



# ibaDaVIS

## Data Visualization and Information Service

Manual  
Issue 3.0

Measurement Systems for Industry and Energy  
[www.iba-ag.com](http://www.iba-ag.com)

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The current version is available for download on our web site [www.iba-ag.com](http://www.iba-ag.com).

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# 1 About this documentation

This documentation describes the function and use of the **Data Visualization and Information Server *ibaDaVIS***. *ibaDaVIS* is designed for analyzing product and process data. The screenshots in this manual mainly show desktop views (tablet and smartphone views may deviate).

## 1.1 Target group and previous knowledge

This manual is aimed at qualified professionals who are familiar with handling electrical and electronic modules as well as communication and measurement technology. A person is regarded as professional if he/she is capable of assessing safety and recognizing possible consequences and risks on the basis of his/her specialist training, knowledge and experience and knowledge of the standard regulations.

## 1.2 Notations

In this manual, the following notations are used:

Action	Notation
Menu command	Menu <i>Logic diagram</i>
Calling the menu command	<i>Step 1 – Step 2 – Step 3 – Step x</i> Example: Select the menu <i>Logic diagram – Add – New function block</i> .
Keys	<Key name> Example: <Alt>; <F1>
Press the keys simultaneously	<Key name> + <Key name> Example: <Alt> + <Ctrl>
Buttons	<Key name> Example: <OK>; <Cancel>
Filenames, paths	<a href="#">Filename</a> , <a href="#">Path</a> Example: <a href="#">Test.docx</a>

## 1.3 Used symbols

If safety instructions or other notes are used in this manual, they mean:

---

### Danger!



The non-observance of this safety information may result in an imminent risk of death or severe injury:

- Observe the specified measures.

---

### Warning!



The non-observance of this safety information may result in a potential risk of death or severe injury!

- Observe the specified measures.

---

### Caution!



The non-observance of this safety information may result in a potential risk of injury or material damage!

- Observe the specified measures

---

### Note



A note specifies special requirements or actions to be observed.

---

### Tip



Tip or example as a helpful note or insider tip to make the work a little bit easier.

---

### Other documentation



Reference to additional documentation or further reading.

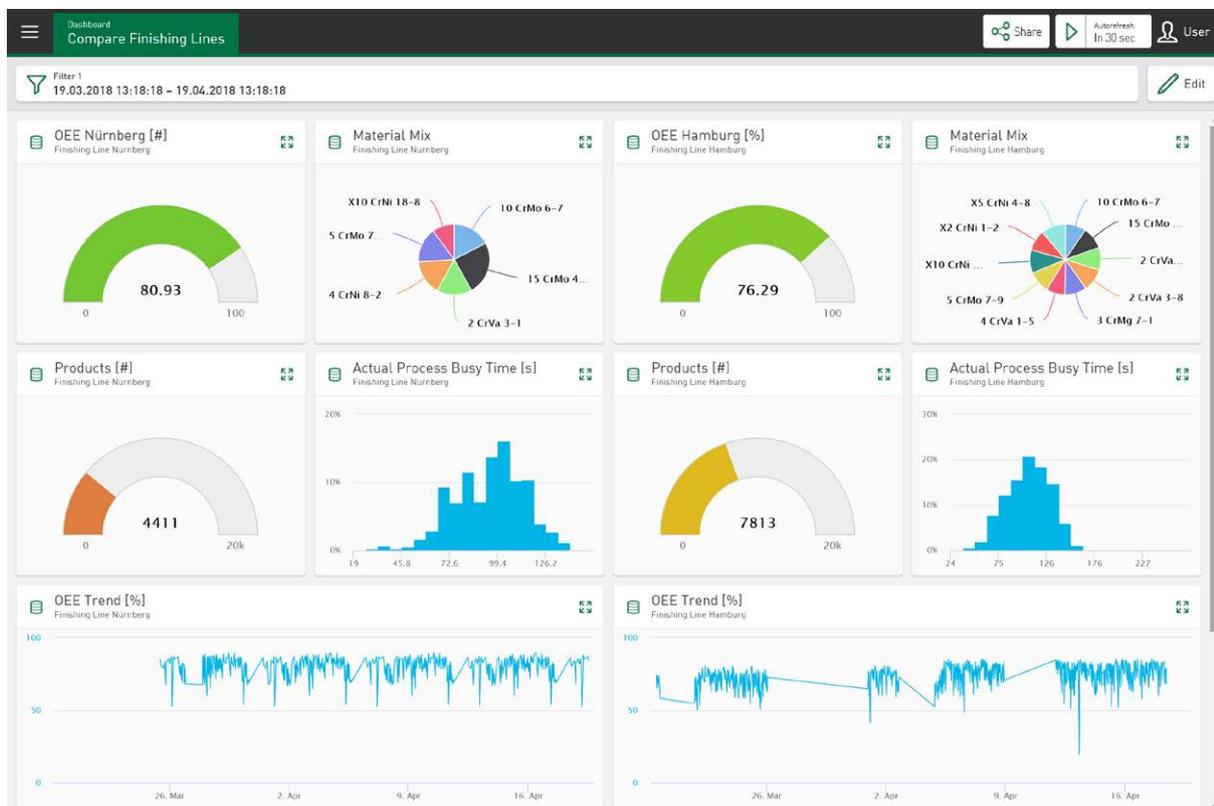
---

## 2 Introduction

With the **Data Visualization and Information Service** *ibaDaVIS*, measurement, process and quality data can be visualized and analyzed web-based. *ibaDaVIS* enables both the long-term analysis of product and process data across measurement files and the root cause analysis by drilling down to high-resolution measurement data.

*ibaDaVIS* offers a completely new overview and clarity via in-depth insight into data and processes. Systems and machines can be compared with each other based on their characteristic values. The precise information required to monitor systems and machines and to identify weak points and optimization potentials can be quickly and easily displayed.

The production or process can be viewed over long periods of time. Long-term trends, histograms, tables or pie charts are visualization and filter elements in one. Plant operators, process technologists or decision makers see the same data with *ibaDaVIS* regardless of whether on a PC, mobile tablet or smart phone.



*ibaDaVIS* uses the latest web technologies and supports all common web browsers such as Google Chrome or Mozilla Firefox. The responsive design enables convenient operation including via tablets or smartphones. Here, only a web browser is needed to connect to *ibaDaVIS*. Installation of an additional app is not necessary.

## Flexible configuration

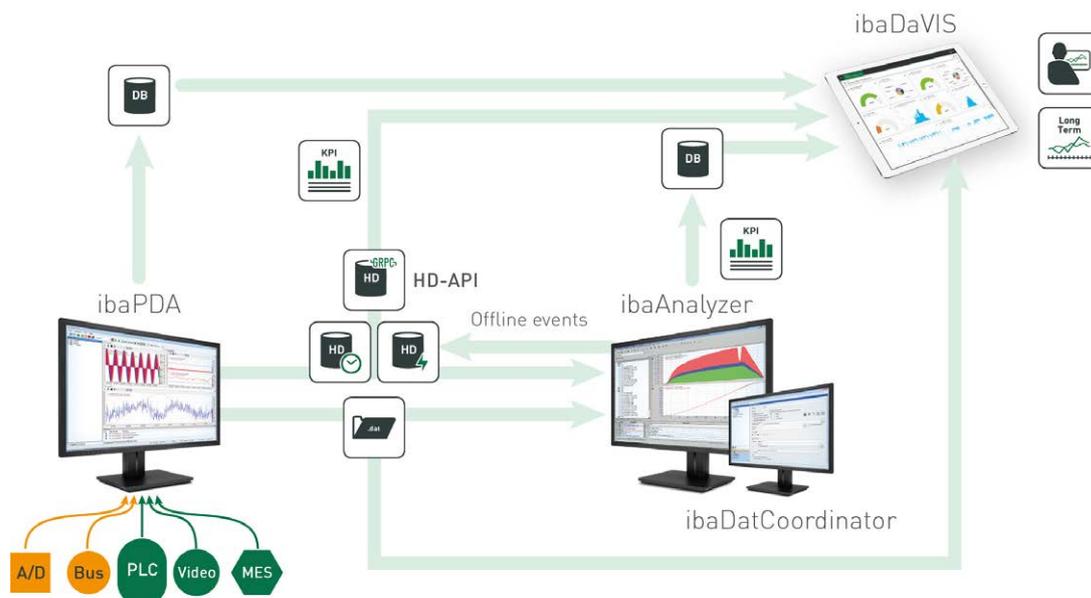
In the navigation area of *ibaDaVIS*, the dashboards can be organized hierarchically by location, machine or user groups in order to achieve views of specific assets or production sites or a problem- or user-specific view of the plant or machine. The dashboards can be accessed from anywhere on the web via the structure tree and visualize in tiles the assigned quality or characteristic values from databases or the high-resolution measured values from iba measurement files. With the help of virtual functions, signals or trends can be easily compared and statistical and other values can be calculated. For example, exceeded limit values can be quickly displayed and detected. A wide variety of tile types, such as trend displays, scatter charts, histograms, tables, gauges, pie charts, or bullet graphs are available. The data can be displayed directly or in aggregated form depending on the selected tile. All tiles can be quickly and easily resized and individually positioned by dragging and dropping.

## Interactive filter and search functions

*ibaDaVIS* shows characteristic values or measured values from the same defined time range on all tiles. The time range can be selected directly with date and time or relatively, for example for the last 7 days. All tiles are updated directly after selection and show values from the desired time range. The tiles can also be used as filter objects. For example, by clicking on a segment in the pie chart, the filter is automatically set to the selected group. In this way, a specific material group can be selected, for example. Due to the implicit filter function of *ibaDaVIS*, all tiles of the dashboard now show the data points or trends that are part of the selected material group.

By zooming in a trend graph, the time range for all displayed characteristic values on the dashboard can be narrowed down very quickly. To track the characteristic values of a specific product, for example, simply enter the product number in the table. The table immediately displays the product-related characteristic values and offers a download of the iba measurement file or the previously created product report.

In the following figure the data flow within the iba system is shown.



## 2.1 System Requirements

### Hardware

- Central Windows based PC (or VM) for *ibaDaVIS* service with access to a database system or *ibaHD-Server*

### Software

- Operating system for *ibaDaVIS* service: Windows 8.1 (64 Bit), Windows 10 (64 Bit), Windows Server 2012 R2 (64 Bit), Windows Server 2016 (64 Bit), Windows Server 2019 (64 Bit), Windows Server 2022 (64 Bit), Windows 11 (x64)
- Licence service: Codemeter Runtime for Windows v7.21a or higher from WIBU-SYSTEMS AG required, the latest version of CodeMeter Runtime is included in *ibaDaVIS* Installer  
Higher versions of CodeMeter Runtime cannot be used in conjunction with Windows 7, Windows Server 2008, Windows 8.

