



Data Logging Module Manual

Version 2.0

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GENERAL INFORMATION

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The manual has been conceived and written for users who are experienced in the use of PCs and automation technology.

CONVENTIONS

[KEYS]	Keys that are to be pressed by the user are given in square brackets, e.g. [CTRL] or [DEL]
COURIER	On-screen messages are given in the Courier font, e.g. C : \>
COURIER BOLD	Keyboard input to be made by the user are given in Courier bold, e.g. C : \> DIR
"..."	Names of buttons to be pressed, menus or other onscreen elements and product names are given within double quotes. (e.g. "Configuration").
PICTOGRAMS	In this manual the following symbolic are used to indicate particular text blocs.
	<i>Caution!</i> A dangerous situation may arise that may cause damage to material.
	<i>Hint</i> Hints and additional notes
	<i>New</i> New features

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1 Introduction

1.1 FOREWORD

OPTIMA offers the possibility to log and visualize energy values graphically in form of a bar chart without the need of any additional module. With the DATA-LOGGING module (*UP-DATALOG-SW*) this function can be expanded to display any kind of values on any kind of page in the visualisation.

This way it is possible to display temperatures, power values or any other kind of measured values graphically. The presentation in the visualisation can be made in different ways. For example it is possible to display temperature values in form of a curve, switching operations with bars or percentage values as a cake diagram. Due to the versatile display options for each type of value a suitable and intuitive representation can be found. Moreover the data shown in the graphs is logged and can be exported as CSV data to be further analyzed or displayed by specialized software or simply downloaded for long term storage.

1.2 REQUIREMENTS AND LIMITATIONS

To use the DATA-LOGGING function in OPTIMA you need:

- A KNXCONTROL device
- The additional module UP-DATALOG-SW¹

With the DATA-LOGGING module, values can be displayed in an intuitive way, but the module is not developed for continuous logging of values over a long time. The logged values are deleted after a certain amount of time to preserve the storage capabilities of the KNXCONTROL device. See chapter 3 (Settings) for more details.

NEW

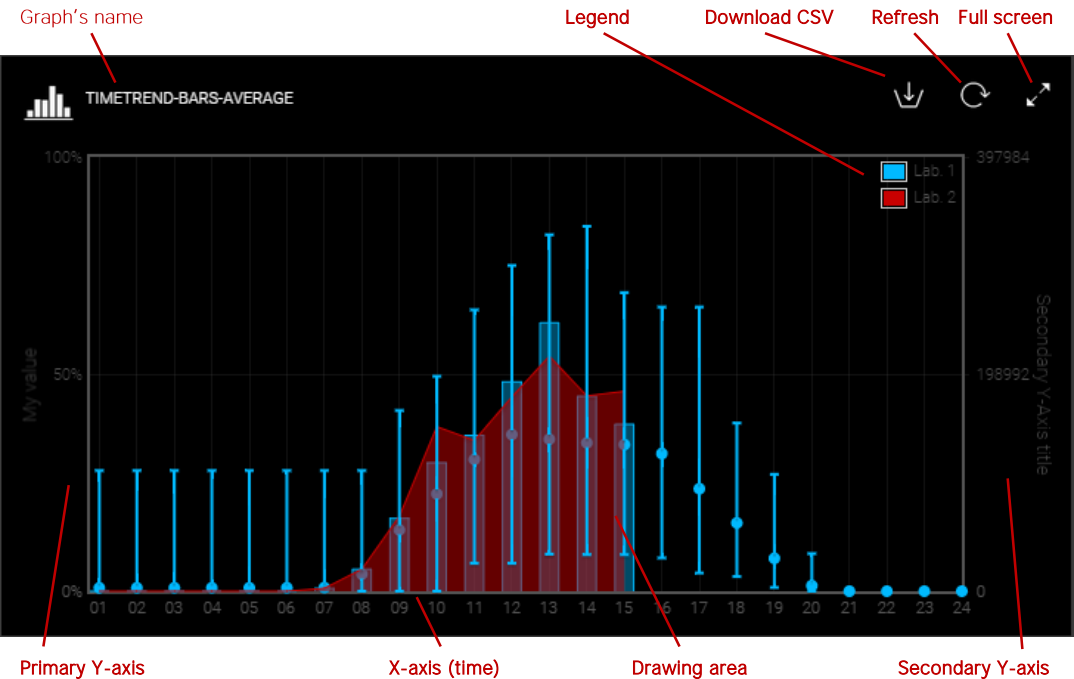
New: Since Optima 2.0 there is a free graph with max. 5 data points available without additional license codes. For more graphs or data points, there is still the possibility to extend Optima's functionality through the additional module mentioned above, getting the possibility to use any number of graphs/data points.

¹ The DATA-LOGGING module UP-DATALOG-SW can be ordered together with the KNXCONTROL device or purchased later on as license code.

2 Diagrams

2.1 PRESENTATION

Diagrams can be displayed in the visualisation in different rooms together with other objects. In rooms using the "Background" template, the size and position of the diagram can be stretched at will, while in grid-type rooms they will use a predefined area. Whatever the size, the diagram representation will have the elements shown here:



PREDEFINED PERIOD	Time period for which the data is displayed
GRAPH NAME	Name of the graph
LEGEND	The legend shows the denomination of the displayed objects as well as their correlation to the used colours
DOWNLOAD	Allows to download the data shown in the graph as CSV-file
REFRESH	Forces an immediate reload of the displayed data
FULL SCREEN	A click on this symbol opens the graph in the full screen mode
PRIMARY Y-AXIS	Primary Y-axis as reference for the corresponding data

TIME AXIS	Time axis as reference for the displayed data
DRAWING AREA	In this area the diagrams are displayed (time trend/cake/donut)
SECONDARY Y-AXIS	Secondary Y-axis as reference for the corresponding data

Depending on the configuration of the diagram, some details may be hidden. A click on the symbol „full screen“ opens the diagram in full screen mode:



In full screen mode the following additional functions are available:

