

ModelDesk

Plotting

For ModelDesk 5.5

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How to Contact dSPACE

Mail:	dSPACE GmbH Rathenaustraße 26 33102 Paderborn Germany
Tel.:	+49 5251 1638-0
Fax:	+49 5251 16198-0
E-mail:	info@dspace.de
Web:	http://www.dspace.com

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About This Document

Contents

This document introduces you to the plotting features of ModelDesk. It provides all the information of selecting signals for plotting, the plotter, and handling the plots.

Symbols

dSPACE user documentation uses the following symbols:

Symbol	Description
 DANGER	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
 NOTICE	Indicates a hazard that, if not avoided, could result in property damage.
 Note	Indicates important information that you should take into account to avoid malfunctions.
 Tip	Indicates tips that can make your work easier.
	Indicates a link that refers to a definition in the glossary, which you can find at the end of the document unless stated otherwise.
	Precedes the document title in a link that refers to another document.

Naming conventions

dSPACE user documentation uses the following naming conventions:

%name% Names enclosed in percent signs refer to environment variables for file and path names.

< > Angle brackets contain wildcard characters or placeholders for variable file and path names, etc.

Special folders

Common Program Data folder A standard folder for application-specific configuration data that is used by all users.

%PROGRAMDATA%\dSPACE\<InstallationGUID>\<ProductName>

or

%PROGRAMDATA%\dSPACE\<ProductName>\<VersionNumber>

Documents folder A standard folder for user-specific documents.

%USERPROFILE%\Documents\dSPACE\<ProductName>\<VersionNumber>

Local Program Data folder A standard folder for application-specific configuration data that is used by the current, non-roaming user.

%USERPROFILE%\AppData\Local\dSPACE\<InstallationGUID>\<ProductName>

Accessing dSPACE Help and PDF Files


After you install and decrypt dSPACE software, the documentation for the installed products is available in dSPACE Help and as PDF files.

dSPACE Help (local) You can open your local installation of dSPACE Help:

- On its home page via Windows Start Menu
- On specific content using context-sensitive help via **F1**

dSPACE Help (Web) You can access the Web version of dSPACE Help at www.dspace.com/go/help.

To access the Web version, you must have a *mydSPACE* account.

PDF files You can access PDF files via the  icon in dSPACE Help. The PDF opens on the first page.

Basics and Instructions

Where to go from here

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A plotter lets you display the values of measurement variables graphically as curves (time plots or xy plots).	

Introduction to the Plot Manager

Where to go from here

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The Plot Manager is integrated into ModelDesk. It has several elements in the user interface.	
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The files of a ModelDesk project are stored in a pool. This makes them available to all the experiments/configurations in a ModelDesk project.	

Basics of the Plot Manager

Introduction

Before you start working with the Plot Manager, you should know its features and some basic terms.

Features of the Plot Manager

The Plot Manager provides the following features:

- Monitor signals of an ASM. The ASM libraries contain an ASMSignalInterface block. The block is used to transfer the values of the connected ASMSignalBus to ModelDesk. If the block is used in an ASM module, all the signals contained in the ASMSignalBus are available for plotting.
- Use up to four plotter on one layout. One layout can have one, two or four plotter instruments. The plotters have several features for observing the signals' curves.
- Start and stop a simulation via ModelDesk. It is not necessary to change to other tools for this.
- Plot signals of a running simulation. The simulation can be done in MATLAB/Simulink (Simulink simulation), on real-time boards (real-time simulation), or VEOS (offline simulation). The signals to be plotted must be selected.
- Specify a downsampling factor and signal buffer size to configure the size of the recorded data.
- Specify start and stop triggers. When you use suitable signals for triggering, it is easy to compare multiple plots as they have the same time axis.

- Save the plotted signals to files. After the simulation finishes, you can save all or a subset of the plotted signals to a file.
- Monitor the signals which are saved in a file in the plotter.
- Compare plotted signals of different experiments within a ModelDesk project. All files are stored in the pool in ModelDesk. These files are available for all experiments in one ModelDesk project, so you can easily compare plots within an experiment or even within a project. You can record signals during a simulation, change parameter values and run the simulation again. The effects of the changed parameter values can be visualized in a plot.

Elements of the Plot Manager

The Plot Manager uses the following elements for structuring in a ModelDesk experiment.

Configuration An element containing all the settings that you made for plotting signals. Configurations are stored in the pool and can be used in several experiments in a ModelDesk project. However, only one configuration can be active at the same time.

Layout A window which contains the plotters. A layout can contain one, two or four plotters. The number and arrangement of plotters are specified during layout creation and cannot be changed afterwards.

Layouts are stored in the pool and can be used in several experiments in a ModelDesk project.

Plotter An instrument that displays the signal curves. Signals can be displayed as time plots (signal value over time) in a Time Plotter or XY plots (signal value in relation to another signal) in an XY Plotter.

Note that the plotter instruments are used in ModelDesk and other dSPACE tools. There are commands that are useful in other dSPACE tools but useless for ModelDesk. Some of these commands are visible in ModelDesk but have no effect.

Trigger A trigger specifies the conditions for starting or stopping plotting. The conditions can be a delay time or the value of another signal.

The trigger settings are stored in the pool and can be used in several experiments in a ModelDesk project.

Signal Selector A controlbar for selecting signals to visualize. It has one or more pages. One page contains a list of the signals that are connected to an ASMSignalInterface block. The tab displays the label of the block.. These pages are displayed when a configuration is opened. The other pages contain lists of recorded signals. These pages are available only if measurements are opened.

Measurements An element containing the recorded signals. You can open measurements to compare them with other measurements or with the simulation. The measurements are stored in the pool, so it is even possible to compare measurements from different experiments in a ModelDesk project. As measurements can be exported and imported as MAT files, you can also compare

measurements from other ModelDesk projects or other MAT files if they have the correct structure.

Related topics	References
	Time Plotter..... 82
	XY Plotter..... 85

Collecting Signals for Plotting in the ASM Model

Introduction	The signals to be plotted are collected in the simulation model using ASMSignalInterface blocks.
ASMSignalInterface block	The ASM libraries contain the ASMSignalInterface block in ModelDesk Utilities / Plot Interface. The block can be used several times in a model. It is used to transfer the values of the connected signals to ModelDesk via the ASMSignalBus. All the signals contained in the ASMSignalBus are available for plotting. You can specify a label in the block dialog. The labels are used as name of the tabs in the Signal Selector.
Using the ASMSignalInterface block	The demo models of the ASM blockset shows how the ASMSignalInterface block is used. You can use the demo models as examples for your own simulation model. ASMSignalInterface blocks are contained in the ASM modules of the ASM demo model. A ModelDesk project comes with the demo models, which are already prepared for plotting.

Related topics	References
	ASMSignalInterface (ASM User Guide 📖)

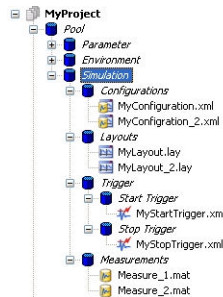
Graphical User Interface of the Plot Manager

Introduction	The Plot Manager is integrated into ModelDesk. It has several elements in the user interface.
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Elements in the Project Navigator

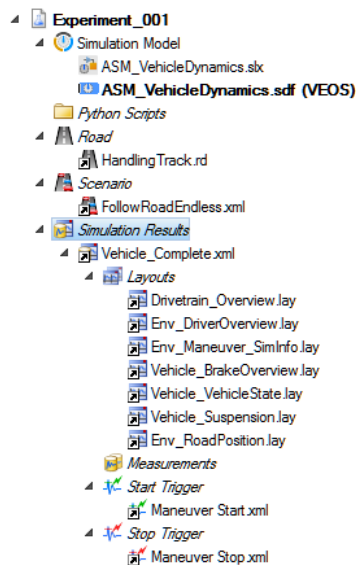
The tree in the Project Navigator has elements to manage the simulation results.

Pool container The following illustration shows the Pool container of the Project Navigator.



All the files which are created for plotting signals and managing simulation results are under the Simulation node. These files are available for all experiments in the ModelDesk project.

Simulation Results container The following illustration shows the Experiment container of the Project Navigator. The Simulation Results node, a container for all elements used by the Plot Manager, is under an Experiment node.



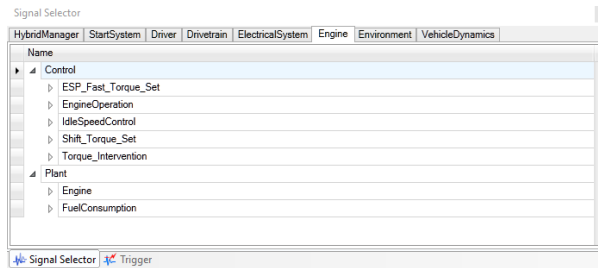
The Simulation Results container holds the configuration, with the following elements:

- Layouts
- Measurements
- Start Trigger
- Stop Trigger

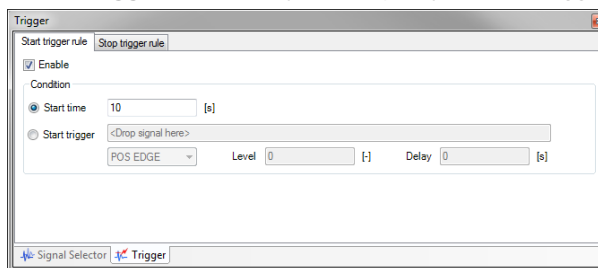
Only one configuration can be active at the same time.

Controlbars of the Plot Manager

The Plot Manager has two controlbars: Signal Selector and Trigger. The Signal Selector provides the signals for the plotter and trigger rule.

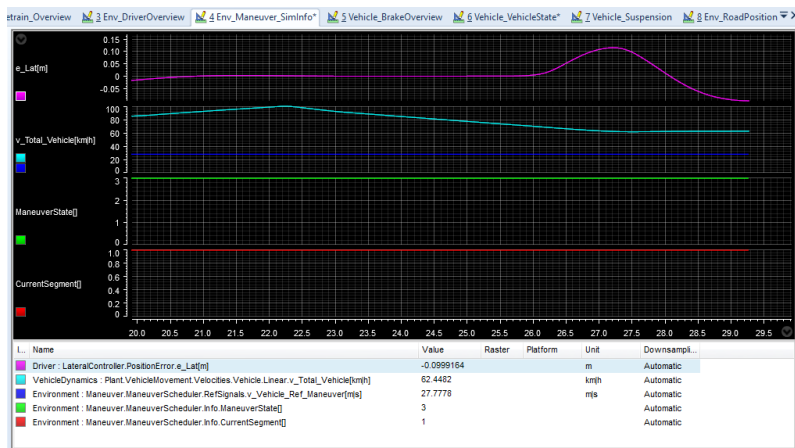


On the Trigger controlbar, you can specify the start trigger and the stop trigger.



Windows of the Plot Manager

The Plot Manager holds the Layout windows. You can create several layouts but only one layout can be displayed at the same time. The following illustration shows a layout with one plotter.



The plotter in the layout shows the graphs of the assigned signals and displays information on the signals at the bottom. A signal name starts with the name of the measurement if its source is a MAT file, or the label of the ASMSignalInterface block if its source is the simulation.

Related topics**Basics**

[Basics of the Plot Manager.....](#) 14

Working with the Pool

Introduction

The files of a ModelDesk project are stored in a pool. This makes them available to all the experiments/configurations in a ModelDesk project.

Files in the pool

All the settings of the Plot Manager are saved in files in the pool section in the Project Navigator. Only references to these files are used in experiments. The following files are used:

- `<Configuration name>.xml`
- `<Layout name>.lay`
- `<Trigger name>.xml`
- `<Measurement name>.mat`

Creating pool files

The pool files are created in the active experiment. For example, if you create a new configuration with the name **MyConfig**, the **MyConfig.xml** file is created in the pool section. The new node which is created in the experiment (Simulation - Configurations - MyConfig.xml) is only a reference to the **MyConfig.xml** file.

Changing pool files

The pool files cannot be changed in the pool directly. The settings must be changed in an experiment. When the settings are saved, the files in the pool are updated. As the files are saved in the pool, the settings apply to all other experiments which reference the files for the whole project.

Using files in other experiments

Working with the pool makes it easy to use the same settings in different experiments. You can reference each file in the pool from several experiments, which then have the same settings.

Using files in other projects

The pool principle works only within one ModelDesk project. However, you can export and import the files via the file system to reuse the settings in other ModelDesk projects.

Related topics

References

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Plotting Signals

Introduction

The Plot Manager can be used to visualize the signals of an ASM model of the active ModelDesk experiment.

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To plot signals, you must create a configuration for plotting that contains a layout with one or more plotters.	
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If you performed several simulations, you want to compare the simulation results. If the plotting is configured correctly, the comparison is easy.	
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When the configuration is ready, you can select signals for plotting and start the simulation.	
How to Specify Start Trigger and/or Stop Trigger.....	27
If you want to record only a part of a signal curve, you can specify start and stop triggers. Using start triggers is also useful if you want to compare different signal curves afterwards.	

Workflow for Plotting Signals

Workflow

To plot signals, you must perform the following steps:

1. First, create a configuration. Then you can add a layout with one, two or four plotters. The plotters are Time Plotters by default. You can change the type of each plotter individually. If you want to monitor the time course of signals, use the Time Plotter. If you want to monitor the dependency between signals, use the XY Plotter. Refer to [How to Create a Configuration and Layouts](#) on page 23.
2. When the plotters are added, you can select signals for plotting and start the simulation. Refer to [How to Plot Signals](#) on page 25.

3. You can specify start and stop triggers. This is useful if you want to record only a part of a signal curve. This is also useful if you want to compare signals of a running simulation and a recorded plot. If the trigger condition is fulfilled, the plot starts at 0, independently of the simulation time of the platform. To compare signals, trigger with the same signal, for example, a signal which represents the state of the maneuver. You can create new triggers in your configuration or use triggers from the pool. Refer to [How to Specify Start Trigger and/or Stop Trigger](#) on page 27.

Plotters provide several features which influence signal plotting. You should therefore read the instructions on plotter handling before you use plotters. Refer to [Plotter Handling](#) on page 33.

Related topics

Basics

[Basics of the Plot Manager](#)..... 14

Basics on Downsampling and Signal Buffer Size

Introduction

The amount of data which is recorded is influenced by the values for downsampling and signal buffer size.

Both properties are specified for configurations, i.e., you can use different values in different configurations.

Downsampling

When you specify the configuration for capturing signals, you can specify a downsampling factor. When a downsampling factor of $\langle n \rangle$ is specified, only every $\langle n_{th} \rangle$ value of the signals are transferred from the simulation model to ModelDesk and captured there. This reduces the amount of data to be transferred and stored.

The downsampling is used for each signal that is used in the configuration. It does not influence the start trigger. The first values are captured with the start trigger, the second values are captured after $\langle n \rangle$ sample steps.

Downsampling is qualified for simulations in which not each value of a sampling step is relevant. You can use this feature for capturing signals for a long period and the change of signal values are small.

Signal buffer size

When you specify the configuration for plotting signals, you can specify the signal buffer size. This value specifies the size of memory that the host PC must provide to store all the captured data for one signal. It requires a large memory if you capture signals for a long time or you capture a lot of signals.

Related topics**HowTos**

[How to Create a Configuration and Layouts.....](#) 23

How to Create a Configuration and Layouts

Objective

To plot signals, you must create a configuration for plotting that contains a layout with one or more plotters.

Basics

For basic information on working with the Plot Manager, refer to [Introduction to the Plot Manager](#) on page 14.

Preconditions

A ModelDesk experiment must be active.

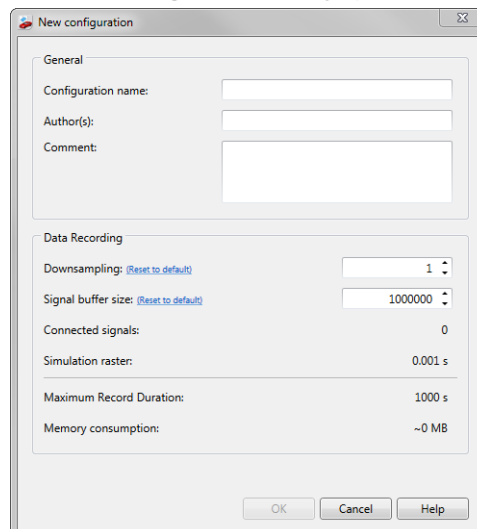
Method**To create a configuration and layouts**

1 On the Plotting ribbon, click Configuration – New.

Or

In the Project Navigator on the Simulation Results element, open the context menu and choose New.

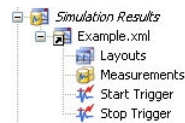
The New configuration dialog opens.



- 2 Enter the configuration name. The name must be unique in the ModelDesk project. This field is mandatory and cannot be modified afterwards. The Author(s) and Comment fields are optional.
- 3 Specify the Downsampling and Signal buffer size properties for data recording. You can also use the default values and modify the values afterwards.
- 4 Click OK to close the dialog.

ModelDesk adds a new configuration element to the experiment and in the Pool in the Project Navigator tree. The element in the Pool is the file of the configuration, and the element under Simulation Results is only a reference to the file.

ModelDesk also adds the Layout, Measurement, Start Trigger and Stop Trigger folders to the configuration element of the experiment. See the following illustration.



- 5 On the Plotting ribbon, click Configuration – Add Layout – $m \times n$. m and n are the number of plotters on the layout (m : vertically, n : horizontally). The New Layout dialog opens.
- 6 Enter the layout name. The name must be unique in the ModelDesk project. ModelDesk opens the new layout window. A file for saving the settings is created in the pool. A reference to the file is created in the configuration.
- 7 In the Project Navigator on the layout element, open the context menu and choose Save to save the configuration and the layout.

Result

You have created a configuration with a layout. The layout is saved in the pool and can also be used in other configurations.

Related topics

References

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Making the Comparison of Simulation Results Easy

Introduction

If you performed several simulations, you want to compare the simulation results. If the plotting is configured correctly, the comparison is easy. If you use


the same time basis for the simulation results, you can use an XY plotter to plot the different curves in one plotter.

Comparing results using XY Plotter

ModelDesk provides two plotters: XY Plotter and Time Plotter. The Time Plotter plots the signal depending on the simulation time. Because the simulation time differs in different simulation results, the comparison of the signals is difficult.

To make a comparison easier, you can use the XY Plotter. The XY Plotter plots a curve depending on two signals. If you use the same signal for the x-axis, you can compare the signals that are dragged to the y-axis easily. For example, in a vehicle dynamics model, you can use the ManeuverTime signal on the x-axis. This signal provides the time after maneuver start. A comparison is easy if you drive the same maneuver.

Related topics

HowTos	
How to Plot Signals.....	25
References	
Maneuver Scheduler (ASM Environment Reference )	
Switch Plotter Type.....	131

How to Plot Signals

Objective When the configuration is ready, you can select signals for plotting and start the simulation.

Using plotters Plotters provide several features which influence signal plotting. You should therefore read the instructions in [Plotter Handling](#) on page 33 before you use plotters.

Signals for plotting The signals which are available for plotting are listed in the Signal Selector. The pages show the signals connected to an ASMSignalInterface block in the model. The name of the tab is the label specified in the block. If one of these signals is dragged to the plotter, the plotter legend displays the variable path of the signal.

The Signal Selector can have additional pages which contain signals of measurements. You can also drag these signals to the plotter, for example, to compare the signals of the current simulation with a previous simulation. If one

of these signals is dragged to the plotter, the plotter legend displays the MAT file name and the variable path of the signal.

Starting the plotter

When ModelDesk starts the plotting, it also starts the simulation. Simulink simulations, real-time simulations, and offline simulations have different start procedures.

Starting Simulink simulations ModelDesk performs the following steps for Simulink simulations:

1. Starting MATLAB.
2. Opening the model by initialization scripts.
3. Starting the simulation in MATLAB.

Starting real-time simulations ModelDesk performs the following steps for real-time simulations:

1. Connecting to the real-time platform.
2. Downloading the real-time application to the platform if necessary.
3. Starting the real-time application.

Starting offline simulations ModelDesk performs the following steps for real-time simulations:

1. Connecting to VEOS.
2. Downloading the simulation model to VEOS.
3. Starting the simulation.

Preconditions

A configuration with a layout must have been created. Refer to [How to Create a Configuration and Layouts](#) on page 23.

Method

To plot signals

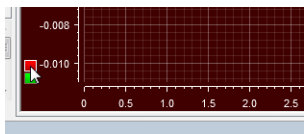
- 1** If the configuration is closed, open the context menu of the configuration and choose **Open** in the **Project Navigator**.
- 2** The plotters on the layout are Time Plotters by default. If you require an XY Plotter, you must switch the plotter type: Open the context menu of the plotter and choose **Switch Plotter Type**.

Tip

Select the required plotter type before assigning signals to the plotter. If you switch the plotter type afterwards, all the assignments of the signals are lost.

- 3** Drag signals from the **Signal Selector** to the plotter.
When the signal is dropped on the plotter, you can set its properties.

- 4 Click the legend of the plotting signal in the plotter.



The Properties pane displays the properties of the plotting signal.

- 5 In the Properties pane, set the properties of all the plotting signals and axes of the plotter.

Tip

You can also set the properties using the commands in the plotting signal's context menu.

- 6 To start plotting the signals, go to the Plotting ribbon and click Plotting – Start.
ModelDesk starts the simulation. The signals are displayed in the plotter.
- 7 To stop plotting, go to the Plotting ribbon and click Plotting – Stop.

Result

The selected signals are displayed in the plotter.

Tip

You can specify start and stop triggers, to record only a part of the signal curves or to compare the signal curve with a reference curve. Refer to [How to Specify Start Trigger and/or Stop Trigger](#) on page 27.

Related topics

Basics

Making the Comparison of Simulation Results Easy.....	24
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References

Open (Configuration).....	63
Start Plotting.....	77
Stop Plotting.....	78

How to Specify Start Trigger and/or Stop Trigger

Objective

If you want to record only a part of a signal curve, you can specify start and stop triggers. Using start triggers is also useful if you want to compare different signal curves afterwards.

You can create new triggers in your configuration or use triggers from the pool.

Basics

Signal recordings are started and stopped by a start trigger and a stop trigger.

Start trigger A start trigger determines the time when the recording of signal values starts. A start trigger can depend on a delay time or a value of a signal. The trigger is specified on the **Start Trigger** page of the **Trigger** controlbar.

Stop trigger A stop trigger determines the time when the recording of signal values stops. A stop trigger can depend on a delay time or a value of a signal. The trigger is specified on the **Stop Trigger** page of the **Trigger** controlbar.

If you specify a start trigger and stop trigger, the trigger conditions can depend on a delay time or a signal of the model. The conditions can be specified independently of each other. It is also possible to enable only one trigger (start trigger or stop trigger).

Delay time The delay time of a start trigger is the time between the start of simulation and the start of recording.

The delay time of a stop trigger is the time between the start of recording and the end of recording.

Signal-dependent The trigger conditions can also depend on a signal in the model. Triggering occurs when a signal exceeds (positive edge) or falls below (negative edge) a specified value. You can also specify an additional delay time. If the plotting configuration is used for testing, the signal used for triggering must be in the same application process as the signal used for controlling the test. The signals which are used for controlling the test are specified in the **Environment Configuration** dialog.

Preconditions

A configuration must be created. Refer [How to Create a Configuration and Layouts](#) on page 23.

Method

To specify a start trigger and/or stop trigger

- 1** On the **Plotting** ribbon, click **Configuration – Activate Start Trigger** or **Activate Stop Trigger – New**.
A dialog opens.
- 2** Specify the name of the trigger, and optionally the author name and a comment.
The new trigger is created in the pool and linked to the active configuration.
- 3** If the **Trigger** controlbar is not visible, go to the **View** ribbon and click **Controlbar – Switch Controlbars – Trigger**.
- 4** On the **Start Trigger** or **Stop Trigger** page of the **Trigger** controlbar, select the **Enable** checkbox.
- 5** Select **Start time (Time limit)** or **Start trigger (Stop trigger)**.

- 6 Specify the trigger parameters.
- To select a trigger signal, drag it from the **Signal Selector** to the corresponding field:
1. Click the **Signal Selector** tab to display the **Signal Selector**.
 2. In the **Signal Selector**, browse to the signal which you want to use as the trigger signal.
 3. Drag the signal to the **Trigger** tab. The **Trigger** controlbar is displayed. Drop the signal on the **Start trigger** or **Stop trigger** field.

Tip


If you often use trigger signals, you can change the arrangement of the controlbars to make drag & drop easier. Refer to [How to Customize the Screen Arrangement \(ModelDesk Basics !\[\]\(6b630aeae0fb7557fd0bf6b9b0397925_img.jpg\)](#)).

- 7 Select the signals and start the simulation. For instructions, refer to [How to Plot Signals](#) on page 25.

Result The plotter displays the signals in the triggered part only.

Related topics

References

Activate Start Trigger - From Pool / Add Reference from Pool (Start Trigger).....	55
Activate Stop Trigger - From Pool / Add Reference from Pool (Stop Trigger).....	56
Environment Configuration Dialog (ModelDesk Scenario Creation 	
New (Start Trigger).....	61
New (Stop Trigger).....	62
Save (Start Trigger).....	70
Save (Stop Trigger).....	71
Save As (Start Trigger).....	73
Save As (Stop Trigger).....	73
Trigger.....	79

Managing Simulation Results

Introduction You can save simulation results in MAT files and compare them with other measurements or simulation runs.

Where to go from here **Information in this section**

How to Save Recorded Signals to a MAT File.....	30
You can save the recorded signals to a MAT file to compare them with other measurements.	
How to Compare Measurements and Simulation.....	31
You can compare signals from different MAT files and a simulation.	