### Supported datasources

- *ibaHD-Server* v2.5 or higher
- Database systems: Microsoft SQL Server, MySQL, Maria DB, SQLite, ORACLE and PostgreSQL for storing the tables in iba format or open databases.

### For PCs or tablets accessing the *ibaDaVIS* service:

- Supported HTML 5 capable webbrowser under: Windows, iOS and Android like e.g. Google Chrome, Mozilla Firefox, Microsoft Edge, etc.

## 2.2 Licensing

*ibaDaVIS* is basically protected with a dongle. For the use in connection with virtual machines the license can be transferred from the dongle to a soft license. The dongle must be plugged into the PC on which the *ibaDaVIS* service is operated. The licenses are differentiated according to the number of configurable tiles. The base version of *ibaDaVIS* contains 12 tiles. The number can be expanded with upgrade licenses, each with 12 tiles. The number of dashboards and registered users of *ibaDaVIS* are not subject to licensing. The number of datasources is also not limited.

This license includes the possibility to install software updates free of charge for two years. After this period has expired, the possibility to install software updates can be extended by purchasing an EUP (Extended Update Period) as part of a maintenance contract for 1 year at a time.

### Licenses

Order no.	Product name	Description
34.040010	ibaDaVIS-V2	Data Visualization and Information Service (12 tiles)
34.040100	ibaDaVIS-upgrade by 12 Tiles	Upgrade by 12 tiles
34.041010	ibaDaVIS-EUP	Extended Update Period - 1 year
34.041100	ibaDaVIS-EUP upgrade by 12 Tiles	Extended Update Period - 1 year
Optional:		
30.800001	ibaHD-Server-API-Read	gRPC-API interface to query saved signals and events from existing HD stores

Table 1: Available licenses

## 3 First steps

### 3.1 Installation and program start

Install the *ibaDaVIS* software on the computer on which the *ibaDaVIS* service is to be started. Make sure that the computer has sufficient memory.

You can find the "iba Software & Manuals" file on the data carrier in the directory  
`...\01_iba_Software\ibaDaVIS`

1. Run the `ibaDaVIS_vx.y.z.exe` file and follow the instructions in the installation wizard.

---

#### Note



At the start of the installation process, you can open the version history with the *View version history* link. Read through the information about the changes and system requirements. Make sure that the new software version meets your project requirements.

2. Accept the license agreement.
3. Check your license information, if necessary.
4. Select the installation directory.
5. Define a specific IP address (optional) and determine a free port number under which the *ibaDaVIS* service will be accessible as an application.
6. You can select the additional software *ibaManagement Studio Agent* for installation (optional).
7. A desktop shortcut for opening *ibaDaVIS* with the default browser can be created on the desktop (optional).
8. The software WIBU CodeMeter Runtime can be selected for installation (optional).
9. Select the user account (optional).
  - Local system account (default)  
This account is sufficient if the server process works only on the local computer and does not need any other special user-related rights.
  - This user  
Select this option if the server process requires other special user-specific rights. The user account entered here must have these rights (Windows User Management).

---

#### Other documentation



Further information about creating and using for service accounts is provided in the "Information Security for iba Products" guide, which you can find in the download area on the iba website

10. Start the installation process with <Install>.

11. Select whether you want to open *ibaDaVIS* with the current default browser and finish the installation with <Complete>.

---

**Note**


If starting *ibaDaVIS* service correctly was not possible, a corresponding message is displayed. For troubleshooting, possible causes can be localized via the log files, see chapter ↗ *Logging*, page 131

---

**Note**


Furthermore, it is checked whether the installation is taking place within the update period stored in the dongle or in the soft license. If this is not the case, a message appears with information about optionally purchasing an EUP (Extended Update Period) or a maintenance contract, see also chapter ↗ *Licensing*, page 12

---

### 3.1.1 Installation of ibaDaVIS via command line

The installation of *ibaDaVIS* can also be started via a command line. This is helpful for central software administration or when using deployment systems.

The installer offers various options and we provide a list of the most useful ones for installing the software.

You can control how the installation should take place and which components should be installed with the command line switches that are set after the call of the installation program.

Notation:

```
ibaDaVIS_vx.y.z.exe [/SILENT /SUPPRESSMSGBOXES] [/LANG="xx"]
```

/VERYSILENT /SUP- PRESSMSGBOXES	With this switch you install the software "Silent Mode", i.e. no interaction is required during the installation.  Without specifying further parameters, the installer is executed as if <Next> was always pressed in the dialog. With a new installation thereby the program parts from the default setting are installed. With an update installation the selected program parts from the previous installation remain selected.
/TASKS=	This switch allows you to specify whether a desktop icon should be created during installation.  Examples: /TASKS=desktopicon /TASKS=nodesktopicon

/DIR=	Use this button to specify the installation folder, i.e. the program folder. Example: <code>/DIR="C:\Programme (x86)\iba\ibaProduct"</code>
/LANG=	This switch selects the language of the installation program. If nothing is specified, the system language is used. Examples: <code>/LANG=en</code> <code>/LANG=de</code> <code>/LANG=es</code> <code>/LANG=fr</code>

You can find more language packs in the chapter [➤ User Profile](#), page 117

## 3.2 Registration

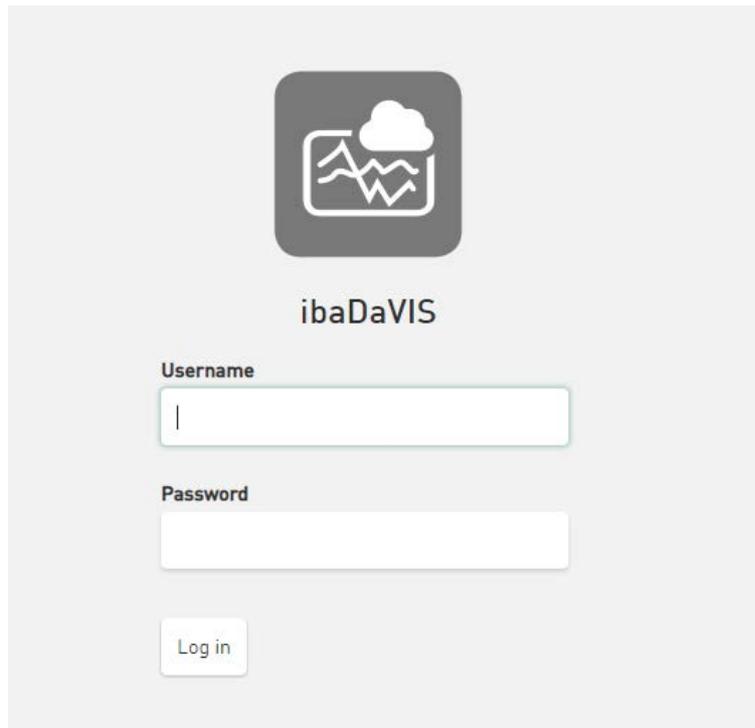
Enter the address `http://localhost:80` based on the logic for the web address `http://[PC-name]:[Port]` in your web browser, see [➤ ibaDaVIS Status App](#), page 18. In order to use all display forms and functions in correct form, the use of the web browser Google Chrome or Mozilla Firefox is currently recommended. In future software versions additional web browsers will be available. If you use the standard port address 80 for registration, you do not have to enter the port number.

### Note



For the individual registration, you can use the name and the port number of the PC. For this purpose, enter the PC name and the port number in the address line of the web browser.

Following the initial login, via `http://localhost:80` or `http://[PC-name]:[PortNr]`, you will be forwarded to the following authentication page.



The credentials for the initial login as administrator are:

User	admin
Password	Admin#1

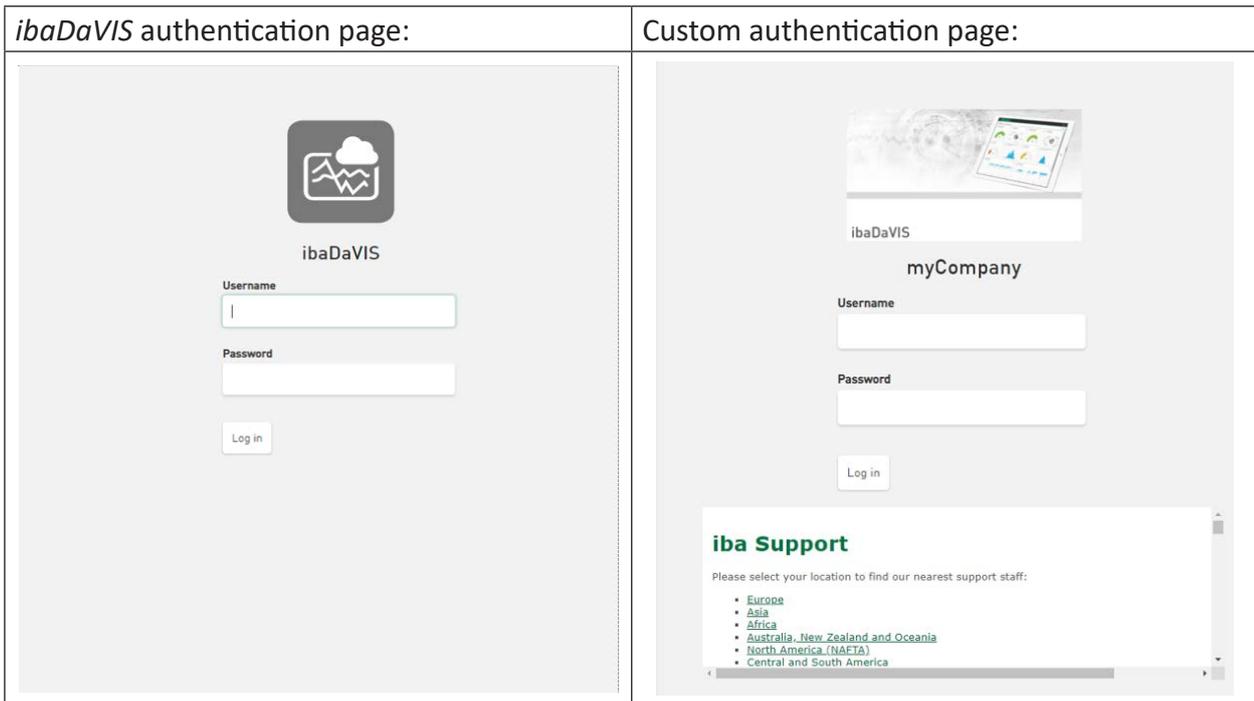
#### Note



It is recommended to change this password after installation. This way, unauthorized usage will be impeded.

