Table of Contents

5 Groups (Operating and Trend Groups) 5-2

5.1 All about Group Displays 5-2

5.2 Operating Groups 5-3

Basic Configuration of Operating Group 5-4

Information You Need to Configure Groups 5-5

How Operating Groups are Displayed 5-6

Note on Finding Faceplates 5-7

Custom Faceplates 5-7

5.3 The Groups Configuration Screen 5-8

Configuring Operating Groups 5-9

Configuring Groups (Description, Color) 5-10

Configuring Groups (Edit) 5-11

Configuring Groups (Entities, Custom) 5-12

Checking out the Operating Groups 5-13

5.4 Other documentation Groups 5-13

5.5 Trend Groups 5-14

Basic Configuration of Trend Groups 5-15

Information Needed to Configure Trends 5-16

How Trend Groups are Displayed 5-17

5.6 dBase Entities in Trend groups 5-18

5.7 The Trends Configuration Screen 5-19

5.8 Configuring Trend Groups 5-20

Configuring Trend Groups (Description, Color) 5-21

Configuring Trend Groups (Edit) 5-22

Configuring Trend Groups (Attr's, Entities, Scales, Digital) 5-23

Checking out the Trend Groups 5-23

5.9 Other Documentation Trends 5-23

List of Tables

Table 1: Other Documentation *5-13*
Table 2: Related Documents *5-23*

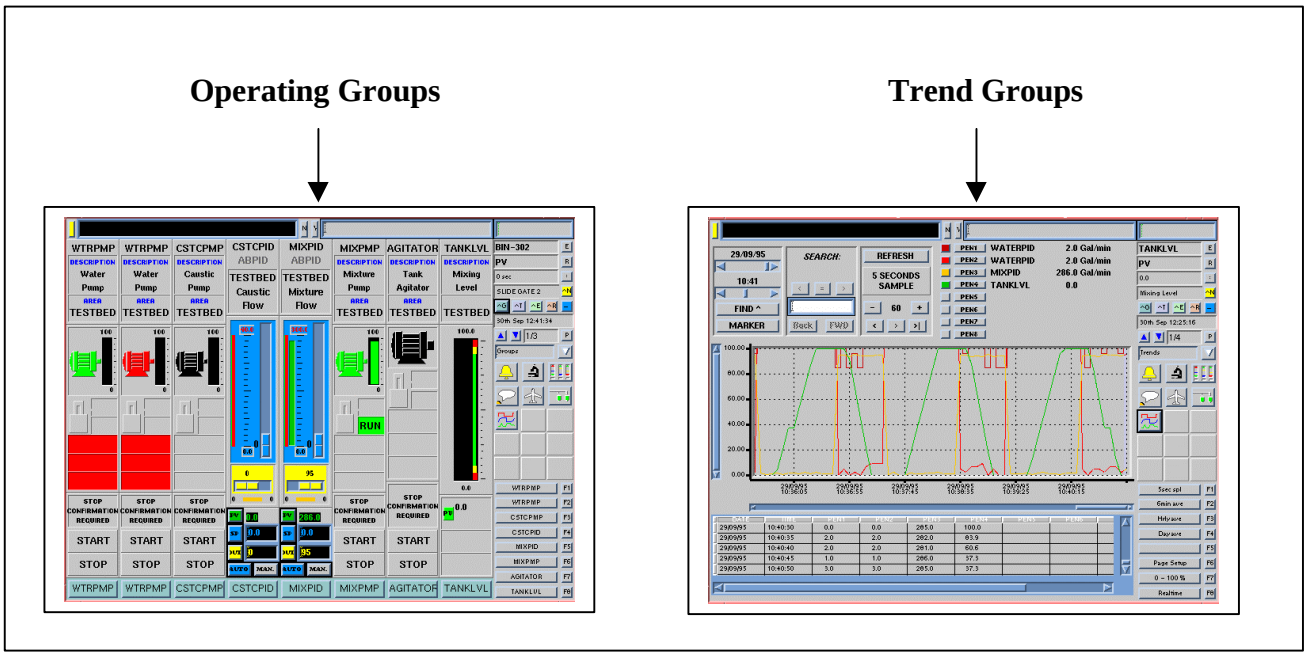
5 Groups (Operating and Trend Groups)

5.1 All about Group Displays

There are two kinds of group displays in ***MacroView***:

(i) **Operating** groups (sometimes referred to as Groups) and

(ii) **Trend** groups (loosely referred to as Trends)



The main advantages of these types of display are:

- **Easy configuration.** To create these graphics, all you have to do is specify which entities are to be grouped together.
- **Standard presentation.** The presentation is preformatted - this means that operators always see the presentation in the same form and become comfortable with this presentation. In times of stress, they can concentrate on the process problem, not the presentation.
- **Powerful tools.** With the Trend Groups, there are a number of facilities such as zooming, listing data, changing time scales etc. that allow the operator to interrogate and modify the data interactively. In the case of operating groups, the user can branch directly from the display to the Detail presentation.

Because of these features, it is no accident that Operating and Trend groups are often the most widely used of all the display types.

This chapter is broken into two separate parts:

(i) Operating Groups and

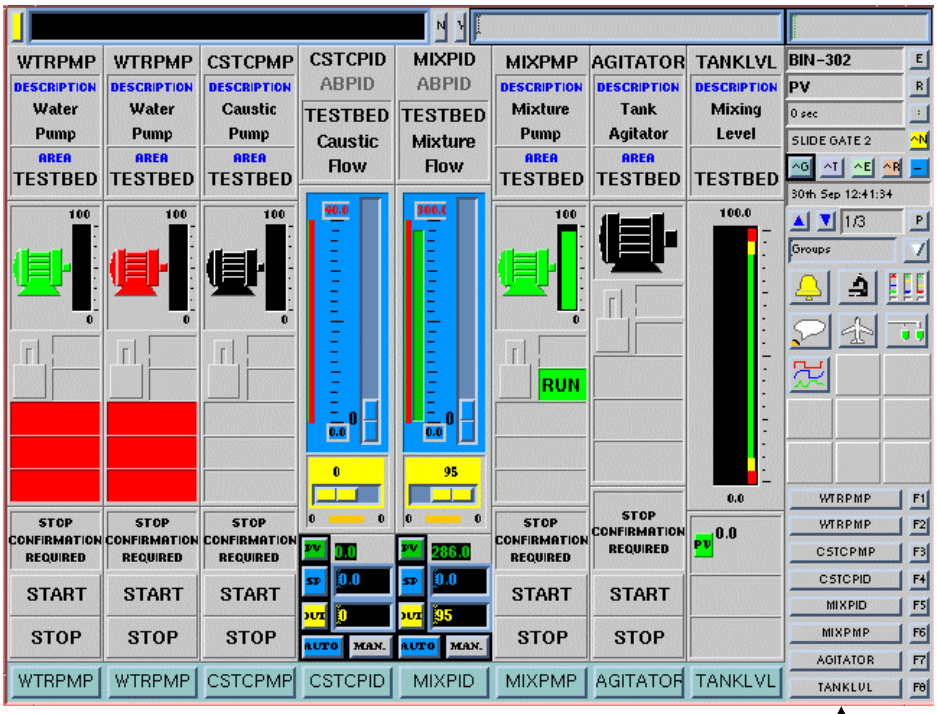
(ii) Trend Groups.

