



**Slide Show 11:**

**Graphs and Trends**



**INSIGHT  
AND  
OVERVIEW**

# Contents

IGSS features two main graph types:

1. [The window-type graph](#)
2. [The embedded graph](#)

# The window-type graph (1)

## Definition

The window-type graph is a graphical chart showing the values or states of up to ten IGSS objects. The object types analog, table, digital and counter are supported. The data source can be either log files (\*.log) or base class files (\*.bcl).

The graph is presented in a graph window.

# The window-type graph (2)

## Use

Use a graph to achieve the following:

- A graphical overview of the values and states of one or more process components
- Detect adverse trends at an early stage
- Monitor the effect of interventions by combining historical graph data with current process values

# The window-type graph (3)

## Three subtypes

1. A **predefined graph** is defined by the system designer. The operator opens the graph from the Graph menu or clicks a symbol representing the graph.
2. A **dynamic graph** is created on-the-fly by the operator during supervision. A dynamic graph can be saved as a file. When re-opened, the graph will be dynamically updated.
3. A **static graph** is a snapshot of a predefined or a dynamic graph that the operator can save for documentation purposes. A static graph is saved as a file. When re-opened, the graph can be shown, but not updated.

# The window-type graph (4)



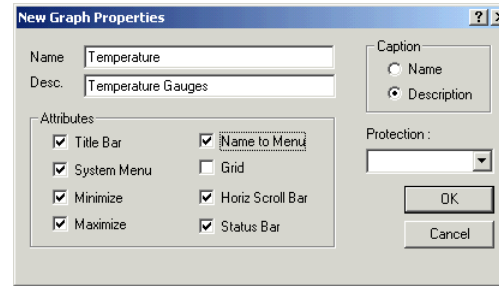
Definition

## Create a predefined graph

Graph menu

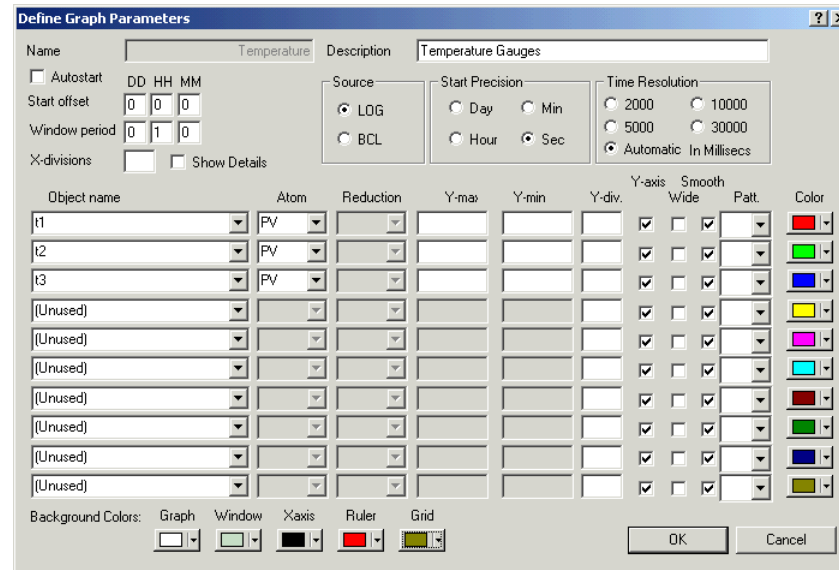


STEP 1: Select "Create" in the Graph menu.



STEP 2:

Choose window elements and "Name to menu"



STEP 3:


Choose objects for graph, colors and other parameters.

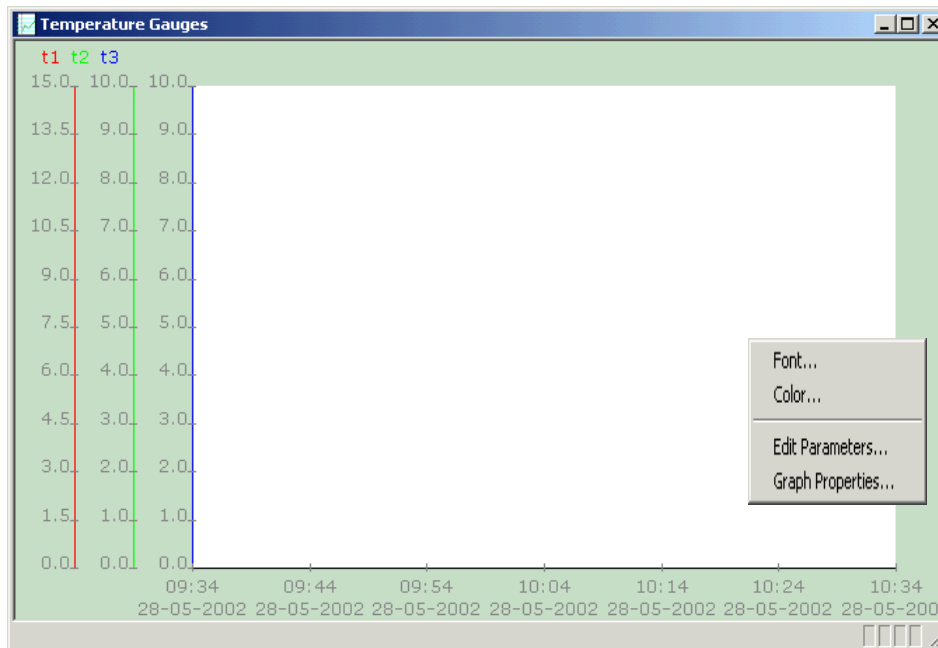
# The window-type graph (5)

## Create a predefined graph

The graph window appears. Position and resize the window.

