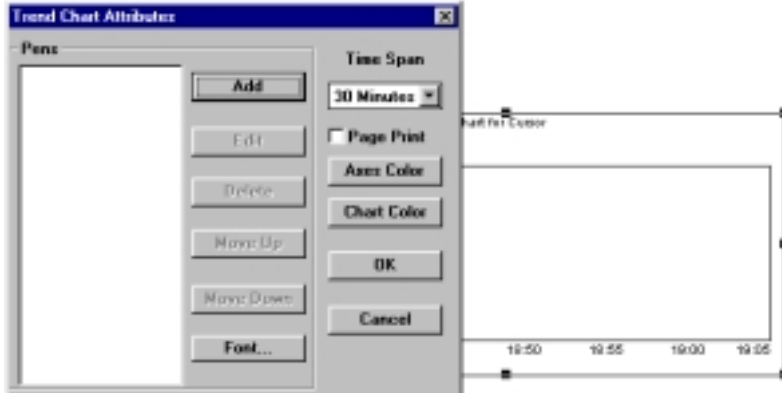
More complex graphics can be used as shown earlier.

Step 2 - Draw a Trend Chart

Click the "Draw Trend Chart" tool and the cursor changes to:



Click and drag on the screen just as drawing a rectangle in any drawing program. When you release the mouse button the screen will look like this...



This box is used to choose what you want on the chart and how you want it to look.

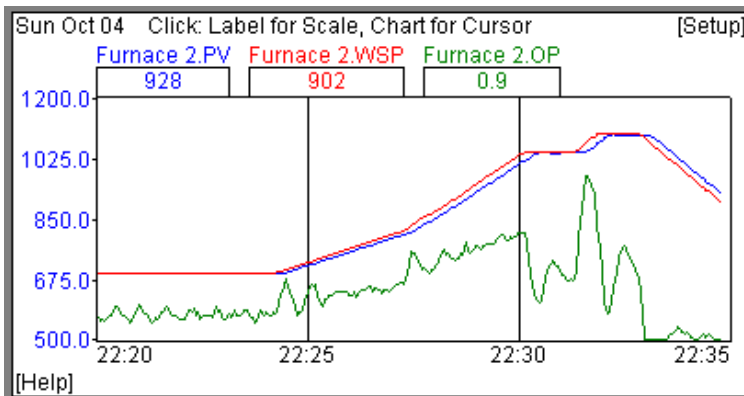
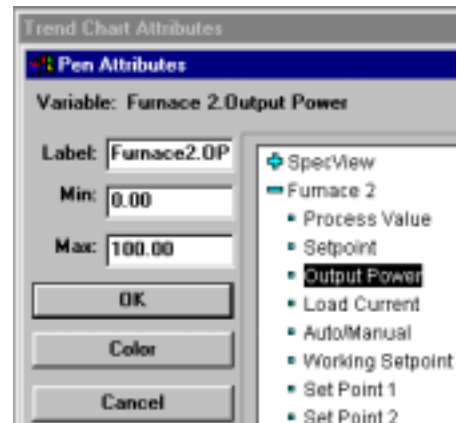
Time spans for the chart range from 1 minute to 28 days!

When the "Page Print" box is checked the SpecView screen will be printed each time the chart is filled with new data.

What is graphed on the chart is selected by clicking the "Add" button. Choose the parameter from the variables list.

There is no limit to the number of pens on a chart or the number of charts, either on a particular screen or in total. Each pen has a label, a scale is defined and a color is selected.

These attributes may be changed at any time SpecView is running. If short and long term trends are required, the same variable may be included on multiple charts.



After saving the screen and entering run-time the chart will look like this.

The scale on the y-axis changes as each pen label is clicked.

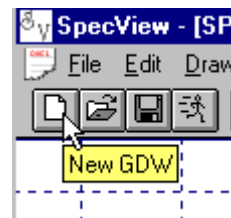
If the body of the chart is clicked a vertical cursor appears and the numeric values change to the values at the time of the cursor.

Step 3 - Open a New Screen for a Second Trend Chart

The first screen (GDW - Graphical Display Window) has been saved with a name such as "Overview". Now click the "New GDW" tool to get a new blank screen:

Click on the Trend Chart tool and draw a second chart, as in Step 2.

Any variables may be used, even the same ones as before. Also, many types of variable can be trended, including Boolean (On/Off functions).