5.2 Operating Groups

The diagram below shows an operating group or "Group" display. Each 1/8 vertical strip of the group presentation represents an entity.

Each faceplate is made up of:
1. A template of background data and dynamic specifications from the template directory.
2. Live data from the source.
3. Other data from the entities database.

You define which entities you want grouped together in the Engineering Configurator. Each Group is associated with a page number



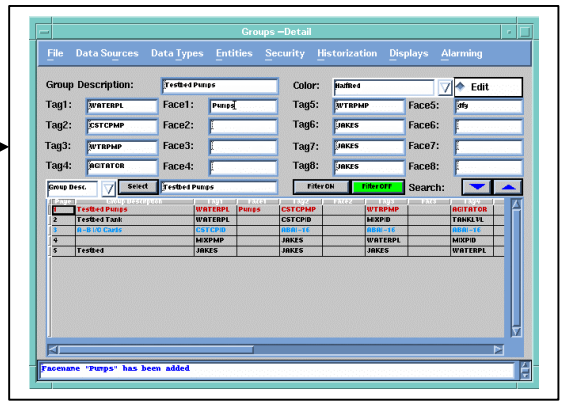
Note: You may have a faceplate for any entity from any source.
Each faceplate may occupy more than one slot of the group display.

A soft key is associated with each entity. The soft key calls the entity into the scratchpad for control or branching to a detail display.

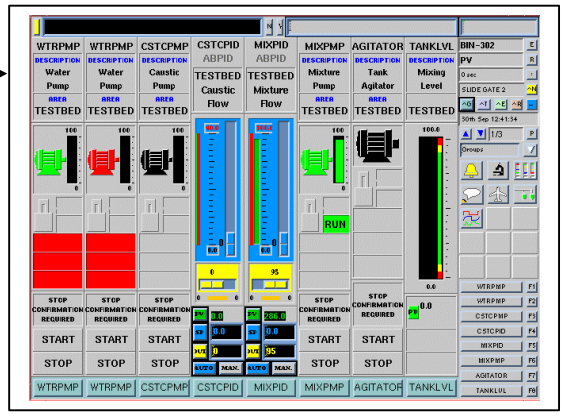
Basic Configuration of Operating Group

The basic tasks required to configure a group are simple:

1. Start the configurator, select ***Displays:Groups:Detail.***
2. Click on a group record and give it a description.
3. Enter the entities you want to appear in this group.



The operating group is ready for use.

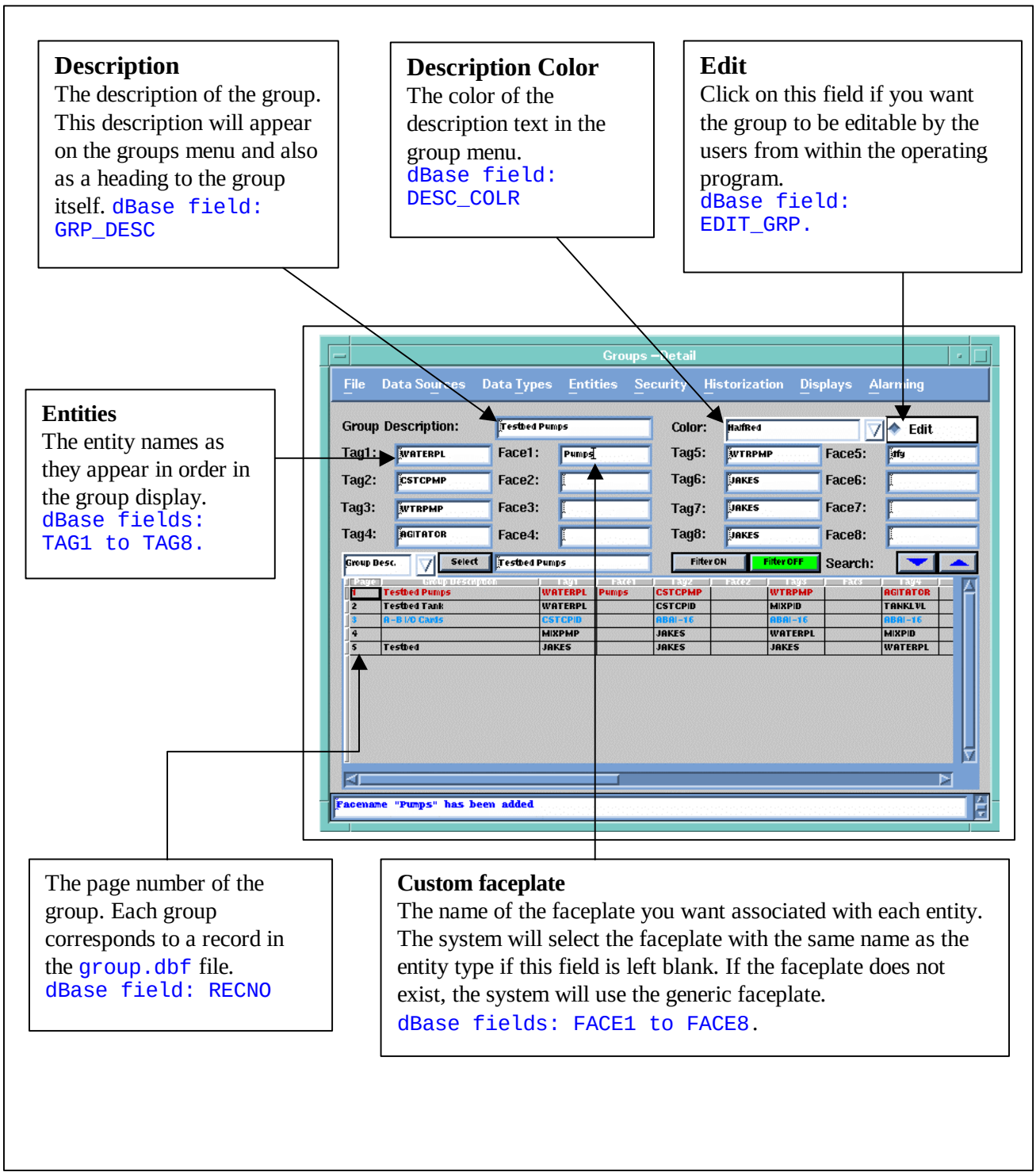


Note: You may specify a non-standard (custom) faceplate if required. You may specify other options such as operator editability.
The section "Configuring Operating Groups" gives more specific details.
Hint: Before you start configuring, take some time to map out a strategy of which pages you are going to assign to different areas of the process. Allow for expansion, since changing group numbers has its drawbacks.
For example, if you have soft keys or pointers in graphics, and these refer to the group numbers, then changing your group numbers will mean changing your soft keys and pointers in the graphics as well.

Note: Configuring these Group Displays can also be done through the ***MacroView*** Navigator, this method is explained in the Navigator Users Manual, **UM-NAV-3.1.0**.