If required, you can lock the position and size from the **Supervise & Language**

tab in the module  System Configuration



The right-click menu in the module



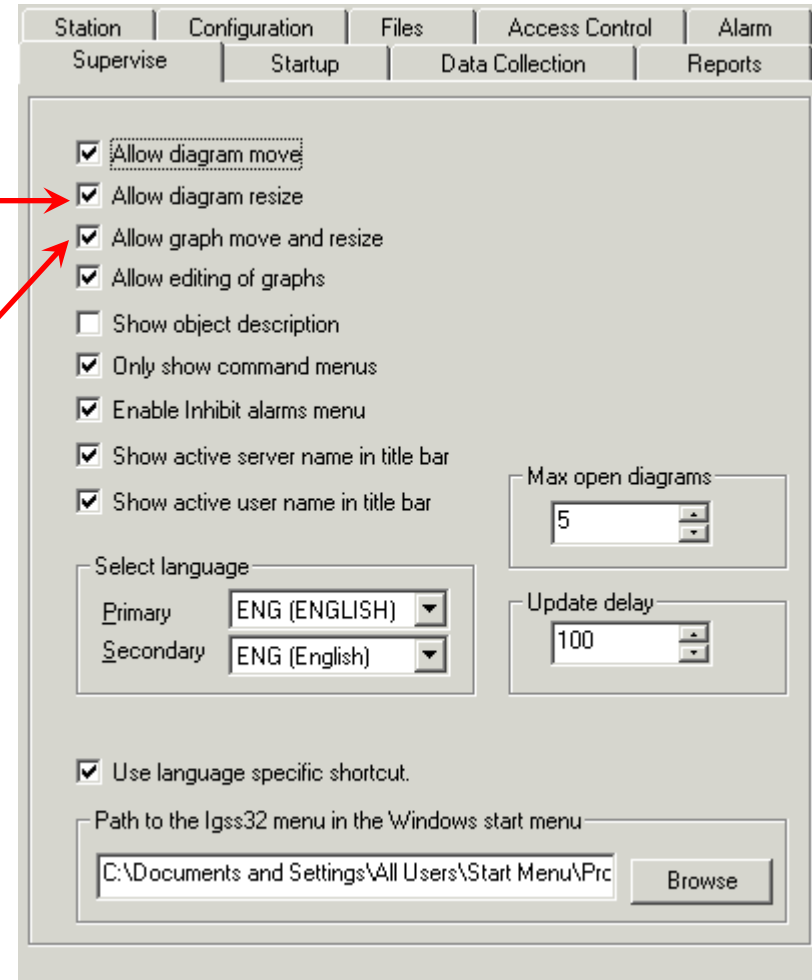
Definition

# The window-type graph (6)

Graph parameters in the **System Configuration** program

Should the operator be able to move and resize the graph window ?

Should the operator be able to change the graph colors, etc. ?



The screenshot shows the 'System Configuration' window with the 'Configuration' tab selected. The 'Startup' sub-tab is active. The following options are visible:

- Allow diagram move
- Allow diagram resize
- Allow graph move and resize
- Allow editing of graphs
- Show object description
- Only show command menus
- Enable Inhibit alarms menu
- Show active server name in title bar
- Show active user name in title bar

Additional settings include:

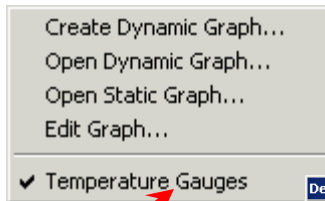
- Max open diagrams: 5
- Update delay: 100
- Select language: Primary (ENG (ENGLISH)), Secondary (ENG (English))
- Use language specific shortcut.
- Path to the Igss32 menu in the Windows start menu: C:\Documents and Settings\All Users\Start Menu\Prc

# The window-type graph (7)

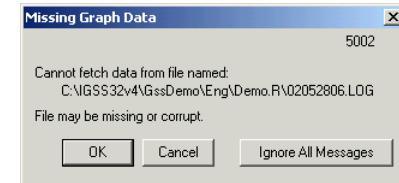
## Supervise

### Calling up a predefined graph

Graph menu



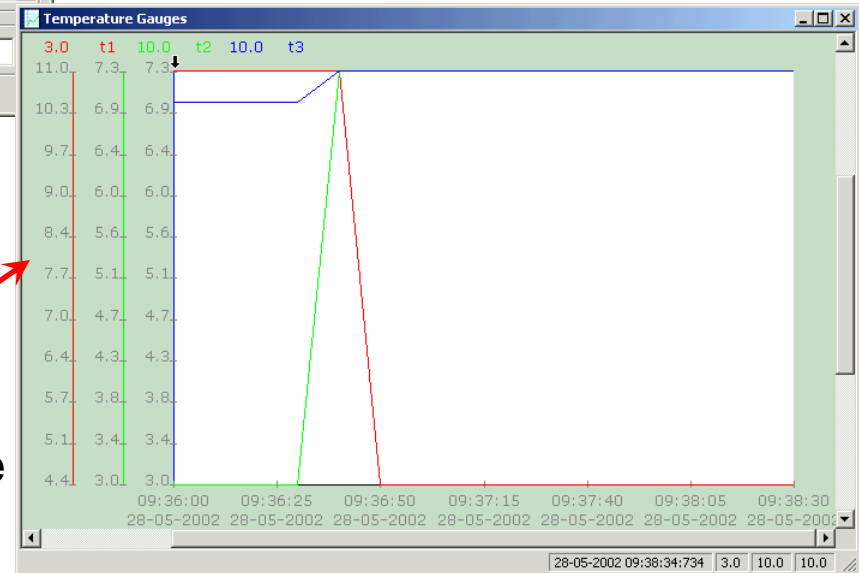
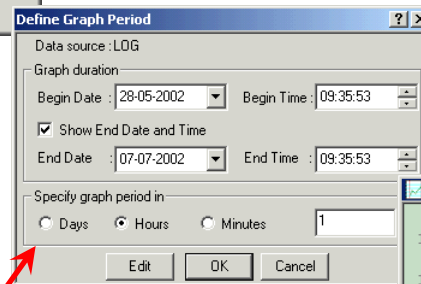
If data is missing for the graph, this message appears.