Step 4 - Add Bar Charts to the screen

Click on the Bar Chart tool and draw a box on the screen just as for the trend chart.

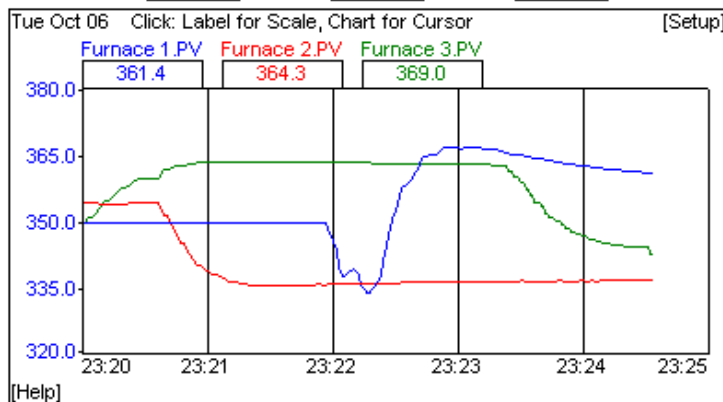
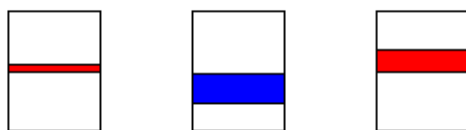
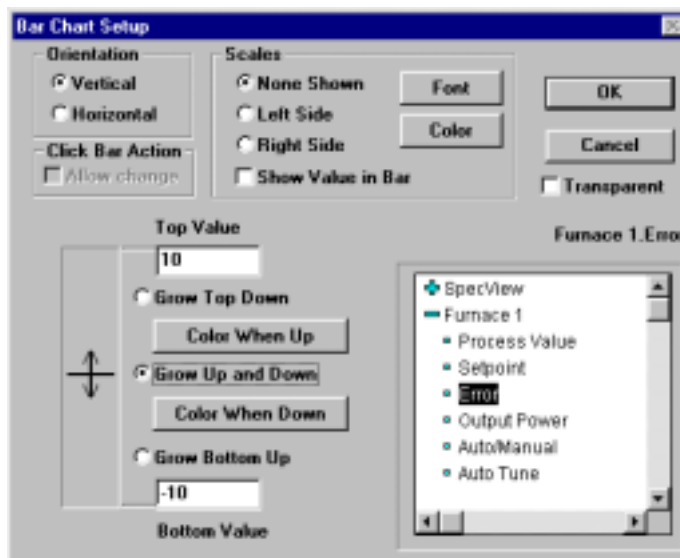
When the mouse button is released the Bar Chart set up box is displayed.



Bar Charts may:

- Be horizontal or vertical
- Include a numeric scale
- Show the numeric value
- Be transparent (hide/reveal objects)
- Be center zeroed (up/down or left/right)
- Grow up or down or left or right
- Allow value change by clicking on them

Notice that all items are selected off the same variables list as before and any parameter in the instrument may be selected.



The second screen will now look something like this...

Step 5 - Add Buttons to Switch Between Screens



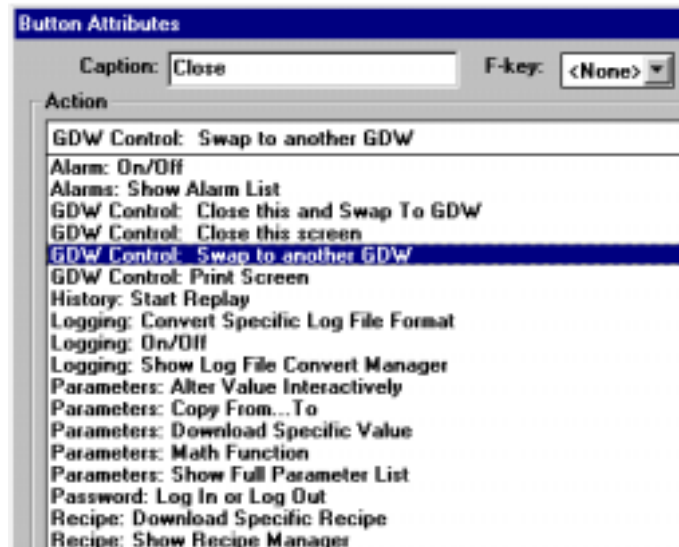
SpecView performs all actions by clicking on buttons. To put a button on the screen click on the "Draw Buttons" tool:



As before, a box is drawn on the screen. When the button is the desired size it is double-clicked to show the button attributes:

Many different actions can be performed by clicking a button such as:

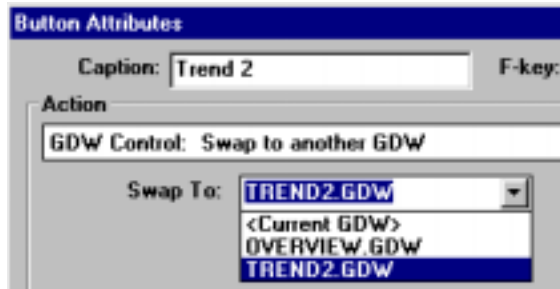
- Changing values in the instruments
- Starting Historical Replay
- Preparing Log Reports
- Downloading Recipes



In this case we want to swap to another screen:

"GDW Control: Swap to another GDW"

Choose which GDW you want to swap to by selecting the name off a list:



This is repeated for each of the screens.

For communications efficiency screens may be "closed" or left "open" (communicating in background). This means trend chart screens are always filled in and current when they are selected.

As previously mentioned, one SpecView user has 150 multi-pen 12 hour trend charts in continuous operation!

The optional Strategy Controller is an automatic way of clicking buttons. "The Parameters: Math Function" action can be used to add/subtract/multiply/divide variables together. Since any number of actions can follow a Strategy Event it is simple to link many operations. For example, instead of changing multiple set points by the same value, a single SpecView variable can be defined. The Strategy Controller is set to watch it's value and, when it changes, the value is added to any number of instrument set points.

Step 6 - Set Up a Recipe for Instrument Parameters

- Any screen in recipe may have recipes associated with it.
- Any individual parameter of any type (number, boolean, text string, etc.) may be included

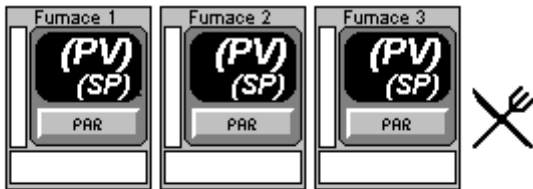
On the screen to have a recipe set up, click on the Recipe Mode tool:



The screen cursor changes to:



To select any item to be included in the recipe click on it with the knife & fork cursor:



As each item is selected it is highlighted with a box.

A button is drawn, given the caption "Recipe" and the action selected is:

"Recipe: Show Recipe Manager"

| | | | |
|----------------------|-----|-----|-----|
| Prop Band | XXX | XXX | XXX |
| Integral | XXX | XXX | XXX |
| Derivative | XXX | XXX | XXX |
| OP High Limit | XXX | XXX | XXX |

| | | |
|--------|--------|---------|
| Recipe | Replay | Trend 2 |
|--------|--------|---------|

Button Attributes

Caption:

Action:

Recipe: Show Recipe Manager

In run-time, when the recipe button is clicked, SpecView "snapshots" the current values. These may be saved immediately or edited first.

A description may also be saved with the recipe.

Other recipe options are:

- Read-only mode: no save button
- Send To: send a recipe from one instrument to others
- Download Specific: Click a button on any screen to download a particular recipe.

Recipe [X]

Warning ! Recipe Edit Mode - Values may not be current.

< Current Values >

Low Temp (<500*) Set Up

Set Up for over 1000

Standard Set Up 1

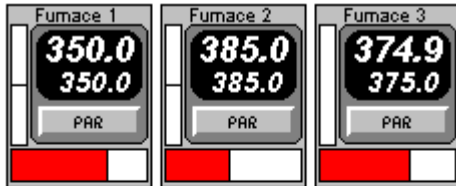
Screen values: Low Temp (<500*) Set Up (12)

| | |
|----------------|------------|
| Hide this box | Send |
| Save | Save As... |
| Description... | Delete |
| Print | Exit |

| | | |
|-------|-------|-------|
| 22.0 | 8.5 | 9.0 |
| 55 | 44 | 45 |
| 10 | 5 | 8 |
| 100.0 | 100.0 | 100.0 |

| | |
|--------|---------|
| Replay | Trend 2 |
|--------|---------|

Step 7 - There is no Step 7!