Information You Need to Configure Groups

The Group display configuration is held in a database called groups.dbf. Each record of the `groups.dbf` database defines the entities of a single operating group. The `groups.dbf` database is stored in the groups directory. e.g, `/u/macro/config/app1/groups.dbf` , for a UNIX system and `C:\users\macro\config\app1\groups.dbf` for the NT system. The diagram below summarizes the meanings of the entities in the configurator and how they are related to the



`groups.dbf` database

How Operating Groups are Displayed

The diagram shows the procedure carried out by the Operating Group application for each faceplate position. The path names for UNIX are used in this example and it should be noted that the path name for NT systems will have `C:\Users\Macro` as the Home directory, while the the path for all other display subdirectories will the same, allowing for the path naming conventions of that operating system.

For each faceplate

2. From the `group.dbf` the Entity name (and faceplate, if present) is read.
3. From the entities.dbf, the Source and Type is read along with the Scales, Descriptions, etc. for display.
4. The faceplate background is found from the `/u/macro/groups/<source>/<type_name>` directory. The <source> and `<typename>` name being obtained form step 2.

Choosing the faceplate is as follows:

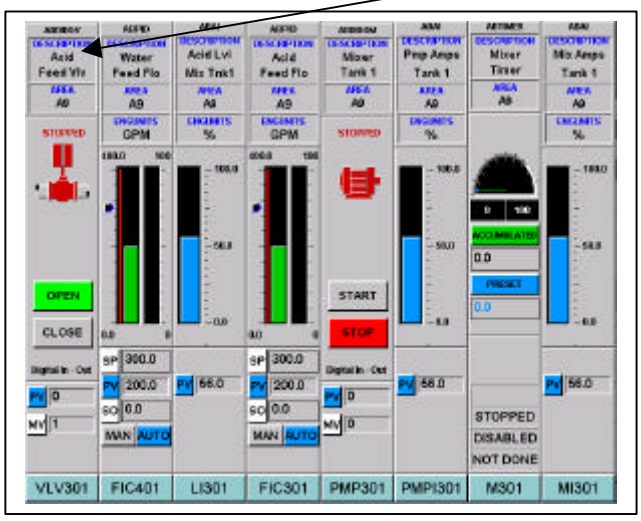
1. If there is a faceplate specified in the FACEn field, this is used, otherwise,
2. If there is a faceplate with the same name as the entity, this is used, otherwise,
3. Use the faceplate with the same name as the Entity Type definition, otherwise,
4. If there are no faceplates, use the generic faceplate, called `openerr.dgt.`
5. Using the modifiers defined in the faceplate file, collect and display the live updates with the faceplate as the background in the required slot of the group.

Page	Group Description	Tag1	Face1
51	Acid Mixing Tank #1	VLV301	

No.	Entity	Source	Type
585	VLV301	A-B	ABDIDOV

e.g.
`/u/macro/groups/a-b/abdidov.dgt`
or
`C:\Users\Macro\Groups\A-B\abdidov.dgt`

1. `abdidov.dgt`



Note on Finding Faceplates

If you want a group display other than the generic group display, then there must be a valid group display template (dgt) file in the:

`$MACRODIR/../groups/<source_name>` directory with one of the following names:

- The name of the faceplate you entered using custom in the configuration.
- The name of the entity (if you want a special entity to be always displayed with this faceplate, just give the metafile the same name as the entity).
- The name of the type (e.g. pid.dgt or abdo.dgt). This means that all entities with this entity type use the same faceplate.

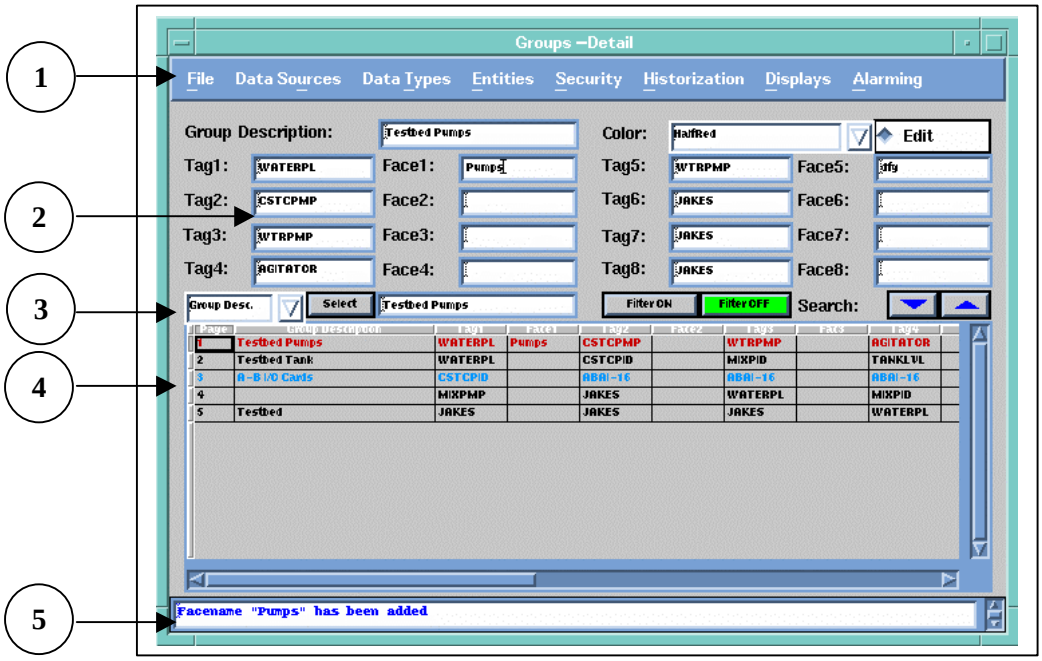
Custom Faceplates

To create your own faceplates, see the section on Group and Detail templates in the Graphics Chapter.

5.3 The Groups Configuration Screen

To get to the groups configuration screen, just select ***Display:Groups:Detail.***

Group Configuration Options



Group Configuration Options

6. **Menu:** Provides a means of Adding Blank Records, Adding Like (cloning) and Deleting Groups.
7. **Note:** If you delete records, it may affect Branch Points in your graphic pages. For example, if you were branching to group 7 in a graphic and you deleted the group 3 record, then the group you originally set in position 7 would now occupy position 6. The branch point would now go to what was previously record 8.
8. **Detail Area:** The detail area shows the various items of the selected group in the groups' database. The next sections in this chapter provide detailed instructions on how to configure these items.
9. **Filter and Search:** The Browse widget can be filtered to show only those records that satisfy a certain condition. You create a filter by (i) selecting a field to filter on from the pull-down combo box and (ii) entering a criteria into the filter area. When you click on the filter button, only those records satisfying the filter conditions will be shown. You may also use the same filter to search through the database.
10. **Browse Area:** This shows a (possibly filtered) window of group displays. You may scroll through the groups and examine details about a selected group simply by clicking on the record of interest.
11. **Message Area:** Suggestions, help and error messages are sent to this area to assist you in your configuration

Configuring Operating Groups

This section describes in detail how to set up the group description that appears as the title to the group in the menu, and how to specify which entities are to appear in the group.