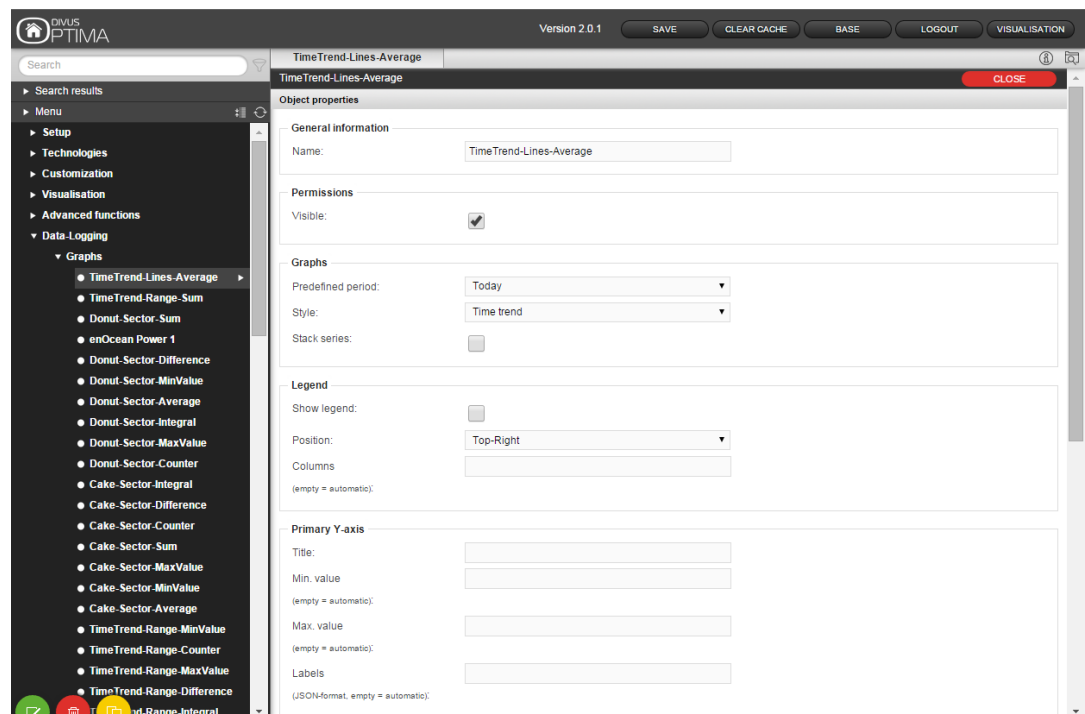
- Over the tabs on the upper area it is possible to change the displayed time period:
 - Today
 - Yesterday
 - Week
 - Last Week
 - Month
 - Last Month
 - Year
 - Last Year
- Over the checkboxes near the legend it is possible to display or hide the range or compare curves for the corresponding object; this function has no effect on cake or donut diagrams.

- Over the colored fields in the legend it is possible to show or hide all values of the corresponding object. A click on the appropriate colored rectangle hides the associated data, another click on the same rectangle shows the data again.
- Inside the drawing area the following functions are available :
 - Scrolling: The diagrams can be shifted up/down/left/right by clicking and holding the left mouse button in the drawing area and moving the mouse in the desired direction.
 - Zoom: If the mouse is on the drawing area it is possible to zoom in or out by moving the scroll wheel.
- The EXPORT bar at the bottom allows to download the data currently shown in the graph.

By clicking on the "X" in the upper right corner the full screen mode can be closed.

2.2 GENERAL CONFIGURATION

A graph has the following settings available:



NAME Name that should be displayed in the administration and visualisation

PREDEFINED PERIOD Defines the time period for which the corresponding data should be displayed.

If the graph is opened in full screen mode it is possible to select and display a different time period.

STYLE	<p>Defines the style of the graph. The following options are available:</p> <p><i>Time trend</i>: Displays the value-progression of the predefined time period on a two-dimensional diagram with X- and Y-axis; the X-axis displays the predefined time period.</p> <p><i>Cake</i>: Displays the values in form of a pie chart.</p> <p><i>Donut</i>: Displays the values in form of a donut/ring diagram.</p> <p>See chapter 4 for some examples giving an overview of the available possibilities.</p>
STACK SERIES	<p>Changes the graph so that the values are not displayed as overlaying, but stacked one over another.</p> <p>The condition for the correct functioning of this setting is that all values are displayed on the same Y-axis.</p>
SHOW LEGEND	<p>Defines whether the legend should be displayed on the graph or not.</p>

In the expert mode the following additional settings are available:

VISIBLE	<p>Default is checked. Unchecking allows to hide a graph in the visualisation.</p>
POSITION	<p>Defines where the legend should be positioned. The following options are available:</p> <ul style="list-style-type: none"> • Top-Right • Top-Left • Bottom-Right • Bottom-Left
COLUMNS	<p>Defines the number of columns with which the legend should be displayed; if the field is empty the number will be chosen automatically.</p>
PRIMARY/SECONDARY Y-AXIS	
TITLE	<p>Title that should be displayed on the Y-axis (vertically).</p>
MIN. VALUE	<p>Minimal value of the Y-axis. If no value is specified an automatic (dynamic) value will be used.</p>
MAX. VALUE	<p>Maximal value of the Y-axis. If no value is specified an automatic (dynamic) value will be used.</p>

LABELS	Provides the possibility to change the partitioning of the Y-axis in JSON-format (e.g. <code>[[0, "0%"], [50, "50%"], [100, "100%]]</code> will associate the labels "0%", "50%" and "100%" to the values 0, 50 and 100 respectively)
--------	---

To display a graph in a room you need to drag the desired room onto the table "Rooms, to which the graph belongs". To do this, search the desired room in the search engine and drag & drop the room onto the table.

Of course it is also possible to drag diagrams into rooms like other objects, following the same procedure as described above - only this time dragging diagrams onto rooms.

2.3 CONFIGURATION OF THE OBJECTS TO BE RECORDED

To record and display values it is needed to define the corresponding object that provides the needed information. New objects are added in the following way:

- Open the detail page of the graph in a new Tab
- Search for the desired object in the search engine and drag it onto the table "Data series"

For each added object the following options are available.