STEP 1:  
Choose the graph name

STEP 2:  
Choose the graph period.

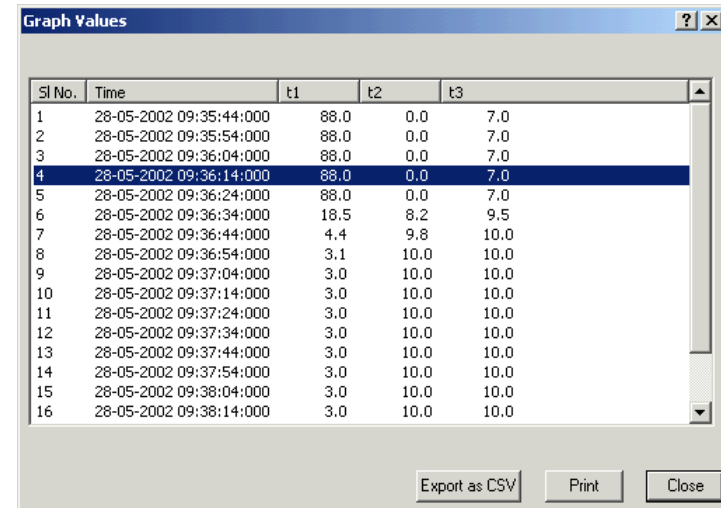
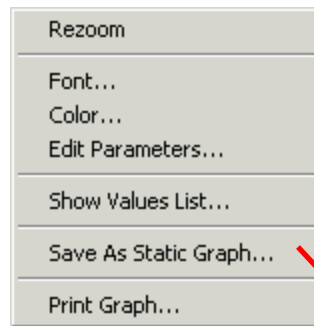
STEP 3:  
Click OK and the graph appears.



# The window-type graph (8)

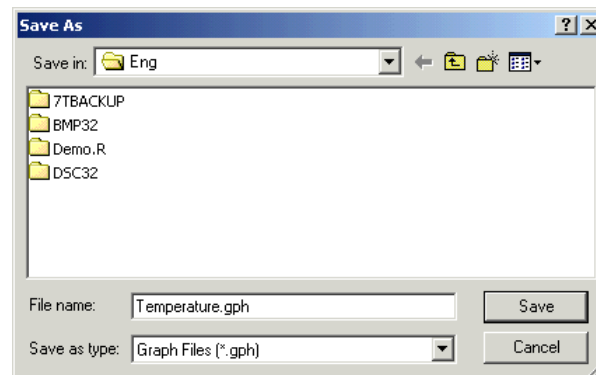
Show a predefined graph – *cont.*

Right-click menu



Sl No.	Time	t1	t2	t3
1	28-05-2002 09:35:44:000	88.0	0.0	7.0
2	28-05-2002 09:35:54:000	88.0	0.0	7.0
3	28-05-2002 09:36:04:000	88.0	0.0	7.0
4	28-05-2002 09:36:14:000	88.0	0.0	7.0
5	28-05-2002 09:36:24:000	88.0	0.0	7.0
6	28-05-2002 09:36:34:000	18.5	8.2	9.5
7	28-05-2002 09:36:44:000	4.4	9.8	10.0
8	28-05-2002 09:36:54:000	3.1	10.0	10.0
9	28-05-2002 09:37:04:000	3.0	10.0	10.0
10	28-05-2002 09:37:14:000	3.0	10.0	10.0
11	28-05-2002 09:37:24:000	3.0	10.0	10.0
12	28-05-2002 09:37:34:000	3.0	10.0	10.0
13	28-05-2002 09:37:44:000	3.0	10.0	10.0
14	28-05-2002 09:37:54:000	3.0	10.0	10.0
15	28-05-2002 09:38:04:000	3.0	10.0	10.0
16	28-05-2002 09:38:14:000	3.0	10.0	10.0

Buttons: Export as CSV, Print, Close

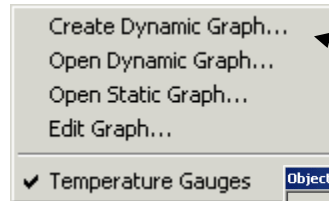


Export to .csv  
for further processing  
for instance in MS Excel

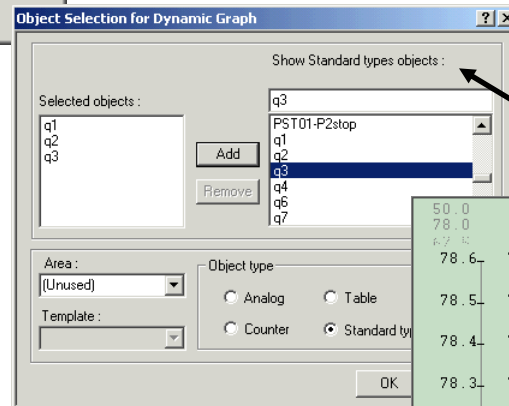
# The window-type graph (9)