Because it is so easy to create groups, the number of groups can escalate rapidly. This makes it difficult for operators to find the group of interest. The following procedures are recommended:

- Decide on a strategy for numbers of groups per operating function. (e.g. one primary, one secondary.)
- Give operators the feedback mechanism to determine what entities go into the groups.
- Use the soft keys and stop pointers to go directly to the groups without having to remember the group numbers.

Configuring Groups (Description, Color)

The diagram below shows how to define the operating group description, it's color in the menu and whether operators are allowed to change the entities displayed in this group.

Description

What you type

This is the description that will appear in the top banner of the window and in the menu.

Hint

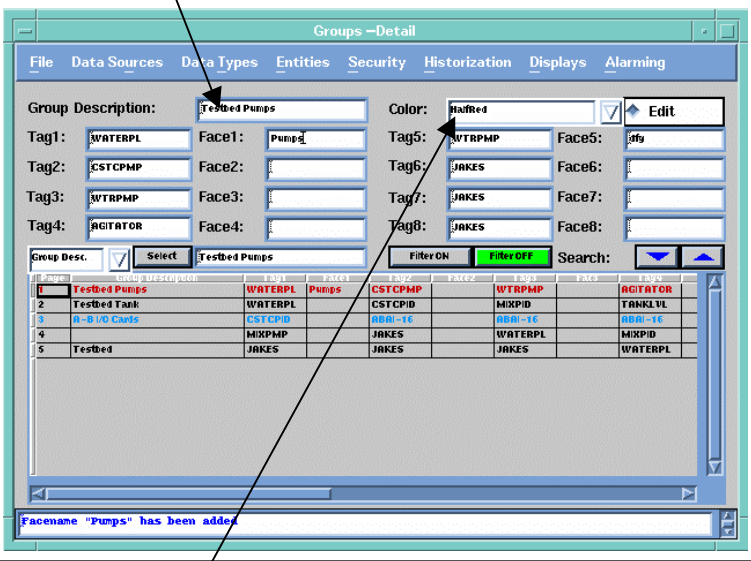
Select your key words carefully to enable users to easily find the groups.

How to get there

1 ***Display: Groups:Detail***
This brings up the Groups Detail screen.

2 Click on the Group to be modified: The Group detail will appear in the top window.

3 Alternatively, you may add a blank record using ***Display:Groups:Detail:Add Blank*** and edit the new record.



Description Colour

What you type

Select the color of the description as it will appear in the group menu. Use colors to differentiate between different areas of the process. Use the same color code for your schematics, trend and help screens

Colour Table

Name	No.	Name	No.	Name	No.	Name	No.
Black	0	HalfBlue	4	Grey(Gray)	8	Blue	12
White	1	HalfYellow	5	HalfGrey(Gray)	9	Yellow	13
HalfRed	2	HalfCyan	6	Red	10	Cyan	14
HalfGreen	3	HalfMagenta	7	Green	11	Magenta	15

Configuring Groups (Edit)

This option allows you to specify which groups the operator can edit from within the Navigator.

Group Editable

What you type

Click on the Edit button if you want operators to be able to make changes to the entities in the group. The group page number will show with a white background if you have selected Yes to give the operators change ability.

Hint

Give operators a number of pages they can use as scratch pages - i.e. groupings they can set up on an ad-hoc basis. Also set up procedures so that they can make suggestions to you to changes to the non-editable groups and other graphics.

How it Works

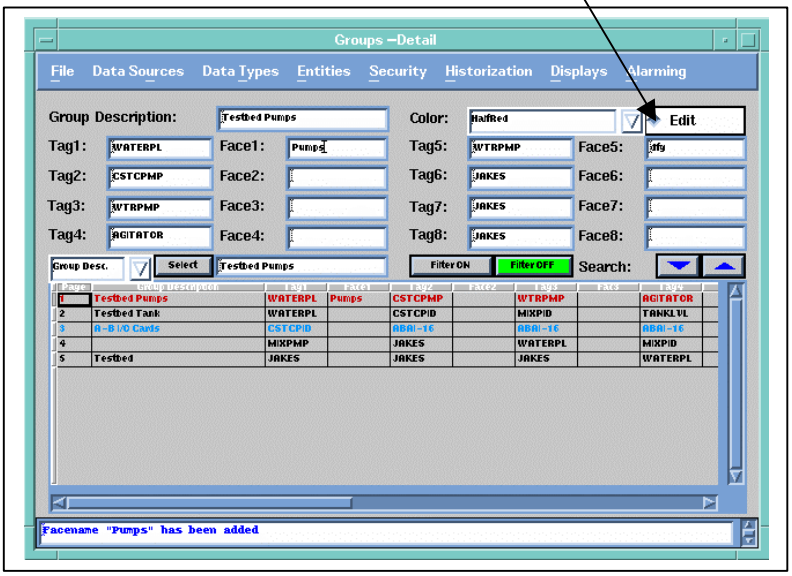
If you allow editing, then the editing facility is available to all users irrespective of their access code.

How to get there

1 ***Display: Groups:Detail*** This brings up the Groups Detail screen.

2 Click on the Group to be modified: The Group detail will appear in the top window.

3 Alternatively, you may add a blank record using ***Display:Groups:Detail:Add Blank*** and edit the new record.



Configuring Groups (Entities, Custom)

This page describes how you select the entities to be included in the operating group and, if necessary,

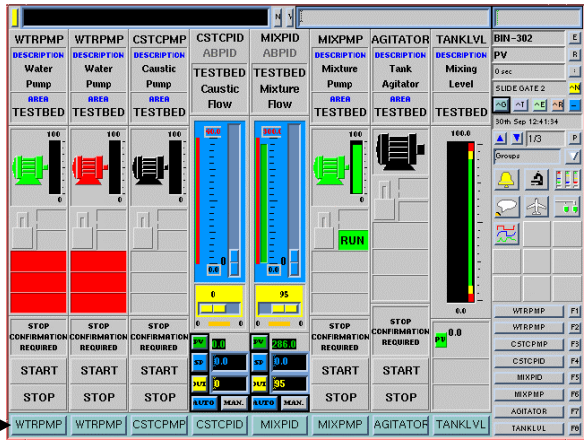
Entities

What you type

Type in the name of the entity you want to appear in the slot position you have selected.

Hint

See the note on grouping strategies in the section "Configuring Operating Groups" in this chapter.

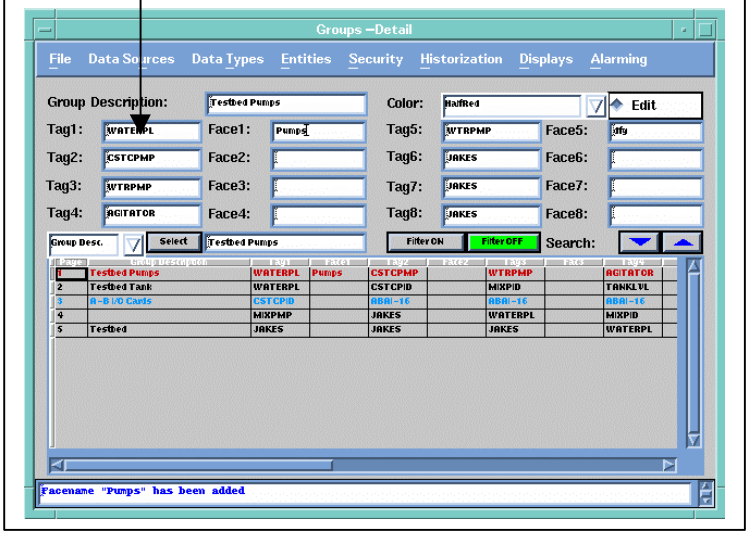


How to get there

1 ***Display: Groups:Detail***
This brings up the Groups Detail screen.