### 3.2.1 Create custom authentication page

The authentication page of *ibaDaVIS* allows you to replace the *ibaDaVIS* product icon and the *ibaDaVIS* product name with a custom image and a custom text line, such as your company name. Below the authentication fields, an HTML page can also be added, such as the contact address of your administrator or support. For security reasons, only simple HTML pages are supported.



Information about the custom icon, the header text and the HTML page are optional settings, which can be added in the JSON configuration file `C:\ProgramData\iba\ibaDaVIS\config.json`.

```

config.json
1  {
2    "Urls": "http://*:80",
3    "LogLevel": "info",
4    "LoginPage": {
5      "IconPath": "C:\\ibaDaVIS\\2.8\\Captured_TopPage.PNG",
6      "HeaderText": "myCompany",
7      "HtmlContentPath": "C:\\ibaDaVIS\\2.8\\support.html",
8      "HtmlContentMinHeight": "100",
9      "HtmlContentMaxHeight": "150"
10   }
11 }
12
    
```

**"IconPath"**

Local file path to the custom image, which replaces the *ibaDaVIS* product icon. The size of the displayed image is limited in order to keep the authentication fields in the visible range (max. image width 300 pixels).

**"HeaderText"**

Replaces the product name *ibaDaVIS*, for example with your own company name.

**"HtmlContentPath"**

File path to the HTML page that is shown under the authentication fields.

**"HtmlContentMinHeight", "HtmlContentMaxHeight", "HtmlContentWidth"**

Limit the visible range of the HTML page as a numerical value in pixels.

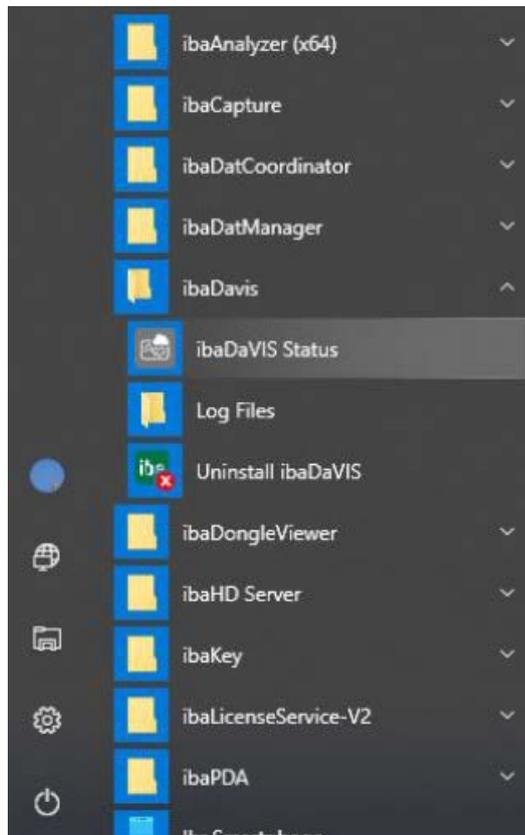
### 3.3 ibaDaVIS Status App

After installing *ibaDaVIS*, a corresponding tray icon appears  in the taskbar.

The icon shows the current status of the application and offers a context menu, for example for controlling service activities. The following options can be selected:

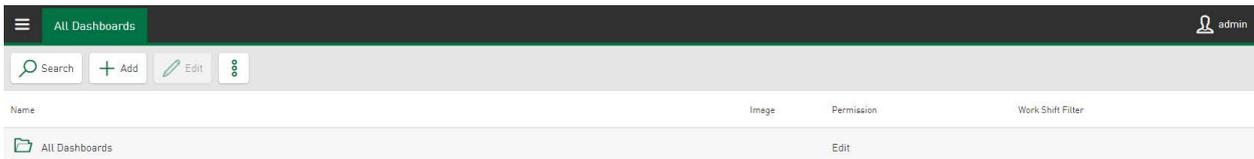
Open in Browser	Open the current standard browser via the URL of the local <i>ibaDaVIS</i> service
Start Service - Stop Service - Restart Service	Start, stop or restart <i>ibaDaVIS</i> service
Open Log/Configuration Folder	Open the Windows file explorer under ~ProgramData\iba\ibaDaVIS
Support	List of iba subsidiaries and partners worldwide ibaDaVIS version history
Save information for iba support...	Compilation of application-related information, e.g. log and project files, as a Zip file for iba support requests.
Version history	ibaDaVIS version history
Help	Start online help
Exit	Closing <i>ibaDaVIS</i> status

The *ibaDaVIS Status* app can be manually started via the Windows start menu.



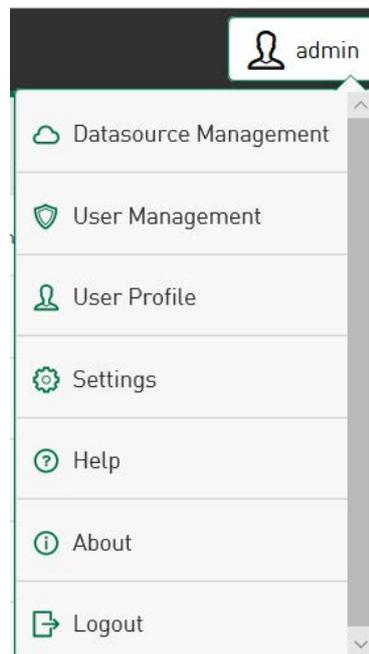
### 3.4 Program interface

The following view appears after a successful login:



The dashboard is managed and edited in this view. When logging in for the first time, this list is empty, as the datasources, dashboards and tiles need to be configured first. See chapter [↗ Configuration concept](#), page 20.

The administration menu shows the name of the logged in user. When logging in for the first time, this is “admin.”



The menu contains links to

the **Datasource Management** to configure the datasource. See [↗ Configuration of datasources](#), page 21

the **User Management** to manage local/domain users and groups. See [↗ User Management in ibadaVIS](#), page 107

personal settings under **User Profile**. See [↗ User Profile](#), page 117

**Settings** for analysis configuration, work shifts and the color scheme, see [↗ Settings](#), page 119

the **online Help**, see [↗ Help](#), page 129.

**About**

Here, you find additional information about the *ibaDaVIS* version number, licenses, network addresses, dongle versions etc. You can find additional information about licenses and dongles in chapter [↗ Licensing](#), page 12; the version history is stored under the version number. If you need support, you can find iba branches and partners under *Contact Information*.

**Logout**

Log out of *ibaDaVIS*.

---

**Note**

*ibaDaVIS* offers touch-optimized working, which is why the term “tapping” is used in the following. Of course, it is also possible to always use a mouse and to click on the corresponding button for all work steps.

---

## 3.5 Configuration concept

The configuration generally occurs in three steps:

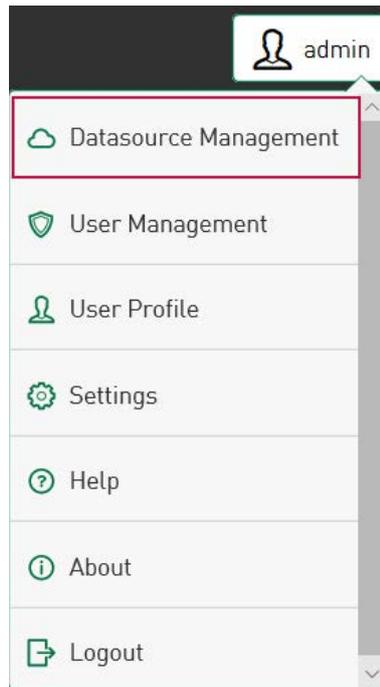
- Configuration of the datasources, see [↗ Configuration of datasources](#), page 21
- Dashboard configuration, see [↗ Configuration of dashboards](#), page 41
- Adding new tiles, see [↗ Adding the tiles](#), page 46

## 4 Configuration of datasources

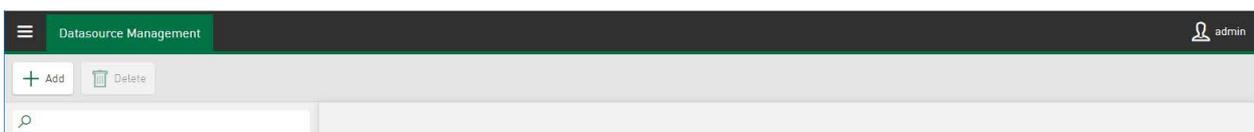
For the product and process analysis, *ibaDaVIS* uses visualizable data from databases, data from the *ibaHD-Server* or signals from DAT files as datasources.

In the *Datasource Management* dialog, you first define connections to the databases or to the *ibaHD-Server*. Connections to multiple databases or *ibaHD-Server* can be created.

Tap on the current user name (for example, admin) to open the menu and select *Datasource Management*.

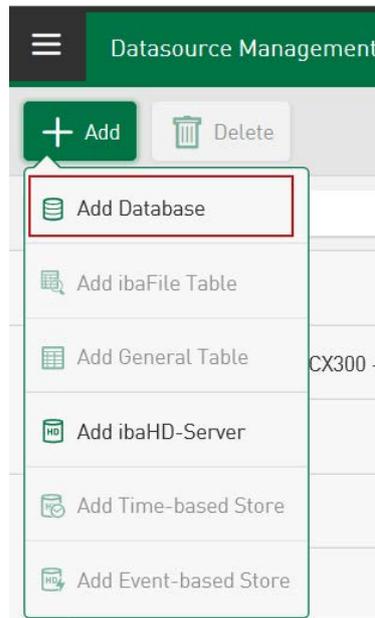


If there are already connections to datasources, the databases and their selected tables are displayed on the left. Use the search field to search for an existing database link. The first time you call up the *Datasource Management* menu item, this list is empty.