Create a dynamic graph

Graph menu

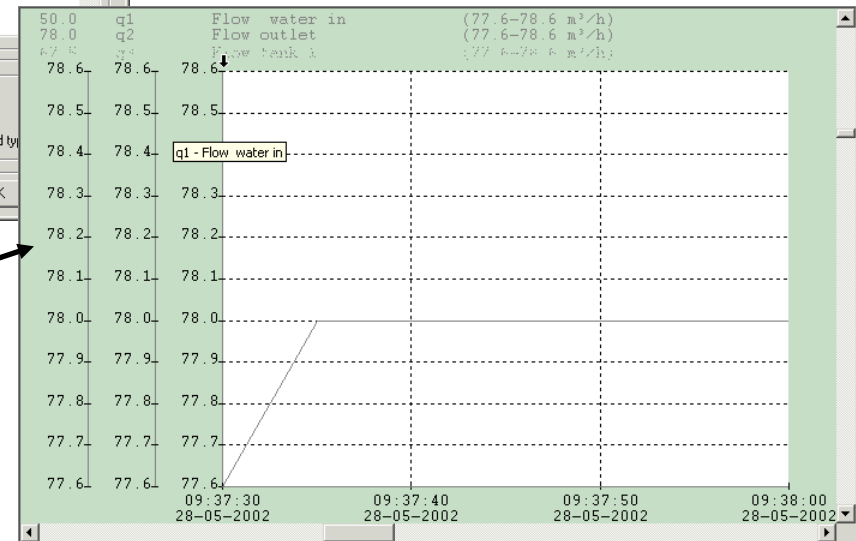


STEP 1:  
Select "Create Dynamic Graph"



STEP 2:  
Choose the objects for the graph.

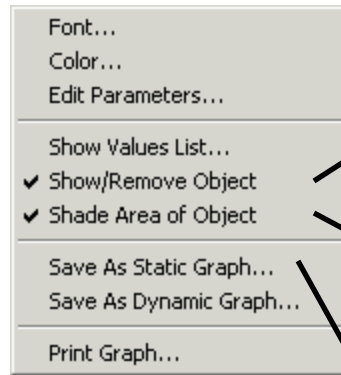
STEP 3:  
Click OK and the graph appears



# The window-type graph (10)

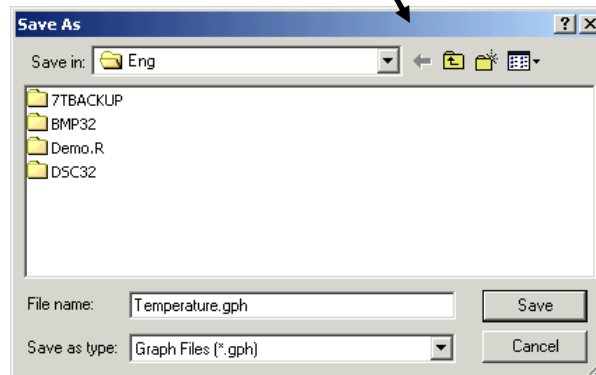
## Create a dynamic graph, *continued*

### Popup menu



Right-click on object legend to show or hide this object in the graph.

Right-click on object legend to shade the area below the measurement results for the selected object.



A dynamic graph or a predefined graph can be saved as a static graph (.gph)

# Embedded graph type (1)

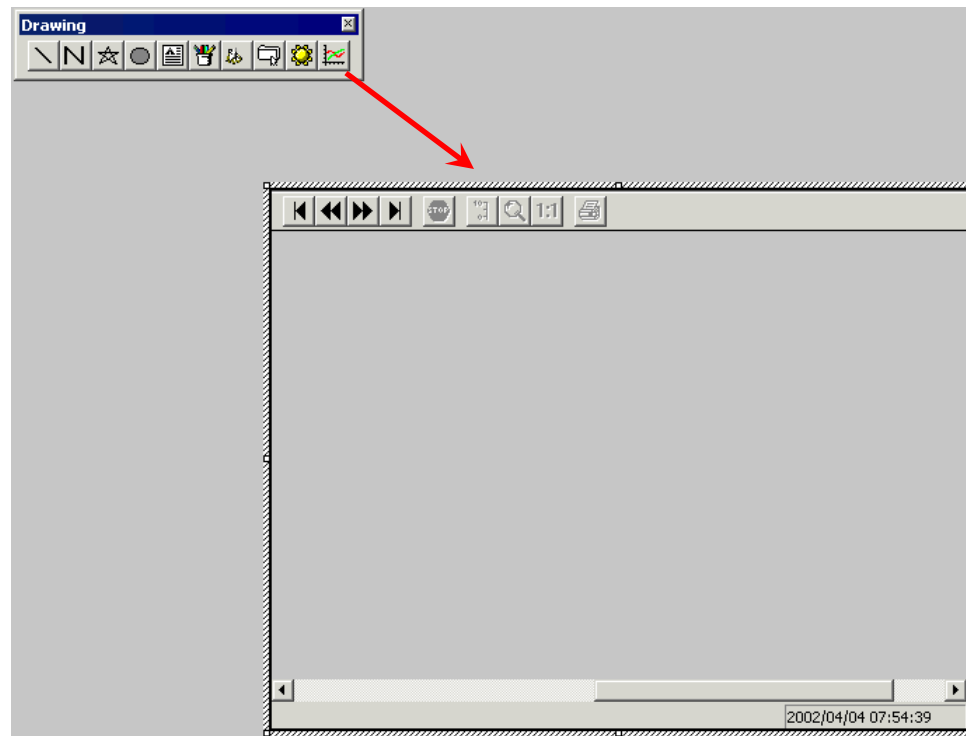
## Benefits

- The new graph can be embedded on a diagram
- XY plot possible (f.ex. voltage as a function of current)
- BCL data can be combined with scanned values
- "Factor" and "Offset" used to show objects with different measuring ranges simultaneously