2 Click on the Group to be modified: The Group detail will appear in the top window.

3 Alternatively, you may add a blank record using ***Display:Groups:Detail:Add Blank*** and edit the new record.



Custom Faceplates

What you type

If you wish to specify a faceplate other than the faceplate corresponding to that Type, type in the name of the faceplate next to the relevant tag.

Things to Note

See the notes on faceplates and how the system selects the faceplates in "How Operating Groups are Displayed" in this chapter.
You could have the same Entity assigned to two positions within the Group and have separate faceplates showing for each of them. One would be the standard faceplate as defined by the Entity Type and the other may be displayed as a small trend faceplate for an important level control.

how you specify a non-standard template.

Checking out the Operating Groups

To check out the operating groups:

i. Call up the group and verify that the entities are correct and that the live data is valid,

ii. Call up the group menu display and verify that the colors etc. are correct,

iii. If you have specified that the group is editable, confirm that this can be done.

iv. If the faceplate only appears in its' generic form, make sure that the faceplate metafile is in the `groups/<source name>` directory.

v. To use the generic faceplate with a new sources; copy the file openerr.dgt from the `~/groups/grp1 directory to ~/groups/<source>.`

Also see "Note on Finding Faceplates" on page6 in this chapter.

5.4 Other documentation Groups

The table shows what other documentation is available for further information.

Table 1: Other Documentation

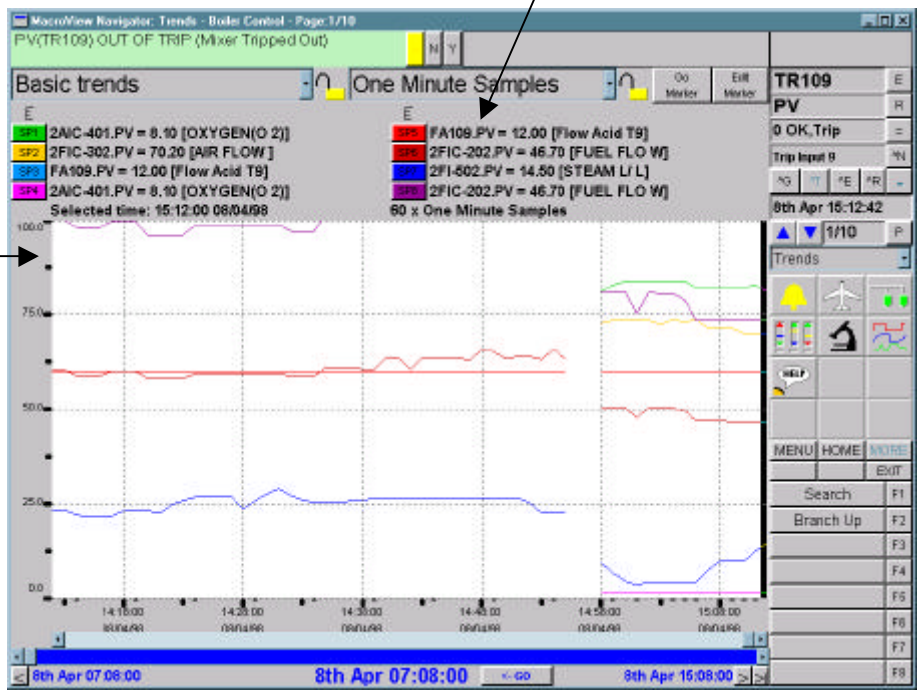
Subject	Document	Chapter	Document Number
Viewing and Editing Groups	Navigator User Manual		U-NAV
Group File Structure	group(F)	_	group(F)

5.5 Trend Groups

The diagram below shows the trend group presentation. This presentation is often referred to simply as Trends.

Each trend pen shows as a different color or line type. You may override the entities scale high and low values if you are only interested in a part of the scale.

You define which attributes and entities you want in a trend group. You may have up to 8 in a simple group. You can only select attributes that are being historized.



There are various buttons and soft keys in the application which allow you to move around the trend data.

Data: you can move the slide wire by clicking on the chart to read the data values at different points in time.

On/Off : turn a pen on or off for easier viewing.

Smp Time : select different sampling times - e.g. hourly averages.

Tabular : display the raw trend data in numerical list form.

Zooming : allows you to view different periods of the trend.

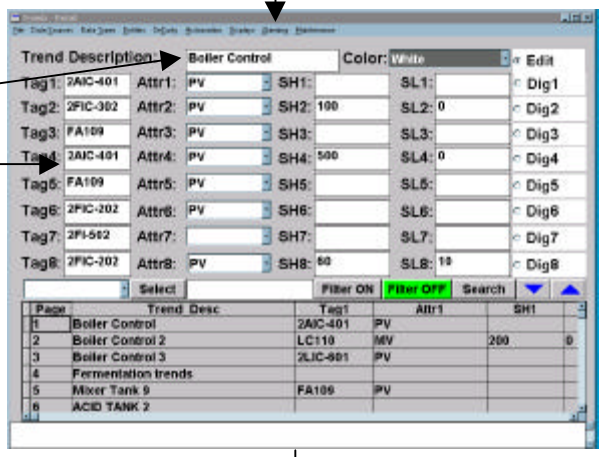
See the Navigator User Manual for more details

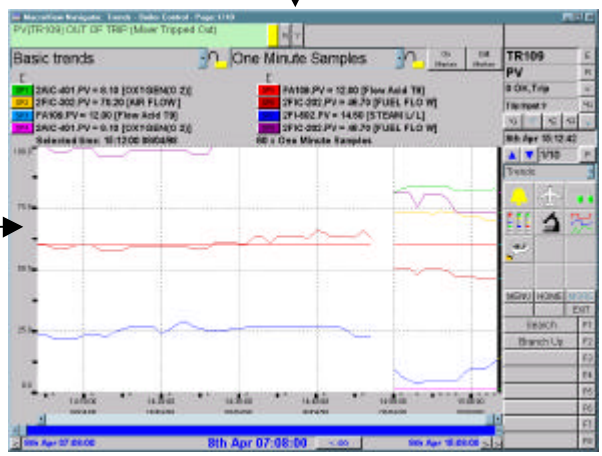
Basic Configuration of Trend Groups

These are the basic tasks required to configure a trend:

1. Start the configurator, select ***Displays:Trends:Detail*** from the menu.
2. Choose a trend page number and give it a description.
3. Enter the entities and attributes you want to appear in this trend.

Note: They must be historized.





The Trend group is ready for use.