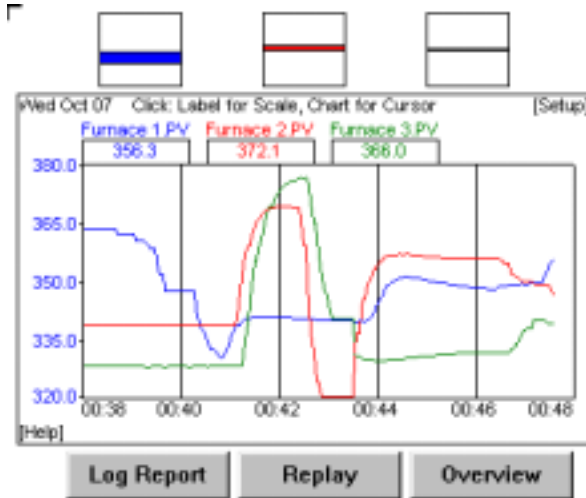


| | | | |
|--------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------------|
| Prop Band | 22.0 | 8.5 | 9.0 |
| Integral | 55 | 44 | 45 |
| Derivative | 10 | 5 | 8 |
| OP High Limit | 100.0 | 100.0 | 100.0 |
| <input type="button" value="Recipe"/> <input type="button" value="Replay"/> <input type="button" value="Trend 2"/> | | | |

SpecView is now configured for basic operation. You have two live screens that look something like this:

Clicking on the "PAR" button on the instrument view gives access to every instrument parameters - in some cases several hundred on each one!

Clicking on a number allows direct change of that number:



- Data Logging is already started since by default SpecView logs the most commonly requested parameters every minute. For controllers: Set-Point, Process Value and Output. For Indicators: Process Value.
- Log Reports are ready to use.
- Recipe is ready to use.
- Event logging is recording all operator actions
- Historical Replay is two mouse clicks away.

Certainly time can be spent making the screens attractively and logically laid out, with beautiful graphics and color animation. Advanced users will appreciate the power of the Strategy Controller. However, many SpecView installations are running today with this basic configuration.

Try SpecView at no risk!

The SpecView you can download from the internet (or request a copy from SpecView) is fully functional SpecView Plus. The only restriction is a 10 minute limit on communications in a any run-time session. This ten minute time is reset each time configuration mode is entered. There are no restrictions on saving any work so if you purchase SpecView you do not have to start again!

Without purchasing the options you can still try out the Historical Replay and Strategy Controller options.

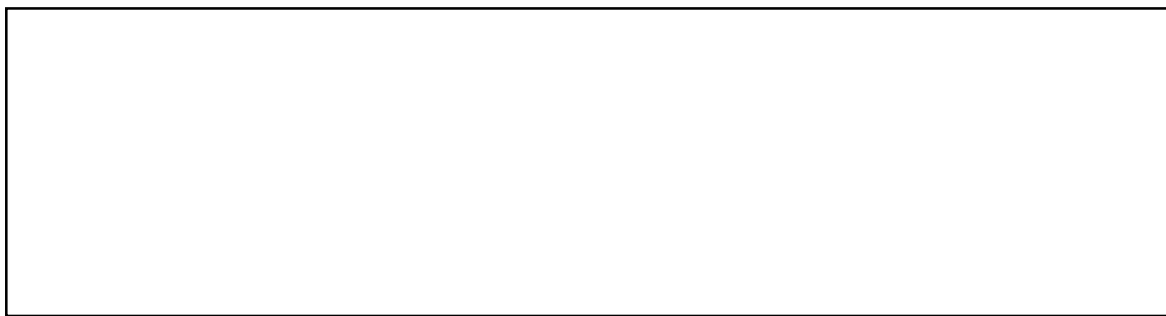
- Historical Replay is limited to replaying the last 4 hours of data
- Strategy Controller id limited to defining 2 events (no limit on actions)

For those that would like to try the real thing SpecView is always supplied with a money back guarantee.

Prototype your Application with SpecView!

Don't be misled by SpecView's low price. It is full featured. However, if you think you *might* need a more traditional SCADA package, try SpecView first. If it meets your requirements you have saved a lot of time and money. If not, with our money back policy you have lost nothing and, more importantly, what you have learned with SpecView will save you much time and effort next time around!

Contact your SpecView Distributor



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