LABEL	Naming that should be used in the legend of the graph for the corresponding object. If no label is defined, the name of the object itself will be used in the legend.
ENABLE	Defines whether the data of the object is shown in the graph or not.
FUNCTIONALITY	Associates the object's data to one of 10 available data series. Each displayed object must be associated to a different data series within the same graph.
DATA	Defines how the recorded data should be evaluated: <ul style="list-style-type: none"> • Average value • Min. value • Max. value • Sum • Counter • Difference • Integral

In Chapter 2.4 these different types are explained in detail.

Defines the way recorded data should be displayed inside the graph. Depending on the chosen style of the graph, the following options are available:

STYLE	<ul style="list-style-type: none"> • Lines (Time trend) • Points (Time trend) • Lines and points (Time trend) • Curve (Time trend)** • Steps (Time trend) • Bars (Time trend) • Area (Time trend) • Range (Time trend) • Sector (Cake, Donut)
COMPARISON*	Defines whether the data of the previous time period should be displayed or not – for comparison.
RANGE*	Defines whether the value range for the recorded objects should be displayed or not.
SCALE FACTOR	May define a scale factor. The scale factor is multiplied by the recorded value; the result will be displayed in the graph. (To use the objects without scale factor, use 1 here.)
Y-AXIS*	Defines which Y-axis should be used as reference or the representation of the data. If no Y-axis is selected the primary Y-Axis will be used.

*This setting affects only diagrams of style "time trend".

**To display the style "Curve" the option "RANGE" should be enabled.

2.4 EVALUATION

In this chapter you will learn how the logged data may be evaluated. Depending on the selected "Data" option of an object, the recorded values are evaluated and displayed in different ways.

2.4.1 AVERAGE VALUE

The average value is the sum of all values that have been recorded for the corresponding object during the last time period (e.g. hour, day or month), divided by the count of recorded values.

2.4.2 MIN. VALUE

The smallest value recorded for the corresponding object during the last time period (e.g. hour, day or month).

2.4.3 MAX. VALUE

The biggest value recorded for the corresponding object during the last time period (e.g. hour, day or month).

2.4.4 SUM

The sum of all values that have been recorded for the corresponding object during the last time period (e.g. hour, day or month).

2.4.5 COUNTER

The quantity of recorded values for the corresponding object during the last time period (e.g. hour, day or month).

2.4.6 DIFFERENCE

The difference between the first recorded value and the last recorded value for the corresponding object during the last time period (e.g. hour, day or month).

2.4.7 INTEGRAL

Calculated as product of the recorded value by the time during which the value is held (time values in minutes); this calculation is made for each change of the value. At the end of each time period (e.g. hour, day or month) the sum of all these multiplications is calculated and then divided by the number of minutes of the time period, giving the average integral. The result is displayed in the graph.

2.5 COLORS

The colors for the representation of the single objects are assigned automatically. The colors are predefined and can't be personalized. The colors are assigned in dependency of the order of the recorded objects in the following way:

1. object / data series	rgb(0,186,255)
2. object / data series	rgb(200,0,0)
3. object / data series	rgb(255,216,0)
4. object / data series	rgb(186,226, 45)
5. object / data series	rgb(240,0,255)
6. object / data series	rgb(255,127,0)
7. object / data series	rgb(139,132,255)
8. object / data series	rgb(85,197,83)
9. object / data series	rgb(228,188,123)
10. object / data series	rgb(180,180,180)

The order of the added objects can be changed at any time by drag & drop the single objects to the wished place by using the corresponding blue "ORDER"-button.

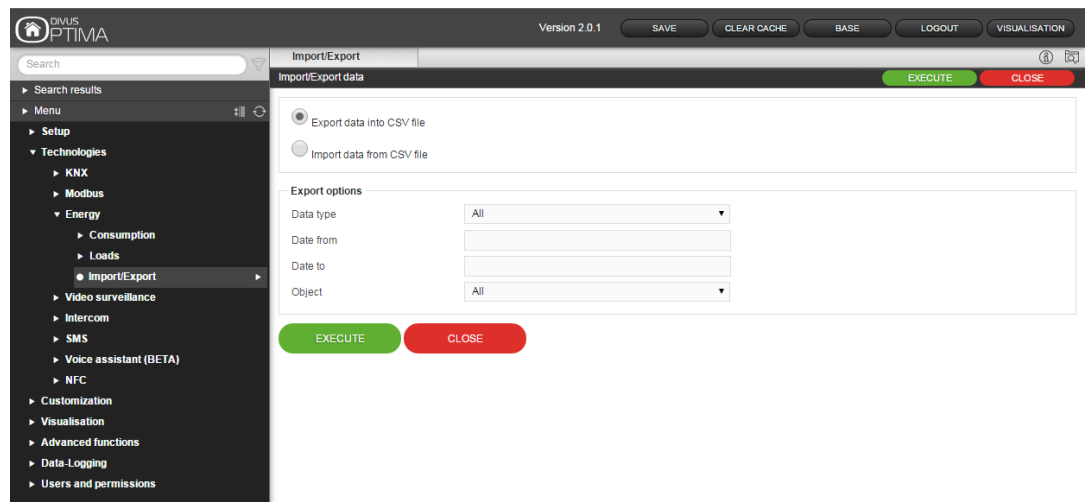
2.6 EXPORT AND IMPORT OF RECORDED DATA

The recorded values can be exported in form of a CSV file. In this way it is possible to store recorded data and to process them externally. The stored data can be imported e.g. into the device after a reset of the database or into another KNXCONTROL device.

2.6.1 EXPORT OF LOGGED DATA

To create a CSV-backup file of the recorded data the following steps are required:

- Access to the KNXCONTROL device and open the administration area
- Select the option "Export data into CSV file" under „Technologies -> Energy -> Import/Export“
- Choose the other options as desired
- Click on "EXECUTE"
- The generated file will be stored according to your browser settings.