How to Save Recorded Signals to a MAT File

Objective You can save the recorded signals to a MAT file to compare them with other measurements.

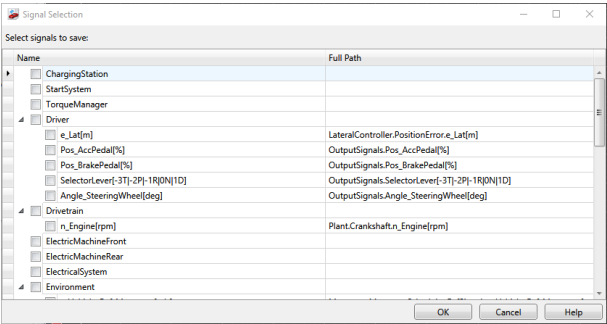
Basics When the simulation is stopped, you can save all the signals selected for plotting and the signals used for triggering to a MAT file. The MAT files are saved in the pool, so they are available in the whole ModelDesk project. This means you can compare measurements within one experiment and between different experiments.

Preconditions Signals must have been plotted. Refer to [How to Plot Signals](#) on page 25.

Method **To save recorded signals to a MAT file**

- 1 In the Project Navigator on the Simulation Results - Measurements element, open the context menu and choose Save Results.

A dialog opens.



- 2 In the dialog, select the signals to be saved in one MAT file.
- 3 Click OK.
A standard Windows opens for you to specify the MAT file name.
- 4 Enter a file name and click Save.

Result The selected signals are saved to the specified MAT file in the pool.

Related topics	References
	Save Capture / Save Results (Measurements)..... 74

How to Compare Measurements and Simulation

Objective You can compare signals from MAT files and a simulation.

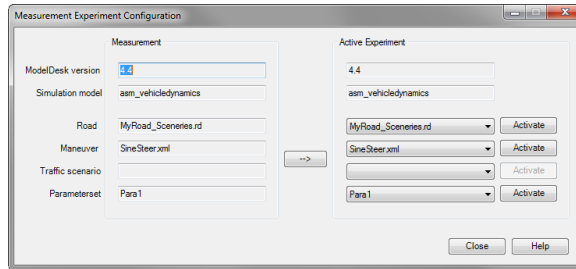
Measurement experiment configuration ModelDesk saves the signals to the MAT file and the experiment's configuration. To simulate the current model with the same configuration, ModelDesk provides a dialog for you to set the same road, maneuver, traffic scenario, and parameter set.

- Preconditions**
- A configuration with a layout must be created. Refer [How to Create a Configuration and Layouts](#) on page 23.
 - A MAT file must be available in the pool. Refer to [How to Save Recorded Signals to a MAT File](#) on page 30.

Method

How to compare measurements and simulation

- 1 If the MAT file is not linked to the configuration, choose **Add Reference** from **Pool** in the context menu of the **Measurements** element and select the MAT file.
- 2 If the MAT file is not opened in the **Signal Selector**, choose **Open** in the context menu of the measurement element (MAT file) in the configuration.
- 3 In the context menu of the measurement element, choose **Experiment Configuration** to open the following dialog.



- 4 In the dialog, click --> to transfer the settings of the measurement to the active experiment.
When the settings are transferred to the active experiment, they are not activated automatically. You must do this explicitly.
- 5 Click **Activate** for the elements which you want to activate for the active experiment's configuration.
- 6 Click **Close**.
- 7 Drag the signals to be compared to the plotter and start the simulation as described in [How to Plot Signals](#) on page 25.

Result

All the signals are shown in a plotter. The signal names show whether the signals are from the simulation or from a MAT file. The MAT file name is added to the signal name of a MAT file signal.

Related topics

References

Add Capture / Add Reference from Pool (Measurements)	55
Experiment Configuration	58
Open (Measurement)	64

Plotter Handling

Introduction

A plotter lets you display the values of measurement variables graphically as curves (time plots or xy plots).

Where to go from here

Information in this section

[Time Plotter and XY Plotter.....](#) 33

You can switch between two plotter types to display signals in relation to the measurement time (time plot) or in relation to another signal (XY plot).

[Basics of Handling the Time Plotter.....](#) 34

The Time Plotter lets you display the values of measurement variables in relation to the measurement time (time plots).

[Basics of Handling the XY Plotter.....](#) 38

The XY Plotter lets you visualize signals in relation to other signals.

[Zooming and Moving the Chart.....](#) 41

You can switch between different modes to zoom into the chart or move the chart.

[How to Configure the Time Plotter.....](#) 43

You can change the Time Plotter settings, for example, the color of the signal, even if the measurement is running.

[How to Configure the XY Plotter.....](#) 45

You can change the XY Plotter settings, for example, the color of the signal, even if the measurement is running.

Time Plotter and XY Plotter

Introduction

You can switch between two plotter instruments to display signals in relation to the measurement time (time plot) or in relation to another signal (XY plot).

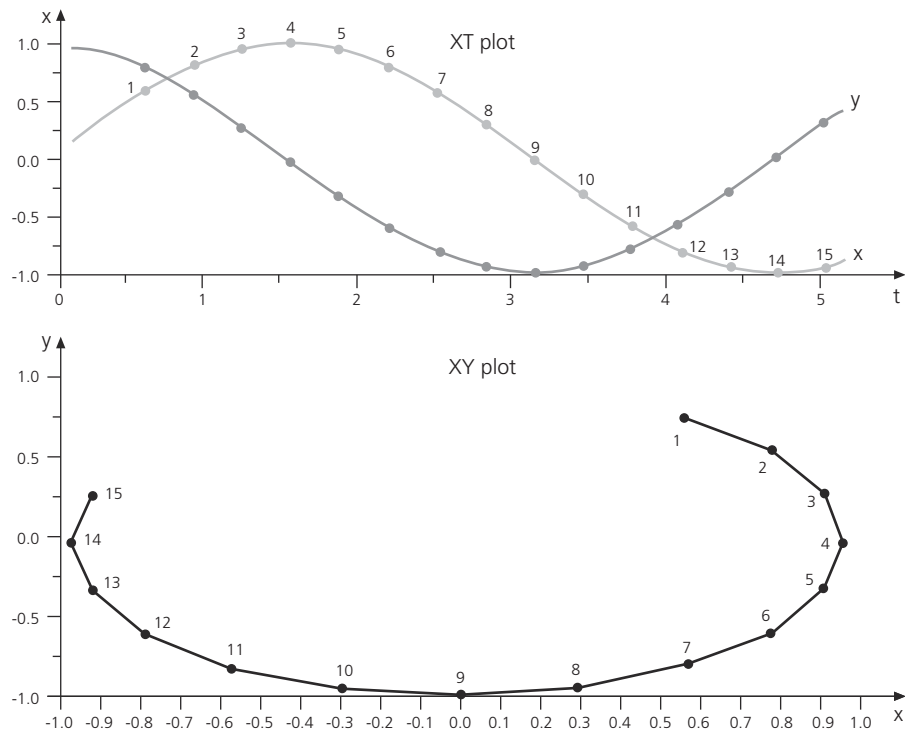
Plotter instruments

You can use two different plotter instruments. It is possible to switch between them via a menu command:

Time Plotter In the Time Plotter, the x-axis visualizes the time dimension (time axis) and one or more y-axes visualize the assigned signals (signal axes). The Time Plotter shows the measured signal in relation to the measurement time.

XY Plotter The XY Plotter displays the relationship between measurement signals. In this case, the x-axis is used as a signal axis. The XY Plotter can display one or more signals on y-axes in relation to the signal on the x-axis.

The following illustrations show a time plot (XT plot) of the signals x and y, and an XY plot of them. In the XY plot the x-axis represents the value range of the x-signal and the y-axis that of the y-signal. The sample points are numbered to show the related points in time in the two illustrations.



The trajectory curve (XY plot) is defined by the starting point (1) and the end point (15).

Related topics

HowTos

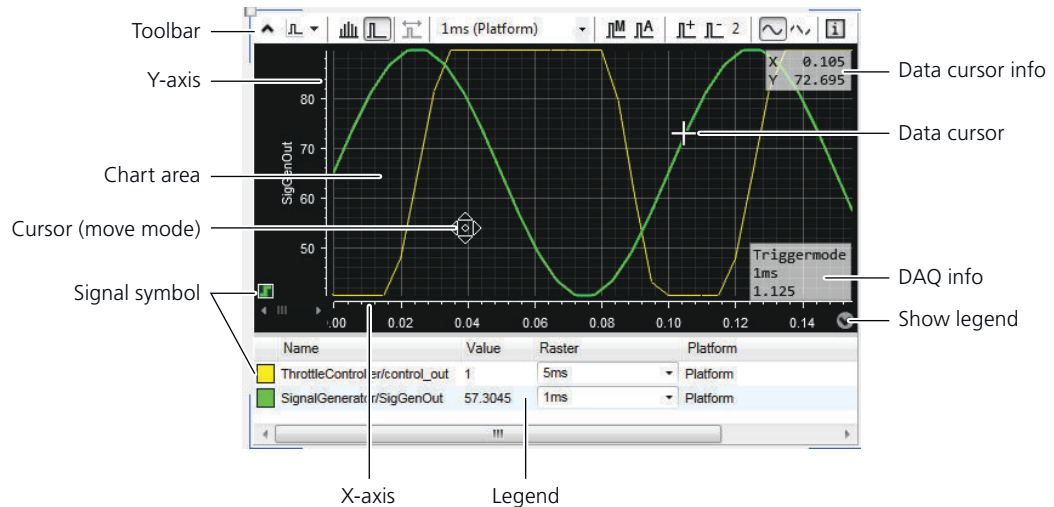
[How to Plot Signals.....](#) 25

Basics of Handling the Time Plotter

Introduction

The Time Plotter lets you display the values of measurement variables in relation to the measurement time (time plots).

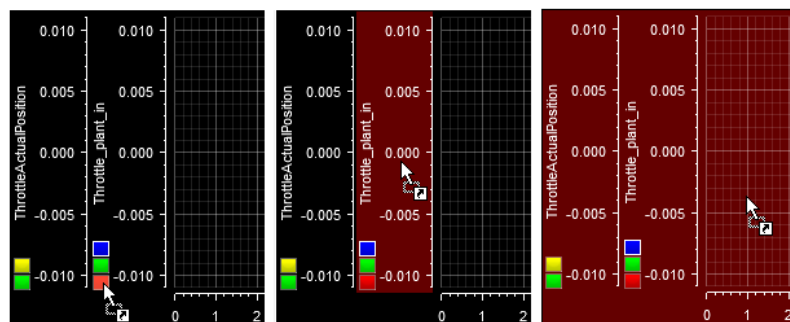
Time Plotter



Connections

You can place signals on the Time Plotter via drag & drop. The visualization of a signal in the Time Plotter depends on where you drop it. The destination is highlighted.

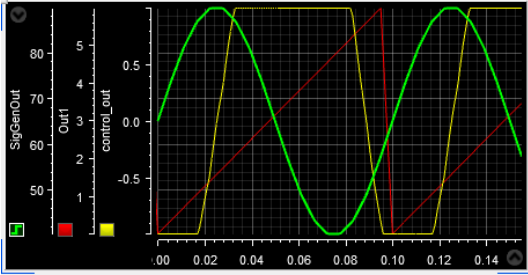
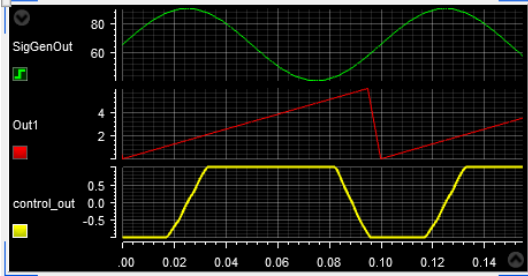
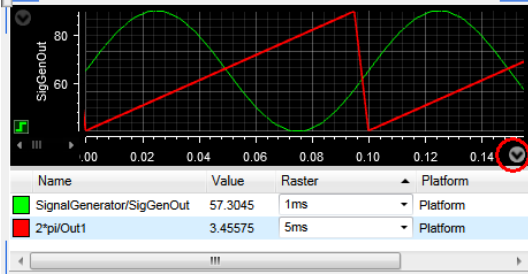
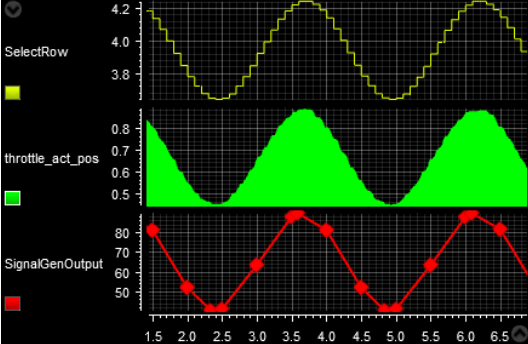
You can drag signals from the Signal Selector to the Time Plotter. Multiselection is possible.

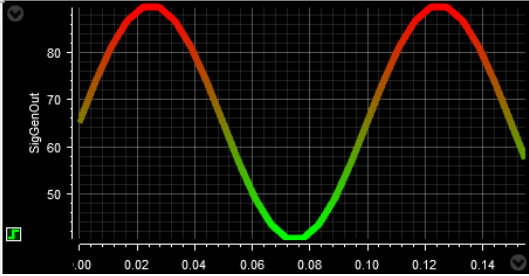
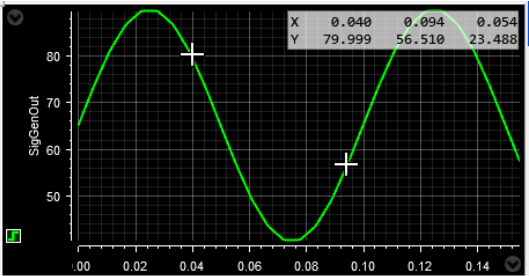
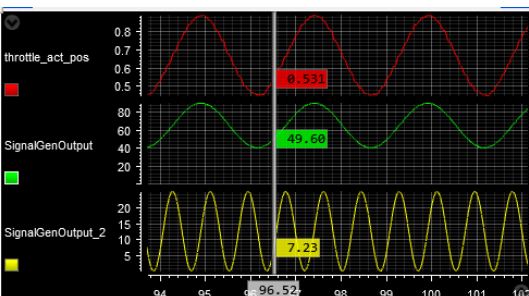
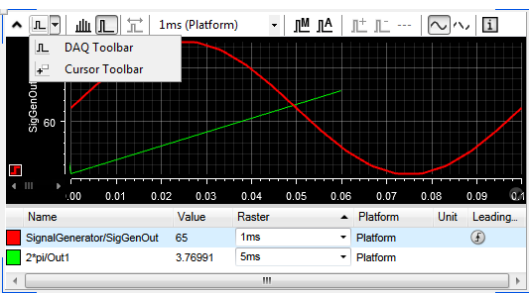
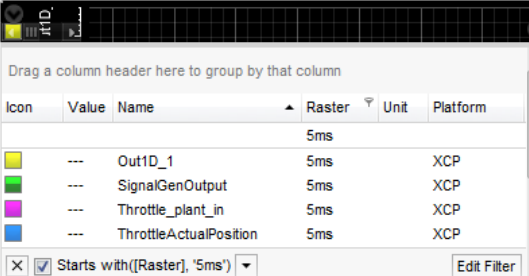


- If you drop a signal onto a signal symbol, the new signal replaces the existing one.
- If you drop one or more signals onto a y-axis, a new signal is added to the y-axis for each signal.
- If you drop one or more variables onto the chart area, a new y-axis is added to the y-axis area for each signal.

Properties of the Time Plotter

The Time Plotter provides a number of properties in its context menu and in the Properties controlbar. The following table shows some example settings.

Example	Description
	<p>The Time Plotter can display y-axes one beside the other in the complete view or in the scroll view.</p>
	<p>The Time Plotter can display the y-axes one below the other in the stacked view.</p>
	<p>You can show/hide the legend via a button.</p>
	<p>The Time Plotter offers various line styles and point styles.</p>

Example	Description
	You can define value ranges for the colors of a multicolor signal. The signal can be displayed with smooth color transitions (multicolor interpolation).
	One or two cursors can be used to specify chart positions. The positions of the cursors and the distance between them can be displayed at the cursor info position.
	A time cursor can be used to specify a time position in the chart. The time position of the cursor and the related signal value can be displayed.
	You can show/hide a toolbar via a button. Via the toolbar, you can easily change cursor and DAQ settings.
	You can sort, group, and filter the signals in the Time Plotter via the column headers of the legend. Right-click the column headers to open related commands. To search for a signal, set the focus to the legend and press Ctrl+F

Related topics

Basics

[Zooming and Moving the Chart.....](#) 41

HowTos

[How to Configure the Time Plotter.....](#) 43

References

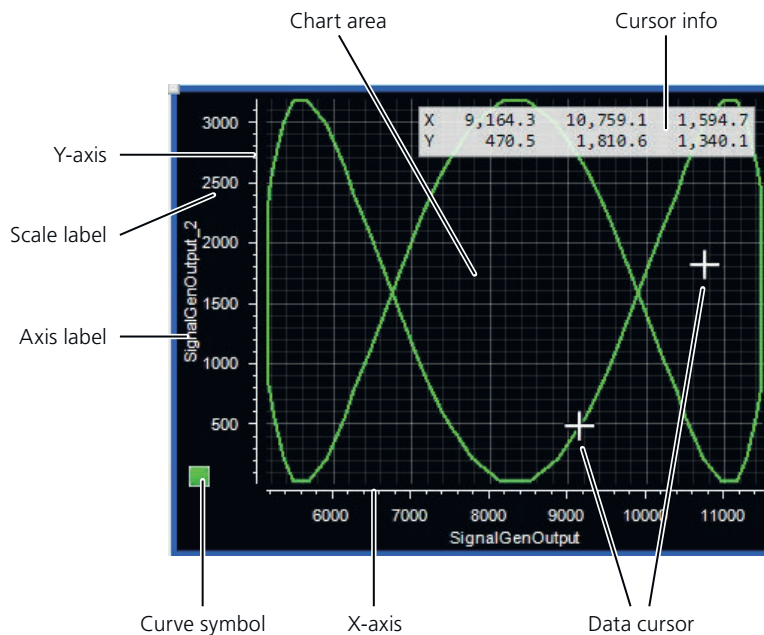
[Show Legend.....](#) 128

Basics of Handling the XY Plotter

Introduction

The XY Plotter lets you visualize signals in relation to other signals.

XY Plotter



Instrument elements

X-axis and y-axis The XY Plotter uses the x- and the y-axis as signal axes. You must connect a signal to each axis to display a curve. The XY Plotter allows you to display several curves in one chart.

Tip






- To rescale an axis to the dimension needed to display all curves, double-click it.
- To rescale both axes, double-click the chart area.

Chart area Displays the XY plots of one or more curves. The curves can be displayed in several styles and colors.

Data cursor and cursor info One or two cursors can be used to specify chart positions. The positions of the cursors and the distance between them can be displayed at the cursor info position.


Time cursor A time cursor can be used to specify a time position in the chart.


Curve symbol The curve symbol is split into two areas that represent the connected variables and the status of the connection.

Symbol	Description
	No variable is connected.
	Only the x-axis is connected to a variable.
	Only the y-axis is connected to a variable.
	Both axes are connected to a variable.
	The axis-variable connection is invalid for at least one axis. For example, the connected variables can have different raster settings. Move the mouse pointer over the symbol to open a tooltip with information on the reasons.

Connections

You can place signals on the XY Plotter via drag & drop. The visualization of signals in an XY Plotter depends on where you drop the signal. The destination is highlighted.

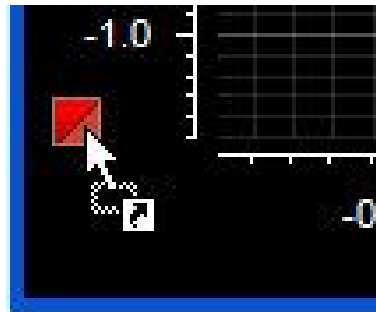
Equal platform or device The two signals of a curve must be measured on the same platform or device. If signals from different platforms or devices are connected, the curve symbol indicates the invalid connection: .

Equal measurement raster settings The two signals of a curve must have the same measurement raster settings. If signals with different raster settings are connected, the curve symbol indicates the invalid connection: .

Connecting a signal to an x- or y-axis Drop the signal on the x- or y-axis. If the axis is already connected, a new curve is added.



Connecting a signal to an existing curve Drop the signal on the desired area of the curve symbol. If the axis is already connected the connected signal is replaced.



XY Plotter visualization

The XY Plotter always shows the data of the current capture. Each new capture replaces the data of the previous one. You do not have to switch between continuous or triggered visualization.

Reducing the number of displayed data points

You can limit the number of displayed data points. This is particularly useful when you perform continuous (untriggered) measurements:

- You can specify the length of the curve.
- You can improve the performance if there is a large number of data points.

Reference signals

You can connect signals from recordings to the XY Plotter and use them as reference signals for the currently measured data.

Related topics

Basics

[Zooming and Moving the Chart](#)..... 41

HowTos

[How to Configure the XY Plotter](#)..... 45

References

[XY Plotter](#)..... 85


Zooming and Moving the Chart

Introduction

You can switch between different modes to zoom into the chart or move the chart.




Zoom mode

The chart area and the axes can be set to zoom mode via context menu. The mouse pointer shows you the active mode.

Mouse Pointer	Description
	Zoom mode: You can specify the zoom area.

Move mode

The chart area and the axes can be set to move mode via context menu. The mouse pointer shows the active mode.



















Mouse Pointer	Description
	Move mode (chart area): You can move the chart in the x-axis and the y-axis directions.
	Move mode (x-axis): You can move the chart in the x-axis direction.
	Move mode (y-axis): You can move the chart in the y-axis direction.

Synchronized x-axis for Time Plotters

Via the x-axis properties, you can activate the synchronization of the x-axis in continuous visualization mode. In this case all synchronized Time Plotters share the same time range. Zooming and moving actions then affect all synchronized plotters in the same way.

Zooming and moving the chart

You can use various methods to zoom or move the chart. See the following table.

Mouse	Gesture ^{1), 2)}	Shortcut Key	Purpose
Move and zoom mode			
—	—	O ²⁾	<p>To show or hide a scroll bar below the x-axis.³⁾</p> <p>To navigate through the measurement, drag the scroll box as shown below.</p>  <p>To specify the zoom settings, drag the edges of the scroll box as shown below (for an animated graphic, refer to dSPACE Help).</p> 
—	—	M	To set the chart view to move mode.
—	—	Z	To set the chart view to zoom mode.
		—	<p>To rescale the chart.</p> <ul style="list-style-type: none"> Use the chart to rescale both axes. Use an axis to rescale the selected axis.
Zoom mode			
	—	—	<p>To zoom into the chart by dragging the mouse pointer.</p> 
 (Scroll wheel)		—	<p>To zoom into the chart.</p> <ul style="list-style-type: none"> Use the chart area to zoom into both axes. Use an axis to zoom into the selected axis.
 (Scroll wheel)		—	<p>To zoom out.</p> <ul style="list-style-type: none"> Use the chart area to zoom out of both axes. Use an axis to zoom out of the selected axis.
Move mode			
		—	To move the chart in any direction (available on the chart area).
		—	To move the chart horizontally (available on the x-axis).
		—	To move the chart vertically (available on the y-axis).
 + 	—	—	To zoom the axis while you are in move mode (available on the x-axis and on the y-axis).

¹⁾ If you are using a multi-touch capable display, you can use gestures to zoom or move the chart.

²⁾ Available only for Time Plotter.

Mouse	Gesture ^{1), 2)}	Shortcut Key	Purpose
-------	---------------------------	--------------	---------

³⁾ You must stop a running measurement to use the scroll bar. For information on the scroll bar settings, refer to [Scroll Bar Properties \(Time Plotter\)](#) on page 109.

Related topics

Basics

Basics of Handling the Time Plotter.....	34
Basics of Handling the XY Plotter.....	38

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Navigation – Rescale (Time Plotter).....	123
Navigation – Zoom Mode (Time Plotter).....	124
Rescale.....	125
Switch to Move Mode / Switch to Zoom Mode (XY Plotter).....	132

How to Configure the Time Plotter

Objective

You can change the Time Plotter settings, for example, the color of the signal, even if the measurement is running.

Time Plotter properties

The Time Plotter provides a number of properties on the **Properties** pane. Some of them can also be set via the Time Plotter's context menu. Some examples are listed below.

You can change settings for the axes of the Time Plotter, for example:

- Scaling mode (Floating, Extended, Fixed)
- Tic format (Standard, Exponential, Scientific, SIPrefix)
- Minimum and maximum values of the axis, if Scaling mode is set to Fixed.

You can change settings for the curves, for example:

- Line width for a curve (in pixels)
- Point size for a curve (in pixels)

The changes can be made during a running measurement.

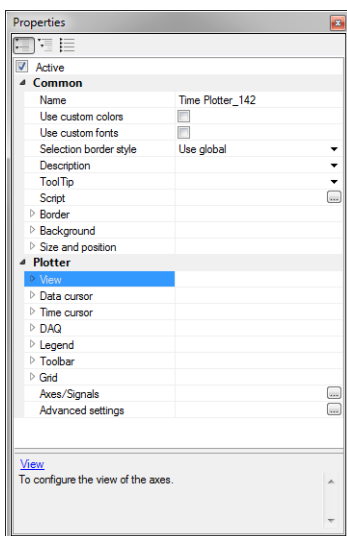
You can change various other settings sorted by different categories. Click a property on the **Properties** pane and read the short information at the bottom of the pane. Press **F1** or click the header of the short information to get detailed information on a specific property.

Method

To configure the Time Plotter

- 1 Click on the Time Plotter.

ModelDesk activates the Properties pane and displays the properties of the selected Time Plotter.