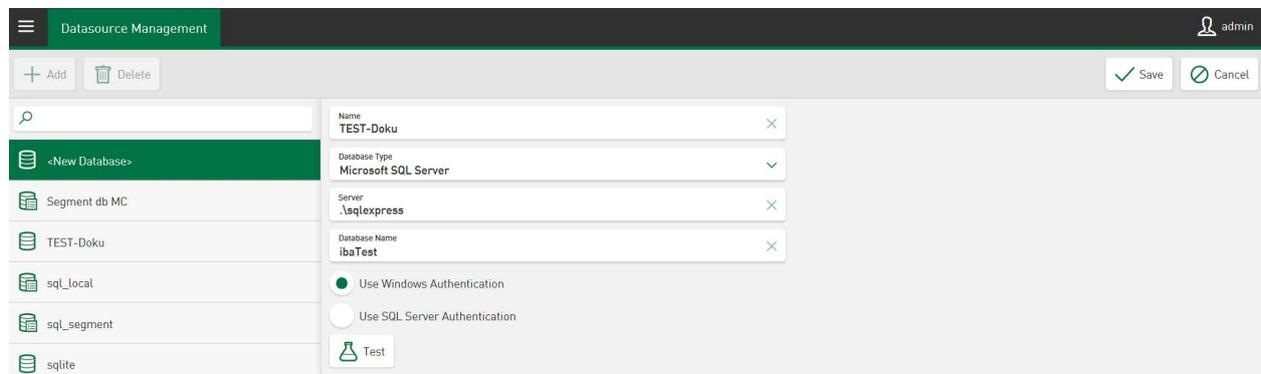


## 4.1 Configuration of the database connection

In order to visualize data from databases or signals from DAT files on a dashboard, select the menu item *Datasource Management* in the administration menu.



By tapping <Add> + <Add Database>, a new database connection is added to the list of data-sources on the left side. The name "New Database" is preset as default. A dialog window opens for setting the specific database properties.



Enter a name for this database connection. Use a drop-down menu in the second line to select the appropriate database type. An arrow in a field indicates that a drop-down menu is available. The following database types are available:

- Microsoft SQL Server
- MySQL / MariaDB
- SQLite
- PostgreSQL
- Oracle Database

Specific connection parameters must be entered for each database type. The database-specific connection parameters are displayed according to the selected database type and are provided via input fields. Detailed information about this can be found in chapter [Examples for database connections](#), page 25

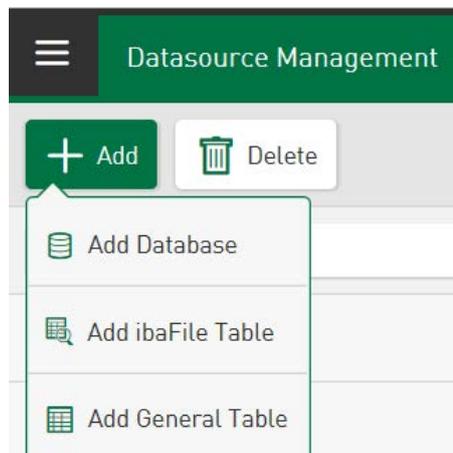
Use the <Test> button to check whether the connection to the database was successfully established.  Test

The settings can be saved with the <Save> button.

### Add iba characteristic value table

Highlight the database and by tapping <Add> a file table can be selected which is inserted below the selected database. A distinction is made between two file table types:

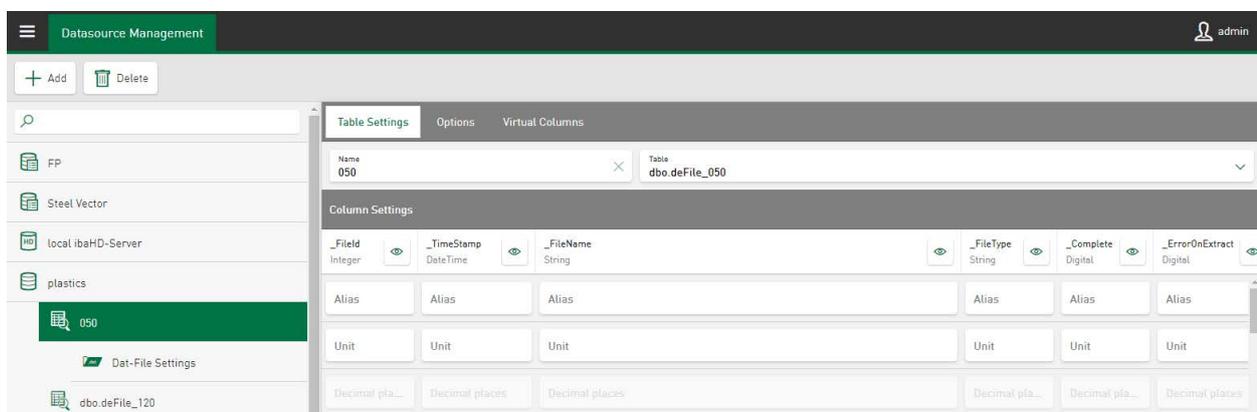
- ibaFile Table 
- General Table 



Under <Add ibaFile Table>, values can be accessed that have been entered into the file table of the database with the DB functionality of *ibaAnalyzer*.

Under <Add General Table>, values are added from an open database table as a datasource. All database tables that contain a date/time column are permitted.

Depending on the table type, the selectable tabs differ, see [Table settings](#), page 26



In the *Table Settings* tab, enter a table name in the *Name* dialog box. In the *Table* field, select the table to be used as a datasource from the drop-down menu.

---

**Note**

In *ibaDaVIS*, the tables displayed for selection are filtered. For the datasource type *ibaFile Table*, only tables that are recognized as file tables in iba format are available for selection. The default name of the file table is preset in *ibaAnalyzer* as "deFile" and can be changed for the user. If the name of the file table currently in use is not known, it can be read in the analysis rule that is used for database extraction. In the *ibaAnalyzer* area "Database link", the names of the tables can be changed and read in iba format. For more information, see the *ibaAnalyzer* manual.

For the *General Table* datasource type, all available tables and database views that contain a date/time column can be selected from a list.

---

You can find additional information on the tabs in the following chapters:

➤ *Options*, page 28

➤ *Configuration of virtual functions*, page 48

**Edit datasource**

Existing database connections and tables are displayed on the left side.

Tapping on  opens the database and the associated tables are shown.

Tapping on  closes the database again.

To edit, select the database or table (highlighted in green). The settings are edited either by entering the data directly into the respective field or via a drop-down menu. If the entries are changed, the buttons <Save> and <Cancel> appear to either accept or discard the changes.

### 4.1.1 Examples for database connections

Depending on the database type, you have to make different entries. In the following, we show you examples of the following types of databases: MS-SQL, MySQL/Maria-DB, SQLite and Oracle.

#### MS-SQL connection:

The screenshot shows a configuration window for a Microsoft SQL Server connection. At the top right are 'Save' and 'Cancel' buttons. The configuration fields are:
 

- Name: Database test
- Database Type: Microsoft SQL Server
- Server: .sqlexpress
- Database Name: ibaTest
- Authentication:  Use Windows Authentication,  Use SQL Server Authentication
- Test button:

Windows authentication: The user account *ibaDaVIS* service is running on is used to connect to the SQL server instance. This is usually the system account. The user can also be changed to another user with administrator rights.

#### Note



When using the local system account, the corresponding login NT-AUTHORITY\SYSTEM in SQL server must be given additional permissions that are not set up by default. Required are the rights to connect to the database, to create and modify a table, and to write to a table. Clarify in advance with your DB administrator whether the extension of rights is possible or whether a different login or authentication should be selected.

#### MySQL/Maria-DB connection:

The screenshot shows a configuration window for a MySQL/MariaDB connection. At the top right are 'Save' and 'Cancel' buttons. The configuration fields are:
 

- Name: Database test 2
- Database Type: MySQL / MariaDB
- Server: localhost
- Port: 3306
- Database Name: ibaTest
- User: root
- Password: (empty)
- Test button:

**SQLite connection:**

The storage destination of the SQLite file is specified in the field *Path*. Tap in the field to open the file selection dialog and simplify the specification of the SQLite database file. The search in the browser refers to the server-side system.

**Oracle-DB connection:**

**4.1.2 Table settings**

**ibaFile Table**

Table Settings									
Name		Table							
Beize		dbo.FP_Beize_I							
Column Settings									
frames	Einsatzbund	COIL_ID	Thickness_abs	Width_abs	L_thickness	deviation_avg	L_thickness_deviation_max	L_width_deviation_avg	
Integer	String	String	Double	Double	Double	Double	Double	Double	
Alias	Alias	Alias	Alias	Alias Width	Alias	Alias	Alias	Alias	
Unit	Unit #	Unit #	Unit mm	Unit mm	Unit μm	Unit μm	Unit μm	Unit mm	
Decimal plac...	Decimal plac...	Decimal plac...	Decimal places	Decimal places 1	Decimal places	Decimal places	Decimal places	Decimal places	
Color	Color	Color	Color	Color	Color	Color	Color	Color	
	100797000	100797	3.29	1652.9		0.49		115.30	0.0

-Icon: Tapping the icon opens a drop-down menu for showing and hiding the table column. If the table column is hidden in the table settings, it is also not selectable in the dashboard pane.

-Icon: If <Updatable> is selected, the values of selected data sets can be updated directly on the dashboard (exception: iba columns `_Field`, `_TimeStamp`, etc.). For this, the user must be authorized to change the contents of datasources. See [↗ Datasource Permissions](#), page 114 and [↗ Update database table records](#), page 88.

<Alias>: Here, an alias name for the table column can be entered. This name appears instead of the original name in the dashboard pane.

<Unit>: Specify an appropriate size unit for the measured value. This unit will appear with the table column name in the dashboard pane.

<Decimal places>: The number of decimals displayed on the dashboard for the measured value. Only whole numbers can be entered.

<Color>: Here it is possible to assign individual colors to signals and values in diagrams, see [↗ Color selection in datasources](#), page 125

## General Table



Select an open database table under *Table* and the column of the *Date Time* data type under *Timestamp column*. The default is the column name "I\_TIME". All database tables that contain a date/time column are permitted as a *General Table*. The currently available columns and a reduced data set are visualized as a preview.

The column settings for visibility, alias name, units and definition of decimal places are the same as the column settings of *ibaFile Table* for a common time-based table for *General Tables*.

### 4.1.3 Options

#### Timezone of the data timestamp

A different timezone can optionally be selected in datasources of the type *ibaFile Table* or *General Table*. As a preference, the same timezone is set for each datasource as for *ibaDaVIS-Service*. However, when data is recorded in a different timezone and the time stamps in the table show the local time, there can be time shifts for the events mapped on the dashboards. These time shifts can be avoided by adjusting the time zone in the datasource.

For *ibaHD-Server* configurations, adapting the time zone is not necessary, since data is sent to *ibaDaVIS* in UTC format.