2.6.2 EXPORT DIRECTLY USING A SPECIAL URL

Optima offers the possibility to export the logged data directly by calling a URL. This may be useful if you want to regularly export the data to save it and/or to analyze it through specialized software. The special URL for this task can be customized by changing the parameters contained in its so called query string. The general form of such an URL is this:

http://IPADDRESS/smartdomuspad/modules/reporting/track_import_export.php?op=export&language=LANGUAGE&interval=INTERVAL&object_id=XXX

You may refer to the following table for the explanation of the parameters

IPADDRESS	Insert the IP address of the OPTIMA device
LANGUAGE	used for the labels of the export data, to be written in English (e.g. english, german, italian)
INTERVAL	possible values are: today, yesterday, week, week-prev, month, month-prev, year, year-prev
XXX	the ID of one single object whose values are being logged and which you want to export into a file. Default is to export all data, so you should completely remove this parameter if you wish to export everything. It is not possible to choose multiple IDs at once.

A URL configured this way may also be used with a Link (see the administration manual) inserted into one or more rooms, offering the user the possibility to manage his collected data autonomously.

Here some examples:

Export the data of object with ID 1234 regarding yesterday in English from my server with IP address 192.168.0.110:

```
http://192.168.0.110/smartdomuspad/modules/reporting/track_import_export.php?op=export&language=english&interval=yesterday&object_id=1234
```

Export from my server 192.168.2.210 all data of last year in German:

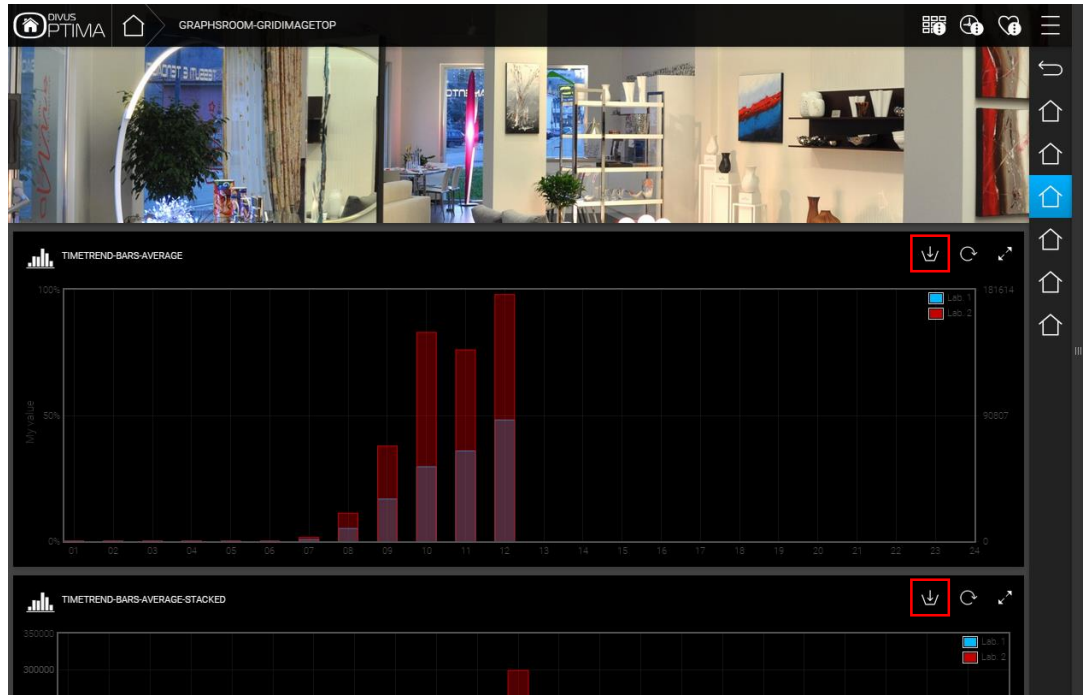
```
http://192.168.2.210/smartdomuspad/modules/reporting/track_import_export.php?op=export&language=german&interval=year-prev
```



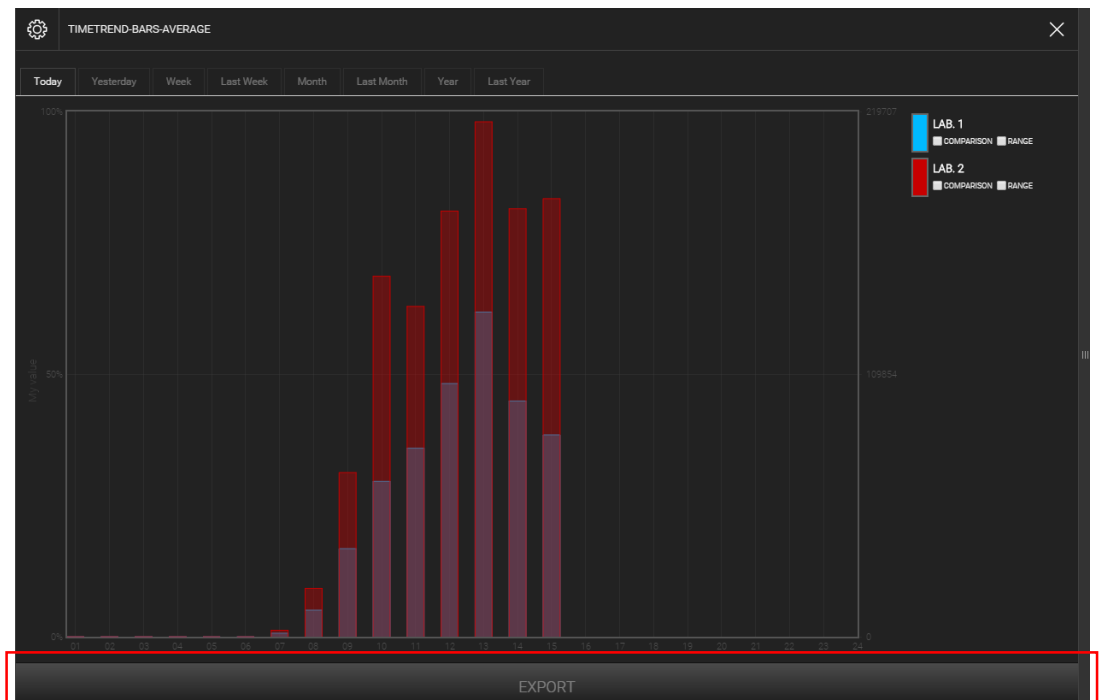
2.6.3 EXPORT A GRAPH'S DATA DIRECTLY FROM THE VISUALISATION

Optima 2.0 introduced a way to export single graph's data directly from the visualisation. Depending on the view, two different kinds of buttons for this function are shown.