# Embedded graph type (2)

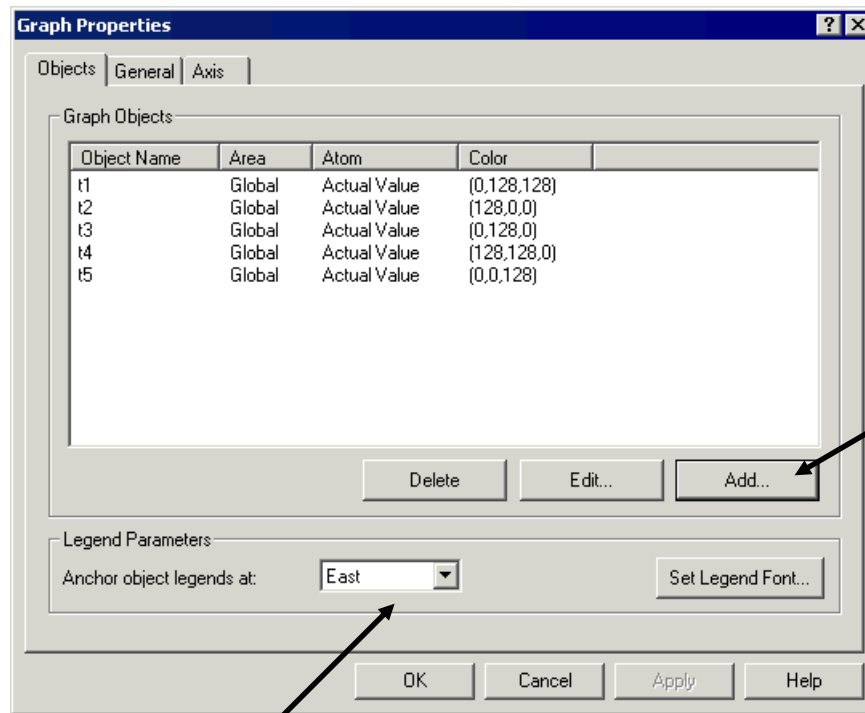
## Create new graph

Click on diagram to embed graph



# Embedded graph type (3)

## Graph Properties dialogue



STEP 1:  
Double-click graph to  
open dialogue

STEP 2:  
Click "Add" to add  
objects (see next slide)

Format graph legend

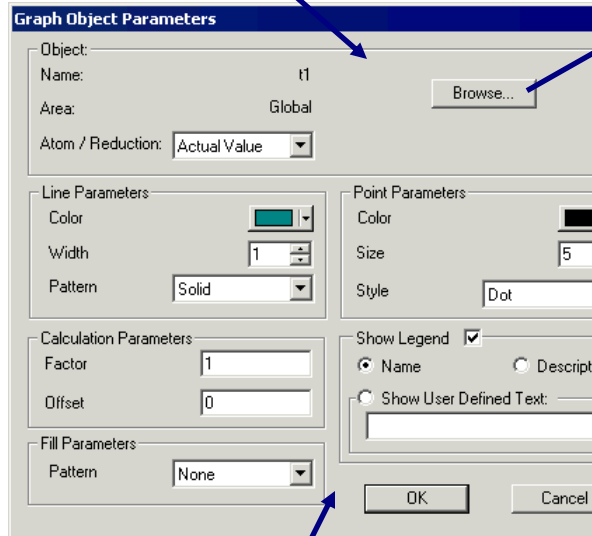
# Embedded graph type (4)

STEP 2:

Click "Browse" to select object in the Object Browser

STEP 1:

Click "Add" in Graph Properties dialogue  
**Add object to graph**



Graph Object Parameters

Object:  
Name: t1  
Area: Global  
Atom / Reduction: Actual Value

Line Parameters:  
Color: [Green]  
Width: 1  
Pattern: Solid

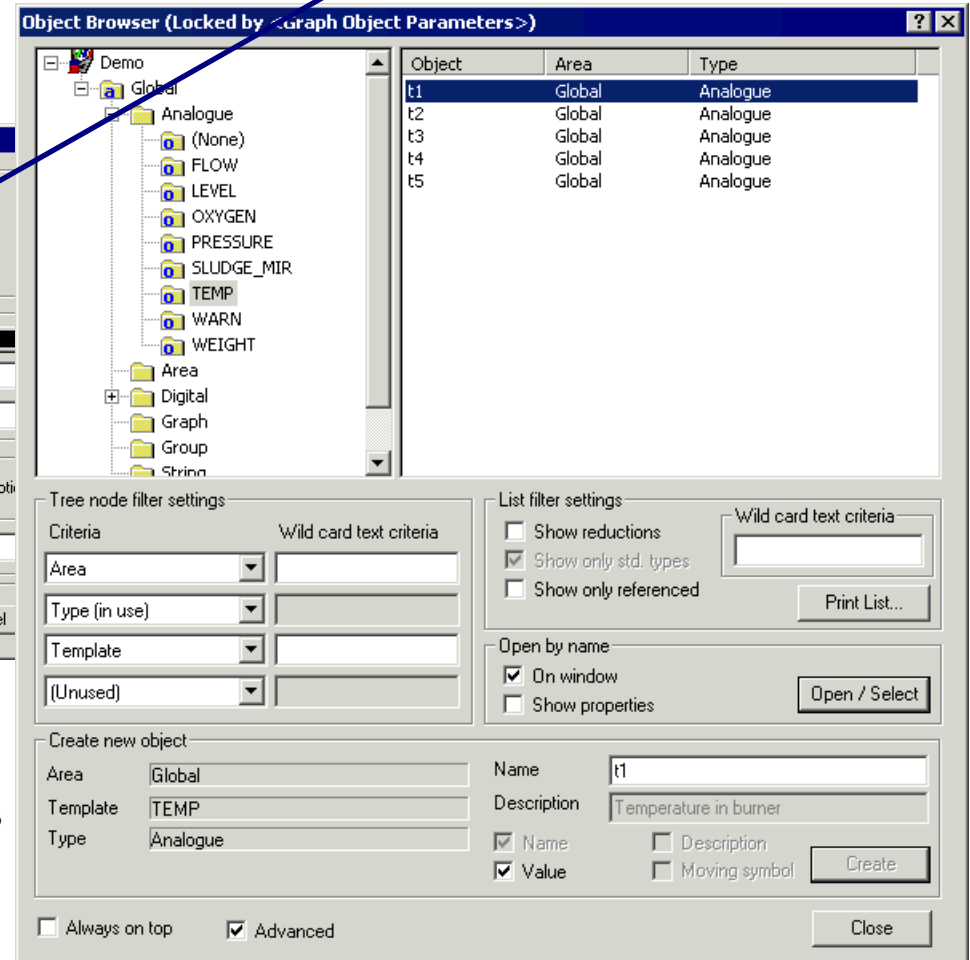
Point Parameters:  
Color: [Black]  
Size: 5  
Style: Dot