The listed properties depend on the element that is selected in the instrument. In the Time Plotter, you can select the following elements:

- X-axis
- Y-axis
- Signal symbol or legend row (multiple selection is possible)

- 2 Select the properties and configure them according to your needs.

Tip

Via the buttons below the title bar of the Properties controlbar, you can:

- Expand or collapse categories and properties
- Search for names and values

Result

The Time Plotter's settings have been changed.

Related topics**Basics**

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Zooming and Moving the Chart.....	41

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Time Plotter.....	82
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How to Configure the XY Plotter

Objective

You can change the XY Plotter settings, for example, the color of the signal, even if the measurement is running.

XY Plotter properties

The XY Plotter provides a number of properties on the Properties pane which you can also set via the XY Plotter's context menu. Some examples are listed below.

You can change settings for the axes of the XY Plotter, for example:

- Scaling mode (Floating, Extended, Fixed)
- Tic format (Standard, Exponential, Engineering)
- Minimum and maximum values of the axis, if Scaling mode is set to Fixed.

You can change settings for the curves, for example:

- Line width for a curve (in pixels)
- Point size for a curve (in pixels)

The changes can be made during a running measurement.

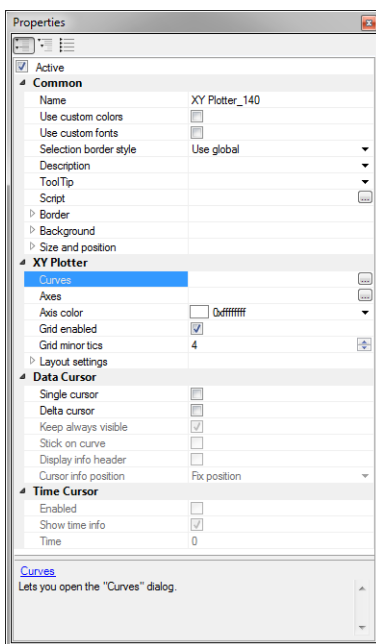
You can change various other settings sorted by different categories. Click a property on the Properties pane and read the short information at the bottom of the pane. Press **F1** or click the header of the short information to get detailed information on a specific property.

Method

To configure the XY Plotter

1 Click the XY Plotter.

ModelDesk activates the Properties pane and displays the properties of the selected XY Plotter.



The listed properties depend on the element that is selected in the instrument. In the XY Plotter, you can select the following elements:

- X-axis
- Y-axis
- Chart
- Curve (select the curve or the curve symbol)

2 Select the properties and configure them according to your needs.

Tip

Via the buttons below the title bar of the Properties controlbar, you can:

- Expand or collapse categories and properties
- Search for names and values

Result

The XY Plotter's settings have been changed.

Related topics

Basics

Basics of Handling the XY Plotter.....	38
Zooming and Moving the Chart.....	41

Reference Information

Where to go from here

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Commands and Dialogs

Overview

ModelDesk provides the following properties, commands and dialogs for managing simulation results.

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Activate from Pool (Configuration)

Access

You can access this command via:

Ribbon	Plotting – Configuration
Context menu of	Project Navigator - Simulation Results
Shortcut key	None
Icon	

Purpose

To activate a configuration from the pool.

Description

The pool contains all the configurations which are created in the ModelDesk project until they are explicitly removed. The **Activate from Pool** command activates a configuration from the pool. The command opens a Windows standard dialog where you can select the XML file. When it is activated, it is available under the **Simulation Results** node of the **Project Navigator**.

Related topics**Basics**

[Working with the Pool..... 19](#)

HowTos

[How to Create a Configuration and Layouts..... 23](#)

Add Layouts - $\langle m \rangle \times \langle n \rangle$ / Add New - $\langle m \rangle \times \langle n \rangle$

Access

You can access this command via:

Ribbon	Plotting – Configuration
Context menu of	Project Navigator – Layouts
Shortcut key	None
Icon	None

Purpose

To add a new layout to the configuration.

Description

Four commands are available for adding a new layout. They create layouts having a different number and arrangement of Plotters.

Command	Description
1×1	Adds a layout containing one plotter covering the whole layout window.
1×2	Adds a layout containing two plotters side by side.
2×1	Adds a layout containing two plotters, one above the other.
2×2	Adds a layout containing four plotters.

The commands opens the **New Layout** dialog for you to specify the layout name. The layout name must be unique in the ModelDesk project because the layout is created in the Pool, which can be used by all the experiments in the project. A link to the new layout is added to the configuration.

Dialog settings

Layout name Lets you enter a name for the layout. The name must not contain any of the following characters: * ? | < > : / \ "

Related topics**HowTos**

[How to Create a Configuration and Layouts.....](#) 23


References

[Time Plotter.....](#) 82
[XY Plotter.....](#) 85

Add Layout - Reference From Pool / Add Reference from Pool (Layouts)

Access

You can access this command via:

Ribbon	Plotting – Configuration – Add Layout
Context menu of	Project Navigator – Layouts
Shortcut key	None
Icon	

Purpose

To activate a layout from the pool.

Description

All layouts created in the ModelDesk project are saved in the Pool - Simulations - Layouts node. To use a layout in the experiment, you must link it to the experiment using one of the following commands:

- The Add Reference from Pool command of the Layouts' context menu in the Project Navigator.
- The Add Layout - Reference from Pool command on the ribbon.

Related topics**HowTos**

[How to Create a Configuration and Layouts.....](#) 23


References

[Add Layouts - <m> x <n> / Add New - <m> x <n>.....](#) 53
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Add Capture / Add Reference from Pool (Measurements)

Access

You can access this command via:

Ribbon	Plotting – Configuration
Context menu of	Project Navigator – Measurements
Shortcut key	None
Icon	

Purpose

To link a measurement from the pool to the configuration.

Description

All measurements saved in the ModelDesk project are saved under the Pool - Simulations - Measurements node. To use a measurement in the experiment, you must link it to the experiment using one of the following commands:

- The Add Reference from Pool command of the Measurements' context menu in the Project Navigator.
- The Add Capture command on the ribbon.

Related topics

HowTos

[How to Compare Measurements and Simulation..... 31](#)

Activate Start Trigger - From Pool / Add Reference from Pool (Start Trigger)

Access

You can access this command via:

Ribbon	Plotting – Configuration
Context menu of	Project Navigator – Start Trigger
Shortcut key	None
Icon	None

Purpose

To use a start trigger from the pool.

Description

All start triggers are saved under the Pool - Simulation - Trigger - Start Trigger node in the Project Navigator. To use a start trigger in your experiment, you must link it to the experiment using one of the following commands:

- The Add Reference from Pool command of the Start Trigger's context menu in the Project Navigator.
- The Activate Start Trigger - From Pool command on the ribbon.

Related topics**HowTos**

[How to Specify Start Trigger and/or Stop Trigger..... 27](#)

References

[Trigger..... 79](#)

Activate Stop Trigger - From Pool / Add Reference from Pool (Stop Trigger)

Access

You can access this command via:

Ribbon	Plotting – Configuration
Context menu of	Project Navigator – Stop Trigger
Shortcut key	None
Icon	None

Purpose

To use a stop trigger from the pool.

Description

All stop triggers are saved under the Pool - Simulation - Trigger - Stop Trigger node in the Project Navigator. To use a stop trigger in your experiment, you must link it to the experiment using one of the following commands:

- The Add Reference from Pool command of the Stop Trigger's context menu in the Project Navigator.
- The Activate Stop Trigger - From Pool command on the ribbon.

Related topics**HowTos**

[How to Specify Start Trigger and/or Stop Trigger..... 27](#)

References

[Trigger..... 79](#)

Close (Configuration)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator – configuration
Shortcut key	None
Icon	None

Purpose

To close the active configuration.

Description

The active configuration is the configuration under the **Simulation Results** node in the **Project Navigator**. The **Close** command closes the configuration. When it is closed, its subelements are unavailable.

Related topics**References**

[Open \(Configuration\)..... 63](#)

Close (Layout)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator – layout
Shortcut key	None
Icon	None

Purpose	To close a layout.		
Description	<p>The command closes the layout window.</p> <p>You can reopen the layout window using the Open command.</p>		
Related topics	References <table> <tr> <td>Open (Layout).....</td><td>63</td></tr> </table>	Open (Layout).....	63
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Close (Measurement)

Access	<p>You can access this command via:</p> <table> <tr> <td>Ribbon</td><td>None</td></tr> <tr> <td>Context menu of</td><td>Project Navigator - measurement</td></tr> <tr> <td>Shortcut key</td><td>None</td></tr> <tr> <td>Icon</td><td>None</td></tr> </table>	Ribbon	None	Context menu of	Project Navigator - measurement	Shortcut key	None	Icon	None
Ribbon	None								
Context menu of	Project Navigator - measurement								
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Icon	None								
Purpose	To close the signal list of a measurement in the Signal Selector .								
Related topics	References <table> <tr> <td>Open (Measurement).....</td><td>64</td></tr> </table>	Open (Measurement).....	64						
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Experiment Configuration

Access	<p>You can access this command via:</p> <table> <tr> <td>Ribbon</td><td>None</td></tr> <tr> <td>Context menu of</td><td>Project Navigator - measurement</td></tr> <tr> <td>Shortcut key</td><td>None</td></tr> <tr> <td>Icon</td><td>None</td></tr> </table>	Ribbon	None	Context menu of	Project Navigator - measurement	Shortcut key	None	Icon	None
Ribbon	None								
Context menu of	Project Navigator - measurement								
Shortcut key	None								
Icon	None								

Purpose	To set the same experiment conditions for the active experiment as those used in a measurement.
Description	The command opens the Measurement Experiment Configuration dialog. The dialog displays the settings which are used during the measurement (road, scenario, and parameter set). You can activate the same settings in your active experiment using the dialog.
Dialog settings	<p>--> Lets you transfer the settings of the measurement (road, scenario, and parameter set) to the active experiment.</p> <p>Activate Lets you activate the road, scenario, or parameter set.</p>
Related topics	<p>HowTos</p> <p>How to Compare Measurements and Simulation..... 31</p>

Layout

Purpose	To display the plotters for plotting the simulation results.																		
Description	<p>A layout is the area where the plotters (1, 2 or 4) are displayed. See the following topics on how to handle and work with layouts.</p> <table border="1"> <thead> <tr> <th>Purpose</th><th>Refer to</th></tr> </thead> <tbody> <tr> <td>To create a new layout in the pool and add a reference to it in the current configuration.</td><td>Add Layouts - <m> x <n> / Add New - <m> x <n> on page 53</td></tr> <tr> <td>To open a layout of the current configuration.</td><td>Open (Layout) on page 63</td></tr> <tr> <td>To use a layout of the pool in the current configuration.</td><td>Add Layout - Reference From Pool / Add Reference from Pool (Layouts) on page 54</td></tr> <tr> <td>To close the layout.</td><td>Close (Layout) on page 57</td></tr> <tr> <td>To save the layout in the pool.</td><td>Save Layout on page 75</td></tr> <tr> <td>To save the layout under a new name in the pool.</td><td>Save As (Layout) on page 72</td></tr> <tr> <td>To remove a layout from the current configuration.</td><td>Remove Link (Layout) on page 67</td></tr> <tr> <td>To work with the plotter.</td><td>Time Plotter on page 82 and XY Plotter on page 85</td></tr> </tbody> </table>	Purpose	Refer to	To create a new layout in the pool and add a reference to it in the current configuration.	Add Layouts - <m> x <n> / Add New - <m> x <n> on page 53	To open a layout of the current configuration.	Open (Layout) on page 63	To use a layout of the pool in the current configuration.	Add Layout - Reference From Pool / Add Reference from Pool (Layouts) on page 54	To close the layout.	Close (Layout) on page 57	To save the layout in the pool.	Save Layout on page 75	To save the layout under a new name in the pool.	Save As (Layout) on page 72	To remove a layout from the current configuration.	Remove Link (Layout) on page 67	To work with the plotter.	Time Plotter on page 82 and XY Plotter on page 85
Purpose	Refer to																		
To create a new layout in the pool and add a reference to it in the current configuration.	Add Layouts - <m> x <n> / Add New - <m> x <n> on page 53																		
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To save the layout under a new name in the pool.	Save As (Layout) on page 72																		
To remove a layout from the current configuration.	Remove Link (Layout) on page 67																		
To work with the plotter.	Time Plotter on page 82 and XY Plotter on page 85																		

Purpose	Refer to
To move the layout to the foreground.	Show on page 75
To show or hide a grid in the plotters of a layout.	Show Grid / Hide Grid on page 76

Related topics

HowTos

[How to Create a Configuration and Layouts](#)..... 23


References

[Time Plotter](#)..... 82
[XY Plotter](#)..... 85

New (Configuration)

Access

You can access this command via:

Ribbon	Plotting – Configuration
Context menu of	Project Navigator – Simulation Results
Shortcut key	None
Icon	

Purpose

To create a new configuration.

Description

The new configuration is created under the Pool - Simulation node in the Project Navigator. A link to the new configuration is created in the Experiment - Simulation Results node.

You can modify all the properties but you cannot change the name afterwards.

Dialog settings

Configuration name Lets you enter a name for the configuration. The name is mandatory and must not contain any of the following characters: * ? | < > : / \ "

Author(s) Lets you enter the author(s) responsible for the configuration.

Comment Lets you enter a description of the configuration.

Data Recording dialog settings

- Downsampling** Lets you specify a downsampling factor for the data recording. A higher downsampling factor increases the duration that can be recorded.
- Signal buffer size** Lets you specify the buffer size for the signals. The value must be greater than 1000. A higher buffer size requires more memory and increases the duration that can be recorded.
- Connected signals** Displays the number of signals that are connected to a layout or used as trigger signal in the configuration.
- Simulation raster** Displays the step size of the simulation.
- Maximum record duration** Displays the maximum duration that can be recorded. The value is the product of downsampling, simulation raster, and signal buffer size.
- Memory consumption** Displays the calculated memory consumption in MB. The value is the product of signal buffer size and connected signals.

Related topics

Basics	
Basics on Downsampling and Signal Buffer Size.....	22
HowTos	
How to Create a Configuration and Layouts.....	23
References	
Properties (Configuration).....	65

New (Start Trigger)

Access

You can access this command via:

Ribbon	Plotting – Configuration – Activate Start Trigger
Context menu of	Project Navigator – Start Trigger
Shortcut key	None
Icon	None

Purpose

To create a new start trigger.

Description The new start trigger is created under the Pool - Simulation - Trigger - Start Trigger node in the Project Navigator. A link to the new start trigger is created in the Experiment - Simulation Results - <configuration name> - Start Trigger node. You can set the properties of the start trigger on the Trigger controlbar. Refer to [Trigger](#) on page 79.

Dialog settings

Start trigger name Lets you enter a name for the start trigger. The name must not contain any of the following characters: * ? | < > : / \ "

Author(s) Lets you enter the author(s) responsible for the start trigger.

Comment Lets you enter a description of the start trigger.

Related topics

HowTos

[How to Specify Start Trigger and/or Stop Trigger.....](#) 27

New (Stop Trigger)

Access

You can access this command via:

Ribbon	Plotting – Configuration – Activate Stop Trigger
Context menu of	Project Navigator – Stop Trigger
Shortcut key	None
Icon	None

Purpose To create a new stop trigger.

Description The new stop trigger is created under the Pool - Simulation - Trigger - Stop Trigger node in the Project Navigator. A link to the new stop trigger is created in the Experiment - Simulation Results - <configuration name> - Stop Trigger node. You can set the properties of the stop trigger on the Trigger controlbar. Refer to [Trigger](#) on page 79.

Dialog settings

Stop trigger name Lets you enter a name for the stop trigger. The name must not contain any of the following characters: * ? | < > : / \ "

Author(s) Lets you enter the author(s) responsible for the stop trigger.

Comment Lets you enter a description of the stop trigger.

Related topics


HowTos

[How to Specify Start Trigger and/or Stop Trigger..... 27](#)

Open (Configuration)

Access

You can access this command via:

Ribbon	<ul style="list-style-type: none">▪ Plotting – Configuration▪ Home – Plotting
Context menu of	Project Navigator – configuration
Shortcut key	None
Icon	

Purpose

To open the active configuration.

Description

The active configuration is the configuration under the **Simulation Results** node in the **Project Navigator**. If it is closed (its subelements are unavailable), you can use the **Open** command to open it.

Related topics

HowTos

[How to Create a Configuration and Layouts..... 23](#)

References

[Close \(Configuration\)..... 57](#)

Open (Layout)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator – layout

Shortcut key	None
Icon	None

Purpose To open a closed layout.

Description You can only open layout windows which are part of the active configuration.
To close a layout window, use the **Close** command.

Related topics

References

[Close \(Layout\)..... 57](#)

Open (Measurement)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator - measurement
Shortcut key	None
Icon	None

Purpose To list the signals of a measurement in the **Signal Selector**.

Description The command creates a tab page for the measurement in the **Signal Selector**. All signals of the measurement are listed on the tab page. You can drag the signals to a layout/Plotter for visualization.

Related topics

References

[Close \(Measurement\)..... 58](#)

Properties (Configuration)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator – configuration
Shortcut key	None
Icon	None

Purpose

To change the properties of a configuration.

General dialog settings

- Configuration name** Displays the name of the configuration.
- Author(s)** Lets you enter the author(s) responsible for the configuration.
- Comment** Lets you enter a description of the configuration.

Data Recording dialog settings

- Downsampling** Lets you specify a downsampling factor for the data recording. A higher downsampling factor increases the duration that can be recorded.
- Signal buffer size** Lets you specify the buffer size for the signals. The value must be greater than 1000. A higher buffer size requires more memory and increases the duration that can be recorded.
- Connected signals** Displays the number of signals that are connected to a layout or used as trigger signal in the configuration.
- Simulation raster** Displays the step size of the simulation.
- Maximum record duration** Displays the maximum duration that can be recorded. The value is the product of downsampling, simulation raster, and signal buffer size.
- Memory consumption** Displays the calculated memory consumption in MB. The value is the product of signal buffer size and connected signals.

Related topics

Basics

[ASMSignalBus \(ASM User Guide !\[\]\(95b425611cbd2b8716a140cf67c81822_img.jpg\)](#))
[Basics on Downsampling and Signal Buffer Size..... 22](#)

HowTos

[How to Create a Configuration and Layouts..... 23](#)

Properties (Start Trigger)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator – start trigger
Shortcut key	None
Icon	None

Purpose

To change the properties of a start trigger (author name or comment).

Dialog settings

Start trigger name Displays the name of the start trigger.

Author(s) Lets you enter the author(s) responsible for the start trigger.

Comment Lets you enter a description of the start trigger.

Related topics

HowTos

[How to Specify Start Trigger and/or Stop Trigger.....](#) 27

Properties (Stop Trigger)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator - stop trigger
Shortcut key	None
Icon	None

Purpose

To change the properties of a stop trigger (author name or comment).

Dialog settings

Stop trigger name Displays the name of the stop trigger.

Author(s) Lets you enter the author(s) responsible for the stop trigger.

Comment Lets you enter a description of the stop trigger.

Related topics**HowTos**

[How to Specify Start Trigger and/or Stop Trigger.....](#) 27

Remove Link (Configuration)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator - configuration
Shortcut key	None
Icon	None

Purpose

To remove the link to the configuration from the experiment.

Description

The configuration displayed in the Simulation Results node of an experiment is a link to a configuration file saved in the Pool - Simulation - Configurations node. The Remove Link command deletes the link.

If you want to work with the configuration, you can use the Activate from Pool command to reactivate the configuration.

If the configuration is not needed anymore in the ModelDesk project, you can use the Remove command to delete the configuration file.

Related topics**References**

[Activate from Pool \(Configuration\).....](#) 52
[Remove \(from Project\) \(ModelDesk Project and Experiment Management !\[\]\(b64b40baaee5acddc1eab8538ba84754_img.jpg\)\)](#)

Remove Link (Layout)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator - layout

Shortcut key	None
Icon	None

Purpose To remove the link to a layout from the experiment.

Description The layouts displayed in the Layouts node of an experiment are links to layout files saved under the Pool - Simulation - Layouts node. The Remove Link command deletes such a link.

If you want to work with a layout, you can use the Add Reference from Pool command to add the layout to the configuration.

If the layout is not needed anymore in the ModelDesk project, you can use the Remove command to delete the layout file.

Related topics

HowTos

[How to Create a Configuration and Layouts.....23](#)

References

[Add Layout - Reference From Pool / Add Reference from Pool \(Layouts\).....54](#)
[Remove \(from Project\) \(ModelDesk Project and Experiment Management !\[\]\(05be7c7a8995decd503647c99211f7c2_img.jpg\)\)](#)

Remove Link (Measurement)

Access You can access this command via:

Ribbon	None
Context menu of	Project Navigator - measurement
Shortcut key	None
Icon	None

Purpose To remove the link to the measurement from the experiment.

Description The measurements displayed in the Measurements node of an experiment are links to measurement files saved under the Pool - Simulation - Measurements node. The Remove Link command deletes such a link.

If you want to work with a measurement, you can use the **Add Reference from Pool** command to add the measurement to the configuration.

If the measurement is not needed anymore in the ModelDesk project, you can use the **Remove** command to delete the measurement file.

Related topics

References

[Add Capture / Add Reference from Pool \(Measurements\)..... 55](#)
[Remove \(from Project\) \(ModelDesk Project and Experiment Management !\[\]\(74d4806277d7e73349d8e8c0897931e9_img.jpg\)\)](#)

Remove Link (Start Trigger)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator - start trigger
Shortcut key	None
Icon	None

Purpose

To remove the link to the start trigger from the experiment.

Related topics

HowTos

[How to Specify Start Trigger and/or Stop Trigger..... 27](#)

Remove Link (Stop Trigger)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator - stop trigger
Shortcut key	None
Icon	None

Purpose To remove the link to the stop trigger from the experiment.

Related topics


HowTos

[How to Specify Start Trigger and/or Stop Trigger..... 27](#)

Save (Configuration)

Access

You can access this command via:

Ribbon	Plotting – Configuration
Context menu of	Project Navigator - configuration
Shortcut key	None
Icon	

Purpose

To save the active configuration and all contained elements.

Description

All settings of the configuration are saved in a configuration file in the Pool - Simulation - Configurations node of the Project Navigator.

Related topics

References

[Save As \(Configuration\)..... 71](#)

Save (Start Trigger)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator - start trigger
Shortcut key	None
Icon	None

Purpose	To save the settings of the start trigger.
Description	All the settings of the start trigger are saved in a file in the Pool - Simulation - Trigger - Start Trigger node of the Project Navigator.
Related topics	<p>HowTos</p> <p>How to Specify Start Trigger and/or Stop Trigger..... 27</p>

Save (Stop Trigger)

Access	<p>You can access this command via:</p> <table border="1"> <tr> <td>Ribbon</td><td>None</td></tr> <tr> <td>Context menu of</td><td>Project Navigator - stop trigger</td></tr> <tr> <td>Shortcut key</td><td>None</td></tr> <tr> <td>Icon</td><td>None</td></tr> </table>	Ribbon	None	Context menu of	Project Navigator - stop trigger	Shortcut key	None	Icon	None
Ribbon	None								
Context menu of	Project Navigator - stop trigger								
Shortcut key	None								
Icon	None								
Purpose	To save the settings of the stop trigger.								
Description	All the settings of the stop trigger are saved in a file in the Pool - Simulation - Trigger - Stop Trigger node of the Project Navigator.								
Related topics	<p>HowTos</p> <p>How to Specify Start Trigger and/or Stop Trigger..... 27</p>								

Save As (Configuration)

Access	<p>You can access this command via:</p> <table border="1"> <tr> <td>Ribbon</td><td>None</td></tr> <tr> <td>Context menu of</td><td>Project Navigator - configuration</td></tr> </table>	Ribbon	None	Context menu of	Project Navigator - configuration
Ribbon	None				
Context menu of	Project Navigator - configuration				

Shortcut key	None
Icon	None

Purpose To save a configuration under a new name.

Description The command opens a standard Windows dialog for you to specify a new file name. The file name must be unique in the ModelDesk project as otherwise the existing configuration file is overwritten. All the settings of the configuration are saved in the specified configuration file in the Pool - Simulation node of the Project Navigator.

Related topics

References

[Save \(Configuration\)..... 70](#)

Save As (Layout)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator – layout
Shortcut key	None
Icon	None

Purpose To save all the settings of a layout under a new name.

Description All the settings of the layout are saved in a layout file in the Pool - Simulation - Layouts node of the Project Navigator.

Related topics

HowTos

[How to Create a Configuration and Layouts..... 23](#)

References

[Save Layout..... 75](#)

Save As (Start Trigger)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator - start trigger
Shortcut key	None
Icon	None

Purpose

To save the settings of the start trigger under a new name.

Description

All the settings of the start trigger are saved in a file in the Pool - Simulation - Trigger - Start Trigger node of the Project Navigator.

Related topics

HowTos

[How to Specify Start Trigger and/or Stop Trigger..... 27](#)

Save As (Stop Trigger)

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator - stop trigger
Shortcut key	None
Icon	None

Purpose

To save the settings of the stop trigger under a new name.

Description

All the settings of the stop trigger are saved in a file in the Pool - Simulation - Trigger - Stop Trigger node of the Project Navigator.

Related topics


HowTos

[How to Specify Start Trigger and/or Stop Trigger..... 27](#)

Save Capture / Save Results (Measurements)

Access

You can access this command via:

Ribbon	<ul style="list-style-type: none"> ▪ Plotting – Plotting ▪ Home – Plotting
Context menu of	Project Navigator – Measurements
Shortcut key	None
Icon	

Purpose

To save recorded data to a MAT file.