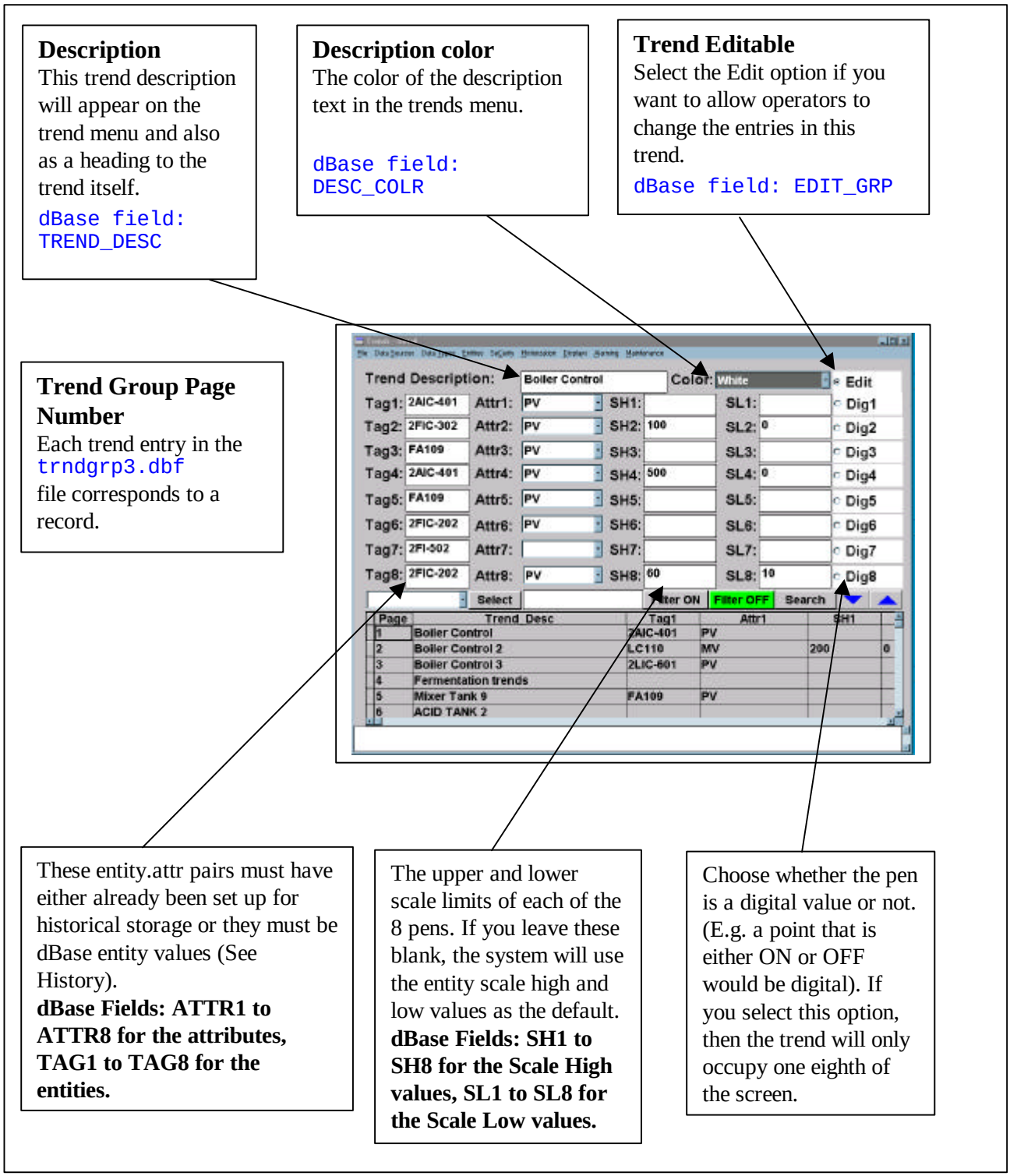
Note: You may specify a scale high and a scale low value. If you leave this blank, the system will use the entity's scale high and scale low values.

You may specify other options such as operator editability.
The section "Configuring Trend Groups" gives more specific details.
Hint: Before you start configuring, take some time to map out a strategy of which page you are going to assign to different areas of the process. Allow for expansion, since adding group numbers has its drawbacks.

For example, if you have softkeys or pointers in graphics, and these refer to the trend group numbers, then changing your trend page numbers **does not change** your soft keys and pointers in the graphics.

Information Needed to Configure Trends

The trend group display configuration is held in a database called `trndgrp3.dbf`. Each record of the `trndgrp3.dbf` database defines the attributes and entities of a single trend group. The `trndgrp3.dbf` database is stored in the `/trends/app1` directory. E.g, `/u/macro/trends/app1/trndgrp3.dbf`. The diagram below summarizes the meanings of the entries in the configurator and how they are related to the `trndgrp3.dbf` database.



How Trend Groups are Displayed

Locate the sample times, trend headings etc. from the `hspec.dbf` files for the selected sample period. (See the History chapter.)

Read which attribute and entities are to be displayed and get the scales from the **entities** database.

For Each Pen

Display the trend using the color associated with the pen number.

Find the location of the historical files using the `hspec` data and the `hlist` data and then read the historical data. (Note the historical data may be resident in archived files.)

Follow the Navigator trend buttons and soft key instructions to bring up different formats of presentation.