Calculation Parameters:  
Factor: 1  
Offset: 0

Fill Parameters:  
Pattern: None

Show Legend   
 Name  Description  
 Show User Defined Text: [ ]

OK Cancel



Object Browser (Locked by <Graph Object Parameters>)

Tree view:  
Demo  
  Global  
    Analogue  
    (NONE)  
    FLOW  
    LEVEL  
    OXYGEN  
    PRESSURE  
    SLUDGE\_MIR  
    TEMP  
    WARN  
    WEIGHT  
  Area  
  Digital  
  Graph  
  Group  
  String

Object	Area	Type
t1	Global	Analogue
t2	Global	Analogue
t3	Global	Analogue
t4	Global	Analogue
t5	Global	Analogue

Tree node filter settings

Criteria	Wild card text criteria
Area	[ ]
Type (in use)	[ ]
Template	[ ]
(Unused)	[ ]

List filter settings

Show reductions  
 Show only std. types  
 Show only referenced

Wild card text criteria: [ ]

Print List...

Open by name

On window  
 Show properties

Open / Select

Create new object

Area: Global  
Template: TEMP  
Type: Analogue

Name: t1  
Description: Temperature in burner

Name  Description  
 Value  Moving symbol

Create

Always on top  Advanced

Close

STEP 3:  
Set up the graph parameters for the object

# Embedded graph type (5)

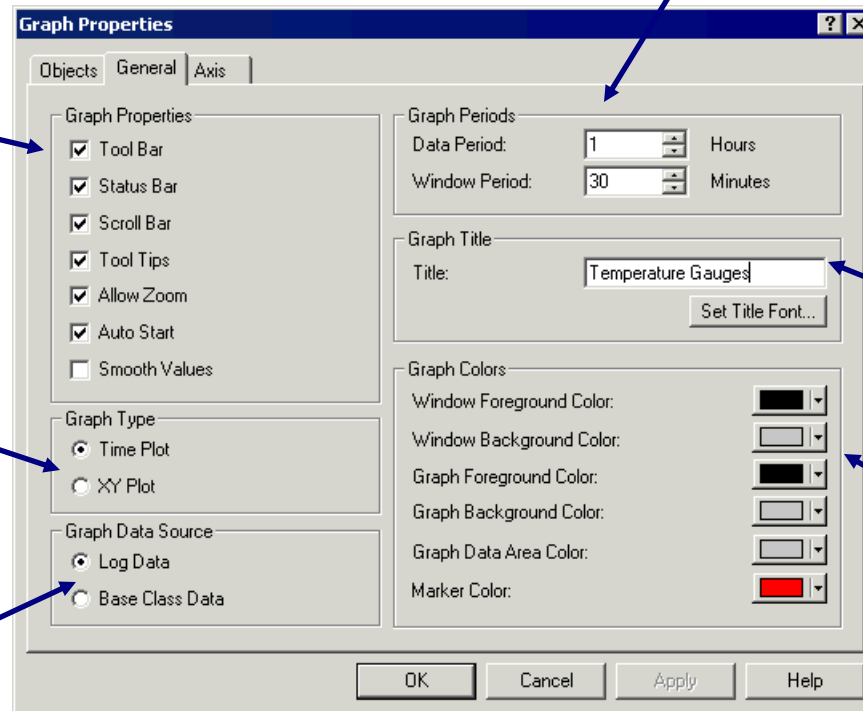
## General tab

Choose graph window elements and other properties

Choose type of plot (time or XY)

Choose data source (.log or .bcl)

Define data and window period (data period can be changed by operator)



The image shows a 'Graph Properties' dialog box with three tabs: 'Objects', 'General', and 'Axis'. The 'General' tab is active. It contains several sections: 'Graph Properties' with checkboxes for Tool Bar, Status Bar, Scroll Bar, Tool Tips, Allow Zoom, Auto Start, and Smooth Values; 'Graph Type' with radio buttons for Time Plot (selected) and XY Plot; 'Graph Data Source' with radio buttons for Log Data (selected) and Base Class Data; 'Graph Periods' with spinners for Data Period (1 Hours) and Window Period (30 Minutes); 'Graph Title' with a text field containing 'Temperature Gauges' and a 'Set Title Font...' button; and 'Graph Colors' with color pickers for Window Foreground/Background, Graph Foreground/Background, Graph Data Area, and Marker colors. At the bottom are 'OK', 'Cancel', 'Apply', and 'Help' buttons.