Description

The command opens the **Choose signals to save** dialog. You can select the signals to be saved in the dialog. These signals and the signals that are used to trigger data acquisition are saved in a measurement file (MAT file). The measurement file is saved under the **Pool - Simulation - Measurements** node. A link to the measurement file is added to the **Measurements** node of the active configuration. The measurement file is opened in the **Signal Selector**.

Dialog settings

The dialog shows the signals which were selected for data acquisition in a table with three columns:

Column	Description
Save	Lets you select the signal to be saved in the MAT file. If you select the box in the first row, all signals are saved.
Name	Displays the signal names and units.
Full Path	Displays the variable path of the signals.

OK Opens the **Specify File Name** dialog to specify the file name and saves the recorded data to this file.

Related topics


HowTos

[How to Save Recorded Signals to a MAT File..... 30](#)

Save Layout

Access

You can access this command via:

Ribbon	Plotting – Configuration
Context menu of	Project Navigator – layout
Shortcut key	None
Icon	

Purpose

To save all the settings of a layout.

Description

All the settings of the layout are saved in a layout file in the Pool - Simulation - Layouts node of the Project Navigator.

Related topics

HowTos

[How to Create a Configuration and Layouts.....](#) 23

References

[Save As \(Layout\).....](#) 72

Show

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator – layout
Shortcut key	None
Icon	None
Other	Double-click of the layout node in the Project Navigator

Purpose

To move the layout to the foreground.

Result The layout is displayed in the foreground.

Related topics

HowTos

[How to Create a Configuration and Layouts..... 23](#)

Show Grid / Hide Grid

Access

You can access this command via:

Ribbon	None
Context menu of	Project Navigator - layout
Shortcut key	None
Icon	None

Purpose

To show or hide a grid in the plotters of a layout.

Result

A grid is shown or hidden in the plotters of the layout.

A grid is always hidden when a layout is opened or reopened.

Signal Selector

Access

You can access this command via:

Ribbon	View – Controlbar – Switch Controlbars – Signal Selector
Context menu of	None
Shortcut key	None
Icon	None

Purpose

To select signals for plotting.

Results

The Signal Selector opens.

Description

The **Signal Selector** is the source for selecting signals. You can drag the listed signals to layouts/Plotters to be visualized or to the **Trigger** controlbar to be used as trigger signals. You can drag several signals using multiselection or by dragging their parent node.

To connect several signals, select them by pressing **Shift** or **Ctrl** before dragging.

To connect several signals of a group, drag their parent node. This connects all the signals of a group but not signals of subgroups.

To search signals, press **Ctrl+F**. An edit field appears where you can enter a filter string.

The **Signal Selector** has one or more pages.

<Label> page The <Label> pages are available if a configuration is active. <Label> are the labels specified in the corresponding **ASMSignalInterface** blocks. They list all the signals connected to these blocks and are therefore available for visualization.

<MAT file name> page <MAT file name> is the name of a MAT file which contains a measurement. Such pages are available if your configuration contains measurements and they were opened. The <MAT file name> pages list all the signals which are saved in the MAT file.

Related topics

Basics	
Collecting Signals for Plotting in the ASM Model.....	16
HowTos	
How to Plot Signals.....	25
How to Specify Start Trigger and/or Stop Trigger.....	27
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Save Capture / Save Results (Measurements).....	74
Time Plotter.....	82
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XY Plotter.....	85

Start Plotting

Access	You can access this command via:
Ribbon	<ul style="list-style-type: none">Plotting – PlottingHome – Plotting

Context menu of	None
Shortcut key	None
Icon	

Purpose To start data acquisition.

Description The command starts data acquisition. If a start trigger is enabled, data is recorded when its trigger conditions are fulfilled.

Data is recorded until the **Stop Plotting** command is selected or until the stop trigger conditions are fulfilled if a stop trigger is enabled.

Related topics

HowTos

[How to Plot Signals.....](#) 25


References

[Stop Plotting.....](#) 78

[Trigger.....](#) 79

Stop Plotting

Access You can access this command via:

Ribbon	<ul style="list-style-type: none"> ▪ Plotting – Plotting ▪ Home – Plotting
Context menu of	None
Shortcut key	None
Icon	

Purpose To stop data acquisition.

Description Data is recorded until the **Stop Plotting** command is clicked or until the stop trigger conditions are fulfilled if a stop trigger is enabled.

Related topics**HowTos**

[How to Plot Signals.....](#) 25

References

[Trigger.....](#) 79

Trigger

Access

You can access this command via:

Ribbon	View – Controlbar – Switch Controlbars – Trigger
Context menu of	None
Shortcut key	None
Icon	None

Purpose

To show the Trigger controlbar.

Results

The Trigger controlbar opens.

Description

In the **Trigger** controlbar, you can enable/disable and configure a start trigger and stop trigger for data acquisition. You can select two trigger conditions: starting/stopping data acquisition after a specified time value or by a signal.

The **Trigger** controlbar has a **Start Trigger** page and a **Stop trigger** page.

Start Trigger page

Enable Indicates whether the start trigger is enabled.

Start time Indicates that data acquisition is started with a delay time after simulation start. The delay time must be specified in seconds.

Start trigger Indicates that data acquisition is started by a signal value. If the option is enabled, the following parameters can be specified:

Parameter	Description
<Drop signal here>	Lets you specify the signal which is used to start data acquisition. The signal must be dropped from the Signal Selector controlbar. Refer to Signal Selector on page 76.

Parameter	Description
Edge type	Lets you specify the edge type: <ul style="list-style-type: none"> ▪ POS EDGE: Starts data acquisition when the signal value rises to the trigger threshold. ▪ NEG EDGE: Starts data acquisition when the signal value falls to the trigger threshold.
Level	Lets you specify a trigger threshold. Data acquisition is started when the values of the trigger signal are equal to the trigger threshold (both rising and falling edges).
Delay	Lets you specify a delay time for triggering data acquisition. If a value is specified, data acquisition is started when the signal exceeds or falls below the specified value and the delay time expires. The value must be positive.

Stop Trigger page

Enable Indicates whether the stop trigger is enabled.

Time limit Indicates that data acquisition is stopped at a specified time after it was started. The time must be specified in seconds.

Stop trigger Indicates that data acquisition is stopped according to a signal value. If the option is enabled, the following parameters can be specified:

Parameter	Description
<Drop signal here>	Lets you specify the signal which is used to stop data acquisition. The signal must be dropped from the Signal Selector controlbar. Refer to Signal Selector on page 76.
Edge type	Lets you specify the edge type: <ul style="list-style-type: none"> ▪ POS EDGE: Stops data acquisition when the signal value rises to the trigger threshold. ▪ NEG EDGE: Stops data acquisition when the signal value falls to the trigger threshold.
Level	Lets you specify a trigger threshold. Data acquisition is stopped when the values of the trigger signal are equal to the trigger threshold (both rising and falling edges).
Delay	Lets you specify a delay time for stopping data acquisition. If a value is specified, data acquisition is stopped when the signal exceeds or falls below the specified value and the delay time expires. The value must be positive.

Related topics

HowTos

[How to Specify Start Trigger and/or Stop Trigger.....](#) 27

Instruments

Overview

ModelDesk provides the following properties, commands and dialogs for working with instruments.

Where to go from here

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Instrument-Related Commands.....	115

Instrument Descriptions

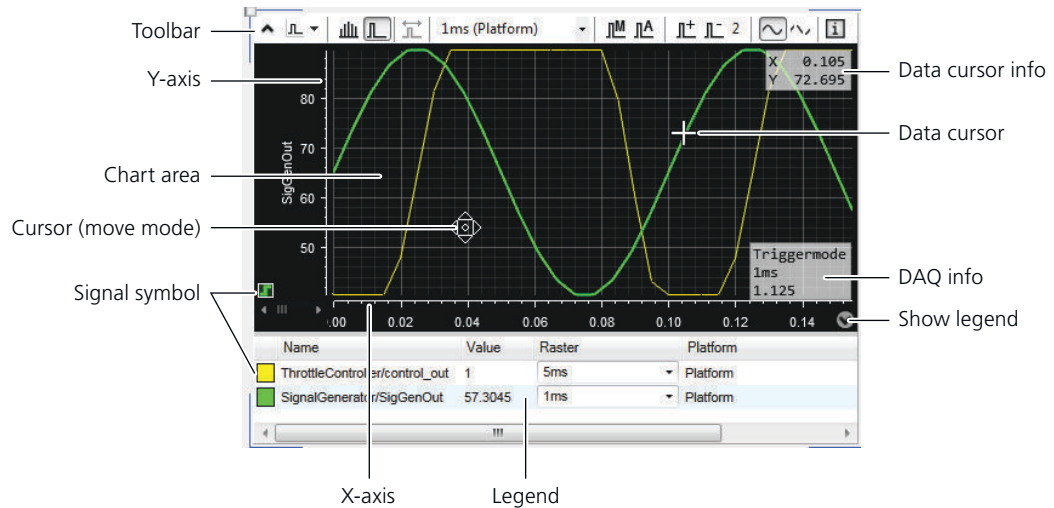
Where to go from here

Information in this section

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To display signals in relation to time (time plots).	
XY Plotter.....	85
To display signals in relation to other signals (no relation to an index or time).	

Time Plotter

Time Plotter



Purpose

To display signals in relation to time (time plots).

Description



Toolbar Via the toolbar, you can easily change frequently used DAQ and cursor settings.

Y-axis The Time Plotter uses the y-axis as a signal axis. You can add several variables to one y-axis and create more than one y-axis in the y-axis area.

X-axis The Time Plotter uses the x-axis as a time axis.

Chart area Displays signals referring to several y-axes. The signals can be displayed in several styles and colors.

Cursor in Move or Zoom mode If you move the pointer to the chart area, the displayed cursor depends on the navigation mode. You can change the navigation mode via the chart's context menu.





Cursor	Navigation Mode	Description
	Zoom mode	You can specify the zoom area with the pointer.
	Move mode	You can move the chart in the x-axis and the y-axis directions.

For details, refer to [Zooming and Moving the Chart](#) on page 41.

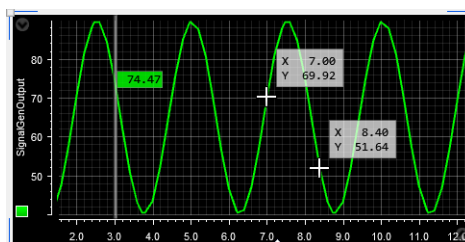
Data cursor and cursor info One or two cursors can be used to specify chart positions. The positions of the cursors and the distance between them can be displayed at the cursor info position.

Signal symbol The signal symbol shows the signal's color in the chart. You can double-click it to show or hide the signal or right-click it to open the context menu with various signal-related commands.

The signal symbol shows the status of the connection:

Symbol	Description
	No variable connected
	Variable connected. Signal is displayed in the chart area. The active signal has a white frame. In the chart, the active signal is displayed in the foreground. Its properties are listed below selected element in the properties list.
	Variable connection invalid. Move the pointer over the symbol to open a tooltip with information on the reasons.
	Signal is disabled and not displayed in the chart area.

Plotter cursors Measured data can be analyzed using several cursors. The positions of the cursors and the distance between them can be displayed in the Plotter:



Time cursor The Time cursor allows you to navigate in a measurement by moving the cursor within the plot area currently displayed.

Data cursors The data cursors allow you to analyze the x- and y-axis values as they were at two points in time during a measurement.

DAQ info Information on the currently active data acquisition settings, such as the selected DAQ mode, can be displayed.

Legend Lists all the variables that are connected to the Plotter and displays information on them.

Instrument properties

The Time Plotter provides the following properties:

Purpose	Refer to
To configure advanced settings.	Advanced Settings Properties (Time Plotter) on page 90
To configure the properties of the selected axis or signal.	Axes and Signal Properties (Time Plotter) on page 91
To configure the background properties of the current instrument.	Background Properties on page 98
To configure the border settings of an instrument.	Border Properties on page 99
To specify properties for converting a source value into a converted value and vice versa. The variable conversion that you define here is assigned to the instrument.	Custom Value Conversion Properties on page 102

Purpose	Refer to
To specify the properties of one or two cursors that are used to display the values of selected chart positions.	Data Cursor Properties (Time Plotter) on page 103
To specify data acquisition settings for visualization in the Time Plotter. For example, you can enable a triggered display of plotter data.	DAQ Properties (Time Plotter) on page 104
To specify a description for the instrument.	Description Property on page 106
To configure the grid properties.	Grid Properties (Time Plotter) on page 107
To specify the legend properties.	Legend Properties (Time Plotter) on page 108
To specify the name of the selected instrument.	Name Property on page 108
To specify whether to use an image (or animated GIF) for the selected element and to specify its properties.	Picture Properties on page 109
To select a style for the selection border of the current instrument.	Selection Border Style Property on page 110
To configure the size and position of an instrument.	Size and Position Properties (Instrument) on page 110
To specify the properties of the time cursor.	Time Cursor Properties on page 111
To specify a tooltip for the instrument.	Tooltip Property on page 112
To enable or disable custom color settings for the instrument.	Use Custom Colors Property on page 113
To enable or disable global font settings for the instrument.	Use Custom Fonts Property on page 113
To configure the view of the axes.	View Properties (Time Plotter) on page 114

Related commands

The Time Plotter provides the following commands:

Purpose	Refer to
To copy the selected variables to the Clipboard.	Copy / Variables - Copy on page 134
To delete the selected y-axis.	Delete (Y-Axis Time Plotter) on page 118
To specify whether to connect the points of a line graphically by a straight line.	Line Style (Time Plotter) on page 122
To move the displayed area of the chart via the pointer.	Navigation – Move Mode (Time Plotter) on page 123
To rescale one or all axes.	Navigation – Rescale (Time Plotter) on page 123
To zoom the displayed area of the chart via the pointer.	Navigation – Zoom Mode (Time Plotter) on page 124
To select the style of the signal's points.	Point Style (Time Plotter) on page 124
To rescale one or both axes of a plot.	Rescale on page 125
To select the scaling mode of the axis.	Scaling Mode on page 126
To display the legend's expand button in the instrument.	Show Expand Button on page 127
To show/hide the legend.	Show Legend on page 128
To show/hide the instrument's toolbar.	Show Toolbar on page 129
To select the format used to label the axis ticks.	Tic Format on page 133
To cut the selected variables in the current instrument.	Variables - Cut on page 135
To delete the selected variables.	Variables - Delete on page 135
To paste variables from the Clipboard to an instrument.	Variables - Paste/Paste Variables on page 136
To arrange the y-axes horizontally one below the other.	Y-Axes View – Horizontal Stacked on page 136
To rescale all y-axes in one step.	Y-Axes View – Rescale All Axes on page 137
To set the width of the y-axes to optimum, maximum, or fixed size.	Y-Axes View – Settings on page 138

Purpose	Refer to
To align the y-axes vertically. All y-axes are visible.	Y-Axes View – Vertical Fixed on page 138
To align the y-axes vertically in a scroll area.	Y-Axes View – Vertical Scroll on page 139

ModelDesk and ControlDesk use common sources for the plotter instruments. For this reason, some commands are visible in the user interface that are not suitable for ModelDesk and therefore not supported.

Related topics

Basics

Basics of Handling the Time Plotter.....

Time Plotter and XY Plotter.....

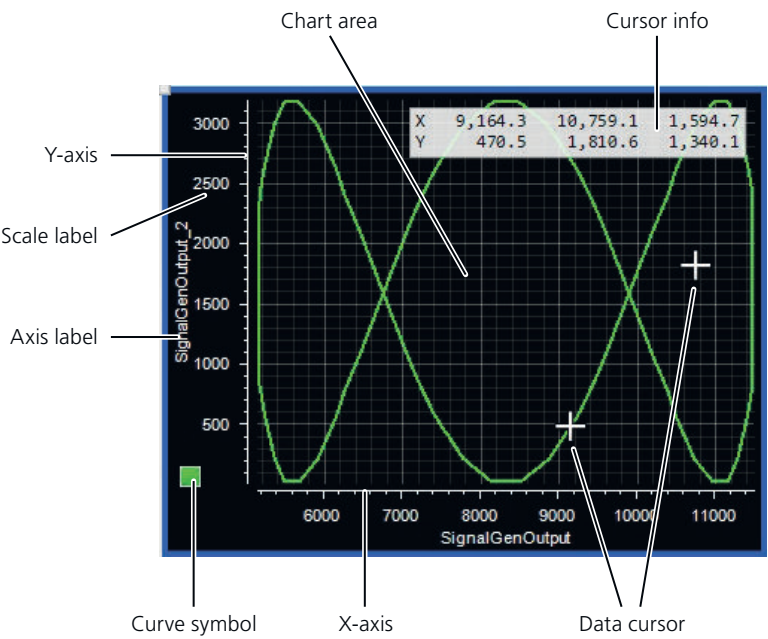
Workflow for Plotting Signals.....

HowTos

How to Create a Configuration and Layouts.....

XY Plotter

XY Plotter



Purpose	To display signals in relation to other signals (no relation to an index or time).
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Description



X-axis and y-axis The XY Plotter uses the x- and the y-axis as signal axes. You must connect a signal to each axis to display a curve. The XY Plotter allows you to display several curves in one chart.

Tip

- To rescale an axis to the dimension needed to display all curves, double-click it.
- To rescale both axes, double-click the chart area.

Chart area Displays the XY plots of one or more curves. The curves can be displayed in several styles and colors.

Cursor in Move or Zoom mode If you move the pointer to the chart area, the displayed cursor depends on the navigation mode. You can change the navigation mode via the chart's context menu.






Cursor	Navigation Mode	Description
	Zoom mode	You can specify the zoom area with the pointer.
	Move mode	You can move the chart in the x-axis and the y-axis directions.

For details, refer to [Zooming and Moving the Chart](#) on page 41.

Data cursor and cursor info One or two cursors can be used to specify chart positions. The positions of the cursors and the distance between them can be displayed at the cursor info position.

Time cursor A time cursor can be used to specify a time position in the chart.

Curve symbol The curve symbol is split into two areas that represent the connected variables and the status of the connection.

Symbol	Description
	No variable is connected.
	Only the x-axis is connected to a variable.
	Only the y-axis is connected to a variable.
	Both axes are connected to a variable.
	The axis-variable connection is invalid for at least one axis. For example, the connected variables can have different raster settings. Move the mouse pointer over the symbol to open a tooltip with information on the reasons.

Connections

You can place signals on the XY Plotter via drag & drop.

Instrument properties

The XY Plotter provides the following properties:

Purpose	Refer to
To configure the properties of the axes in the XY Plotter.	Axis Properties (XY Plotter) on page 96
To activate or deactivate the instrument.	Active Property on page 90
To configure the background properties of the current instrument.	Background Properties on page 98
To configure the border settings of an instrument.	Border Properties on page 99
To configure the properties of the curves in the XY Plotter.	Curves Properties (XY Plotter) on page 100
To specify the properties of one or two cursors that are used to display the values of selected chart positions.	Data Cursor Properties (XY Plotter) on page 104
To specify a description for the instrument.	Description Property on page 106
To specify the name of the selected instrument.	Name Property on page 108
To configure the size and position of an instrument.	Size and Position Properties (Instrument) on page 110
To specify the properties of the time cursor.	Time Cursor Properties on page 111
To specify a tooltip for the instrument.	Tooltip Property on page 112

Related commands

The XY Plotter provides the following commands:

Purpose	Refer to
To copy the selected variables to the Clipboard.	Copy / Variables - Copy on page 134
To move the displayed area of the axis via mouse pointer.	Enable Move Mode (XY Plotter) on page 119
To specify whether to connect the points of a line graphically by a straight line.	Line Style (XY Plotter) on page 122
To select the style of the curve's points.	Point Style (XY Plotter) on page 125
To rescale one or both axes of a plot.	Rescale on page 125
To select the scaling mode of the axis.	Scaling Mode on page 126
To zoom or move the displayed area of the chart via mouse pointer.	Switch to Move Mode / Switch to Zoom Mode (XY Plotter) on page 132
To interchange the variables that are connected to the x- and y-axis.	Switch Variable (XY Plotter) on page 132
To select the format used to label the axis ticks.	Tic Format on page 133
To cut the selected variables in the current instrument.	Variables - Cut on page 135
To delete the selected variables.	Variables - Delete on page 135
To paste variables from the Clipboard to an instrument.	Variables - Paste/Paste Variables on page 136

Related topics**Basics**

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Instrument-Related Properties

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To configure advanced settings.	
Axes and Signal Properties (Time Plotter).....	91
To configure the properties of the selected axis or signal.	
Axis Properties (XY Plotter).....	96
To configure the properties of the axes in the XY Plotter.	
Background Properties.....	98
To configure the background properties of the current instrument.	
Border Properties.....	99
To configure the border settings of an instrument.	
Color Property.....	99
To specify the color of the selected item.	
Curves Properties (XY Plotter).....	100
To configure the properties of the curves in the XY Plotter.	
Custom Value Conversion Properties.....	102
To specify properties for converting a source value into a converted value and vice versa. The variable conversion that you define here is assigned to the instrument.	
Data Cursor Properties (Time Plotter).....	103
To specify the properties of one or two cursors that are used to display the values of selected chart positions.	
Data Cursor Properties (XY Plotter).....	104
To specify the properties of one or two cursors that are used to display the values of selected chart positions.	

DAQ Properties (Time Plotter).....	104
To specify data acquisition settings for visualization in the Time Plotter. For example, you can enable a triggered display of plotter data.	
Description Property.....	106
To specify a description for the instrument.	
Colors Properties (Time Plotter).....	106
(Only available if Color style is set to a multicolor setting) To specify a color range for the signal.	
Grid Properties (Time Plotter).....	107
To configure the grid properties.	
Legend Properties (Time Plotter).....	108
To specify the legend properties.	
Name Property.....	108
To specify the name of the selected instrument.	
Picture Properties.....	109
To specify whether to use an image (or animated GIF) for the selected element and to specify its properties.	
Scroll Bar Properties (Time Plotter).....	109
To specify the scroll bar properties.	
Selection Border Style Property.....	110
To select a style for the selection border of the current instrument.	
Size and Position Properties (Instrument).....	110
To configure the size and position of an instrument.	
Time Cursor Properties.....	111
To specify the properties of the time cursor.	
Toolbar Properties (Time Plotter).....	112
To specify the properties of the instrument's toolbar.	
Tooltip Property.....	112
To specify a tooltip for the instrument.	
Use Custom Colors Property.....	113
To enable or disable custom color settings for the instrument.	
Use Custom Fonts Property.....	113
To enable or disable global font settings for the instrument.	
View Properties (Time Plotter).....	114
To configure the view of the axes.	

Active Property

Purpose	To activate or deactivate the instrument.
Property	Active Lets you activate or deactivate the instrument. If deactivated, the instrument cannot be used and all the properties in the controlbar are read-only. If activated, the instrument is enabled and you can configure its properties in the controlbar.
Related instruments	This property is available for various instruments.

Advanced Settings Properties (Time Plotter)

Purpose	To configure advanced settings.
Description	<p>Select a node from the left side to edit the properties on the right side.</p> <ul style="list-style-type: none"> ▪ Axes properties ▪ Signals properties ▪ Connections properties
Axes properties	<p>Autoscroll to active axis Lets you specify to scroll the y-axes area to the axis of the currently active signal, if Axes mode is set to Scroll view. Select a signal in the legend to make it the active signal.</p> <p>Hide axis if no signal is enabled Lets you specify to hide a y-axis if all the signals connected to it are disabled. Double-click a signal in the legend to enable or disable it.</p>
Connections properties	<p>Connect unconnected signals Lets you specify to connect new variables to an unconnected signal, if one is available. Usually ModelDesk creates a new axis and a new signal for each new variable. If Connect unconnected signals is activated, unconnected signals are used first.</p> <p>Number of signals per axis Lets you specify the number of signals that can be placed on one axis.</p>
Signals properties	Fast drawing mode Lets you specify to append only new points to the signal line.

Use custom settings for new signals Lets you enable or disable the custom settings for new signals.

Color for new signals (Available only if Use custom settings for new signals is enabled) Lets you select a color for new signals that are connected to the plotter.

Point style for new signals (Available only if Use custom settings for new signals is enabled) Lets you select a point style for new signals that are connected to the plotter.

Point size for new signals (Available only if Use custom settings for new signals is enabled) Lets you select a point size for new signals that are connected to the plotter.

Related instruments

These properties are available for the following instruments:

- [Time Plotter](#) on page 82

Axes and Signal Properties (Time Plotter)




Purpose

To configure the properties of the selected axis or signal.

Axes/Signals property

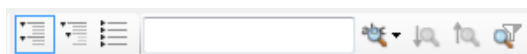
Lets you open the Axes/Signals dialog. The defined axes and signals are listed on the left side of the dialog. Select an axis or signal to specify its properties.

You can use the following buttons to configure the list.

Button	Description
Add	Adds a new axis or signal to the list. Select the element to be added in the drop-down list.
	Moves the selected element to the top.
	Moves the selected element to the bottom.
	Deletes the selected element.

Toolbar

A toolbar is displayed above the properties list. The buttons let you configure the view of the list or search for items in the list, for example.



For more details on the toolbar buttons, refer to [Toolbar buttons \(ControlDesk User Interface Handling\)](#).

Axes properties

Annotation font Opens a dialog for you to select the font of the axis label. Activate **Use custom fonts** in the dialog to switch from the default font to the selected font.

Background color Opens a dialog for you to select a color or enter values to define one. For more information on the dialog settings, refer to [Color Property](#) on page 99.

Foreground color Opens a dialog for you to select a color or enter values to define one. For more information on the dialog settings, refer to [Color Property](#) on page 99.

Label (x-axis) Lets you enter a label for the x-axis.

Label (y-axis) Lets you enter a label for the axis. A number of macros are available in the Macros list, for example:

- Variable Name, to display the name of the connected variable beside the y-axis {%VARIABLE%}.
- Variable Unit, to display the unit of the signal {%UNIT%}.