Default view:



Full screen view:



3 Settings

In the settings page it is possible to define how long the recorded values should be stored. The following settings are available:

DELETE HOURLY DATA AFTER... [DAYS]	Defines after how many days old hourly data should be deleted.
DELETE DAILY DATA AFTER... [MONTHS]	Defines after how many months old daily data should be deleted
DELETE YEARLY DATA AFTER... [YEARS]	Defines after how many years old yearly data should be deleted
REPEAT LAST KNOWN VALUE IN THE ABSENCE OF DATA	When checked: if Optima is not able to get any new value, it will repeat the last received value to avoid having "wholes" in the graph. (Useful e.g. for devices which send their value only when it changes)

To preserve the storage space of the KNXCONTROL device the old data is deleted after a certain amount of time.

4 Examples

In this chapter the usage and the configuration of diagrams are explained using 2 examples.

4.1 EXAMPLE 1 - TEMPERATURE

This example shows the graphical presentation of a heating regulation (outside temperature, room temperature, heating valve).

4.1.1 CONFIGURATION

A new graph with the following properties is created:

NAME	Temperatures
VISIBLE	Yes
PREDEFINED PERIOD	Today
STYLE	Time trend
STACKED SERIES	No
SHOW LEGEND	Yes
POSITION	Top-Right
COLUMNS	empty = automatic
PRIMARY Y-AXIS	
TITLE	TEMPERATURES °C
MIN. VALUE	empty = automatic
MAX. VALUE	empty = automatic
LABELS	empty
SECONDARY Y-AXIS	
TITLE	Valve
MIN. VALUE	0
MAX. VALUE	100

LABELS	[[0,"0%"],[25,"25%"],[50,"50%"],[75,"75%"],[100,"100%"]]
--------	--

Afterwards three objects are added to the table "Data series" from the search engine using drag&drop and configured in the following way:

NAME	Graph outside temperature	Graph room temperature	Graph valve
LABEL	Outside temp.	Room temp.	valve
ENABLE	Yes	Yes	Yes
FUNCTIONALITY	Data series 1	Data series 2	Data series 3
DATA	Average value	Average value	Average value
STYLE	Curve	Lines and points	Steps
COMPARISON	yes	no	no
RANGE	yes	yes	no
SCALE FACTOR	None	None	100
Y-AXIS	1-Primary	1-Primary	2-Secondary

Afterwards the graph is added to the room "Energy", so that the graph is visible inside the visualisation.

Version 2.0.1
SAVE
CLEAR CACHE
BASE
LOGOUT
VISUALISATION

Search

- ▶ Search results
- ▶ Menu
- ▶ Setup
- ▶ Technologies
- ▶ Customization
- ▶ Visualisation
- ▶ Advanced functions
- ▶ Data-Logging
 - ▼ Graphs
 - New graph 1
 - Temperatures
 - Settings
 - Import/Export
- ▶ Users and permissions

Temperatures
CLOSE

Object properties

General information
 Name:

Permissions
 Visible:

Graphs
 Predefined period:
 Style:
 Stack series:

Legend
 Show legend:
 Position:
 Columns:
(empty = automatic);

Primary Y-axis
 Title:
 Min. value:
(empty = automatic);
 Max. value:
(empty = automatic);
 Labels:
(JSON-format, empty = automatic);

Secondary Y-axis
 Title:
 Min. value:
(empty = automatic);
 Max. value:
(empty = automatic);
 Labels:
(JSON-format, empty = automatic);

CLOSE

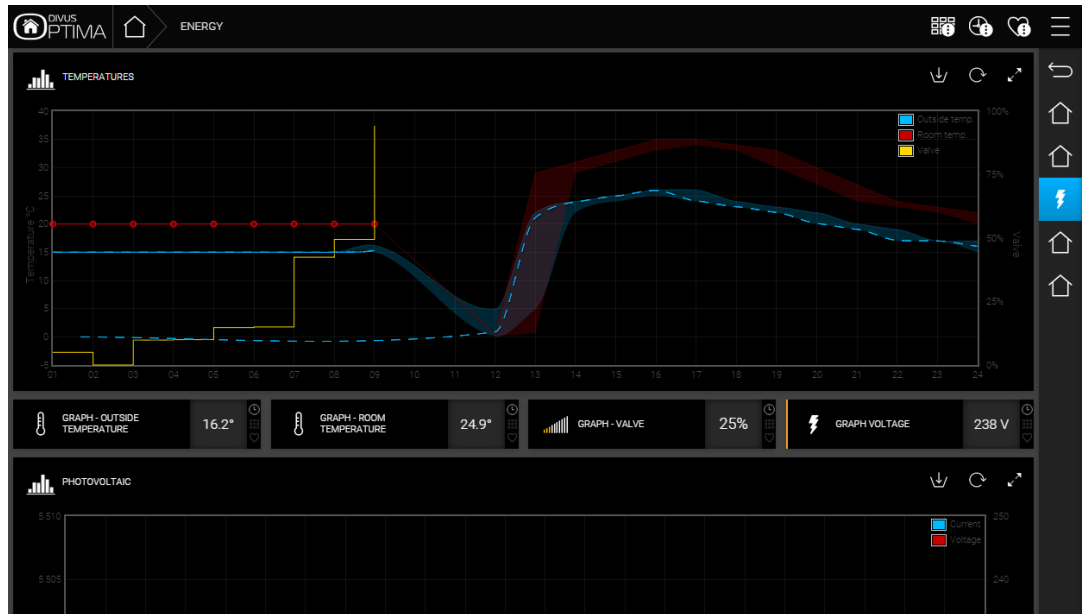
Data series

	Name	Label	Enable	Functionality	Data	Style	Comparison	Range	Scale factor	Y-axis
+ = x	Graph - Outside temperature	Outside temp.	<input checked="" type="checkbox"/>	Data series 1	Averc	Curve	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
+ = x	Graph - Room temperature	Room temp.	<input checked="" type="checkbox"/>	Data series 2	Averc	Lines	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
+ = x	Graph - Valve	Valve	<input checked="" type="checkbox"/>	Data series 3	Averc	Steps	<input type="checkbox"/>	<input type="checkbox"/>	100	