Format graph title

Format graph colors

# Embedded graph type (6)

## Axis tab

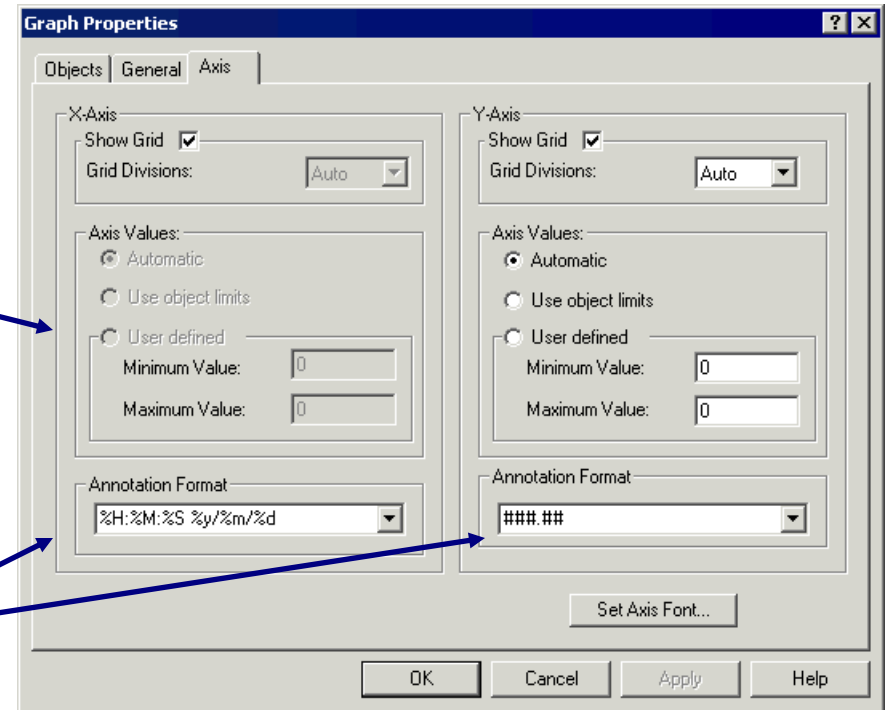
### X-axis - Axis values:

For time plots - fields are greyed out.

For XY plots - limits can be chosen

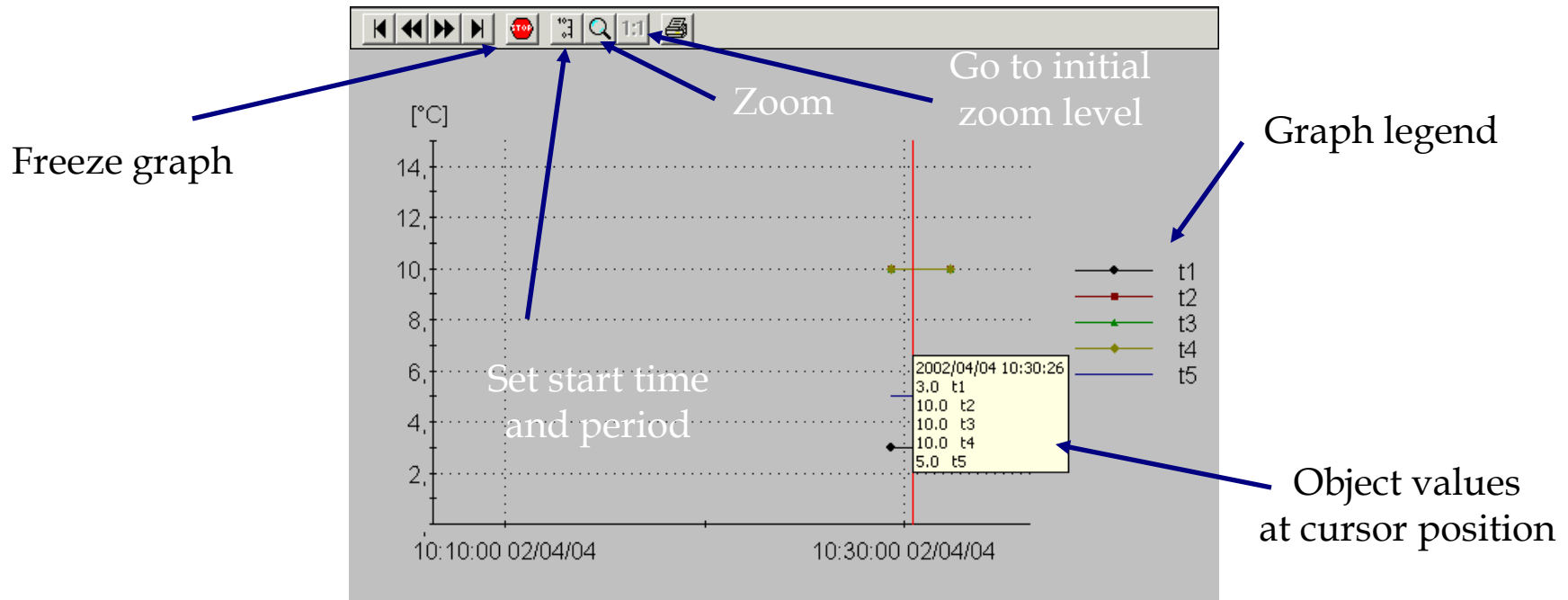
### Annotation format:

Choose format for values on X-axis and Y-axis



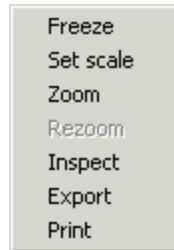
# Embedded graph type (7)