Label alignment Lets you specify the position of the axis label.

Label font Opens a dialog for you to select the font of the axis label. Activate **Use custom fonts** in the dialog to switch from the default font to the selected font.

Scale label suffix Lets you specify a suffix for each axis label.

Synchronization enabled Lets you activate the synchronization of time, zoom and move settings of the x-axis in continuous visualization mode. All synchronized time plotters share the same time range.

Length (Available only for x-axis in continuous mode) Lets you specify the number of data points that are visible at the x-axis.

Tip

You can specify the length using the scroll wheel of the mouse. Or press CTRL and the left mouse button and drag the pointer along the x-axis.

Maximum Lets you specify the maximum value of the selected axis.

Minimum Lets you specify the minimum value of the selected axis.

Minimum scrolling (x-axis) Lets you specify the scroll area of the x-axis (in percent) relative to the entire display area of the plotter.

Name Lets you specify the name of the selected axis.

Scaling mode (Available only for the y-axis) Lets you select the scaling mode of the axis.

Scaling Mode	Description
Floating	The axis range is automatically adjusted. It always shows the current range of the available data. It can grow and shrink during the measurement. If you change the axis range during measurement the automatic scaling is stopped. To start it again you have to rescale the signal axis, for example, by double-clicking it.
Extended	The axis range is automatically adjusted. It always shows all the available data points. It can only grow during measurement. If you change the axis range during measurement the automatic scaling is stopped. To start it again you have to rescale the signal axis, for example, by double-clicking it.
Fixed	The dimensions of the signal axis are set to the values in the Minimum and Maximum edit fields. These limits are kept independently of data curves. You can change the axis range during measurement.

Tic format Lets you select the data format used to display the axis.

Tic Format	Description
Standard	The values on the axis are shown without an exponent.
Exponential	The values on the axis are shown in exponential format.
Scientific	The values on the axis are shown in exponential format. The exponent is always an integer multiple of 3.
SIPrefix	The values on the axis are shown with unit prefixes: m (milli), k (kilo), etc.
Hours	(Available only for a Time Plotter) The values on the x-axis are shown as hours in the format hh:mm:ss.

Signal properties

Area line color (Available only if Line style is set to Area or Area staircase) Lets you specify the color of the area line.

Base line (Available only if Line style is set to Area or Area staircase) Lets you specify the base line of the area. The area between the base line and the area line is filled with the selected signal colors.

Color Opens a dialog for you to select a color or enter values to define one. For more information on the dialog settings, refer to [Color Property](#) on page 99.

Colors (Available only if Color style is set to Multicolor or Multicolor interpolation) Opens the Colors dialog for you to specify a color range for the signal. Refer to [Colors Properties \(Time Plotter\)](#) on page 106.

Color style Lets you select if and how the points of the signal should be graphically connected:

List Entries	Description
Solid	You can specify one color for the signal via the Color property.
Multicolor	You can specify color ranges for the signal via the Colors property.
Multicolor interpolation	You can specify color ranges with smooth color transitions for the signal via the Colors property.

Custom Downsampling Lets you enable the downsampling settings of signal visualization in the instrument's display area. You specify the downsampling settings via the signal's **Display mode** and **Interval** properties.

Note

The downsampling settings apply to signal visualization in the instrument (visualization downsampling). They enhance the performance of the instrument by reducing the amount of data to be visualized. The settings do not influence the amount of measured or recorded data, only the visualization of the data in the instrument (no DAQ downsampling).

Display mode Lets you select the downsampling mode that is used to display the signal.

List Entries	Description
Max	The maximum value of the values in the downsampling interval is displayed.
Mean	The mean value of the values in the downsampling interval is displayed.
Min	The minimum value of the values in the downsampling interval is displayed.

List Entries	Description
Min/Max	The minimum and the maximum value of the values in the downsampling interval are displayed.

If you want to enable or disable downsampling, use the signal's **Custom downsampling** property.

Enabled Lets you specify to display a signal in the plot. If a signal is disabled it is ignored when the y-axis is scaled.

Hide points if too close Lets you specify to hide signal points if the settings for the point style and point size cause the signal points to overlap.

Note

- If a signal is assigned to the **OnChange** measurement raster, signal points cannot be hidden.
- If a signal is assigned to an event raster, the minimum sampling period must be set to an appropriate value. Signal points might overlap if the minimum sampling period is too long, or they might be hidden too early if it is too short.

Index offset (Available for recorded data only) Lets you specify an offset value for the index.

Interval Lets you specify the length of the downsampling interval in seconds. If you want to enable or disable downsampling, use the signal's **Custom downsampling** property.

Line width Lets you select the width of the signal's line in pixels.

Line style Lets you select if and how the points of the signal should be graphically connected:

List Entries	Description
None	Data points are not graphically connected.
Direct	Data points are connected by a direct line. This is the default setting for measurement variables.
Staircase	Data points are connected by a staircase line.
Area	<p>Data points are connected by a direct area line. The area between the base line and the area line is filled with the signal colors.</p> <ul style="list-style-type: none"> ▪ Via Base line, you can change the position of the base line. ▪ Via Area line color, you can select a contrasting color for the area line.
Area Staircase	<p>Data points are connected by a staircase area line. The area between the base line and the area line is filled with the signal colors.</p> <ul style="list-style-type: none"> ▪ Via Base line, you can change the position of the base line.

List Entries	Description
	<ul style="list-style-type: none"> ▪ Via Area line color, you can select a contrasting color for the area line.

Name Lets you specify the name of the signal.

Point size Lets you select the size of the signal's points in pixels.

Point style Lets you select the style of the signal's points. If you select user defined, you can select an image via the Point style image property.

Point style image (Available only if Point style is set to user defined) Lets you select an image for the signal's points.

Smooth mode enabled Lets you smooth the signal visualization.

Time offset (Available only for recorded data) Lets you specify an offset value for the time.

Visibility properties

To configure the visibility of axis elements.

Label visible Lets you show/hide the axis label (annotation).

Scale visible Lets you show/hide the axis scale.

Scale label visible Lets you show/hide the scale label.

Signal symbol visible (Available only for y-axis) Lets you show/hide the signal symbol.

Related instruments

These properties are available for the following instruments:

- [Time Plotter](#) on page 82

Axis Properties (XY Plotter)

Purpose

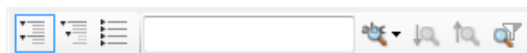
To configure the properties of the axes in the XY Plotter.

Axes property

Axes Lets you open the Axes dialog. The axes are listed on the left side of the dialog. Select an axis to specify its properties. The buttons in the dialog are disabled, since you cannot change the axes list of an XY Plotter.

Toolbar

A toolbar is displayed above the properties list. The buttons let you configure the view of the list or search for items in the list, for example.



For more details on the toolbar buttons, refer to [Toolbar buttons \(ControlDesk User Interface Handling !\[\]\(c8d96c8885d3000a912c2582004aed63_img.jpg\)](#)).

Selected axis properties

To configure the properties of the selected axis.

Annotation font (Available only if Use custom fonts is enabled) Lets you select the font of the axis label.

Label Lets you specify the label of the selected axis. You can use the following macros.

Macro	Description
{%BLOCK%}	Block name of the variable
{%DATATYPE%}	Data type of the variable
{%DEVICE%}	Name of the connected platform
{%PATH%}	Path of the variable
{%UNIT%}	Unit of the variable
{%VARIABLE%}	Name of the variable

Label font (Available only if Use custom fonts is enabled) Lets you select the font of the scale labels.

Maximum Lets you specify the maximum value of the axis for the Fixed scaling mode. In the Floating or Extended scaling mode the current maximum is displayed.

Minimum Lets you specify the minimum value of the axis.

Name Displays the name of the selected axis.

Scaling mode Lets you select the scaling mode of the axis.

Scaling Mode	Description
Floating	The axis range always shows the current range of the displayed data. It can grow and shrink during measurement.
Extended (Default mode)	The axis range always shows the current range of the displayed data. It can only grow during measurement. To rescale a signal axis to display the currently available curves, double-click it.
Fixed	The dimensions of the signal axis are set to the values of the Minimum and Maximum axis properties. These limits are kept independently of data curves.

Tic format

Tic Format	Description
Standard (Default format)	The values on the axis are shown without an exponent.
Exponential	The values on the axis are shown in exponential format.

Tic Format	Description
Scientific	The values on the axis are shown in exponential format. The exponent is always an integer multiple of 3.

Related instruments

These properties are available for the following instrument:

- [XY Plotter](#) on page 85

Background Properties

Purpose

To configure the background properties of the current instrument.

Description

You can set the background color, the transparency property, or a background image.

Color property

Color Opens a dialog for you to select a color or enter values to define one. For more information on the dialog settings, refer to [Color Property](#) on page 99.

Picture properties

To specify whether to use an image/animated GIF for the instrument's background and to specify its properties. Refer to [Picture Properties](#) on page 109.

Related instruments

These properties are available for various instruments.

Border Properties

Purpose To configure the border settings of an instrument.

Properties

Auto hide Lets you specify whether to hide the borders of small instruments (smaller than 20 x 20 pixels).

Bevel width Lets you change the width of the border bevels in pixels.

Border width Lets you change the width of the border in pixels.

Color Opens a dialog for you to select a color or enter values to define one. For more information on the dialog settings, refer to [Color Property](#) on page 99.

Enabled Lets you specify whether a border is displayed.

Inner bevel style Lets you select the style of the inner border bevel:

Style	Description
None	To switch off the inner bevel.
Raised	To raise the instrument from the background.
Sunken	To sink the instrument into the background.

Outer bevel style Lets you select the style of the outer border bevel:

Style	Description
None	To switch off the outer bevel.
Raised	To raise the instrument from the background.
Sunken	To sink the instrument into the background.

Related instruments These properties are available for various instruments.

Color Property

Purpose To specify the color of the selected item.

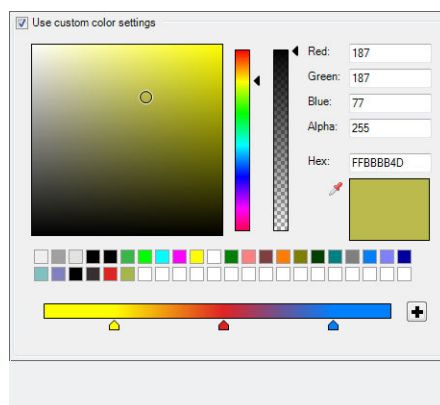
Property

Color Opens a dialog where you can select a color or enter values to define one. You can also drag the pipette symbol to pick a color from anywhere on the screen.

If available, you can use the Alpha value to specify the transparency of the element. Decrease the value to increase the transparency.

Favorite colors: Right-click a favorite color box to insert the currently selected color.

If available, you can use the color gradient to specify smooth color transitions. Click the +-button to add a mark to the gradient, select a color for the mark, and drag the mark to the desired position. To delete a mark, select it and press Delete.



Related instruments

This property is available for various instruments.

Curves Properties (XY Plotter)




Purpose

To configure the properties of the curves in the XY Plotter.

Curves property

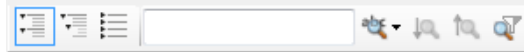
Lets you open the Curves dialog. The defined curves are listed on the left side of the dialog. Select a curve to specify its properties.

You can use the following buttons to configure the list.

Button	Description
Add	Adds a new curve to the list.
	Moves the selected element to the top.
	Moves the selected element to the bottom.
	Deletes the selected element.

Toolbar

A toolbar is displayed above the properties list. The buttons let you configure the view of the list or search for items in the list, for example.



For more details on the toolbar buttons, refer to [Toolbar buttons \(ControlDesk User Interface Handling\)](#).

Selected curve properties

To configure the properties of the selected curve.

Color Opens a dialog for you to select a color or enter values to define one. For more information on the dialog settings, refer to [Color Property](#) on page 99.

Enabled Lets you specify to display the selected curve in the chart.

Limit data points Lets you limit the data points that are displayed for a curve to the **Number of displayed data points**.

Line style Lets you select whether to connect the data points of the curve graphically:

List Entries	Description
None	Data points are not graphically connected.
Direct	Data points are connected by a direct line.

Line width Lets you select the width of the curve's line in the range 1...50 pixels.

Name Lets you specify the name of the curve.

Number of displayed data points (Available only if **Limit data points** is enabled) Lets you specify how many of the last measured data points to display for the curve.

Point style Lets you select the style of the curve's points.

Point size Lets you select the size of the curve's points in the range 1...150 pixels.

Smooth mode enabled Lets you smooth the staircase effect in the signal visualization.

X variable/Y variable properties

To display information on the connected variable.

Platform Displays the platform/device the selected variable is assigned to.

Raster Displays the measurement raster the selected variable is assigned to.

Related instruments

These properties are available for the following instrument:

- [XY Plotter](#) on page 85

Custom Value Conversion Properties

Purpose	To specify properties for converting a source value into a converted value and vice versa. The variable conversion that you define here is assigned to the instrument.
Properties	<p>Backward function Lets you specify the function to convert the source value into the converted value.</p> <p>You can use the operators and functions that are specified in version 1.7 of the ASAM MCD-2 MC standard in connection with the FORMULA keyword, such as basic operations (+, -, *, /), binary operations (>>,<<,...), or various functions (<code>sin(x)</code>, <code>cos(x)</code>, <code>tan(x)</code>, <code>exp(x)</code>, <code>log(x)</code>, <code>log10(x)</code>, <code>sqrt(x)</code>, <code>abs(x)</code>, <code>pow(x1,x2)</code>, ...)</p> <p>Before a bitwise operation is executed, the operands are converted to integer values. The result is passed as a double value.</p> <p>Before a logical operation is executed, the operands are convert to bool values (<code>0.0</code> is <code>false</code>, other values are <code>true</code>). The result is passed as a double value (<code>true</code> is <code>1.0</code>, <code>false</code> is <code>0.0</code>).</p> <p>ModelDesk calculates an inverse function if the original function has the format $(a*x+b)/(c*x+d)$ for any a, b, c, d.</p> <p>Enabled Lets you enable the conversion settings defined via the instrument.</p> <p>Forward function Lets you specify the function to convert the source value into the converted value.</p> <p>You can use the operators and functions that are specified in version 1.7 of the ASAM MCD-2 MC standard in connection with the FORMULA keyword, such as basic operations (+, -, *, /), binary operations (>>,<<,...), or various functions (<code>sin(x)</code>, <code>cos(x)</code>, <code>tan(x)</code>, <code>exp(x)</code>, <code>log(x)</code>, <code>log10(x)</code>, <code>sqrt(x)</code>, <code>abs(x)</code>, <code>pow(x1,x2)</code>, ...)</p> <p>Before a bitwise operation is executed, the operands are converted to integer values. The result is passed as a double value.</p> <p>Before a logical operation is executed, the operands are convert to bool values (<code>0.0</code> is <code>false</code>, other values are <code>true</code>). The result is passed as a double value (<code>true</code> is <code>1.0</code>, <code>false</code> is <code>0.0</code>).</p> <p>ModelDesk calculates an inverse function if the original function has the format $(a*x+b)/(c*x+d)$ for any a, b, c, d.</p> <p>Unit converted Lets you specify the unit of the converted value.</p> <p>Unit source Lets you specify the unit of the source value.</p>
Related instruments	These properties are available for various instruments.

Data Cursor Properties (Time Plotter)

Purpose To specify the properties of one or two cursors that are used to display the values of selected chart positions.

Properties

Cursor info position Lets you select whether to display the cursor information at a fixed position in the chart or let it follow the cursor inside the chart or on the axes.

Decimal places (Available only if **Use custom precision** is enabled) Lets you specify the number of displayed decimal places of the cursor values. If a value has more than the selected number of decimal places, the last displayed digit is rounded.

Display info header Lets you display a header in the cursor information when you enable a delta cursor.

Enabled Lets you show/hide the data cursors.

Keep always visible Lets you specify to keep the cursors inside the chart area, for example, when you move a chart or zoom into it.

Mode Lets you select the data cursor mode.

Mode	Description
Single	Displays one cursor to specify a position in the chart. The x- and y-values of the cursor position are displayed at the cursor info position .
Delta	Displays two cursors to specify two independent positions in the chart. The x- and y-values of the two cursor positions and the differences between them are displayed at the cursor info position .

Stick on curve Lets you specify to move the data cursor on the data points of the signal next to the mouse pointer.

Type Lets you select the data cursor type.

Use custom precision Lets you enable or disable the configuration of the number of decimal places of the cursor values.

Tip

Via the instrument's toolbar, you can easily change frequently used data cursor settings. Refer to [Show Toolbar](#) on page 129.

Related instruments

These properties are available for the following instruments:

- [Time Plotter](#) on page 82

Data Cursor Properties (XY Plotter)

Purpose To specify the properties of one or two cursors that are used to display the values of selected chart positions.

Properties

Cursor info position (Available only if **Single cursor** or **Delta cursor** is enabled) Lets you select whether the cursor information is displayed at a fixed position in the chart or follows the cursor.

Delta cursor Lets you enable two cursors to specify two independent positions in the chart. The x- and y-values of the two cursor positions and the difference between them are displayed at the **cursor info position**. A single cursor is disabled when you enable a delta cursor.

Display info header Lets you display a header in the cursor information when you enable a delta cursor.

Keep always visible (Available only if **Single cursor** or **Delta cursor** is enabled) Lets you specify to keep the cursors inside the chart area, for example, when you move a chart or zoom into it.

Single cursor Lets you enable a single cursor to specify a position in the chart. The x- and y-values of the cursor position are displayed at the **cursor info position**. A delta cursor is disabled when you enable a single cursor.

Stick on curve (Available only if **Single cursor** or **Delta cursor** is enabled) Lets you specify to move the data cursor on the data points of the signal next to the mouse pointer.

Related instruments These properties are available for the following instrument:

- [XY Plotter](#) on page 85

DAQ Properties (Time Plotter)

Purpose To specify data acquisition settings for visualization in the Time Plotter. For example, you can enable a triggered display of plotter data.

Properties **Mode** Lets you switch between triggered and untriggered display of plotter data.

Mode	Description
Trigger mode	Lets you enable the triggered display of plotter data. The plotter uses the trigger settings of the

Mode	Description
	<p>leading measurement raster for its display settings.</p> <p>Only signals with a triggered measurement are displayed. Continuously measured signals show a warning symbol in their icons.</p> <p>The displayed x-axis area starts with the delay of the start trigger. The number of displayed data points depends on the selected trigger:</p> <ul style="list-style-type: none"> ▪ Sample count trigger: sample count value (x-axis scaling is set to fixed mode) ▪ Duration trigger: number of samples measured in the specified duration (x-axis scaling is set to fixed mode) ▪ Platform trigger: number of samples measured until the stop trigger is reached (x-axis scaling is set to extended mode)
Continuous mode	<p>Lets you enable the untriggered display of plotter data. The plotter displays the data stream continuously.</p> <p>Only continuously measured signals are displayed. Signals with a triggered measurement show a warning symbol in their icons.</p>

Drawing mode (Available only if DAQ mode is set to Trigger mode) Lets you specify when to plot the signal trace.

Mode	Description
On new value	The signal trace is drawn each time a new data value is available.
On new capture	The signal trace is drawn when a triggered capture is complete. If the data values arrive at random intervals, you can use this mode to prevent the displayed signal from flickering.

Follow leading raster (Available only if DAQ mode is set to Trigger mode) Lets you specify to change the plotter's DAQ mode automatically if the leading raster is switched between triggered and continuous measurement in the measurement configuration.

Show DAQ mode Lets you display the name of the plotter's DAQ mode in the info area of the instrument.

Show info Lets you display plotter DAQ information in the instrument.

Show leading raster Lets you display the name of the leading raster in the info area of the instrument.

Show start trigger time Lets you display the start trigger time in the info area of the instrument.

Start trigger Displays the name of the start trigger if one is activated for the measurement raster.

Stop trigger Displays the name of the stop trigger if one is activated for the measurement raster.

Tip

Via the instrument's toolbar, you can easily change frequently used DAQ settings. Refer to [Show Toolbar](#) on page 129.

Related instruments

These properties are available for the following instruments:

- [Time Plotter](#) on page 82

Description Property

Purpose

To specify a description for the instrument.

Property

Description Lets you specify a description for the instrument. Click the down arrow to enter more than one line.

Related instruments

This property is available for various instruments.

Colors Properties (Time Plotter)


Purpose

(Only available if Color style is set to a multicolor setting) To specify a color range for the signal.

Colors list

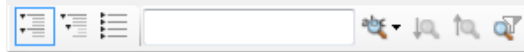
All the defined colors are listed on the left side of the dialog.

You can use the following dialog buttons to configure the list.

Button	Description
Add	Adds a new color to the bottom of the list.
	Deletes the selected color.

Toolbar

A toolbar is displayed above the properties list. The buttons let you configure the view of the list or search for items in the list, for example.



For more details on the toolbar buttons, refer to [Toolbar buttons \(ControlDesk User Interface Handling\)](#).

Properties

Axis max. value Displays the maximum value of the axis.

Axis min. value Displays the minimum value of the axis.

Color Opens a dialog for you to select a color or enter values to define one. For more information on the dialog settings, refer to [Color Property](#) on page 99.

Value Lets you specify the start value for the selected color. The color is set for all values above this start value up to the start value of the next color or, if no further color is defined, up to the maximum. If only one color is defined in the list, the signal gets that color and the value setting is ignored.

Related instruments

These properties are available for the following instruments:

- [Time Plotter](#) on page 82

Grid Properties (Time Plotter)

Purpose

To configure the grid properties.

Properties

Color Opens a dialog for you to select a color or enter values to define one. For more information on the dialog settings, refer to [Color Property](#) on page 99.

Enabled Lets you show/hide a grid in the instrument.

Minor tics Lets you specify the number of minor tics between two major tics.

Related instruments

These properties are available for the following instruments:

- [Time Plotter](#) on page 82

Legend Properties (Time Plotter)

Purpose To specify the legend properties.

Properties

Enabled Lets you show/hide the legend.

Extend Lets you specify the extent of the legend in pixels.

Position Lets you specify the position of the legend.

Tip

You can also double-click the splitter between chart and legend to switch to the next position.

Show expand button Lets you show/hide the expand button in the instrument. The expand button lets you show or hide the legend.

Synchronize chart with filter Lets you specify to show/hide the same signals in the chart as in the legend. If you enable a filter via the context menu of the legend's column header, its settings also apply to the legend.

Related instruments

These properties are available for the following instruments:

- [Time Plotter](#) on page 82

Name Property

Purpose To specify the name of the selected instrument.

Property

Name Lets you enter a name for the selected instrument. The names of the instruments on a layout must be unique.

Related instruments

This property is available for various instruments.

Picture Properties

Purpose

To specify whether to use a picture for the selected element and to specify its properties. Depending on the selected instrument or instrument element, you can also use an animated GIF.

Properties

Embedded (Available only if **Visible** is enabled) Lets you specify whether to save only the reference path to the picture or to embed the whole picture in the project file. If a picture has been embedded and you remove the embedding, ModelDesk stores the picture in a temporary folder.

Tip

To access an embedded picture, for example to copy it, disable **Embedded** and use the path displayed in **Picture path** or **Path**.

Picture path/Path (Available only if **Visible** is enabled) Lets you enter a path and file name for the picture/animated GIF or select one via the Browse button.

Visible Lets you specify whether a picture or animated GIF is displayed. If enabled, you can specify the picture's properties.

Related instruments

These properties are available for various instruments.

Scroll Bar Properties (Time Plotter)

Purpose

To specify the scroll bar properties.

Properties

Height Lets you specify the scroll bar's height in pixels.

Enabled Lets you show or hide the plotter's scroll bar. You must stop a running measurement to use the scroll bar.

- Drag the scroll box to navigate through the measurement.



- Drag the edges of the scroll box to change the zoom settings.



Preview signal visible Lets you show or hide the measured signal as a preview in the scroll bar.

Related instruments

These properties are available for the following instruments:

- [Time Plotter](#) on page 82

Related topics

Basics

[Zooming and Moving the Chart](#)..... 41

References

[Show Scroll Bar \(Time Plotter\)](#)..... 128

Selection Border Style Property

Purpose

To select a style for the selection border of the current instrument.

Property

Selection Border Style Lets you select a border style for the selection border of the current instrument. You can change the global setting for the selection border on the Instruments page of the ModelDesk Properties dialog.

Related instruments

This property is available for various instruments.

Size and Position Properties (Instrument)

Purpose

To configure the size and position of an instrument.

Description

These are the basic properties of any instrument. You can enter the size of an instrument and its position inside the layout numerically.

Properties	Height	Displays the height of the instrument in pixels.
	Width	Displays the width of the instrument in pixels.
	X	Displays the distance of the left margin of the instrument from the left margin of the layout in pixels.
	Y	Displays the distance of the top margin of the instrument from the top margin of the layout in pixels.

Related instruments	These properties are available for various instruments.
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Time Cursor Properties

Purpose	To specify the properties of the time cursor.
----------------	---

Properties	The type of selected plotter determines which time cursor properties are available.	
	Decimal places	(Available only if Use custom precision is enabled) Lets you specify the number of decimal places that are displayed for the cursor value. If a value has more than the selected number of decimal places, the last displayed digit is rounded.
	Enabled	Lets you show/hide the time cursor. To use the time cursor during a running measurement, pause the visualization by moving or zooming the chart.
	Keep always visible	Lets you specify to keep the cursor inside the chart area. For example, when you move a chart or zoom into it.
	Show time info	Lets you activate a tooltip that displays the position of the time cursor (in seconds).
	Show tooltip	Lets you activate a tooltip that displays the signal value at the position of the time cursor.
	Stick on curve	Lets you specify to move the time cursor on the data points of the signal next to the mouse pointer.
	Time	Lets you specify the position of the time cursor (in seconds).
Use custom precision Lets you enable or disable the configuration of the number of decimal places of the cursor value.		