#### Enable segment tables

Enable this option if the measurement signals from the DAT files were extracted directly into the database segment table using the DB functionality of *ibaAnalyzer*. Also see [Options - DAT File Settings](#), page 31

#### Other documentation



Additional information about the extraction of measurement signals from measurement files can be found in the *ibaAnalyzer* manual.

#### Allow download of the PDF, CSV, ZIP and PARQUET files by paths

Permissions can be assigned for a direct download of PDF, CSV, ZIP or PARQUET files for the datasource types *ibaFile Table* and *General Table*. For this purpose, the name of the file must be registered as the reference in the database table and *ibaDaVIS* must have read rights to the directory in which the reference file is located.

Field	TimeStamp	FileName	E	M	E	T	N	N	N	CSV_Files	PDF_Files	Parquet_Files			
1649147586	2016-08-22 05:2...	E:\dat\Custom...	r...	1	0	H4...	2...	02...	674	02...	4...	4,04	C:\csv_Export\ibaDaVIS_Export_2021-02-03_18-26-34.csv	C:\PrintAllTest\Report_1.PDF	C:\PrintAllTest\DataSet_3.par...

The respective string is then signed with the ending `.csv`, `.pdf`, `.zip` or `.parquet` as a download link in the tile type *Table*.

See also [Download link for PDF, CSV, ZIP, PARQUET files](#), page 87.

### Display only file names

If you enable this option, the information displayed in the dashboards is reduced to the file name and related file paths are not displayed (available for *ibaFile Table* only).

### Enable logging for updates on datasource content

This option enables logging for user-controlled updates. If a user modifies table contents via the update function (see [↗ Update database table records](#), page 88), the user name and the current time stamp are registered by default in two additional columns under the designations TOM (TimeOfModification) and UOM (UserOfModification).

---

#### Note



- An already existing DATETIME column can also be used as a log column for the time of modification (TOM); likewise, an already existing string or varchar column can be selected for the modification user (UserOfModification - UOM).
- Additional columns can only be created if the currently used database login includes the authorization to change the datasource table.

---

### 4.1.3.1 DAT file signals in segment tables

DAT file signals in segment tables can be read directly from the database table and not from the referenced DAT file.

This function requires the extraction of selected signal data with the DB functionality of *ibaAnalyzer* into the segment table. In addition to the characteristic values from the index table, the DB functionality of *ibaAnalyzer* also inserts signal values in a structure defined by the user into the tables.

---

#### Other documentation



For further information about the correct extraction with the DB functionality of *ibaAnalyzer*, refer to the *ibaAnalyzer* manual.

---

Define a table in *Datasource Management* under <Add ibaFile Table> to retrieve signal data in the segment table.

Open the *Options* tab and select the <Enable segment tables> function.

Select the *Channel Header* and the *Segments* in the specified fields. The specified table names are filtered according to the supported table format.

If you work with the DB functionality of *ibaAnalyzer*, it is possible to store the data in multi-column format (MC format). This format works on the basis of several tables, which all have the segment table name and differ in suffix. Select the table with the suffix "\_AvgT" as the segment table if you are working with the MC format.



Now, signals from the database tables are visualized instead of those from DAT files.

When enabled, a new menu item *Segment Table Settings* additionally appears below the selected table. When disabled, the menu item is removed again.

Here, a default color for signals from segment tables can be defined for each configured *ibaFile Table*. In each tile (e.g. line chart) that displays signals from segment tables of this datasource, these color settings are used to visualize the signal trends. However, the signal color can also be changed at any time in the respective tile view.

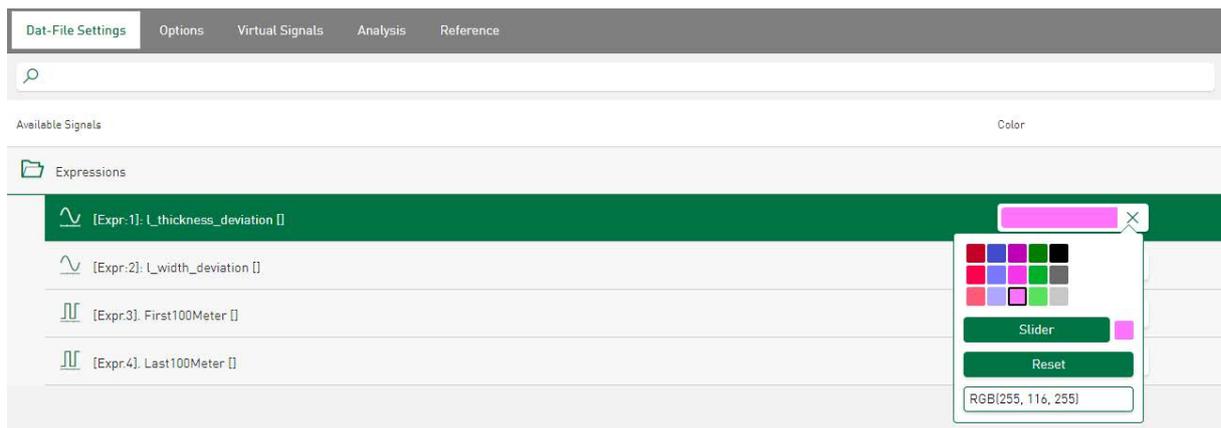
**Note**



Changes in the color scheme are also applied to default colors for DAT file signals from segment tables.

### 4.1.4 DAT File Settings

A *DAT File Settings* folder is generated for each newly added *ibaFile Table*. In the tab of the same name, a default color for signals from DAT files can be defined for each configured *ibaFile Table*. When selecting this function, the signal names of the last valid DAT file of the *ibaFile Table* are displayed in a signal tree.



The color field can be used to determine the default color for the listed file signals. In each tile chart that displays signals from DAT files of this datasource, these color settings are used to visualize the signal trends. However, the signal color can also be changed at any time in the respective tile view.

**Note**

Changes in the color scheme are also applied to default colors for DAT files.

For information on editing virtual signals, see chapter [↗ Configuration of virtual functions](#), page 48

#### 4.1.4.1 Options - DAT File Settings

##### Replace DAT files path

Enable this option if the DAT files are generally saved in a different location than the original location at the time of extraction. This may, for example, be the case if the files are moved or copied to a network drive after the extraction task.

##### Replace PDF reports path

Enable this option if the PDF report files are generally saved in a location that is different than that of the extracted DAT files.

##### DAT Password

Enter a datasource-related password here for the automatic opening of the password-protected DAT files.

#### 4.1.4.2 Analysis

A configured analysis contains an analysis file (.pdo). One or more configured analyses can be combined with the current selected data table in the *Analysis* tab. A DAT file or ibaHD data can be downloaded on the dashboard together with an analysis and opened with *ibaAnalyzer* directly after downloading.

For more information about the configuration of the analyses, see [↗ Analysis Configuration](#), page 119

For more information about using the analyses, DAT files and HD data, see [↗ Using the Analysis configuration](#), page 120

For more information about using the analyses and HD data, see [↗ Markers in HD stores](#), page 69

### 4.1.4.3 Reference

This function allows the comparison of signals from DAT files with signals from a selected reference file. The signals can be compared visually in a tile on the dashboard.

A reference datasource can be added to each datasource of type *ibaFileTable*. You can use any datasource of the type *ibaFileTable* as a reference datasource.

For this, select the datasource in the *Datasource Management* that you have created with the DB functionality of *ibaAnalyzer*.

#### Reference datasource

The datasource type *ibaFileTable* can be selected as datasource.

#### Reference ident column

The values that were selected to display different reference files on a dashboard for visual comparison are displayed here.

#### Reference values to display

DAT file signals: The displayed reference signals are read from the linked DAT file.

Values from segment tables: The displayed reference signals are read from segment tables

#### Other documentation



For further information about the correct extraction of measuring channels and segment tables with the DB functionality of *ibaAnalyzer*, refer to the *ibaAnalyzer* manual.

For more information on the use of process-relevant reference signals, see [➤ Visualize reference signals](#), page 68

#### Note



#### Reference - Migration ibaDaVIS v2 to v3

If you are using *ibaDaVIS* version 2 and have already configured the *Reference* function, a change or reaccess is required.

In case of installation and project migration of *ibaDaVIS* version 3, the pre-selection "\_TimeStamp" is set for the reference ident column. Due to some changes in the backend of the datasource configuration, this pre-selection has to be made. If "\_TimeStamp" has not been used as the ident column so far, the configuration will need to be carried out again. For this, select the applicable column under *Reference ident column*. Afterwards, the functionality is restored.

## 4.2 Configuration of the ibaHD-Server connection

Time-based signals and events from HD stores can be queried directly from the *ibaHD-Server* and transferred to dashboards of *ibaDaVIS*. An additional license for the programming interface *ibaHD-Server-API-Read* (for *ibaHD-Server* v2.5.0 or higher) is required for this. Time- and event-based HD data can therefore be visualized and analyzed in the tiles of *ibaDaVIS*.

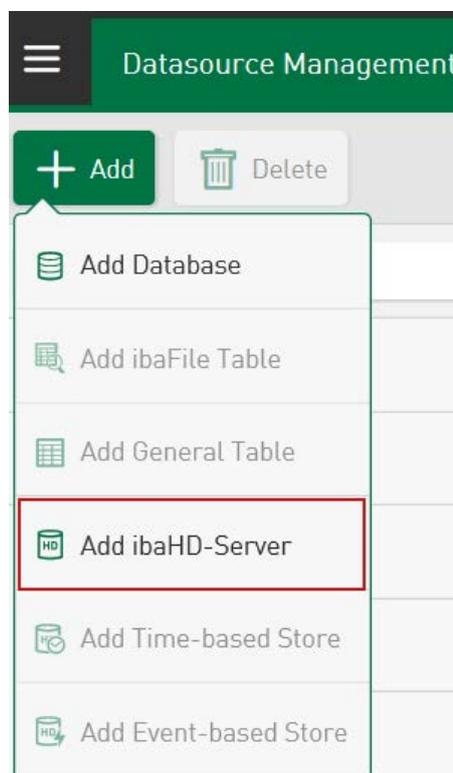
### Other documentation



The *ibaHD-Server* user who is specified when setting up the *ibaDaVIS* connection must be assigned the necessary access permissions (permissions for API store, user-related permissions) in *ibaHD-Server*.

Refer to the *ibaHD-Server manual* for more information about this.

In the *ibaDaVIS* administration menu, select the menu item *Datasource Management*.



Tapping on <Add> + <Add ibaHD-Server> opens dialog windows to configure connection settings for *ibaHD-Server-API* or *ibaHD-Service*.