Rooms, to which the graph belongs

Name	Description / ETS name	
+ = x	Energy	
+ = x	Room 1	

4.1.2 PRESENTATION



4.2 EXAMPLE 2 – ENERGY BALANCE

The following Chapter explains how different diagrams can be combined. Therefore the following 4 diagrams are configured:

- Graph A: The voltage and the current output of a solar plant of the current day
- Graph B: The progress of the produced and the consumed power of the current day
- Graph C: The relation between the produced and the consumed energy of the current day
- Graph D: The relation between the produced and the consumed energy of the previous day

All 4 diagrams are added to the room "Energy". Since this room uses the template "Background" it is possible to position all 4 graph arbitrarily on the page. Each single graph can afterwards be opened in full screen mode.

4.2.1 CONFIGURATION

4.2.1.1 CONFIGURATION GRAPH A

A new graph with the following properties is created:

NAME	Photovoltaic
VISIBLE	Yes
PREDEFINED PERIOD	Today
STYLE	Time trend
STACKED SERIES	No
SHOW LEGEND	Yes
POSITION	Top-right
COLUMNS	1
PRIMARY Y-AXIS	
TITLE	Current
MIN. VALUE	Empty = automatic
MAX. VALUE	Empty = automatic
LABELS	Empty
SECONDARY Y-AXIS	

TITLE	Voltage
MIN. VALUE	210
MAX. VALUE	250
LABELS	Empty

Afterwards two objects are added to the table "Data series" using drag&drop and configured in the following way:

NAME	Graph current	Graph voltage
LABEL	Current	Voltage
ENABLE	Yes	Yes
FUNCTIONALITY	Data series 1	Data series 2
DATA	Integral	Integral
STYLE	Lines	Lines
COMPARISON	No	No
RANGE	No	No
SCALE FACTOR	None	None
Y-AXIS	1-Primary	2-Secondary

Then the graph is added to the room "Energy", so that the graph is visible inside the visualisation.

The screenshot shows the configuration window for a 'Photovoltaic' graph. The 'Object properties' section includes:

- General information:** Name: Photovoltaic
- Permissions:** Visible:
- Graphs:** Predefined period: Today, Style: Time trend, Stack series:
- Legend:** Show legend: , Position: Top-Right, Columns: 1
- Primary Y-axis:** Title: Current, Min. value: (empty), Max. value: (empty), Labels: (empty)
- Secondary Y-axis:** Title: Voltage, Min. value: 210, Max. value: 250, Labels: (empty)

The 'Data series' table is as follows:

Name	Label	Enable	Functionality	Data	Style	Comparison	Range	Scale factor	Y-axis
Graph current	Current	<input checked="" type="checkbox"/>	Data series 1	Integral	Lines	<input type="checkbox"/>	<input type="checkbox"/>		1
Graph voltage	Voltage	<input checked="" type="checkbox"/>	Data series 2	Integral	Lines	<input type="checkbox"/>	<input type="checkbox"/>		2

The 'Rooms, to which the graph belongs' table is as follows:

Name	Description / ETS name
Energy	

4.2.1.2 CONFIGURATION GRAPH B

A new graph with the following properties is created:

NAME	Daily production
VISIBLE	Yes
PREDEFINED PERIOD	Today
STYLE	Time trend
STACKED SERIES	No

SHOW LEGEND	Yes
POSITION	Top-right
COLUMNS	1
PRIMARY Y-AXIS	
TITLE	Empty
MIN. VALUE	Empty = automatic
MAX. VALUE	Empty = automatic
LABELS	Empty
SECONDARY Y-AXIS	
TITLE	Empty
MIN. VALUE	Empty = automatic
MAX. VALUE	Empty = automatic
LABELS	Empty

Afterwards two objects are added to the table "Data series" using drag&drop and configured in the following way:

NAME	Graph photovoltaic	Graph photovoltaic
LABEL	Production	Consumption
ENABLE	Yes	Yes
FUNCTIONALITY	Data series 1	Data series 2
DATA	Average value	Average value
STYLE	Area	Area
COMPARISON	Yes	Yes
RANGE	No	No
SCALE FACTOR	1	-1
Y-AXIS	1-Primary	1-Primary

Then the graph is added to the room "Energy", so that the graph is visible inside the visualisation.

The screenshot shows the configuration window for a graph named 'Daily production'. The interface includes a sidebar menu on the left with categories like Setup, Technologies, Customization, Visualisation, and Data-Logging. The main configuration area is divided into several sections:

- Object properties:**
 - General information:** Name: Daily production
 - Permissions:** Visible:
 - Graphs:** Predefined period: Today, Style: Time trend, Stack series:
 - Legend:** Show legend: , Position: Top-Right, Columns: 1
 - Primary Y-axis:** Title, Min. value, Max. value, Labels (all empty)
 - Secondary Y-axis:** Title, Min. value, Max. value, Labels (all empty)
- Data series:** A table with columns: Name, Label, Enable, Functionality, Data, Style, Comparison, Range, Scale factor, Y-axis.

Name	Label	Enable	Functionality	Data	Style	Comparison	Range	Scale factor	Y-axis
Graph photovoltaic	Production	<input checked="" type="checkbox"/>	Data series 1	Average	Area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.1	1.0
Graph photovoltaic	Consumption	<input checked="" type="checkbox"/>	Data series 2	Average	Area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	-1	1.0
- Rooms, to which the graph belongs:** A table with columns: Name, Description / ETS name.