## Embedded graph in Supervise



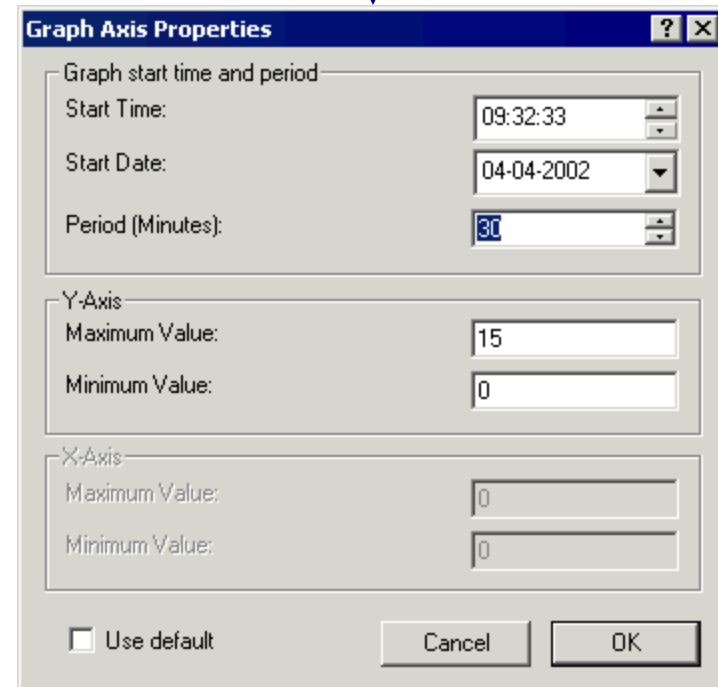
# Embedded graph type (8)

Graph  
right-click  
menu



Choose "Set Scale"

Start time and period  
can be changed by the operator



**Graph Axis Properties**

Graph start time and period

Start Time: 09:32:33

Start Date: 04-04-2002

Period (Minutes): 30

Y-Axis

Maximum Value: 15

Minimum Value: 0

X-Axis

Maximum Value: 0

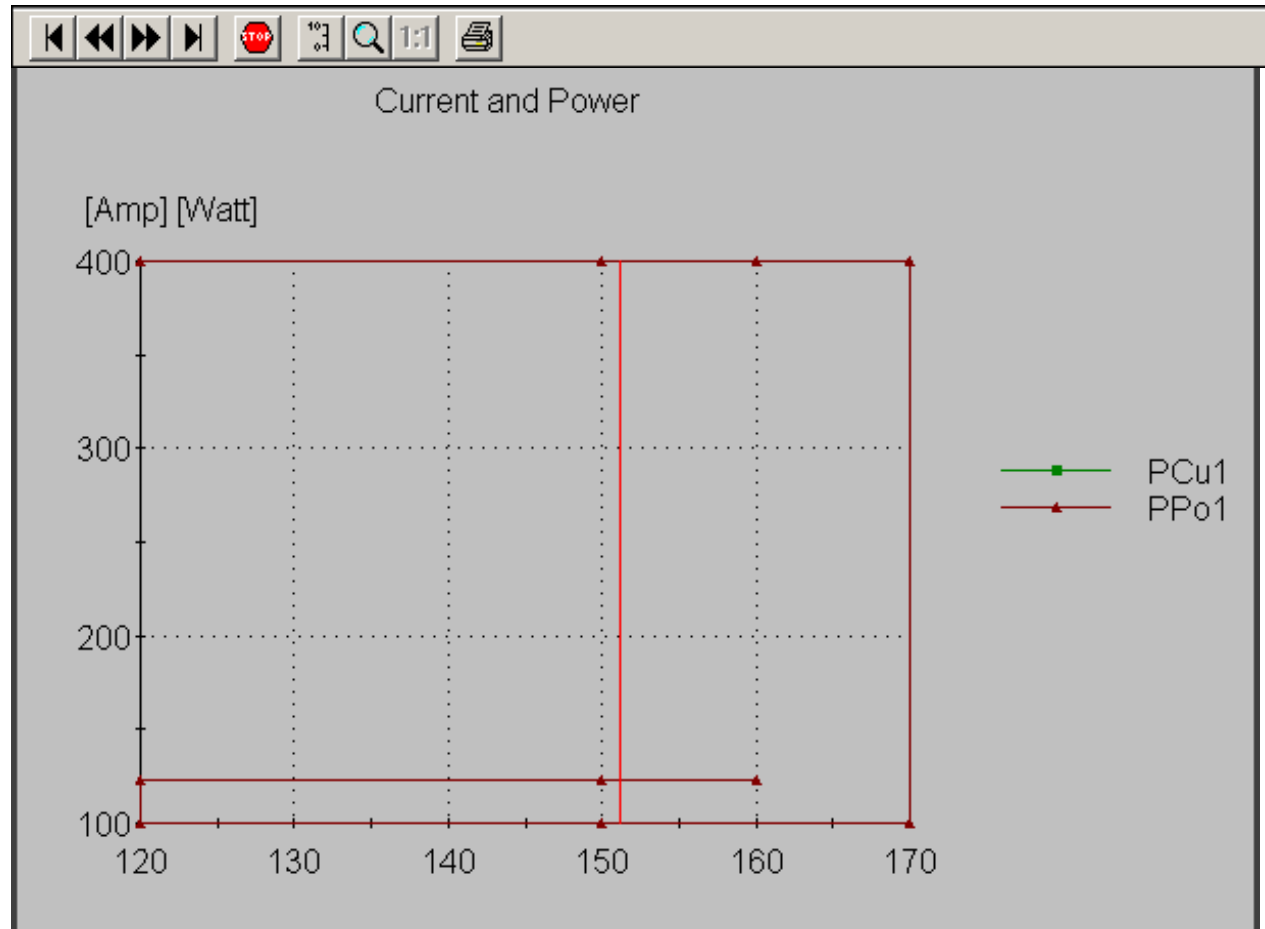
Minimum Value: 0

Use default

Cancel OK

# Embedded graph type (9)

## XY Plot



# Instructor demo

## Online Demo

- Create a traditional time plot

Do Exercise 7 in the Exercises booklet after the instructor demo