## ibaHD API connection settings

The *API Key* and the *Certificate thumbprint* are already available in the user interface of the *ibaHD-Manager* and entered directly in the read-only fields. The further connection parameters must be entered directly in this view of *ibaDaVIS*.

### Parameter

#### Name

Host name or IP of *ibaHD-Server*

#### Server

Name of the active server connection

#### Port

Communication port of *ibaHD-API* (standard value 9003)

#### User

User name for *ibaHD-Server* with access to HD data stores

#### API Key

Read-only field displaying the user-dependent key for higher security levels. This key is only used if the user management is enabled on *ibaHD-Server* side.

#### Certificate thumbprint

Read-only field displaying the thumbprint of the currently applied certificate.

#### <Remove>

Deletes the currently used certificate from the connection parameters of the datasource.

#### Select certificate

Selection field for the certificate file.

**<Test>**

Once all of the required information has been entered, you can check here whether your connection information is correct. After tapping on the button, the list of the HD stores is requested. The connection test is successful if the list of available memories contains at least one entry.

**Other documentation**

The required *ibaHD API* connection settings can be found in the user interface of the *ibaHD-Manager* in the *ibaHD-API* tab.

**ibaHD Service connection settings**

Here the connection settings of *ibaHD-Service* are displayed for the further analysis with *ibaAnalyzer*. Alterations can be entered directly in the input fields and applied to the connection setup.

**Quick Connect ibaHD-Server to ibaDaVIS**

To enable a fast connection setup between the *ibaHD-Server* and *ibaDaVIS*, first open the *ibaHD-API* tab in the *ibaHD-Manager* and then the sub-tab *Get API key for admin*. As soon as you activate the quick connect button in the *ibaHD-API key for admin* dialog, the connection information is copied to the clipboard as string.

**Note**

To simplify the transfer of the connection information from the clipboard, open the browser of the PC on which the *ibaHD-Server* is installed and log in to *ibaDaVIS* here.

Go to the *ibaHD API connection settings* tab of *ibaDaVIS* and add the connection information as string into the *ibaHD Manager Quick Connect* input field.

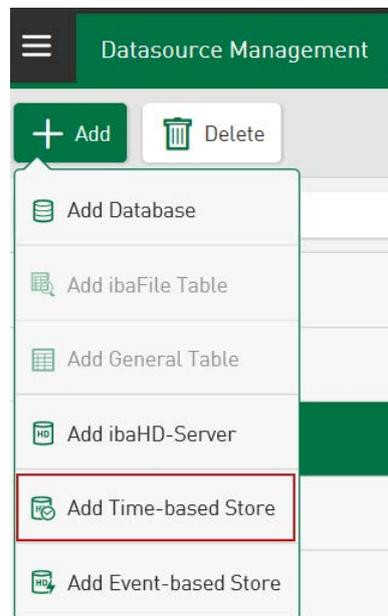
The content of the connection is automatically transferred. Press <Test> to check the connection. Before saving the current settings, you have to specify a name for your *ibaHD-Server* connection.

**Note**

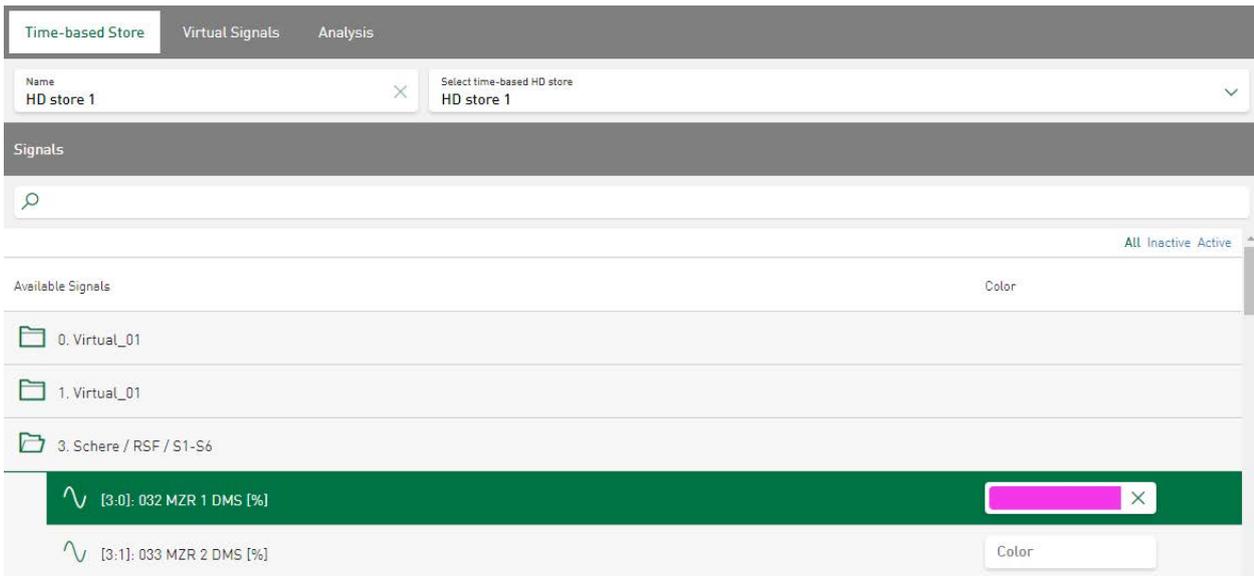
If the connection test fails, enter the IP address instead of the DNS name of the active *ibaHD-Server* connection in the *Server* input field on the *ibaHD API connection settings* tab or contact iba Support.

### 4.2.1 Add Time-based HD store

To add a time-based HD store to a stored *ibaHD-Server* connection, select the corresponding menu item in the *Datasource Management*.



Select one of the displayed time-based HD stores from the dropdown menu as the source file. You can enter a name or simply apply the specified suggestion based on the currently selected HD store name. Tap on <Save> to exit the setup of the time-based HD store as the datasource.



*Signals* displays the signal tree of the selected HD store. Use the color field to assign a certain color to the respective signal.

The display mode of the HD-related signal tree can be adjusted as follows:

- <All> to display all signals
- <Inactive> to display the currently inactive signals
- <Active> to display the active signals.

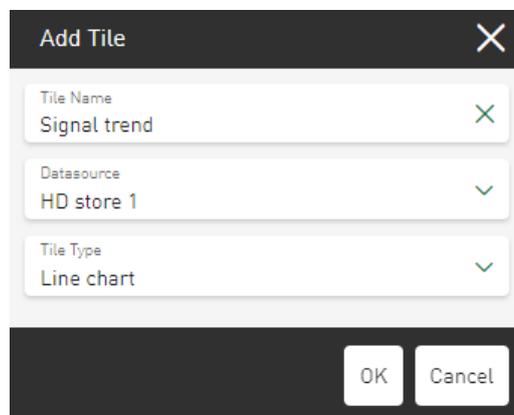
The signal tree is refreshed immediately after selecting the type of display.

In the *Virtual Signals* tab, additional virtual functions can be added and edited, see ↗ *Configuration of virtual functions*, page 48

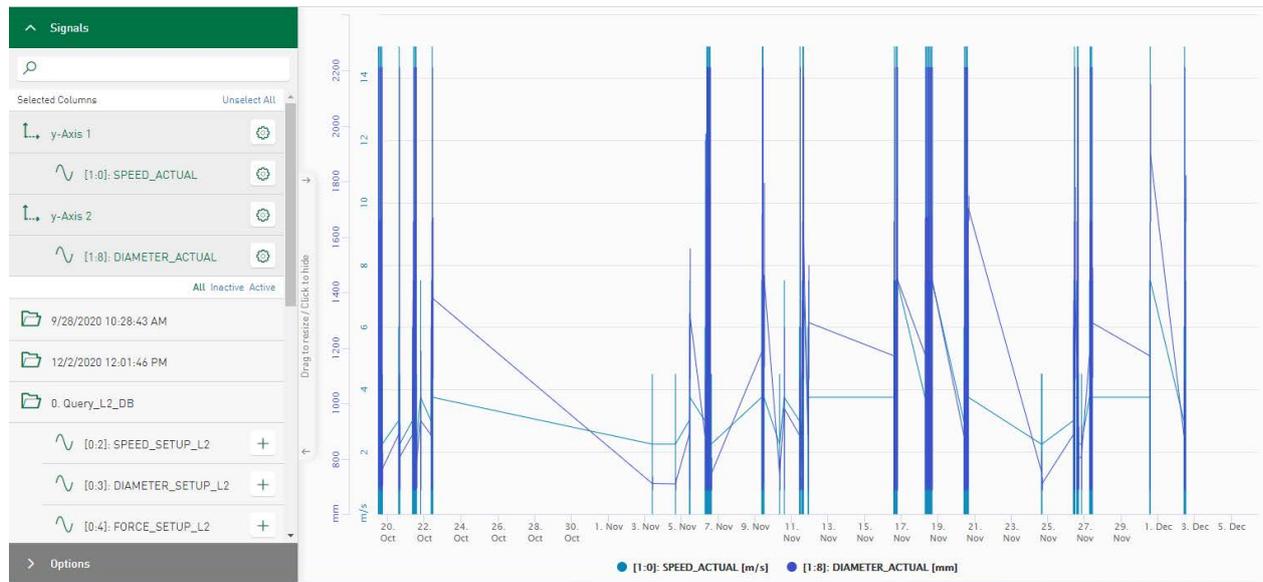
The *Analysis* tab lists the configured analyses. See ↗ *Analysis*, page 31

#### 4.2.1.1 Time-based HD data on dashboard

When a new tile is added, a time-based HD data store can be selected as the *Datasource* from the drop-down menu. The *Tile Type* shows you a list of available tile types from which the desired tile type can be selected.

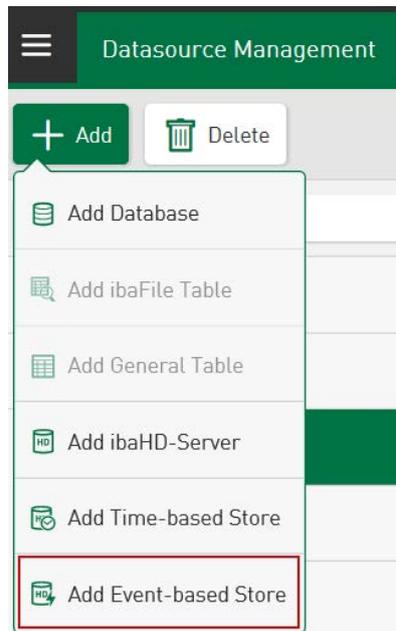


The signal tree related to the HD store is displayed and any of the available analog or digital channels or text channels can be selected as a signal.