Name	Description / ETS name
Energy	

4.2.1.3 CONFIGURATION GRAPH C

A new graph with the following properties is created:

NAME	Relation today
VISIBLE	Yes
PREDEFINED PERIOD	Today
STYLE	Cake
STACKED SERIES	No
SHOW LEGEND	Yes

POSITION	Top-Right
COLUMNS	1
PRIMARY Y-AXIS	
TITLE	Empty
MIN. VALUE	Empty = automatic
MAX. VALUE	Empty = automatic
LABELS	Empty
SECONDARY Y-AXIS	
TITLE	Empty
MIN. VALUE	Empty = automatic
MAX. VALUE	Empty = automatic
LABELS	Empty

Afterwards two objects are added to the table "Data series" using drag&drop and configured in the following way:

NAME	Graph photovoltaic	Graph consumption
LABEL	Production	Consumption
ENABLE	Yes	Yes
FUNCTIONALITY	Data series 1	Data series 2
DATA	Sum	Sum
STYLE	Sector	Sector
COMPARISON	No	No
RANGE	No	No
SCALE FACTOR	None	None
Y-AXIS	---	---

Then the graph is added to the room "Energy", so that the graph is visible inside the visualisation.

The screenshot shows the configuration page for a graph named 'Relation today'. The interface includes a sidebar menu, a top navigation bar with 'SAVE', 'CLEAR CACHE', 'BASE', 'LOGOUT', and 'VISUALISATION' buttons, and a main configuration area with the following sections:

- Object properties:**
 - General information:** Name: Relation today
 - Permissions:** Visible:
 - Graphs:** Predefined period: Today, Style: Cake, Stack series:
 - Legend:** Show legend: , Position: Top-Right, Columns: 1
 - Primary Y-axis:** Title, Min. value, Max. value, Labels (all empty)
 - Secondary Y-axis:** Title, Min. value, Max. value, Labels (all empty)
- Data series table:**

Name	Label	Enable	Functionality	Data	Style	Comparison	Range	Scale factor	Y-axis
Graph photovoltaic	Production	<input checked="" type="checkbox"/>	Data series 1	Sum	Sector	<input type="checkbox"/>	<input type="checkbox"/>		...
Graph consumption	Consumption	<input checked="" type="checkbox"/>	Data series 2	Sum	Sector	<input type="checkbox"/>	<input type="checkbox"/>		...
- Rooms, to which the graph belongs:**

Name	Description / ETS name
Energy	

4.2.1.4 CONFIGURATION GRAPH D

A new graph with the following properties is created:

NAME	Relation yesterday
VISIBLE	Yes
PREDEFINED PERIOD	Yesterday
STYLE	Donut
STACKED SERIES	No
SHOW LEGEND	No

POSITION	Top-Right
COLUMNS	empty
PRIMARY Y-AXIS	
TITLE	Empty
MIN. VALUE	Empty = automatic
MAX. VALUE	Empty = automatic
LABELS	Empty
SECONDARY Y-AXIS	
TITLE	Empty
MIN. VALUE	Empty = automatic
MAX. VALUE	Empty = automatic
LABELS	Empty

Afterwards three objects are added to the table "Data series" from the search engine using drag&drop and configured the following way:

NAME	Graph photovoltaic	Graph consumption
LABEL	Production	Consumption
ENABLE	Yes	Yes
FUNCTIONALITY	Data series 1	Data series 2
DATA	Sum	Sum
STYLE	Sector	Sector
COMPARISON	No	No
RANGE	No	No
SCALE FACTOR	None	None
Y-AXIS	---	---

Afterwards the graph is added to the room "Energy", so that the graph is visible inside the visualisation.

Version 2.0.1

SAVE
CLEAR CACHE
BASE
LOGOUT
VISUALISATION

Search

Search results

- Menu
- Setup
- Technologies
- Customization
- Visualisation
- Advanced functions
- Data-Logging
 - Graphs
 - New graph 1
 - Temperatures
 - Daily production
 - Relation today
 - Relation yesterday
 - Photovoltaic
 - Settings
 - Import/Export
- Users and permissions

Relation yesterday
CLOSE

Object properties

General information

Name:

Permissions

Visible:

Graphs

Predefined period:

Style:

Stack series:

Legend

Show legend:

Position:

Columns:

(empty = automatic)

Primary Y-axis

Title:

Min. value:

(empty = automatic)

Max. value:

(empty = automatic)

Labels:

(JSON-format, empty = automatic)

Secondary Y-axis

Title:

Min. value:

(empty = automatic)

Max. value:

(empty = automatic)

Labels:

(JSON-format, empty = automatic)

CLOSE

Data series

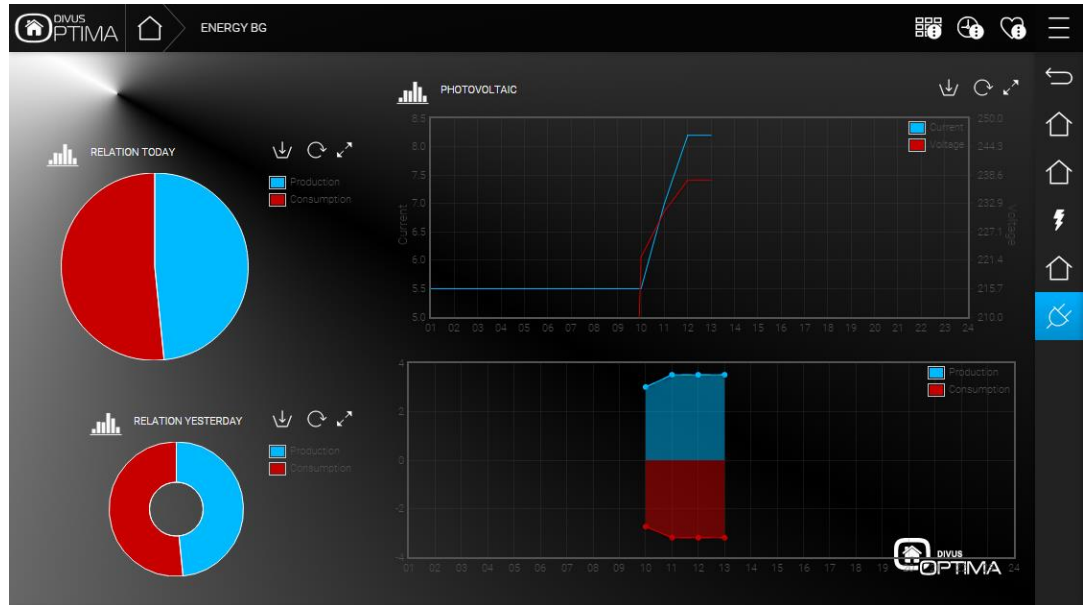
	Name	Label	Enable	Functionality	Data	Style	Comparison	Range	Scale factor	Y-axis
+	Graph photovoltaic	Production	<input checked="" type="checkbox"/>	Data series 1	Sum	Sector	<input type="checkbox"/>	<input type="checkbox"/>		---
+	Graph consumption	Consumption	<input checked="" type="checkbox"/>	Data series 2	Sum	Sector	<input type="checkbox"/>	<input type="checkbox"/>		---