Tip

Via the instrument's toolbar, you can easily change frequently used time cursor settings. Refer to [Show Toolbar](#) on page 129.

Related instruments

These properties are available for the following instrument:

- [Time Plotter](#) on page 82

Toolbar Properties (Time Plotter)

Purpose

To specify the properties of the instrument's toolbar.

Properties

Toolbar visible Lets you show/hide the instrument's toolbar.

Show expand button Lets you show/hide a button in the instrument's left upper corner that lets you show/hide the instrument's toolbar via the pointer.

Type Lets you select the toolbar to be displayed.

Related instruments

These properties are available for the following instruments:

- [Time Plotter](#) on page 82

Related topics**References**

[Show Toolbar.....](#) 129

Tooltip Property

Purpose

To specify a tooltip for the instrument.

Property

Tooltip Lets you specify a tooltip for the instrument. Click the down arrow to enter more than one line or to use macros. The tooltip is displayed when you move the mouse pointer over the instrument.

You can use the following macros for the text:

Macro	Description
{%INSTRUMENT%}	Name of the instrument
{%DESCRIPTION%}	Description text of the instrument, if specified in the instrument properties

Related instruments

This property is available for various instruments.

Use Custom Colors Property

Purpose

To enable or disable custom color settings for the instrument.

Property

Use custom colors Lets you specify whether the color settings on the Instruments page of the ModelDesk Properties dialog are used for the instrument.

Related instruments

This property is available for various instruments.

Related topics

References

[Instruments Page](#)..... 120

Use Custom Fonts Property

Purpose

To enable or disable global font settings for the instrument.

Property

Use custom fonts Lets you specify whether the fonts settings on the Instruments page of the ModelDesk Properties dialog are used for the instrument.

Related instruments

This property is available for various instruments.

Related topics**References**

[Instruments Page.....](#) 120

View Properties (Time Plotter)

Purpose

To configure the view of the axes.

Properties

Auto hide elements Lets you specify to hide the y-axes and the x-axis, if the size of the instrument is reduced below a certain limit.

Axis mode Lets you select the axes mode of the y-axes area.

Axis Mode	Description
Scroll view	The y-axes are aligned vertically in a scroll area. One (default) or more y-axes are visible as default. The Axis width mode is set to Fixed.
Complete view	The y-axes are aligned vertically. All y-axes are visible. The Axis width mode can be set to Fixed, Floating, or Maximum.
Stacked view	The y-axes are arranged horizontally one below the other. The Axis width mode can be set to Fixed or Floating.

Axis width mode Lets you specify the width mode of the y-axes. The available modes depend on the selected Axis mode.

Width Mode	Description
Fixed	The width of the y-axes area is set to the value in the Axis width edit field.
Floating	The width of the y-axes area is set automatically. All y-axes are completely visible. Each y-axis has its optimum width.
Maximum	The width of the y-axes area is set automatically. All y-axes are completely visible. The width of the widest y-axis is set for each.

Bookmarks visible (Available only for a Time Plotter) Displays bookmark symbols at the x-axis. The time position of a bookmark is marked either by a triangle (manual bookmark) or a rhombus (automatic bookmark). In measurement data files, bookmarks that belong to the same recording have the

same color. Move the pointer onto the symbol to display more information on the bookmark.

Highlight active signal Lets you highlight the active signal.

Overlap symbols and labels Lets you specify to use the same y-axis space for symbols and labels and to allow overlapping if necessary.

Label orientation Lets you display the y-axes labels horizontally or vertically.

X-Axis visible Lets you show/hide the x-axis area.

Y-Axes visible Lets you show/hide the y-axes area.

Y-Axes width (Available only if **Axes width mode** is set to **Fixed**) Lets you specify the width of the axis area in pixels.

Related instruments

These properties are available for the following instruments:

- [Time Plotter](#) on page 82

Instrument-Related Commands

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Bottom

Access

You can access this command via:

Ribbon	None
Context menu of	Time Plotter: <ul style="list-style-type: none"> ▪ Splitter ▪ Expand button
Shortcut key	None
Icon	None

Purpose To display the plotter legend below the chart.

Related topics**References**

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Legend Properties (Time Plotter).....	108
Right.....	126
Top.....	134

Delete (Y-Axis Time Plotter)

Access

Available only if more than one y-axis exists. You can access this command via:

Ribbon	None
Context menu of	Time Plotter – y-axis
Shortcut key	None
Icon	None

Purpose

To delete the selected y-axis.

Related topics**HowTos**

How to Configure the XY Plotter.....	45
--	--------------------

Display Format Page

Access

This page is part of the ModelDesk Options dialog.

Purpose

To select predefined numeric data display formats for the numerical output in the Table Editor.

Dialog settings**Decimal format** Lets you select one of the following decimal formats.

Decimal Format	Description
Float	To display decimal values as floating-point values.
Engineering	To display decimal values as exponential values. The exponent is always an integer multiple of 3.
Exponential	To display decimal values as exponential values.
UnsignedInt	To display decimal values as unsigned integer values.
SignedInt	To display decimal values as signed integer values.

Decimal places Lets you specify a fixed number of fractional digits displayed after the decimal point. Use the edit field to specify the number of displayed fractional digits. If a value has more than the selected number of fractional digits, the last displayed digit is rounded.

Promote source settings Not applicable

Promote converted settings Not applicable

Use variable format Not applicable

Promote variable settings Not applicable

Related topics**References**

[Options \(ModelDesk Basics !\[\]\(51514032c8ca341817228f39f1307b05_img.jpg\)\)](#)

Enable Move Mode (XY Plotter)

Access

You can access this command via:

Ribbon	None
Context menu of	Axis of an XY Plotter
Shortcut key	None
Icon	None

Purpose

To move the displayed area of the axis via mouse pointer.

Related topics**Basics**

[Zooming and Moving the Chart..... 41](#)

Hide Expand Button

Access

You can access this command via:

Ribbon	None
Context menu of	Time Plotter: <ul style="list-style-type: none"> ▪ Splitter ▪ Expand button
Shortcut key	None
Icon	None

Purpose

To hide the legend's expand button in the instrument.

Related topics

References

[Legend Properties \(Time Plotter\)..... 108](#)

Instruments Page

Access

This page is part of the ModelDesk Options dialog.

Purpose

To specify global color, fonts, and header settings for instruments.

Dialog settings

Colors – Up Color Lets you select a color for tendency up visualization, for example, for the value color in the Table Editor. Choose one of the predefined colors in the box or use the Browse button to open the standard Windows Color dialog.

Colors – Down Color Lets you select a color for tendency down visualization, for example, for the value color in the Table Editor. Choose one of the predefined colors in the box or use the Browse button to open the standard Windows Color dialog.

Colors – Plotter Background Lets you select a color for the background of a plotter instrument. Choose one of the predefined colors in the box or use the Browse button to open the standard Windows Color dialog.

Colors – Plotter Foreground Lets you select a color for elements in the foreground of a plotter instrument, such as labels and tics. Choose one of the predefined colors in the box or use the Browse button to open the standard Windows Color dialog.

Fonts – Text Lets you specify the font for text appearing on instruments via a standard Font dialog. To use the selected global font in an instrument, deactivate the "Use custom fonts" instrument property.

Fonts – Numeric Output Lets you specify the font for the numerical values displayed on instruments via a standard Font dialog. To use the selected global font in an instrument, deactivate the "Use custom fonts" instrument property.

Header – Visible Lets you specify whether an instrument header is displayed. The instrument header contains the instrument's title and, if enabled, information on the connected variable(s).

Header – Display variable info Not applicable

Related topics

References

[Options \(ModelDesk Basics !\[\]\(17413706fd4997a1a4bdf85c6864eee1_img.jpg\)\)](#)

Instrument Script

Unsupported command

ModelDesk does not support this command.

Left

Access

You can access this command via:

Ribbon	None
Context menu of	Time Plotter: <ul style="list-style-type: none"> ▪ Splitter ▪ Expand button
Shortcut key	None
Icon	None

Purpose

To display the plotter legend on the left side of the chart.

Related topics**References**

Bottom.....	117
Legend Properties (Time Plotter).....	108
Right.....	126
Top.....	134

Line Style (Time Plotter)

Access

You can access this command via:

Ribbon	None
Context menu of	Time Plotter: <ul style="list-style-type: none"> ▪ Legend (Signal) ▪ Signal symbol ▪ Curve (Active signal)
Shortcut key	None
Icon	None

Purpose

To specify whether to connect the points of a line graphically by a straight line.

Line Style (XY Plotter)

Access

You can access this command via:

Ribbon	None
Context menu of	<ul style="list-style-type: none"> ▪ Curve symbol ▪ Curve (Signal - Line Style)
Shortcut key	None
Icon	None

Purpose

To specify whether to connect the points of a line graphically by a straight line.

Related topics

HowTos

How to Configure the XY Plotter.....	45
--------------------------------------	----

Navigation – Move Mode (Time Plotter)

Access

This command is available after you have zoomed into the chart. You can access this command via:

Ribbon	None
Context menu of	Time Plotter – chart
Shortcut key	M
Icon	None

Purpose

To move the displayed area of the chart via the pointer.

Related topics

Basics

Zooming and Moving the Chart.....	41
-----------------------------------	----

Navigation – Rescale (Time Plotter)

Access

This command is available after you have zoomed into the chart. You can access this command via:

Ribbon	None
Context menu of	Time Plotter: <ul style="list-style-type: none">▪ X-axis or y-axis (rescales the selected axis)
Shortcut key	None
Icon	None

Purpose

To rescale one or all axes.

Navigation – Zoom Mode (Time Plotter)

Access

This command is available after you have zoomed into the chart. You can access this command via:

Ribbon	None
Context menu of	Time Plotter – chart
Shortcut key	Z
Icon	None

Purpose

To zoom the displayed area of the chart via the pointer.

Related topics

Basics

[Zooming and Moving the Chart..... 41](#)

Point Style (Time Plotter)

Access

You can access this command via:

Ribbon	None
Context menu of	Time Plotter: <ul style="list-style-type: none"> ▪ Legend (Signal) ▪ Signal symbol ▪ Curve (Active signal)
Shortcut key	<ul style="list-style-type: none"> ▪ P: Next point style ▪ Ctrl+P: Previous point style
Icon	None

Purpose

To select the style of the signal's points.

Description

If you select user defined, you can define an image for the point style via the Point style image property in the Properties list. Refer to [Axes and Signal Properties \(Time Plotter\)](#) on page 91.

Point Style (XY Plotter)

Access

You can access this command via:

Ribbon	None
Context menu of	<ul style="list-style-type: none"> Curve symbol Curve (Signal - Point Style)
Shortcut key	None
Icon	None

Purpose

To select the style of the curve's points.

Related topics

HowTos

[How to Configure the XY Plotter.....](#) 45

Rescale

Access

This command is available after you have zoomed into the chart of a Time Plotter/XY Plotter. You can access this command via:

Ribbon	None
Context menu of	<ul style="list-style-type: none"> X-axis or y-axis (rescales the selected axis) Chart (rescales both axes)
Shortcut key	None
Icon	None

Purpose

To rescale one or both axes of a plot.

Description

The axes are rescaled to display the currently available curves.

Related topics

Basics

[Zooming and Moving the Chart.....](#) 41

Right

Access

You can access this command via:

Ribbon	None
Context menu of	Time Plotter: <ul style="list-style-type: none"> ▪ Splitter ▪ Expand button
Shortcut key	None
Icon	None

Purpose

To display the plotter legend on the right side of the chart.

Related topics

References

Bottom.....	117
Left.....	121
Legend Properties (Time Plotter).....	108
Top.....	134

Save Displayed Data as New Measurement

Unsupported command

ModelDesk does not support this command.

Scaling Mode

Access

You can access this command via:

Ribbon	None
Context menu of	Axis of an XY Plotter/Time Plotter
Shortcut key	None
Icon	None

Purpose

To select the scaling mode of the axis.

Description

The following scaling modes are available.

Scaling Mode	Description
Floating	The axis range always shows the current range of the displayed data. It can grow and shrink during measurement.
Extended (Default mode)	The axis range always shows the current range of the displayed data. It can only grow during measurement. To rescale a signal axis to display the currently available curves, double-click it.
Fixed	The dimensions of the signal axis are set to the values of the Minimum and Maximum axis properties. These limits are kept independently of data curves.

Fixed from current axis Lets you specify the **Minimum** and **Maximum** axis properties according to the currently visible axis area and sets the scaling mode to **Fixed**.

Related topics**HowTos**

[How to Configure the XY Plotter.....](#) 45

Select in Instrument Navigator

Unsupported command

ModelDesk does not support this command.

Show Bookmarks

Unsupported command

ModelDesk does not support this command.

Show Expand Button

Access

You can access this command via:

Ribbon	None
Context menu of	Time Plotter – Splitter

Shortcut key	None
Icon	None

Purpose To display the legend's expand button in the instrument.

Related topics

References

[Legend Properties \(Time Plotter\)..... 108](#)

Show Legend

Access

You can access this command via:

Ribbon	None
Context menu of	Time Plotter - chart
Shortcut key	L
Icon	None

Purpose To show/hide the legend.

Description The legend displays the signals that are connected to the instrument. Via the context menu of the column headers, you can sort, group, and filter the signals.

Related topics

Basics

[Customizing Tables \(ModelDesk Basics !\[\]\(e3f255517d37bb309a3a931ec4849e6a_img.jpg\)\)](#)

Show Scroll Bar (Time Plotter)

Access

You can access this command via:

Ribbon	None
Context menu of	Time Plotter - chart

Shortcut key	None
Icon	None

Purpose To show or hide the instrument's scroll bar.

Description Via the instrument's scrollbar, you can navigate through the measurement and change the zoom settings. Refer to [Scroll Bar Properties \(Time Plotter\)](#) on page 109.

Related topics

Basics

[Zooming and Moving the Chart](#)..... 41

References

[Scroll Bar Properties \(Time Plotter\)](#)..... 109

Show Toolbar

Access You can access this command via:

Ribbon	None
Context menu of	Time Plotter - chart
Shortcut key	T
Icon	None

Purpose To show/hide the instrument's toolbar.









Description Via the instrument's toolbar, you can easily change frequently used DAQ (display trigger) and data cursor settings.

Refer to:

- DAQ toolbar
- Cursor toolbar










DAQ toolbar

The DAQ type of the instrument's toolbar lets you change display trigger settings.

Button	Description	Refer to
	To show/hide the toolbar.	Toolbar Properties (Time Plotter) on page 112
	To select the toolbar type.	Toolbar Properties (Time Plotter) on page 112
	To set the DAQ mode to Continuous mode. Enables the untriggered display of plotter data.	DAQ Properties (Time Plotter) on page 104
	To set the DAQ mode to Triggered mode. Enables the triggered display of plotter data.	DAQ Properties (Time Plotter) on page 104
	To increment the number of displayed periods if Autoset Trigger is activated for a periodic signal.	Advanced Settings Properties (Time Plotter) on page 90
	To decrement the number of displayed periods if Autoset Trigger is activated for a periodic signal.	Advanced Settings Properties (Time Plotter) on page 90
	To set the drawing mode to On new capture. The signal trace is drawn when a triggered capture is complete. If the data values arrive at random intervals, you can use this mode to prevent the displayed signal from flickering.	DAQ Properties (Time Plotter) on page 104
	To set the drawing mode to On new value. The signal trace is drawn each time a new data value is available.	DAQ Properties (Time Plotter) on page 104

Cursor toolbar

The Cursor type of the instrument's toolbar lets you change data cursor settings.

Button	Description	Corresponding Property/Command
	To show/hide the toolbar.	Toolbar Properties (Time Plotter) on page 112
	To select the toolbar type.	Toolbar Properties (Time Plotter) on page 112
	To select the single mode for the data cursor. Displays one cursor to specify a position in the chart. The x- and y-values of the cursor position are displayed at the cursor info position.	Data Cursor Properties (Time Plotter) on page 103
	To select the delta mode for the data cursor. Displays two cursors to specify two independent positions in the chart. The x- and y-values of the two cursor positions and the differences between them are displayed at the cursor info position.	Data Cursor Properties (Time Plotter) on page 103
	To move the data cursor on the data points of the signal next to the pointer (stick on curve).	Data Cursor Properties (Time Plotter) on page 103
	To keep the cursor(s) always visible inside the chart area, for example, when you move a chart or zoom into it.	Data Cursor Properties (Time Plotter) on page 103
	To zoom into the interval of a delta cursor.	–
	To display the cursor information at a fixed position in the chart.	Data Cursor Properties (Time Plotter) on page 103
	To display the cursor information next to the cursor.	Data Cursor Properties (Time Plotter) on page 103

Button	Description	Corresponding Property/Command
	To display the cursor information at the axes.	Data Cursor Properties (Time Plotter) on page 103
	To set the data cursor type to Point.	Data Cursor Properties (Time Plotter) on page 103
	To set the data cursor type to X-line.	Data Cursor Properties (Time Plotter) on page 103
	To set the data cursor type to Y-line.	Data Cursor Properties (Time Plotter) on page 103
	To show or hide the time cursor.	Time Cursor Properties on page 111
	To activate a tooltip that displays the signal value at the position of the time cursor.	Time Cursor Properties on page 111
	To activate a tooltip that displays the position of the time cursor (in seconds).	Time Cursor Properties on page 111
	To move the time cursor to the data points of the signal next to the mouse pointer.	Time Cursor Properties on page 111
	To keep the cursor inside the chart area. For example, when you move a chart or zoom into it.	Time Cursor Properties on page 111
	To display bookmark symbols at the x-axis.	View Properties (Time Plotter) on page 114

Related topics

References

[Toolbar Properties \(Time Plotter\)](#)..... 112

Switch Plotter Type

Access

You can access this command via:

Menu	None
Context menu of	Time Plotter/Index Plotter
Shortcut key	none
Icon	None

Purpose

To switch the plotter type.

Description

The command lets you switch the plotter type (Time Plotter or XY Plotter).

Related topics**References**

Time Plotter.....	82
XY Plotter.....	85

Switch to Move Mode / Switch to Zoom Mode (XY Plotter)

Access

You can access this command via:

Ribbon	None
Context menu of	Chart of an XY Plotter
Shortcut key	None
Icon	None

Purpose

To zoom or move the displayed area of the chart via mouse pointer.

Related topics**Basics**

Zooming and Moving the Chart.....	41
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Switch Variable (XY Plotter)

Access

You can access this command via:

Ribbon	None
Context menu of	<ul style="list-style-type: none"> Curve symbol Curve (Signal - Switch Variable)
Shortcut key	None
Icon	None

Purpose

To interchange the variables that are connected to the x- and y-axis.

Tip

Check the axis labels after you have switched the variables. They are not switched together with the variables.

Related topics**HowTos**

[How to Configure the XY Plotter..... 45](#)

Tic Format

Access

You can access this command via:

Ribbon	None
Context menu of	Axis (Time Plotter/XY Plotter)
Shortcut key	None
Icon	None

Purpose

To select the format used to label the axis tics.

Description

The following options are available.

Tic Format	Description
Standard (Default format)	The values on the axis are shown without an exponent.
Exponential	The values on the axis are shown in exponential format.
Scientific/Engineering	The values on the axis are shown in exponential format. The exponent is always an integer multiple of 3.
SIPrefix	(Available only for the Time Plotter) The values on the x-axis are shown with prefixes for the SI units: milli (m), kilo (k), etc.
Hours	(Available only for the Time Plotter) The values on the x-axis are shown as hours in the format hh:mm:ss.

Related topics**HowTos**

[How to Configure the XY Plotter.....](#) 45

Top

Access

You can access this command via:

Ribbon	None
Context menu of	Time Plotter: <ul style="list-style-type: none"> ▪ Splitter ▪ Expand button
Shortcut key	None
Icon	None

Purpose

To display the plotter legend above the chart.

Related topics**References**

[Bottom.....](#) 117
[Left.....](#) 121
[Legend Properties \(Time Plotter\).....](#) 108
[Right.....](#) 126

Copy / Variables - Copy

Access

You can access this command via:

Ribbon	None
Context menu of	Variable(s) in an instrument
Shortcut key	None
Icon	None

Purpose

To copy the selected variables to the Clipboard.

Result The selected variable(s) is/are copied and placed on the Clipboard.

Related topics**References**

[Variables - Paste/Paste Variables.....](#) 136

Variables - Cut

Access

You can access this command via:

Ribbon	None
Context menu of	Variables in an instrument
Shortcut key	None
Icon	None

Purpose

To cut the selected variables in the current instrument.

Result

The selected variable is removed and placed in the Clipboard.

Related topics**References**

[Variables - Delete.....](#) 135
[Variables - Paste/Paste Variables.....](#) 136

Variables - Delete

Access

You can access this command via:

Ribbon	None
Context menu of	Variables in an instrument
Shortcut key	Delete
Icon	None

Purpose To delete the selected variables.

Result The selected variable(s) is/are removed from the current instrument.

Related topics

References

Variables - Cut.....	135
Variables - Delete.....	135
Variables - Paste/Paste Variables.....	136

Variables - Paste/Paste Variables

Access

You can access this command via:

Ribbon	None
Context menu of	All instruments (Variable(s) – Paste)
Shortcut key	None
Icon	None

Purpose To paste variables from the Clipboard to an instrument.

Related topics

References

Variables - Cut.....	135
Variables - Delete.....	135

Y-Axes View – Horizontal Stacked

Access

You can access this command via:

Ribbon	None
Context menu of	Time Plotter – x-axis or y-axis
Shortcut key	S (to switch between the axis views)
Icon	None

Purpose To arrange the y-axes horizontally one below the other.

Description The following table shows the y-axis views you can select.

Y-Axes View	Description
Vertical fixed	The y-axes are aligned vertically. All y-axes are visible. You cannot change the axis width with the pointer. Use Y-Axes View - Settings to set the width to optimum, maximum, or fixed size.
Vertical scroll	The y-axes are aligned vertically in a scroll area. One (default) or more y-axes are visible. You can change the axis width with the pointer.
Horizontal stacked	The y-axes are arranged horizontally one below the other.

Related topics

Basics

[Y-Axes View – Vertical Scroll..... 139](#)

References

[Y-Axes View – Vertical Fixed..... 138](#)

Y-Axes View – Rescale All Axes

Access This command is available after you have zoomed into the chart. You can access this command via:

Ribbon	None
Context menu of	Time Plotter – x-axis or y-axis
Shortcut key	None
Icon	None

Purpose To rescale all y-axes in one step.

Y-Axes View – Settings

Access

This command is available after you have zoomed into the chart. You can access this command via:

Ribbon	None
Context menu of	Time Plotter – x-axis or y-axis
Shortcut key	None
Icon	None

Purpose

To set the width of the y-axes to optimum, maximum, or fixed size.

Description

The following table shows the y-axis view settings you can select.

Size	Description
Optimal	The width of the y-axes area is set automatically. All y-axes are completely visible. Each y-axis has its optimum width.
Maximum	The width of the y-axes area is set automatically. All y-axes are completely visible. The width of the widest y-axis is set for each.
Fixed	The width of the y-axes area is set to the value in the Axis width edit field.

Y-Axes View – Vertical Fixed

Access

This command is available after you have zoomed into the chart. You can access this command via:

Ribbon	None
Context menu of	Time Plotter – x-axis or y-axis
Shortcut key	S (to switch between the axis views)
Icon	None

Purpose

To align the y-axes vertically. All y-axes are visible.

Description

The following table shows the y-axis views you can select.

Y-Axes View	Description
Vertical fixed	The y-axes are aligned vertically. All y-axes are visible. You cannot change the axis width with the pointer. Use Y-Axes View - Settings to set the width to optimum, maximum, or fixed size.
Vertical scroll	The y-axes are aligned vertically in a scroll area. One (default) or more y-axes are visible. You can change the axis width with the pointer.
Horizontal stacked	The y-axes are arranged horizontally one below the other.

Y-Axes View – Vertical Scroll

Access

This command is available after you have zoomed into the chart. You can access this command via:

Ribbon	None
Context menu of	Time Plotter – x-axis or y-axis
Shortcut key	S (to switch between the axis views)
Icon	None

Purpose

To align the y-axes vertically in a scroll area.

Description

The following table shows the y-axis views you can select.

Y-Axes View	Description
Vertical fixed	The y-axes are aligned vertically. All y-axes are visible. You cannot change the axis width with the pointer. Use Y-Axes View - Settings to set the width to optimum, maximum, or fixed size.
Vertical scroll	The y-axes are aligned vertically in a scroll area. One (default) or more y-axes are visible. You can change the axis width with the pointer.
Horizontal stacked	The y-axes are arranged horizontally one below the other.

Automation

Where to go from here

Information in this section

[Programming ModelDesk Automation.....](#) 142

Introduces to the automation of plotting and gives an overview of the classes.

[Classes for Plotting.....](#) 146

Provides information on the classes for automating the plotting of simulation results.

Programming ModelDesk Automation

Where to go from here

Information in this section

Automated Plotting of Simulation Signals in MATLAB.....	142
You can plot simulation signals from the simulation model.	
Overview of the Object Model for Plotting.....	144
The object model overview for plotting gives a quick overview of object dependencies.	

Automated Plotting of Simulation Signals in MATLAB

Introduction

You can plot simulation signals from the simulation model.

Features

ModelDesk's tool automation provides the following features:

- Creating configurations and layouts
- Specifying the plotting of signals
- Specifying start triggers and stop triggers

Reference information

The following listings show only short examples of the tool automation.

For an overview of the classes, refer to [Overview of the Object Model for Plotting](#) on page 144.

For a full description of the classes, refer to [Classes for Plotting](#) on page 146.