### 4.2.2 Add Event-based HD store

To add an event-based HD store to a stored *ibaHD-Server* connection, select the corresponding menu item in the *Datasource Management*.



Select one of the displayed event-based HD stores as the datasource. You can enter a name or simply apply the specified suggestion based on the currently selected HD store name. Tap on <Save> to exit the setup of the event-based HD store as the datasource.

Event-based Store						Virtual Event Fields	Analysis
Name GEB PQ-Events		Select event-based HD store GEB PQ-Events					
Events							
Event String	Timestamp DateTime	Message String	Trigger String	Priority String	Acknowledged Digital		
Alias	Alias	Alias	Alias	Alias	Alias	Alias	Alias
Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit
Decimal places	Decimal places	Decimal places	Decimal pla...	Decimal pla...	Decimal pla...	Decimal pla...	Decimal pla...
Color	Color	Color	Color	Color	Color	Color	Color
Peak in current I1	07/27/2023 08:38:49	Peak in current I1: -150.57	Incoming				0

A series of recently added events is displayed under *Events*. You can optionally add an *Alias* name, add a *Unit*, change the number of *Decimal places* for formatting the numerical values, or assign a color, see [Table settings](#), page 26.

In the *Virtual Event Fields* tab, additional virtual functions can be added and edited, see [Configuration of virtual functions](#), page 48

The *Analysis* tab lists the configured analyses. See [Analysis](#), page 31.

The configuration is immediately applied and completed by pressing <Save>.

#### 4.2.2.1 Event-based HD data on dashboard

When a new tile is added, an event-based HD data store can be selected as the *Datasource* from the drop-down menu. The *Tile Type* shows you a list of available tile types from which the desired tile type can be selected.

Add Title
✕

Tile Name  
Trends
✕

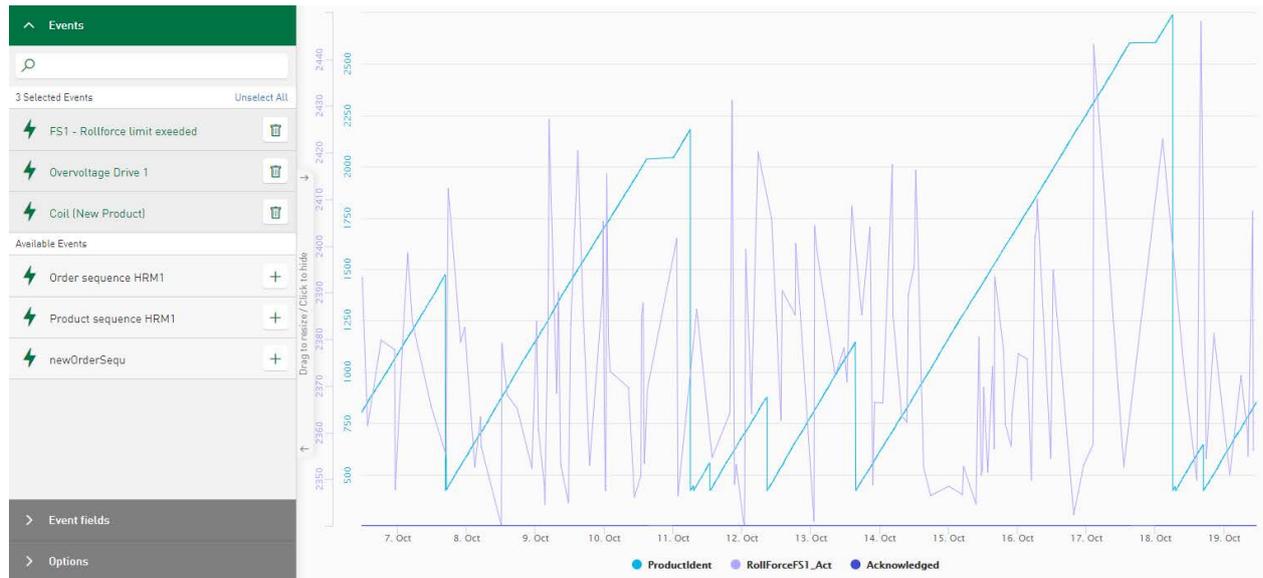
Datasource  
GEB PQ-Events
▼

Tile Type  
Line chart
▼

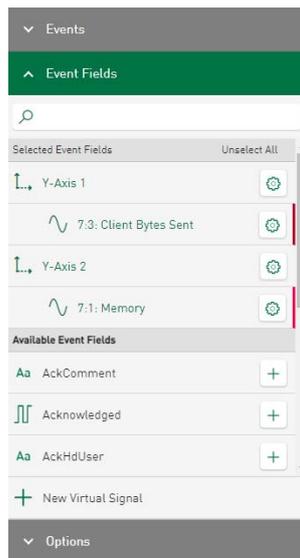
OK
Cancel

The available events are displayed in the area in which the signal tree is normally positioned.

First select the relevant *Events*.



Next, select the associated *Event Fields* to execute the visualization.



## 5 Configuration of dashboards

Tap on the base menu button at the top left  and select *All dashboards*.

In this pane, you can create and manage the dashboards.

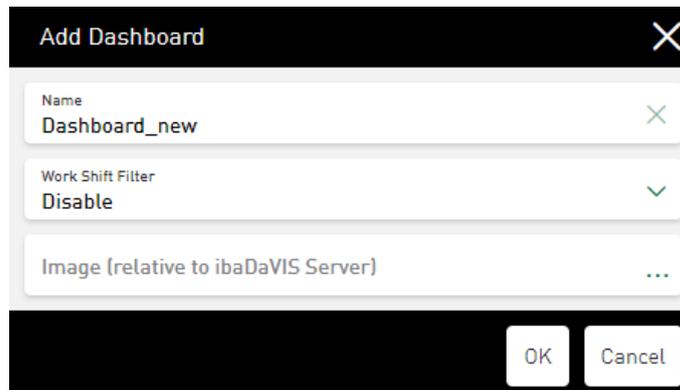


### <Add Folder>

Create specified folders to group your dashboards by topic and add custom images.

### <Add Dashboard>

By selecting this option, you create a new dashboard. In the following dialog window, a corresponding name and optionally a detail filter can be added to determine work shifts. See [↗ Work Shift Definition](#), page 122. Additional images can be added to dashboards and folders. See [↗ Custom images for dashboards and folders](#), page 45.



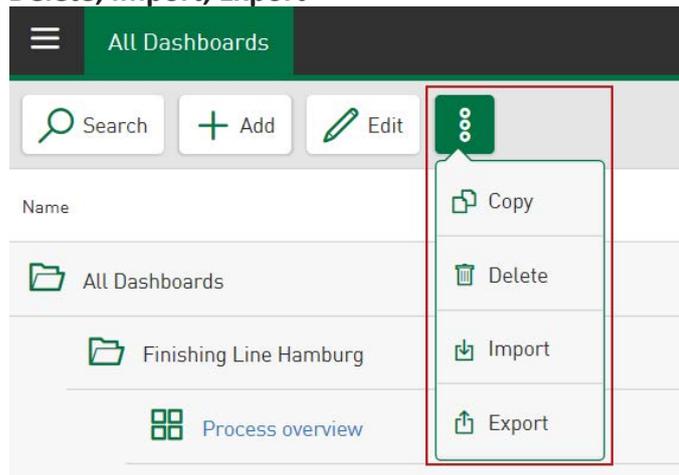
The new dashboard is arranged in alphabetical order.

The following options are available to manage dashboards:

### <Edit>

Selected folders and dashboards (highlighted in green) can be edited via the respective dialog window. If you select a dashboard for editing, ensure that you do not tap on the dashboard name or the dashboard symbol, as this will open the dashboard.

Tapping on the folder name opens the folder and closes it again.

**Context menu: Copy, Delete, Import, Export****<Copy>**

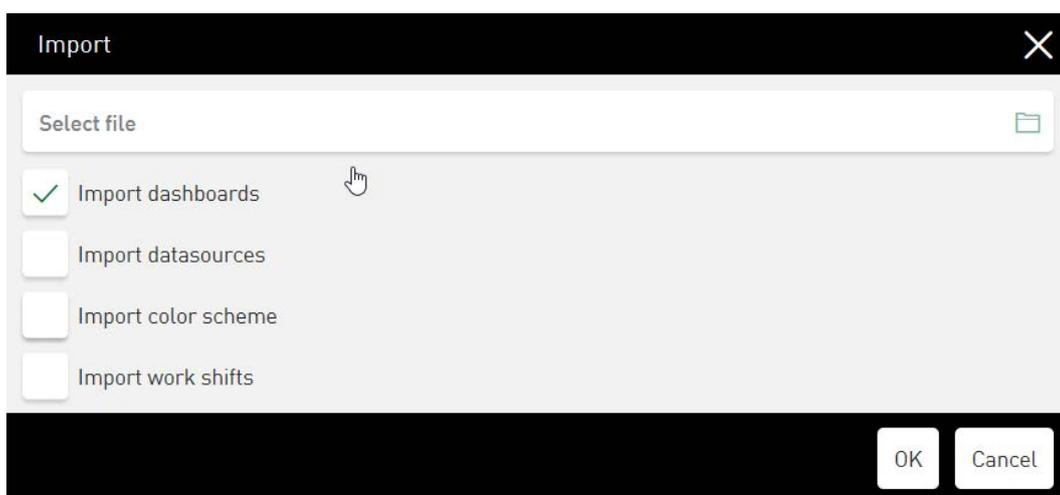
Selected dashboards or folders (highlighted in green) can be copied. If you select a dashboard for copying, ensure that you do not tap on the dashboard name or the dashboard symbol, as this will open the dashboard. The copy is inserted under the original name with the addition "copy" at the same folder level as the original dashboard. A new name can optionally also be set for the copy using the edit window.

**<Delete>**

Selected dashboards or folders (highlighted in green) can be deleted. If you select a dashboard for deleting, ensure that you do not tap on the dashboard name or the dashboard symbol, as this will open the dashboard.

**<Import>**

JSON files that were created by the *ibaDaVIS* export can be imported via this function. The file content is scanned before starting the import. This gives you the ability to select the contained dashboards, the contained datasources and also any contained color scheme in an editing dialog for import. The contained detail filter for determining work shifts can optionally also be imported.