`hspec.dbf`

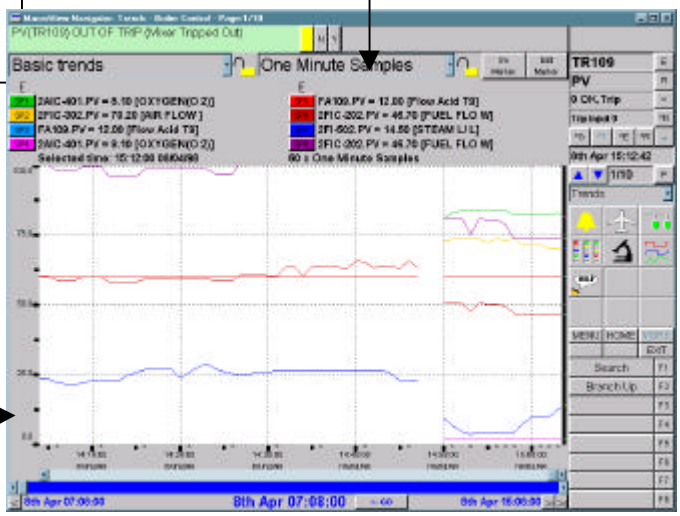
`trndgrp3.dbf`

`entities.dbf`

historical files

`hlist.dbf`

archived files



5.6 dBase Entities in Trend groups

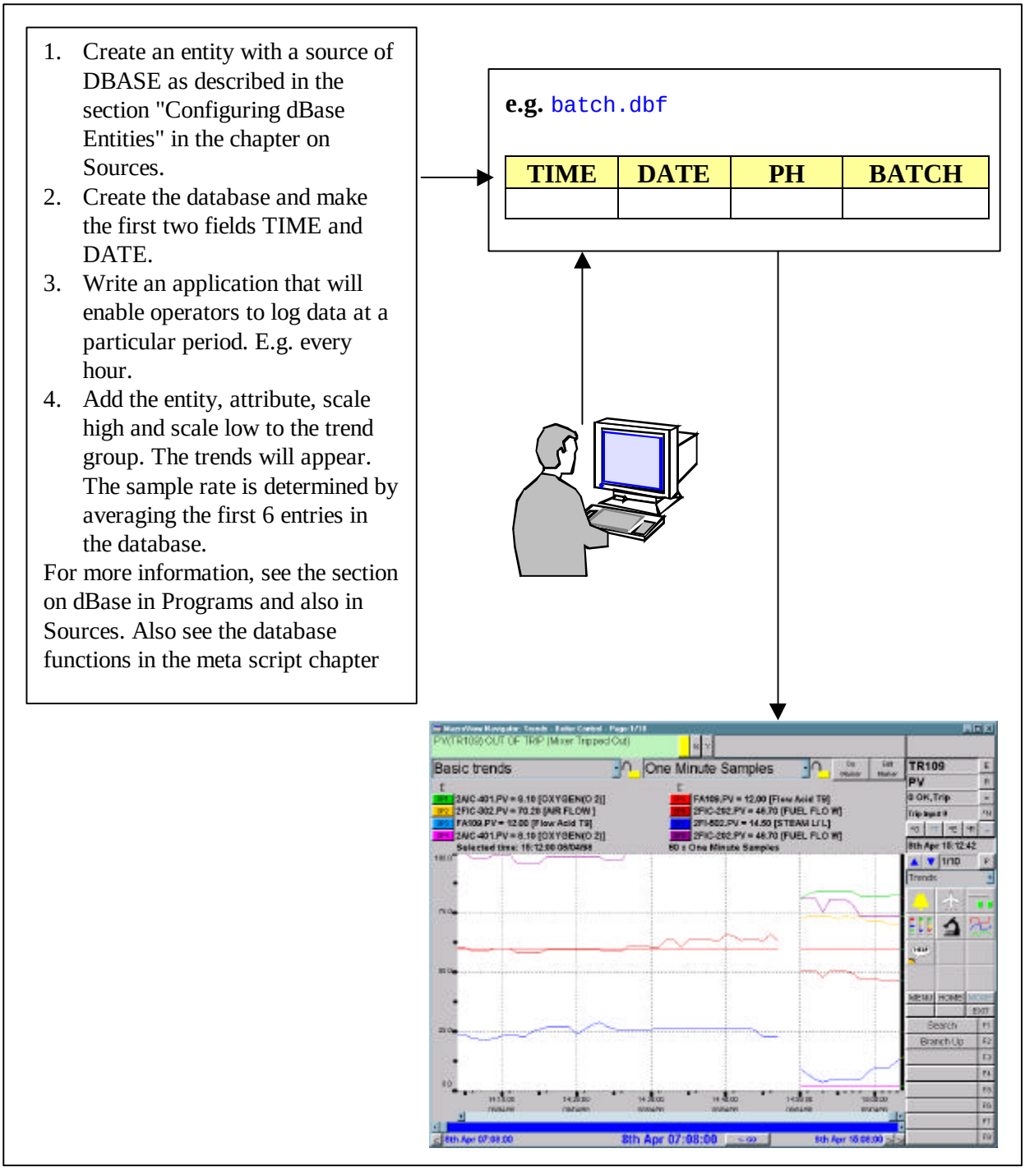
Frequently in process control applications, operators or laboratory personnel manually enter data into the system.

Typically, this data is stored in dBase files and needs to be trended on the same page as data that is collected automatically from a live source.

The diagram shows the steps needed to display this dBase trend information in a trend group.

1. Create an entity with a source of DBASE as described in the section "Configuring dBase Entities" in the chapter on Sources.
2. Create the database and make the first two fields TIME and DATE.
3. Write an application that will enable operators to log data at a particular period. E.g. every hour.
4. Add the entity, attribute, scale high and scale low to the trend group. The trends will appear. The sample rate is determined by averaging the first 6 entries in the database.

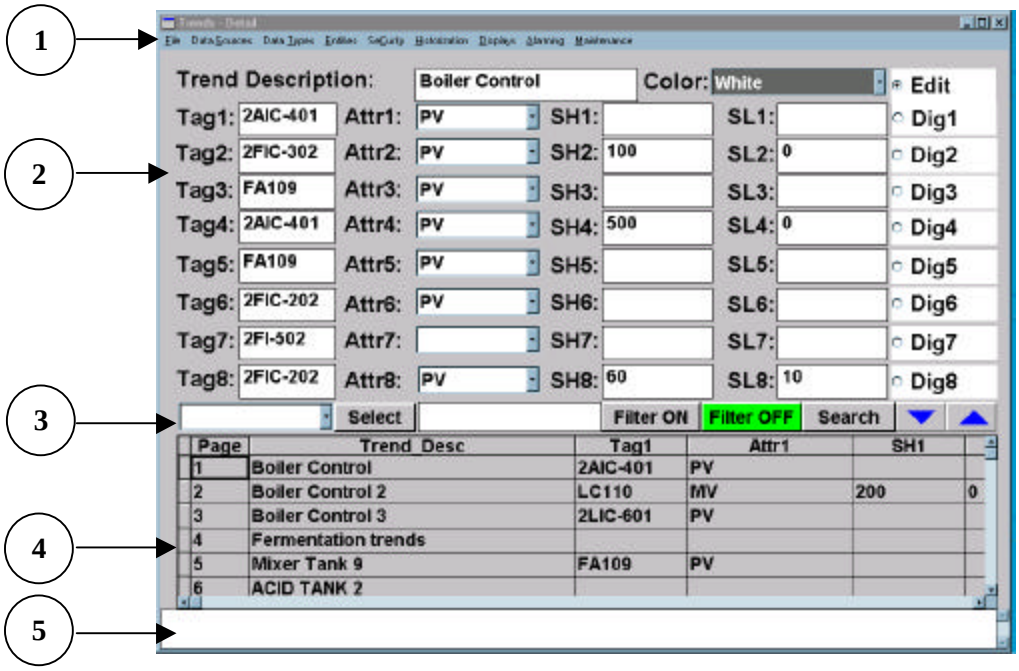
For more information, see the section on dBase in Programs and also in Sources. Also see the database functions in the meta script chapter



5.7 The Trends Configuration Screen

To get to the Trends Configuration Screen, just select ***Display:Trends:Detail***.

Trend Configuration Options



Trend Configuration Options

1. **Menu:** Provides a means of Adding Blank Records, Adding Blank Records at a specific location, Adding Like (cloning) and Deleting Groups.

   Note: If you delete or insert records, it may affect Branch Points in your graphic pages. For example, if you were branching to trend 12 in a graphic and you deleted the trend 3 record, then the group you originally set in position 12 would now occupy position 11. The branch point would now go to what was previously record 13.

2. **Detail Area:** The detail area shows the various items of the selected group in the `trndgrp3.dbf` database. The next sections in this chapter provide detailed instructions on how to configure these items.

3. **Filter and Search:** The Browse widget can be filtered to show only those records that satisfy a certain condition. You create a filter by (i) selecting a field to filter from the pull-down combo box and (ii) entering a criteria into the filter area. When you click on the filter button, only those records satisfying the filter conditions will be shown.
4. **Browse Area:** This shows a (possibly filtered) window of trend displays. You may scroll through the trends and examine details about a selected trend simply by clicking on the record of interest.
5. **Message Area:** Suggestions, help and error messages are sent to this area to assist you in your configuration.