Accessing the experiment

The following example shows how you can open a project and activate an experiment. Replace the project name and path by your own project in the script below.

```
from win32com.client import Dispatch
# Start ModelDesk, Load project and activate experiment
Application = Dispatch("ModelDesk.Application")
Application.Visible = True
MyProject = Application.OpenProject(r"C:\ExamplePath\Example_001\Example_001.CDP")
MyExperiments = MyProject.Experiments
MyExperiment = MyExperiments.Item(0)
MyActiveExperiment = MyExperiment.Activate(False)
```

A project is opened and an experiment is accessed in this part. For a description, refer to [Handling Projects and Experiments in Python \(ModelDesk Project and Experiment Management !\[\]\(097cdd6c9c875b64d9b8c9a2409491c4_img.jpg\)](#)).

Creating and activating a layout

The following example shows how to create and activate a layout for plotting.

```
# Get the Plotting object
MyPlotting = MyActiveExperiment.Plotting
# Add a new Layout
MyPlotting.Layouts.Add("NewLayout", False, 0)
# Get the new Layout
MyLayoutDocument = MyPlotting.Layouts.ActiveLayouts.Item("NewLayout")
```

The **MyActiveExperiment** object is an instance of the **ActiveExperiment** class. It has the **Plotting** attribute which is an instance of the **ActivePlotting** class. This is assigned to the **MyPlotting** object which gives you access to the settings for plotting

The **MyPlotting** object has the **Layouts** attribute (instance of **LayoutConfiguration** class). The **Add** method of the **Layouts** object creates a new layout (name: "NewLayout") which has one plotter.

The **MyLayoutDocument** object (instance of **LayoutDocument**) is the return value of the **Item** method of **aActiveLayouts** object. It is used to access the layout for the plotter.

Connect Signals to an axis

The following example shows how to select signals of the simulation model for plotting.

```
# Get the Y-Axis of a Time Plotter
MyYAxis = MyLayoutDocument.Instruments[0].ActivePlot.YAxes[0]
# Get the signal collector where the signal to be plotted is connected to.
MySignalCollector = MyPlotting.SignalCollectors.Item('Driver')
# Connect all signals containing "Gear" in its name to Y-Axis
MyFoundSignals = MySignalCollector.SimulationSignals.Find("Gear")
for Signal in MyFoundSignals:
    MyPlottingSignal = MyYAxis.ConnectSignal(Signal)
    # Mark signal for Later saving
    MyPlottingSignal.SaveResults = True
```

The **MyAxis** object (instance of **Axis** class) is used to access the first plotter (index: 0) of the layout.

A simulation model can contain several signal collectors (**ASMSignalInterface** blocks). All signals to be plotted must be connected to the block. The name of the signal collector is the label specified in this block. In the script, the **Driver** signal collector is selected.

The **Find** method of the **SimulationSignals** class searches for all the signals which name contain 'Gear'. The signals that are found, are stored in the **MyFoundSignals** object.

In a For loop, all the signals that are found, are connected to the y-axis of the plotter. The **SaveResults** attributes of the **PlottingSignals** are set to save their values when the capture which include the **PlottingSignals**, is saved.

Plotting and capturing

The following example shows how to start plotting and save the results.

```
import time
```

```
# Start plotting
MyPlotting.Plotting.Start()
# Plot for 15 seconds
time.sleep(15)
# Stop plotting
MyPlotting.Plotting.Stop()
# Save all marked signals (see above) in capture
MyPlotting.Captures.SaveResults("Capture1", False)
```

The **Start** method starts plotting. After 15 seconds, the plotting is stopped. The captured results are saved in the **Capture1** file.

Related topics

Basics

[Handling Projects and Experiments in Python \(ModelDesk Project and Experiment Management !\[\]\(96cc62f861fdd6e50510c0224a756dff_img.jpg\)\)](#)

References

[Classes for Plotting.....](#) 146
[Overview of the Object Model for Plotting.....](#) 144












Overview of the Object Model for Plotting

Introduction

The object model overview for plotting gives a quick overview of object dependencies.

ActivePlotting

The following table gives an overview of the plotting object model:

Class	Level
ActivePlotting on page 152	
LayoutConfiguration on page 180	
ActiveLayouts on page 148	
LayoutDocument on page 184	
Instruments on page 178	
TimePlotter on page 203	
Plot on page 186	
Axes on page 155	
Axis on page 158	
PlottingSignals on page 190	
PlottingSignal on page 191	

Class	Level
XYPlotter on page 210	
Curves on page 175	
Curve on page 171	
CurveAxis on page 172	
PlottingSignal on page 191	
CaptureConfiguration on page 160	
Captures on page 165	
Capture on page 164	
CaptureSignals on page 168	
CaptureSignal on page 167	
SignalCollectors on page 194	
SignalCollector on page 193	
SimulationSignals on page 199	
SimulationSignal on page 197	
TriggerConfiguration on page 206	
ActiveTrigger on page 149	
TriggerConditions on page 205	
TimeCondition on page 202	
SignalCondition on page 196	
PlottingConfiguration on page 187	

Related topics

References

Classes for Plotting.....	146
Enumerations for Plotting.....	212

Classes for Plotting

Introduction

The following classes are used to automate the plotting of simulation results.

Where to go from here

Information in this section

ActiveLayouts	148
To handle the active layouts.	
ActiveTrigger	149
To specify a trigger.	
ActivePlotting	152
To get the active plotting configuration.	
Axes	155
To handle axes.	
Axis	158
To handle the signals for an axis.	
CaptureConfiguration	160
To handle signal capturing.	
Capture	164
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To handle the captures.	
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To handle a signal for capturing.	
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To handle the signals of a capture.	
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To specify a curve.	
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To handle the instruments of a layout.	
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To handle a layout document.	

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To handle the plotting signals.	
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To specify a plotting signal.	
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To access the simulation signals.	
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To access signal collectors of the simulation model.	
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To specify the signal condition for triggering.	
SimulationSignal	197
To access a simulation signal.	
SimulationSignals	199
To access signals of a signal collector of the simulation model.	
TimeCondition	202
To specify the time condition for triggering.	
TimePlotter	203
To specify a Time Plotter.	
TriggerConditions	205
To specify the trigger conditions.	
TriggerConfiguration	206
To configure a trigger.	
XYPlotter	210
To specify an XY Plotter.	
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Information in other sections

Overview of the Object Model for Plotting	144
The object model overview for plotting gives a quick overview of object dependencies.	
Automated Plotting of Simulation Signals in MATLAB	142
You can plot simulation signals from the simulation model.	

ActiveLayouts

Purpose To handle the active layouts.

Where to go from here **Information in this section**

Class Description (ActiveLayouts)	148
To describe the class and its attributes.	
Item	149
To get a specific layout document.	

Class Description (ActiveLayouts)

Syntax `ActiveLayouts = LayoutConfiguration.ActiveLayouts`

Purpose To handle the active layouts.

Attributes The class contains the following attributes:

Attributes	Type	Purpose
Count	Long	To get the number of layouts.

Methods The class contains the following methods:

Method	Purpose
Item	To get a specific layout document. Refer to Item on page 149.

Related topics

References

Class Description (LayoutConfiguration)	180
---	-----

Item

Class ActiveLayouts

Syntax `LayoutDocument = ActiveLayouts.Item(Index)`

Purpose To get a specific layout document.

Parameters The method uses the following parameters:

Parameter	Type	Description
Index	Variant	Index of the required layout document.

Return value The method returns the following parameter:

Type	Description
LayoutDocument ¹⁾	The specific layout document

¹⁾ Refer to [LayoutDocument](#) on page 184.

Related topics

References

[Class Description \(ActiveLayouts\)](#)..... 148

ActiveTrigger

Purpose To specify a trigger.

Where to go from here

Information in this section

[Class Description \(ActiveTrigger\)](#)..... 150
To describe the class and its attributes.

[CreateCopy](#)..... 150
To create a copy of the trigger.

Save.....	151
To save the trigger.	

Class Description (ActiveTrigger)

Syntax `ActiveTrigger = TriggerConfiguration.ActiveTrigger`

Purpose To specify a trigger.

Attributes The class contains the following attributes:

Attributes	Type	Purpose
Enabled	Boolean	To get/set the enabling status of the trigger.
Conditions	TriggerConditions ¹⁾	To get the trigger conditions.

¹⁾ Refer to [TriggerConditions](#) on page 205.

Methods The class contains the following methods:

Method	Purpose
CreateCopy	To create a copy of the trigger. Refer to CreateCopy on page 150.
Save	To save the trigger. Refer to Save on page 151.

Related topics

References

Class Description (TriggerConfiguration).....	206
---	---------------------

CreateCopy

Class ActiveTrigger

Syntax `ActiveTrigger.CreateCopy(FileName, OverwriteExisting)`

Purpose	To create a copy of the trigger.										
Parameters	The method uses the following parameters:										
	<table><tr><th>Parameter</th><th>Type</th><th>Description</th></tr><tr><td>FileName</td><td>String</td><td>File name of the copy</td></tr><tr><td>OverwriteExisting</td><td>Boolean</td><td>Overwrites an existing trigger if true</td></tr></table>	Parameter	Type	Description	FileName	String	File name of the copy	OverwriteExisting	Boolean	Overwrites an existing trigger if true	
Parameter	Type	Description									
FileName	String	File name of the copy									
OverwriteExisting	Boolean	Overwrites an existing trigger if true									
Return value	—										
Related topics	References										
	Class Description (ActiveTrigger)..... 150										

Save

Class	ActiveTrigger	
Syntax	<code>ActiveTrigger.Save()</code>	
Purpose	To save the trigger.	
Parameters	—	
Return value	—	
Related topics	References	
	Class Description (ActiveTrigger)..... 150	

ActivePlotting

Purpose To get the active plotting configuration.

Where to go from here Information in this section

Class Description (ActivePlotting).....	152
To describe the class and its attributes.	
Save.....	153
To save the settings of the active plotting.	
SaveAs.....	154
To save the settings of the active plotting under a new name.	

Class Description (ActivePlotting)

Syntax `ActivePlotting = ActiveExperiment.Plotting`

Purpose To get the active plotting configuration.

Attributes The class contains the following attributes:

Attributes	Type	Purpose
Name	String	To get the name of the plotting.
Comment	String	To get/set a comment for the plotting.
Author	String	To get/set the author of the plotting.
Downsampling	Long	To get/set the downsampling factor.
SignalBufferSize	Long	To get/set the signal buffer size.
Layouts	LayoutConfiguration ¹⁾	To get the object for configuring layouts.
Captures	CaptureConfiguration ²⁾	To get the object for configuring captures.
SignalCollectors	SignalCollectors ³⁾	To get the signal collectors.
StartTriggerConfiguration	TriggerConfiguration ⁴⁾	To get the object for configuring a start trigger.
StopTriggerConfiguration	TriggerConfiguration ⁴⁾	To get the object for configuring a stop trigger.

Attributes	Type	Purpose
Plotting	PlottingConfiguration ⁵⁾	To get the object for configuring plotting.

¹⁾ Refer to [LayoutConfiguration](#) on page 180.

²⁾ Refer to [CaptureConfiguration](#) on page 160.

³⁾ Refer to [SignalCollectors](#) on page 194.

⁴⁾ Refer to [TriggerConfiguration](#) on page 206.

⁵⁾ Refer to [PlottingConfiguration](#) on page 187.

Methods

The class contains the following methods:

Method	Purpose
Save	To save the settings of the active plotting. Refer to Save on page 153.
SaveAs	To save the settings of the active plotting under a new name. Refer to SaveAs on page 154.

Related topics

References

[Class Description \(ActiveExperiment\) \(MotionDesk Project and Experiment Management !\[\]\(4b7a79268f6ba26c1471d4232fffa85a_img.jpg\)](#))
[Properties \(Configuration\)..... 65](#)

Save

Class ActivePlotting

Syntax `ActivePlotting.Save()`

Purpose To save the settings of the active plotting.

Parameters —

Return value

—

Related topics**References**[Class Description \(ActivePlotting\)..... 152](#)

SaveAs

Class

ActivePlotting

Syntax

```
ActivePlotting = ActivePlotting.SaveAs(FileName, OverwriteExisting)
```

Purpose

To save the settings of the active plotting under a new name.

Parameters

The method uses the following parameters:

Parameter	Type	Description
FileName	String	The new file name.
OverwriteExisting	Boolean	Saving the active plotting configuration overwrites an existing file called FileName if true.

Return value

The method returns the following parameter:

Type	Description
ActivePlotting ¹⁾	The ActivePlotting object.

¹⁾ Refer to [ActivePlotting](#) on page 152.**Related topics****References**[Class Description \(ActivePlotting\)..... 152](#)

Axes

Purpose To handle axes.

Where to go from here Information in this section

Class Description (Axes)	155
To describe the class and its attributes.	
Add	156
To add an axis.	
Item	156
To get a specific axis.	
Remove	157
To remove an axis.	

Class Description (Axes)

Syntax `Axes = TimePlotter.ActivePlot.YAxes`

Purpose To handle axes.

Attributes The class contains the following attributes:

Attributes	Type	Purpose
Count	Long	To get the number of axes.

Methods The class contains the following methods:

Method	Purpose
Add	To add an axis. Refer to Add on page 156.
Item	To get a specific axis. Refer to Item on page 156.
Remove	To remove an axis. Refer to Remove on page 157.

Related topics**References**[Class Description \(TimePlotter\).....](#) 203

Add

Class

Axes

Syntax

```
Axis = Axes.Add()
```

Purpose

To add an axis.

Parameters

—

Return value

The method returns the following parameter:

Type	Description
Axis ¹⁾	The added axis

¹⁾ Refer to [Axis](#) on page 158.**Related topics****References**[Class Description \(Axes\).....](#) 155

Item

Class

Axes

Syntax

```
Axis = Axes.Item(Index)
```

Purpose To get a specific axis.

Parameters The method uses the following parameters:

Parameter	Type	Description
Index	Variant	The index of the specific axis.

Return value The method returns the following parameter:

Type	Description
Axis ¹⁾	The specific axis

¹⁾ Refer to [Axis](#) on page 158.

Related topics

References

[Class Description \(Axes\).....](#) 155

Remove

Class Axes

Syntax `Axes.Remove(Axis)`

Purpose To remove an axis.

Parameters The method uses the following parameters:

Parameter	Type	Description
Axis	Axis ¹⁾	The axis to be removed

¹⁾ Refer to [Axis](#) on page 158.

Return value	—
Related topics	References
	Class Description (Axes)..... 155

Axis

Purpose	To handle the signals for an axis.
Where to go from here	Information in this section
	Class Description (Axis)..... 158 To describe the class and its attributes.
	ConnectSignal..... 159 To connect a signal to the axis.

Class Description (Axis)

Syntax	<code>Axis = Plot.XAxis</code>
	or
	<code>Axis = Plot.YAxes.Item()</code>
	or
	<code>Axis = Plot.YAxes.Add()</code>

Purpose	To handle the signals for an axis.
---------	------------------------------------

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
Signals	PlottingSignals ¹⁾	To get the signals connected to the axis.

¹⁾ Refer to [PlottingSignals](#) on page 190.

Methods

The class contains the following methods:

Method	Purpose
ConnectSignal	To connect a signal to the axis. Refer to ConnectSignal on page 159.

Related topics**References**

[Class Description \(Plot\)](#)..... 187

ConnectSignal

Class

Axis

Syntax

```
PlottingSignal = Axis.ConnectSignal(Signal)
```

Purpose

To connect a signal to the axis.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Signal	Variant	Signal to be plotted. You can specify the path of a signal or an instance of CaptureSignal or SimulationSignal.

Return value

The method returns the following parameter:

Type	Description
PlottingSignal ¹⁾	The signal to be plotted

¹⁾ Refer to [PlottingSignal](#) on page 191.

Related topics**References**

[Class Description \(Axis\)](#)..... 158

CaptureConfiguration

Purpose

To handle signal capturing.

Where to go from here**Information in this section**

[Class Description \(CaptureConfiguration\)](#)..... 160
To describe the class and its attributes.

[CloseCapture](#)..... 161
To close a capture.

[OpenCapture](#)..... 162
To open a capture.

[Remove](#)..... 163
To remove a capture.

[SaveResults](#)..... 163
To save the results of a capture.

Class Description (CaptureConfiguration)

Syntax

```
CaptureConfiguration = ActivePlotting.Capture
```

Purpose

To handle signal capturing.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
AvailableElements	Strings	To get the available elements.
OpenCaptures	Captures ¹⁾	To get the open captures.

¹⁾ Refer to [Captures](#) on page 165.

Methods

The class contains the following methods:

Method	Purpose
CloseCapture	To close a capture. Refer to CloseCapture on page 161.
OpenCapture	To open a capture. Refer to OpenCapture on page 162.
Remove	To remove a capture. Refer to Remove on page 163.
SaveResults	To save the results of a capture. Refer to SaveResults on page 163.

Related topics**References**

[Class Description \(ActivePlotting\)](#)..... 152

CloseCapture

Class

CaptureConfiguration

Syntax

```
CaptureConfiguration.CloseCapture(Capture)
```

Purpose

To close a capture.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Capture	Variant	The capture to be closed.

Return value

—

Related topics**References**[Class Description \(CaptureConfiguration\)..... 160](#)

OpenCapture

Class

CaptureConfiguration

Syntax`Capture = CaptureConfiguration.OpenCapture(Capture)`**Purpose**

To open a capture.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Capture	Variant	The capture to be opened.

Return value

The method returns the following parameter:

Type	Description
Capture ¹⁾	The opened capture

¹⁾ Refer to [Capture](#) on page 164.**Related topics****References**[Class Description \(CaptureConfiguration\)..... 160](#)

Remove

Class CaptureConfiguration

Syntax `CaptureConfiguration.Remove(CaptureName)`

Purpose To remove a capture.

Parameters The method uses the following parameters:

Parameter	Type	Description
CaptureName	String	The name of the capture to be removed

Return value –

Related topics

References

[Class Description \(CaptureConfiguration\)..... 160](#)

SaveResults

Class CaptureConfiguration

Syntax `CaptureConfiguration.SaveResults(CaptureName, OverwriteExisting)`

Purpose To save the results of a capture.

Description The methods saves all the measured value of the appropriate signals. The values of invalid signals, for example, unconnected signals, are not saved.

Parameters

The method uses the following parameters:

Parameter	Type	Description
CaptureName	String	The name of the capture to be saved.
OverwriteExisting	Boolean	True to overwrite an existing capture with the same name.

Return value

—

Related topics**References**

[Class Description \(CaptureConfiguration\).....](#) 160

Capture

Purpose

To handle signals of a capture.

Class Description (Capture)

Syntax

```
Capture = Captures.Item()
```

Purpose

To handle signals of a capture.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
Name	String	To get the name of the capture.
Signals	CaptureSignals ¹⁾	To get the signals of the capture.

¹⁾ Refer to [CaptureSignals](#) on page 168.

Methods	—
Related topics	References <div> Class Description (Captures)..... 165 </div>

Captures

Purpose	To handle the captures.
Where to go from here	Information in this section <div> Class Description (Captures)..... 165 To describe the class and its attributes. Item..... 166 To get a specific capture. </div>

Class Description (Captures)

Syntax

Capture = CaptureConfiguration.OpenCaptures

Purpose

To handle the captures.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
Count	Long	To get the number of captures.

Methods

The class contains the following methods:

Method	Purpose
Item	To get a specific capture. Refer to Item on page 166.

Related topics**References**

[Class Description \(CaptureConfiguration\).....](#) 160

Item

Class

Captures

Syntax

```
Capture = Captures.Item(Index)
```

Purpose

To get a specific capture.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Index	Variant	The index of the specific capture

Return value

The method returns the following parameter:

Type	Description
Capture ¹⁾	The specific capture

¹⁾ Refer to [Capture](#) on page 164.

Related topics**References**

[Class Description \(Captures\).....](#) 165

CaptureSignal

Purpose To handle a signal for capturing.

Where to go from here **Information in this section**

Class Description (CaptureSignal).....	167
To describe the class and its attributes.	
Connect.....	168
To connect a signal to an axis of a plotter.	

Class Description (CaptureSignal)

Syntax `CaptureSignal = CaptureSignals.Item()`

Purpose To handle a signal for capturing.

Attributes The class contains the following attributes:

Attributes	Type	Purpose
Name	String	To get the name of the signal.
Path	String	To get the path of the signal.

Methods The class contains the following methods:

Method	Purpose
Connect	To connect a signal to an axis of a plotter. Refer to Connect on page 168.

Related topics

References

Class Description (CaptureSignals).....	169
---	---------------------

Connect

Class CaptureSignal

Syntax `PlottingSignal = CaptureSignal.Connect(Axis)`

Purpose To connect a signal to an axis of a plotter.

Parameters The method uses the following parameters:

Parameter	Type	Description
Axis	Axis ¹⁾	Axis to which the signal is connected

¹⁾ Refer to [Axis](#) on page 158.

Return value The method returns the following parameter:

Type	Description
PlottingSignal ¹⁾	A PlottingSignal object (signal connected to an axis of a plotter)

¹⁾ Refer to [PlottingSignal](#) on page 191.

Related topics

References

[Class Description \(CaptureSignal\)..... 167](#)

CaptureSignals

Purpose To handle the signals of a capture.

Where to go from here **Information in this section**

[Class Description \(CaptureSignals\)..... 169](#)
To describe the class and its attributes.

Item.....	170
To get a specific capture.	
Find.....	170
To find signals by using a given string.	

Class Description (CaptureSignals)

Syntax

```
CaptureSignals = Capture.Signals
```

Or

```
CaptureSignals = CaptureSignals.Find()
```

Purpose

To handle the signals of a capture.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
Count	Long	To get the number of signals.

Methods

The class contains the following methods:

Method	Purpose
Item	To get a specific capture. Refer to Item on page 170.
Find	To find signals by using a given string. Refer to Find on page 170.

Related topics

References

Class Description (Capture).....	164
--	---------------------

Item

Class CaptureSignals

Syntax `CaptureSignal = CaptureSignals.Item(Index)`

Purpose To get a specific capture.

Parameters The method uses the following parameters:

Parameter	Type	Description
Index	Variant	Index of the specific signal

Return value The method returns the following parameter:

Type	Description
CaptureSignal ¹⁾	The specific signal

¹⁾ Refer to [CaptureSignal](#) on page 167.

Related topics

References

[Class Description \(CaptureSignals\)..... 169](#)

Find

Class CaptureSignals

Syntax `CaptureSignals = CaptureSignals.Find(SubString)`

Purpose To find signals by using a given string.

Parameters

The method uses the following parameters:

Parameter	Type	Description
SubString	String	String to search for in the names of CaptureSignal objects

Return value

The method returns the following parameter:

Type	Description
CaptureSignals ¹⁾	A CaptureSignals object that includes the CapturesSignal objects which names contain the given string.

¹⁾ Refer to [CaptureSignals](#) on page 168.

Related topics**References**

[Class Description \(CaptureSignals\).....](#) 169

Curve

Purpose

To specify a curve.

Class Description (Curve)

Syntax

```
Curve = Curves.Item(Variant Index)
```

Or

```
Curve = Curves.Add()
```

Purpose

To specify a curve.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
XAxis	CurveAxis ¹⁾	To get the x-axis.
YAxis	CurveAxis ¹⁾	To get the y-axis.

¹⁾ Refer to [CurveAxis](#) on page 172.

Methods

—

Related topics**References**

[Class Description \(Curves\)..... 175](#)

CurveAxis

Purpose

To specify the axis of a curve.

Where to go from here**Information in this section**

[Class Description \(CurveAxis\)..... 172](#)
To describe the class and its attributes.

[ConnectSignal..... 173](#)
To connect a signal to the axis.

[Item..... 174](#)
To get a specific plotting signal.

Class Description (CurveAxis)

Syntax

```
CurveAxis = Curve.XAxis
```

Or

```
CurveAxis = Curve.YAxis
```

Purpose	To specify the axis of a curve.						
Attributes	–						
Methods	<p>The class contains the following methods:</p> <table border="1"> <thead> <tr> <th>Method</th><th>Purpose</th></tr> </thead> <tbody> <tr> <td>ConnectSignal</td><td>To connect a signal to the axis. Refer to ConnectSignal on page 173.</td></tr> <tr> <td>Item</td><td>To get a specific plotting signal. Refer to Item on page 174.</td></tr> </tbody> </table>	Method	Purpose	ConnectSignal	To connect a signal to the axis. Refer to ConnectSignal on page 173.	Item	To get a specific plotting signal. Refer to Item on page 174.
Method	Purpose						
ConnectSignal	To connect a signal to the axis. Refer to ConnectSignal on page 173.						
Item	To get a specific plotting signal. Refer to Item on page 174.						
Related topics	<p>References</p> <table border="1"> <tbody> <tr> <td>Class Description (Curve).....</td><td>171</td></tr> </tbody> </table>	Class Description (Curve)	171				
Class Description (Curve)	171						

ConnectSignal

Class

CurveAxis

Syntax

PlottingSignal = CurveAxis.ConnectSignal(Signal)

Purpose

To connect a signal to the axis.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Signal	Variant	Signal to be plotted. You can specify the path of a signal or an instance of CaptureSignal or SimulationSignal.

Return value

The method returns the following parameter:

Type	Description
PlottingSignal ¹⁾	The connected signal

¹⁾ Refer to [PlottingSignal](#) on page 191.

Related topics**References**[Class Description \(CurveAxis\)..... 172](#)

Item

Class

CurveAxis

Syntax

```
PlottingSignal = CurveAxis.Item(Index)
```

Purpose

To get a specific plotting signal.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Index	Variant	Index of the specific plotting signal

Return value

The method returns the following parameter:

Type	Description
PlottingSignal ¹⁾	The specific plotting signal.

¹⁾ Refer to [PlottingSignal](#) on page 191.**Related topics****References**[Class Description \(CurveAxis\)..... 172](#)

Curves

Purpose To specify the curves of an XY Plotter.