Rooms, to which the graph belongs

	Name	Description / ETS name
+	Energy BG	
+	Energy	

4.2.2 APPEARANCE

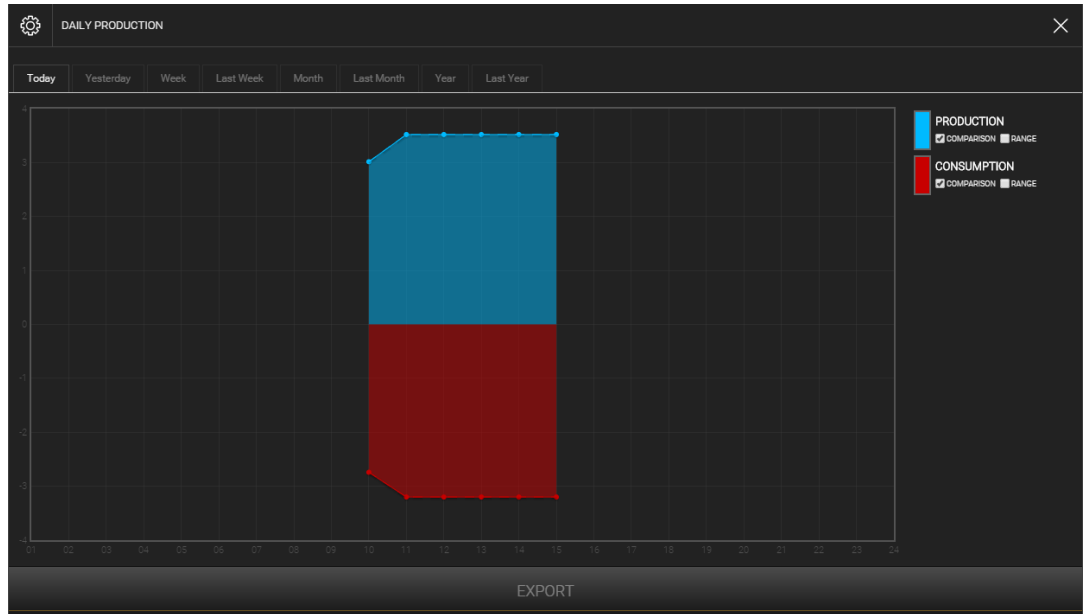
4.2.2.1 BACKGROUND (GRAPH A-D)



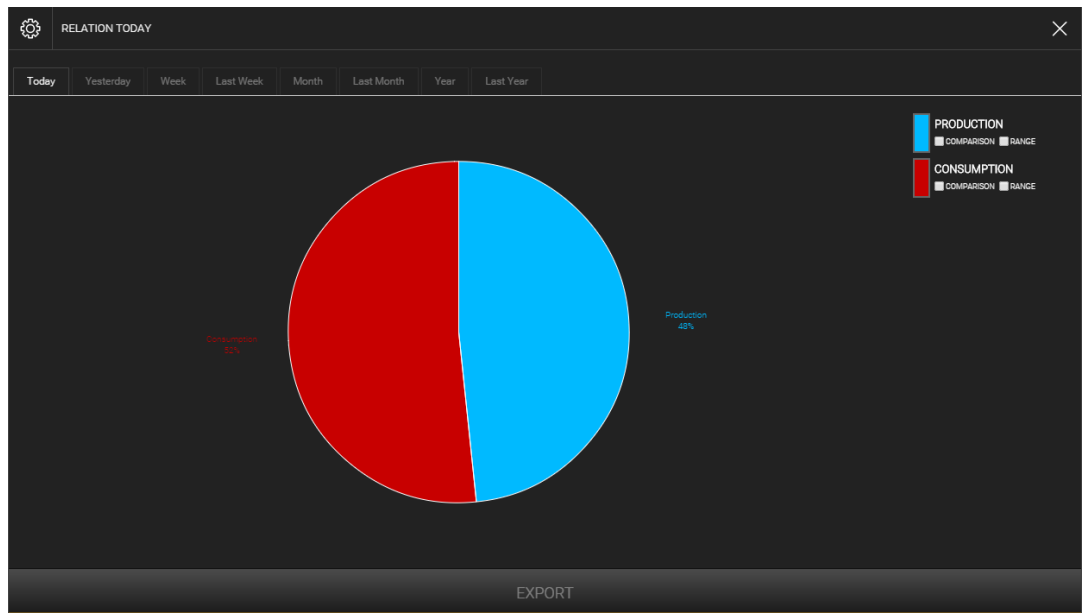
4.2.2.2 GRAFIK A - VOLLBILD



4.2.2.3 GRAPH B – FULL SCREEN



4.2.2.4 GRAPH C – FULL SCREEN



4.2.2.5 GRAPH D – FULL SCREEN