5.8 Configuring Trend Groups

This section describes in detail how you:

- Set up the trend description that appears as the title to the trend and in the trend menu and
- How you specify which entities and attributes are to appear in the group.

Note: You must have already defined the historical storage of the data before you configure the trends unless the trend group value is a dBase entity (with TIME and DATE fields specified). i.e you need to have specified the historical files and the entities and attributes to be historized. See the History chapter for details.

Because it is so easy to create trends, the number of groups can escalate rapidly. This makes it difficult for operators to find the trend of interest. The following procedures are recommended:

i. Decide on a strategy for numbers of trends per operating function. E.g. one primary, one secondary. Give operators the feedback mechanism to determine what entities go into the trend groups.

ii. Use the soft keys and stop pointers to go directly to the trends without having to remember the trend numbers.

Configuring Trend Groups (Description, Color)

The diagram below shows how you define the trend group description and it's color in the menu.

Description

What you type

This is the description that will appear in the top banner of the window and in the menu.

Hint

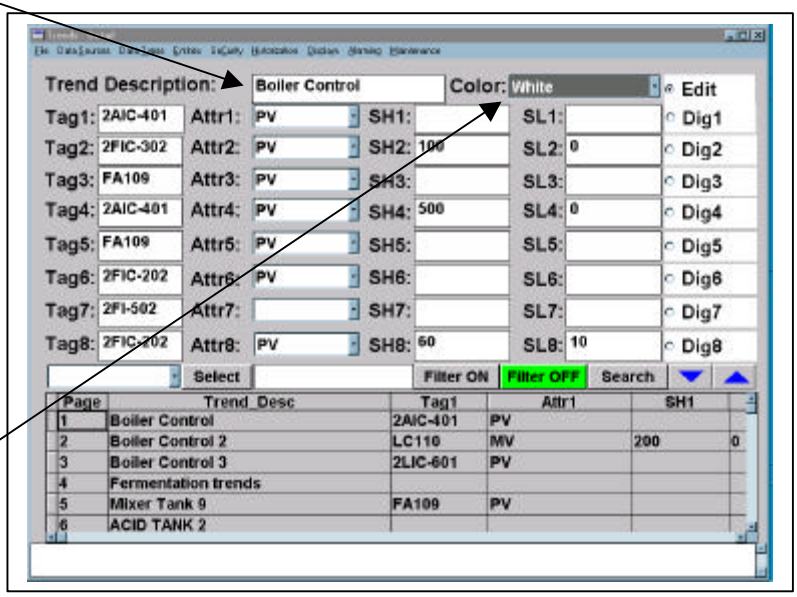
Select your key words carefully to enable users to easily find the groups.

How to get there

1 ***Display: Trends:Detail***
This brings up the Trend Detail screen.

2 Click on the Trend to be modified: The Trend detail will appear in the top window.

3 Alternatively, you may add a blank record using ***Display:Trend:Detail:Add Blank*** and edit the new record.



Description Colour

What you type

Select the color of the description as it will appear in the trends menu.
Use colors to differentiate between different areas of the process. Use the same color code for your schematics, groups and help screens

Colour Table

Name	No.	Name	No.	Name	No.	Name	No.
Black	0	HalfBlue	4	Grey(Gray)	8	Blue	12
White	1	HalfYellow	5	HalfGrey(Gray)	9	Yellow	13
HalfRed	2	HalfCyan	6	Red	10	Cyan	14
HalfGreen	3	HalfMagenta	7	Green	11	Magenta	15

Configuring Trend Groups (Edit)

The diagram below shows how to select the operators' ability to change the entities and their attributes displayed in this trend.

Trend Editable

What you type

Click on the Edit button if you want operators to be able to make changes to the entities in the group. The trend page number will show with a white background if you have selected Yes to give the operators change ability.

Hint

Give operators a number of pages they can use as scratch pages - i.e. groupings they can set up on an ad-hoc basis. Also set up procedures so that they can make suggestions to you to changes to the **non**-editable groups and other graphics.

How it Works

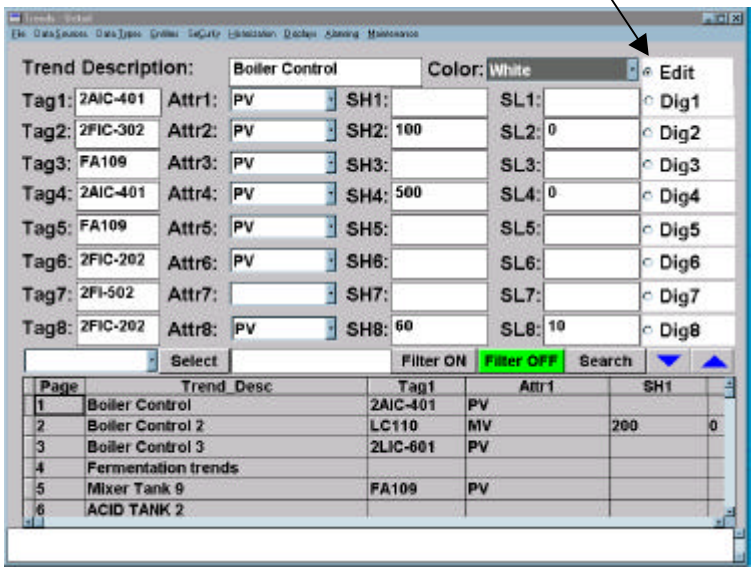
If you allow editing, then the editing facility is available to **all** users irrespective of their access code.

How to get there

1 ***Display: Trend:Detail*** This brings up the Trend Detail screen.

2 Click on the Trend to be modified: The Trend detail will appear in the top window.

3 Alternatively, you may add a blank record using ***Display:Trend:Detail:Add Blank*** and edit the new record.



Configuring Trend Groups (Attr's, Entities, Scales, Digital)

This page describes how to select the attributes and entities to be include in the trend groups and how to can specify the Scale High and Scale Low values of the trend display.

Checking out the Trend Groups

To check out the trend groups:

i. Call up the trend and verify that the entities are correct and that the historical data is valid.

ii. Call up the trend menu display and verify that the colors, etc. are correct.

iii. If you have specified that the trend is editable, confirm that this can be done.

If the trend does not appear:

- Check that the attribute and entity have been configured for historization (See the section Historical Entities Configuration in the History chapter). If the attribute and entity have not been configured, add the entity.attr and restart the History Manager.
- Check that the History Manager is running. (Start it if it is not; see the section "Starting the History Manager" in the History Chapter.)

5.9 Other Documentation Trends

The table shows what other documentation is available for further information

Table 2: Related Documents

Subject	Document	Chapter	Document Number	Other References in this manual
Viewing and Editing Trends	Navigator User Manual	Trend Application	U-NAV	–
Trend Group File Structure	trndgrp(F)	–	trndgrp(F)	–
Historical Storage	Engineering Manual	4	UM-ENG-3.1.0	History Chapter