Where to go from here

Information in this section

Class Description (Curves)	175
To describe the class and its attributes.	
Add	176
To add a curve.	
Item	176
To get a specific curve.	
Remove	177
To remove a curve.	

Class Description (Curves)

Syntax `Curves = XYPlotter.Curves`

Purpose To specify the curves of an XY Plotter.

Attributes The class contains the following attributes:

Attributes	Type	Purpose
Count	Long	To get the number of curves.

Methods The class contains the following methods:

Method	Purpose
Add	To add a curve. Refer to Add on page 176.
Item	To get a specific curve. Refer to Item on page 176.
Remove	To remove a curve. Refer to Remove on page 177.

Methods

—

Related topics**References**

[Class Description \(XYPlotter\).....](#) 210

Add

Class

Curves

Syntax

```
Curve = Curves.Add()
```

Purpose

To add a curve.

Parameters

—

Return value

The method returns the following parameter:

Type	Description
Curve ¹⁾	The added curve

¹⁾ Refer to [Curve](#) on page 171.

Related topics**References**

[Class Description \(Curves\).....](#) 175

Item

Class

Curves

Syntax

```
Curve = Curves.Item(Index)
```


Purpose To get a specific curve.

Parameters The method uses the following parameters:

Parameter	Type	Description
Index	Variant	Index of the specific curve

Return value The method returns the following parameter:

Type	Description
Curve ¹⁾	The specific curve

¹⁾ Refer to [Curve](#) on page 171.

Related topics

References

[Class Description \(Curves\)..... 175](#)

Remove

Class Curves

Syntax `Curves.Remove(Curve)`

Purpose To remove a curve.

Parameters The method uses the following parameters:

Parameter	Type	Description
Curve	Curve ¹⁾	Curve to be removed

¹⁾ Refer to [Curve](#) on page 171.

Return value

—

Related topics**References**[Class Description \(Curves\)..... 175](#)

Instruments

Purpose

To handle the instruments of a layout.

Where to go from here**Information in this section**[Class Description \(Instruments\)..... 178](#)

To describe the class and its attributes.

[Item..... 179](#)

To get a specific instrument.

Class Description (Instruments)

Syntax`Instruments = LayoutDocument.Instruments`**Purpose**

To handle the instruments of a layout.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
Count	Long	To get the number of instruments of the layout.

Methods

The class contains the following methods:

Method	Purpose
Item	To get a specific instrument. Refer to Item on page 179.

Related topics**References**[Class Description \(LayoutDocument\).....](#) 184

Item

Class

Instruments

Syntax

```
Plotter = Instruments.Item(Index)
```

Purpose

To get a specific instrument.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Index	Variant	Index of the instrument

Return value

The method returns the following parameter:

Type	Description
XYPlotter ¹⁾ or TimePlotter ²⁾	The specific instrument (XY Plotter or Time Plotter)

¹⁾ Refer to [XYPlotter](#) on page 210.²⁾ Refer to [TimePlotter](#) on page 203.**Related topics****References**[Class Description \(Instruments\).....](#) 178

LayoutConfiguration

Purpose To configure the layout for plotting.

Where to go from here

Information in this section

Class Description (LayoutConfiguration)	180
To describe the class and its attributes.	
ActivateLayout	181
To activate a layout.	
Add	182
To add a new layout.	
DeactivateLayout	182
To deactivate a layout.	
Remove	183
To remove a layout.	

Class Description (LayoutConfiguration)

Syntax

```
LayoutConfiguration = ActivePlotting.Layouts
```

Purpose To configure the layout for plotting.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
ActiveLayouts	ActiveLayouts ¹⁾	To get the active layout objects.
AvailableElements	Strings	To get all the available elements.
ConnectedSignals	PlottingSignals ²⁾	To get the connected signals.

¹⁾ Refer to [ActiveLayouts](#) on page 148.

²⁾ Refer to [PlottingSignals](#) on page 190.

Methods

The class contains the following methods:

Method	Purpose
ActivateLayout	To activate a layout. Refer to ActivateLayout on page 181.
Add	To add a new layout. Refer to Add on page 182.
DeactivateLayout	To deactivate a layout. Refer to DeactivateLayout on page 182.
Remove	To remove a layout. Refer to Remove on page 183.

Related topics**References**

[Class Description \(ActivePlotting\)](#)..... 152

ActivateLayout

Class

LayoutConfiguration

Syntax

```
LayoutConfiguration.ActivateLayout(variant Layout)
```

Purpose

To activate a layout.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Layout	Variant	The specified layout to be activated

Return value

—

Related topics**References**

[Class Description \(LayoutConfiguration\)](#)..... 180

Add

Class LayoutConfiguration

Syntax `LayoutConfiguration.Add(LayoutName, OverwriteExisting, Configuration)`

Purpose To add a new layout.

Parameters The method uses the following parameters:

Parameter	Type	Description
LayoutName	String	The name of the new layout
OverwriteExisting	Boolean	Saving the layout configuration overwrites an existing file if true.
Configuration	LayoutConfigurations ¹⁾	The layout configuration

¹⁾ Refer to [LayoutConfigurations](#) on page 212.

Return value —

Related topics

References

[Class Description \(LayoutConfiguration\)](#)..... 180

DeactivateLayout

Class LayoutConfiguration

Syntax `LayoutConfiguration.DeactivateLayout(Layout)`

Purpose To deactivate a layout.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Layout	Variant	The layout to be deactivated.

Return value

—

Related topics**References**

[Class Description \(LayoutConfiguration\).....](#) 180

Remove

Class

LayoutConfiguration

Syntax

```
LayoutConfiguration.Remove(LayoutName)
```

Purpose

To remove a layout.

Parameters

The method uses the following parameters:

Parameter	Type	Description
LayoutName	String	The name of the layout to be removed

Return value

—

Related topics**References**

[Class Description \(LayoutConfiguration\).....](#) 180

LayoutDocument

Purpose To handle a layout document.

Where to go from here

Information in this section

Class Description (LayoutDocument)	184
To describe the class and its attributes.	
Close	185
To close the layout document.	
CreateCopy	185
To create a copy of the layout document.	
Save	186
To save the layout document.	

Class Description (LayoutDocument)

Syntax `LayoutDocument = ActiveLayouts.Item()`

Purpose To handle a layout document.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
Name	String	To get the name of the layout document.
Instruments	Instruments ¹⁾	To get the instruments of the layout. You can access the instruments only if the layout is open.

¹⁾ Refer to [Instruments](#) on page 178.

Methods

The class contains the following methods:

Method	Purpose
Close	To close the layout document. Refer to Close on page 185.
CreateCopy	To create a copy of the layout document. Refer to CreateCopy on page 185.
Save	To save the layout document. Refer to Save on page 186.

Related topics**References**

[Class Description \(ActiveLayouts\).....](#) 148

Close

Class

LayoutDocument

Syntax

```
LayoutDocument.Close( SaveChanges )
```

Purpose

To close the layout document.

Parameters

The method uses the following parameters:

Parameter	Type	Description
SaveChanges	Boolean	Saves the layout document when it is closed if true

Return value

—

Related topics**References**

[Class Description \(LayoutDocument\).....](#) 184

CreateCopy

Class

LayoutDocument

Syntax

```
LayoutDocument.CreateCopy(FileName, OverwriteExisting)
```

Purpose

To create a copy of the layout document.

Parameters

The method uses the following parameters:

Parameter	Type	Description
FileName	String	The file name of the copy.
OverwriteExisting	Boolean	Overwrites an existing layout document if true.

Return value

—

Related topics**References**

[Class Description \(LayoutDocument\)..... 184](#)

Save

Class

LayoutDocument

Syntax

```
LayoutDocument.Save()
```

Purpose

To save the layout document.

Parameters

—

Return value

—

Related topics**References**

[Class Description \(LayoutDocument\)..... 184](#)

Plot

Purpose

To specify the plot of a Time Plotter.

Class Description (Plot)

Syntax

```
Plot = TimePlotter.ActivePlot
```

Purpose

To specify the plot of a Time Plotter.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
YAxes	Axes ¹⁾	To get the y axes of the plotter.

¹⁾ Refer to [Axes](#) on page 155.

Methods

—

Related topics

References

[Class Description \(TimePlotter\)](#)..... 203

PlottingConfiguration

Purpose

To start or stop the plotting.

Where to go from here

Information in this section

Class Description (PlottingConfiguration)	188
To describe the class and its attributes.	
Start	188
To start plotting.	
Stop	189
To stop plotting.	

Class Description (PlottingConfiguration)

Syntax

```
PlottingConfiguration = ActivePlotting.Plotting
```

Purpose

To start or stop the plotting.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
State	PlottingStates ¹⁾	To get the plotting state.

¹⁾ Refer to [PlottingStates](#) on page 212.

Methods

The class contains the following methods:

Method	Purpose
Start	To start plotting. Refer to Start on page 188.
Stop	To stop plotting. Refer to Stop on page 189.

Related topics

References

[Class Description \(ActivePlotting\)](#)..... 152

Start

Class

PlottingConfiguration

Syntax

```
RetVal = PlottingConfiguration.Start()
```

Purpose

To start plotting.

Parameters

—

Return value

The method returns the following parameter:

Type	Description
Boolean	True if successful started.

Related topics**References**

Class Description (PlottingConfiguration)	188
Stop	189

Stop

Class

PlottingConfiguration

Syntax

```
RetVal = PlottingConfiguration.Stop()
```

Purpose

To stop plotting.

Parameters

—

Return value

The method returns the following parameter:

Type	Description
Boolean	True if successful stopped

Related topics**References**

Class Description (PlottingConfiguration)	188
Start	188

PlottingSignals

Purpose To handle the plotting signals.

Where to go from here **Information in this section**

Class Description (PlottingSignals).....	190
To describe the class and its attributes.	
Item.....	191
To get a specific plotting signal.	

Class Description (PlottingSignals)

Syntax `PlottingSignals = Axis.Signals`

Purpose To handle the plotting signals.

Attributes The class contains the following attributes:

Attributes	Type	Purpose
Count	Long	To get the number of plotting signals.

Methods The class contains the following methods:

Method	Purpose
Item	To get a specific plotting signal. Refer to Item on page 191.

Related topics

References

Class Description (Axis).....	158
---	---------------------

Item

Class PlottingSignals

Syntax `PlottingSignal = PlottingSignals.Item(Index)`

Purpose To get a specific plotting signal.

Parameters The method uses the following parameters:

Parameter	Type	Description
Index	Variant	The index of the plotting signal

Return value The method returns the following parameter:

Type	Description
PlottingSignal ¹⁾	The specific plotting signal

¹⁾ Refer to [PlottingSignal](#) on page 191.

Related topics

References

[Class Description \(PlottingSignals\).....](#) 190

PlottingSignal

Purpose To specify a plotting signal.

Where to go from here

Information in this section

[Class Description \(PlottingSignal\).....](#) 192
To describe the class and its attributes.

[Disconnect.....](#) 192
To disconnect the plotting signal from the axis.

Class Description (PlottingSignal)

Syntax

```
PlottingSignal = PlottingsSignals.Item()
```

Or

```
PlottingSignal = CurveAxis.ConnectSignal()
```

Or

```
PlottingSignal = Axis.ConnectSignal()
```

Purpose

To specify a plotting signal.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
SaveResult	Boolean	To get/set the flag that the values of the plotting signal is saved.
Name	String	To get the name of the plotting signal.
Path	String	To get the path of the plotting signal.

Methods

The class contains the following methods:

Method	Purpose
Disconnect	To disconnect the plotting signal from the axis. Refer to Disconnect on page 192.

Related topics

References

Class Description (Axis)	158
Class Description (CurveAxis)	172
Class Description (PlottingSignals)	190

Disconnect

Class

PlottingSignal

Syntax

```
PlottingSignal.Disconnect()
```


Purpose	To disconnect the plotting signal from the axis.
Description	When a signal is disconnected, the PlottingSignal becomes invalid.
Parameters	–
Return value	–
Related topics	<div>References</div> <div> Class Description (PlottingSignal)..... 192 </div>

SignalCollector

Purpose	To access the simulation signals.
----------------	-----------------------------------

Class Description (SignalCollector)

Syntax	<code>SignalCollector = SignalCollectors.Item(Index)</code>
---------------	---

Purpose	To access the simulation signals.
----------------	-----------------------------------

Attributes	The class contains the following attributes:
-------------------	--

Attributes	Type	Purpose
Name	String	To get the name of the signal collector.
SimulationSignals	SimulationSignals ¹⁾	To get the simulation signals.

¹⁾ Refer to [SimulationSignals](#) on page 199.

Methods

—

Related topics**References**[SignalCollectors.....](#) 194

SignalCollectors

Purpose

To access signal collectors of the simulation model.

Where to go from here**Information in this section**[Class Description \(SignalCollectors\).....](#) 194

To describe the class and its attributes.

[Item.....](#) 195

To access a signal collector.

Class Description (SignalCollectors)

Syntax`SignalCollectors = ActivePlotting.SignalCollectors`**Purpose**

To access the signal collectors.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
Count	LONG	To get the number of signal collectors.

Methods

The class contains the following methods:

Method	Purpose
Item	To get a specific signal collector. Refer to Item on page 195.

Related topics**References**[ActivePlotting.....](#) 152

Item

Class

SignalCollectors

Syntax`SignalCollector = SignalCollectors.Item(Index)`**Purpose**

To access a signal collector.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Index	VARIANT	The index number or name of the signal collector.

Return value

The method returns the following parameter:

Type	Description
SignalCollector ¹⁾	The specific signal collector.

¹⁾ Refer to [SignalCollector](#) on page 193.**Related topics****References**[Class Description \(SignalCollectors\).....](#) 194
[SignalCollector.....](#) 193

SignalCondition

Purpose To specify the signal condition for triggering.

Where to go from here **Information in this section**

Class Description (SignalCondition)	196
To describe the class and its attributes.	
Activate	197
To activate the condition.	

Class Description (SignalCondition)

Syntax `SignalCondition = TriggerConditions.Signal`

Purpose To specify the signal condition for triggering.

Attributes The class contains the following attributes:

Attributes	Type	Purpose
EdgeType	TriggerEdgeTypes ¹⁾	To get/set edge type for triggering.
Level	Double	To get/set the level (value) when it is triggered.
Delay	Double	To get/set the level (value) when it is triggered.
Trigger	SimulationSignal ²⁾	To get/set the simulation signal which is used for triggering.
IsActive	Boolean	To get the active state of the condition.

¹⁾ Refer to [TriggerEdgeTypes](#) on page 212.

²⁾ Refer to [SimulationSignal](#) on page 197.

Methods The class contains the following methods:

Method	Purpose
Activate	To activate the condition. Refer to Activate on page 197.

Related topics**References**

[Class Description \(TriggerConditions\).....](#) 205

Activate

Class

SignalCondition

Syntax`SignalCondition.Activate()`

Purpose

To activate the condition.

Parameters

—

Return value

—

Related topics**References**

[Class Description \(SignalCondition\).....](#) 196

SimulationSignal

Purpose

To access a simulation signal.

Where to go from here**Information in this section**

[Class Description \(SimulationSignal\).....](#) 198
To describe the class and its attributes.

[Connect](#)..... 198
To connect a simulation signal to an axis of a plotter.

Class Description (SimulationSignal)

Syntax `SimulationSignal = SimulationSignals.Item()`

Purpose To access a simulation signal.

Attributes The class contains the following attributes:

Attributes	Type	Purpose
Name	String	To get the name of the simulation signal.
Path	String	To get the path of the simulation signal.

Methods The class contains the following methods:

Method	Purpose
Connect	To connect a simulation signal to an axis of a plotter. Refer to Connect on page 198.

Related topics

References

[Class Description \(SimulationSignals\)](#)..... 200

Connect

Class SimulationSignal

Syntax `PlottingSignal = SimulationSignal.Connect(Axis)`

Purpose To connect a simulation signal to an axis of a plotter.

Parameters The method uses the following parameters:

Parameter	Type	Description
Axis	Variant	The axis of the plotter to which the simulation signal is connected

Return value The method returns the following parameter:

Type	Description
PlottingSignal ¹⁾	The plotting signal (simulation signal connected to a plotter)

¹⁾ Refer to [PlottingSignal](#) on page 191.

Related topics

References

[Class Description \(SimulationSignal\)](#)..... 198

SimulationSignals

Purpose To access signals of a signal collector of a simulation model.

Where to go from here

Information in this section

[Class Description \(SimulationSignals\)](#)..... 200
To describe the class and its attributes.

[Find](#)..... 200
To find simulation signals by using a given string.

[Item](#)..... 201
To access a specific simulation signal.

Class Description (SimulationSignals)

Syntax

```
SimulationSignals = SignalCollector.SimulationSignals
```

Purpose

To access signals of a signal collector.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
Count	Long	To get the number of simulation signals.

Methods

The class contains the following methods:

Method	Purpose
Find	To find simulation signals by using a given string. Refer to Find on page 200.
Item	To access a specific simulation signal. Refer to Item on page 201.

Related topics

References

[SignalCollector..... 193](#)

Find

Class

SimulationSignals

Syntax

```
SimulationSignals = SimulationSignals.Find(SubString)
```

Purpose

To find simulation signals by using a given string.

Parameters

The method uses the following parameters:

Parameter	Type	Description
SubString	String	String to search for in the names of SimulationSignal objects

Return value

The method returns the following parameter:

Type	Description
SimulationSignals ¹⁾	A SimulationSignals object that includes the SimulationSignal objects which names contain the given string.

¹⁾ Refer to [SimulationSignals](#) on page 199.

Related topics**References**

[Class Description \(SimulationSignals\)..... 200](#)

Item

Class

SimulationSignals

Syntax

```
SimulationSignal = SimulationSignals.Item(Index)
```

Purpose

To access a specific simulation signal.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Index	Variant	Index of the specific signal.

Return value

The method returns the following parameter:

Type	Description
SimulationSignal ¹⁾	The specific simulation signal.

¹⁾ Refer to [SimulationSignal](#) on page 197.

Related topics**References**

[Class Description \(SimulationSignals\)..... 200](#)

TimeCondition

Purpose To specify the time condition for triggering.

Where to go from here

Information in this section

Class Description (TimeCondition).....	202
To describe the class and its attributes.	
Activate.....	203
To activate the condition.	

Class Description (TimeCondition)

Syntax

```
TimeCondition = TriggerConditions.Time
```

Purpose

To specify the time condition for triggering.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
Time	Double	To get/set the time when it is triggered.
IsActive	Boolean	To get the active state of the condition.

Methods

The class contains the following methods:

Method	Purpose
Activate	To activate the condition. Refer to Activate on page 203.

Related topics

References

Class Description (TriggerConditions).....	205
--	---------------------

Activate

Class	TimeCondition
Syntax	<code>TimeCondition.Activate()</code>
Purpose	To activate the condition.
Parameters	–
Return value	–
Related topics	References Class Description (TimeCondition)..... 202

TimePlotter

Purpose	To specify a Time Plotter.
Where to go from here	Information in this section Class Description (TimePlotter)..... 203 To describe the class and its attributes. ChangeInstrumentType..... 204 To change the instrument type.

Class Description (TimePlotter)

Syntax	<code>TimePlotter = Instruments.Item()</code>
---------------	---

Purpose To specify a Time Plotter.

Attributes The class contains the following attributes:

Attributes	Type	Purpose
Type	InstrumentTypes ¹⁾	To get the instrument type.
ActivePlot	Plot ²⁾	To get the active plot.

¹⁾ Refer to [InstrumentTypes](#) on page 212.

²⁾ Refer to [Plot](#) on page 186.

Methods The class contains the following methods:

Method	Purpose
ChangeInstrumentType	To change the instrument type. Refer to ChangeInstrumentType on page 211.

Related topics

References

[Class Description \(Instruments\)](#)..... 178

ChangeInstrumentType

Class TimePlotter

Syntax `TimePlotter.ChangeInstrumentType(Type)`

Purpose To change the instrument type.

Description The return value is a new instrument. The current instrument becomes invalid.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Type	InstrumentTypes ¹⁾	The type of the new instrument

¹⁾ Refer to [InstrumentTypes](#) on page 212.

Return value

The method returns the following parameter:

Type	Description
XYPlotter ¹⁾ or TimePlotter ²⁾	The new instrument

¹⁾ Refer to [XYPlotter](#) on page 210.

²⁾ Refer to [TimePlotter](#) on page 203.

Related topics**References**

[Class Description \(TimePlotter\)](#)..... 203

TriggerConditions

Purpose

To specify the trigger conditions.

Class Description (TriggerConditions)

Syntax

```
TriggerConditions = ActiveTrigger.Conditions
```

Purpose

To specify the trigger conditions.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
Signal	SignalCondition ¹⁾	To get the signal condition.
Time	TimeCondition ²⁾	To get the time condition.

¹⁾ Refer to [SignalCondition](#) on page 196.

²⁾ Refer to [TimeCondition](#) on page 202.

Methods —

Related topics

References

Class Description (ActiveTrigger).....	150
--	-----

TriggerConfiguration

Purpose To configure a trigger.

Where to go from here

Information in this section

Class Description (TriggerConfiguration).....	206
To describe the class and its attributes.	
ActivateTrigger.....	207
To activate a trigger.	
Add.....	208
To add a trigger.	
DeactivateTrigger.....	208
To deactivate the active trigger.	
Remove.....	209
To remove a trigger.	

Class Description (TriggerConfiguration)

Syntax

```
TriggerConfiguration = ActivePlotting.StartTriggerConfiguration
```

Or

```
TriggerConfiguration = ActivePlotting.StopTriggerConfiguration
```

Purpose To configure a trigger.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
AvailableElements	Strings	To get all the available triggers.
ActiveTrigger	ActiveTrigger ¹⁾	To get the active trigger.

¹⁾ Refer to [ActiveTrigger](#) on page 149.

Methods

The class contains the following methods:

Method	Purpose
ActivateTrigger	To activate a trigger. Refer to ActivateTrigger on page 207.
Add	To add a trigger. Refer to Add on page 208.
DeactivateTrigger	To deactivate the active trigger. Refer to DeactivateTrigger on page 208.
Remove	To remove a trigger. Refer to Remove on page 209.

Related topics**References**

[Class Description \(ActivePlotting\)](#)..... 152

ActivateTrigger

Class

TriggerConfiguration

Syntax

```
TriggerConfiguration.ActivateTrigger(variant Trigger)
```

Purpose

To activate a trigger.

Parameters

The method uses the following parameters:

Parameter	Type	Description
Trigger	Variant	Trigger to be activated

Return value

—

Related topics**References**[Class Description \(TriggerConfiguration\)..... 206](#)

Add

Class

TriggerConfiguration

Syntax`TriggerConfiguration.Add(string Triggername)`**Purpose**

To add a trigger.

Parameters

The method uses the following parameters:

Parameter	Type	Description
TriggerName	String	Name of the trigger to be added

Return value

—

Related topics**References**[Class Description \(TriggerConfiguration\)..... 206](#)

DeactivateTrigger

Class

TriggerConfiguration

Syntax`TriggerConfiguration.Deactivate()`

Purpose	To deactivate the active trigger.
Parameters	–
Return value	–
Related topics	References Class Description (TriggerConfiguration)..... 206

Remove

Class

TriggerConfiguration

<

XYPlotter

Purpose To specify an XY Plotter.

Where to go from here

Information in this section

Class Description (XYPlotter)	210
To describe the class and its attributes.	
ChangeInstrumentType	211
To change the instrument type.	

Class Description (XYPlotter)

Syntax `XYPlotter = Instruments.Item()`

Purpose To specify an XY Plotter.

Attributes

The class contains the following attributes:

Attributes	Type	Purpose
Type	InstrumentTypes ¹⁾	To get the instrument type.
Curves	Curves ²⁾	To get the curves.

¹⁾ Refer to [InstrumentTypes](#) on page 212.

²⁾ Refer to [Curves](#) on page 175.

Methods

The class contains the following methods:

Method	Purpose
ChangeInstrumentType	To change the instrument type. Refer to ChangeInstrumentType on page 211.

Related topics

References

Class Description (Instruments)	178
---	-----

ChangeInstrumentType

Class XYPlotter

Syntax `XYPlotter.ChangeInstrumentType(Type)`

Purpose To change the instrument type.

Description The return value is a new instrument. The current instrument becomes invalid.

Parameters The method uses the following parameters:

Parameter	Type	Description
Type	InstrumentTypes ¹⁾	The type of the new instrument

¹⁾ Refer to [InstrumentTypes](#) on page 212.

Return value The method returns the following parameter:

Type	Description
XYPlotter ¹⁾ or TimePlotter ²⁾	The new instrument

¹⁾ Refer to [XYPlotter](#) on page 210.

²⁾ Refer to [TimePlotter](#) on page 203.

Related topics

References

[Class Description \(XYPlotter\)](#)..... 210

Enumerations for Plotting

Enumerations for Plotting

Introduction

You can use predefined constants in the tool automation.

Enumerations

InstrumentTypes The following constants are used to specify the instrument types:

Value	Description
TimePlotter	Plotter in time mode (x-axis as time axis)
XYPlotter	Plotter in XY mode (x-axis as signal axis)

LayoutConfigurations The following constants are used to specify the layout configuration:

Value	Description
OneByOne	Layout gets one plotter.
OneByTwo	Layout gets Two plotters side by side.
TwoByOne	Layout gets two plotters, one above the other.
TwoByTwo	Layout gets four plotters.

PlottingStates The following constants are used to get the plotting state:

Value	Description
Stopped	Plotting is stopped.
Running	Plotting runs.

TriggerEdgeTypes The following constants are used to specify the trigger edge:

Value	Description
NegativeEdge	Trigger when the signal falls below a specified value.
PositiveEdge	Trigger when the signal exceeds a specified value.

Related topics

References

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