The imported dashboards and folders are added to the currently configured dashboards and folders. If the selection of the imported dashboard tiles exceeds the number of licensed tiles, the import will not start and an error message appears. The import adds the imported data-sources to your project as new datasources and an existing color scheme is replaced by the imported color scheme. An existing work shift definition will also be replaced by the imported work shift definition.

---

**Note**

Importing a manually edited JSON file may damage the current configuration.

---

**<Export>**

Use this function to start exporting the configuration as a JSON file. Use an editing dialog to select content (dashboards, datasources, color scheme, work shifts) you want to be included in the export.



Which content is available for export depends on the permissions of the user who is initiating the export and can only include dashboards and folders that are accessible to this user. Based on the current selection in the dashboard tree, the export contains a single dashboard. If the current selection is a folder, the export includes the content related to the folder, e.g. all dashboards and sub-folders. The export of any dashboard includes the configured tiles in terms of chart type, configured visualisation and position on the dashboard. The main dashboard time filter is included in the exported data; the tile-related filters are not part of the exported dashboard configuration. The option to export the datasources includes the configured datasource connections to the JSON file. If a color scheme is selected or a work shift definition is set, these settings can also be adopted in the export file.

**<Search>**

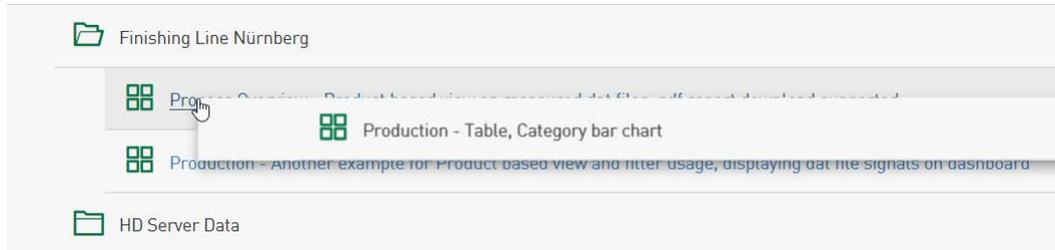
Tapping on the <Search> button opens the search text field. The search term can be entered and the corresponding dashboards and directories are displayed. Tapping on the X in the search text field deletes the search term and ends the search.

**<Save>**

Close the configuration by saving the settings.

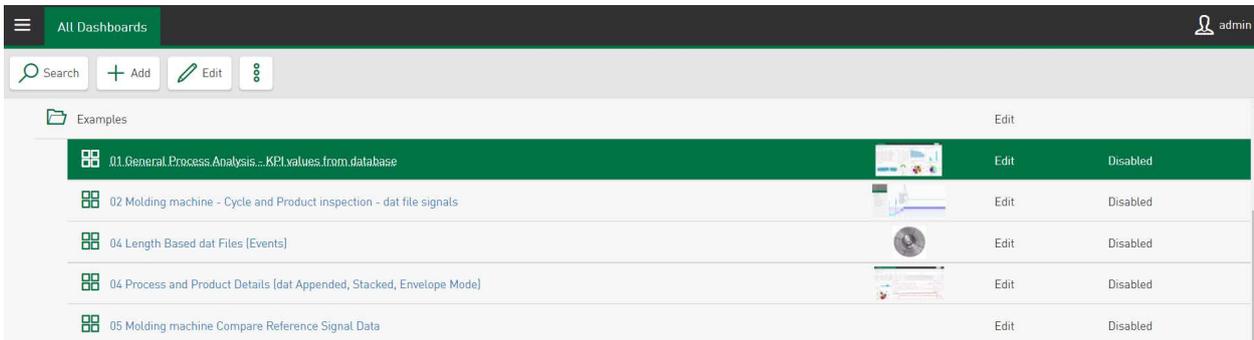
### Drag & drop function

Folders as well as dashboards can both be dragged into a different folder in the dashboard tree. To do this, tap on the icon in front of the folder or dashboard and drag the folder or dashboard to the desired position in the dashboard tree with the left mouse key pressed. They will be displayed in alphabetical order there.

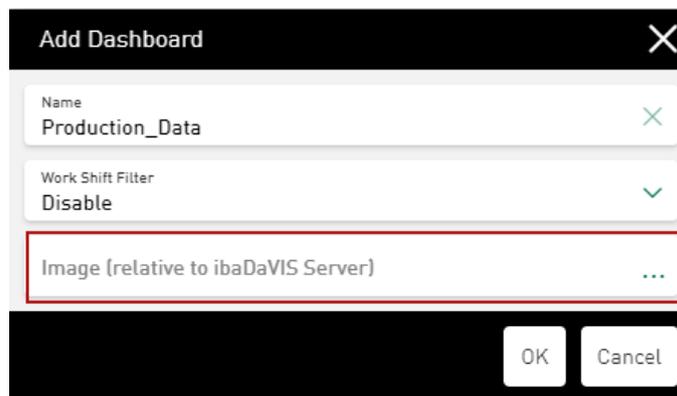


## 5.1 Custom images for dashboards and folders

To be able to assign the content of a dashboard or folder at first glance, it is possible to paste schematic representations, such as photos or pictograms, to the respective dashboard or folder.



The edit dialog for a dashboard/folder provides the text input field for the file path of an image with the field *Image (relative to ibaDaVIS Server)*. The standard image formats, such as png, bmp, jpg, etc. are supported here.



The selected image is shown directly in the edit dialog in a preview. After the settings have been applied by pressing the <OK> button, the image is shown in the overview in a smaller form in the *Image* column at the height of the dashboard or folder.

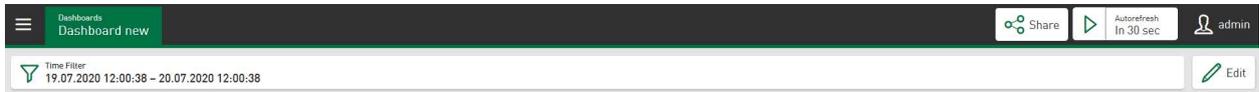
The image is also displayed on the dashboard page in the dashboard header. Dashboards to which no images have been assigned automatically receive the selected image of an affiliated folder pinned.



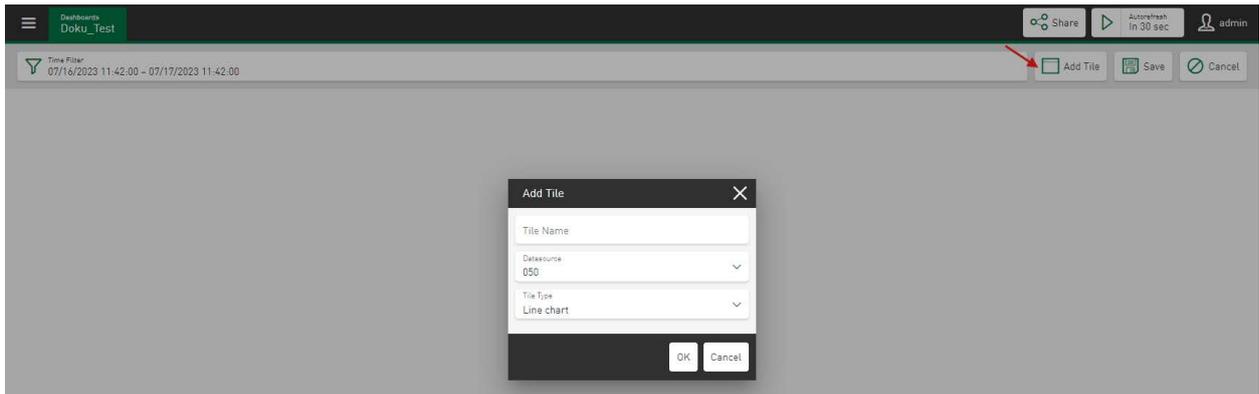
Tapping on the image will show it in an enlarged form.

## 6 Adding the tiles

Open the dashboard by tapping the dashboard name or the dashboard icon to create a new tile. Tap <Edit> to switch to edit mode.



Use the <Add Tile> button to create a new tile. The basic properties of the tile are set in the following dialog box.



In the *Tile Name* field, specify a name for this tile.

In the *Datasource* field, a drop-down menu can be opened to select the appropriate datasource. The tables defined as *datasource* or *ibaHD-Server* data are available for selection, see [↗ Configuration of datasources, page 21](#).

A selection of the available tile types is displayed under *Tile type*. This selection depends on the previously selected *datasource* and can vary accordingly.

### Display options

The following overview shows the available file tables and HD stores (marked with "x") for the respective tile type:

Tile type	ibaFile Table	DAT file signals Segment table values	General Table
Line chart	x	x	x
Scatter chart	x	-	x
Histogram	x	x	x
Pie chart	x	-	x
Gauge	x	x	x
Table	x	-	x
Bullet Graph	x	x	x
Bar chart	x	-	x
Value display	x	-	x
Heat map	-	x	-

Tile type	Time-based HD store	Event-based HD store
Line chart	x	x
Scatter chart	-	x
Histogram	x	x
Pie chart	-	x
Gauge	x	x
Table	-	x
Bullet Graph	x	x
Bar chart	x	x
Value display	-	x
Heat map	x	x

For detailed information on properties and editing tiles, see

➤ *Tile types*, page 55

➤ *Tiles in dashboard view*, page 100

➤ *Edit dashboard*, page 99

Finish editing the dashboard with <Save>.

## 7 Configuration of virtual functions

With virtual functions, you can combine signals or trends with arithmetic operations in order to aggregate values and calculate statistical parameters. Data from database tables, values from DAT files as well as time-based signals or event-based data from *ibaHD-Server* can be used as a basis for comparisons and calculations.

A configured virtual signal is linked to the datasource when it is saved as a calculation rule. The results of a virtual function can be visualized in diagrams and combined with data from databases, HD stores or values from DAT files.

Virtual signals are not stored as data series but are calculated based on the defined calculation rules and displayed in the dashboard view using the current dashboard filters. Virtual signals can also be used as operands for other virtual signals as well as in dashboard views for the scaling of the Y-axes and for the definition of the signal color.

Virtual functions can be added and edited in *Datasource Management* as well as in dashboard tiles, see [Virtual functions in datasources](#), page 48 and [Virtual functions in tiles](#), page 53

Configuring, modifying and deleting virtual functions is only permitted for users with the right to configure datasources or to modify dashboards, see [User Permissions](#), page 111 and [Dashboard Permissions](#), page 113

### Note



#### Event Definitions - Migration ibaDaVIS v2 to v3

In previous *ibaDaVIS* versions, events based on digital signal values were defined in the *Event Definitions* tab for referenced DAT files. Event definitions can be used in line charts as markers to control the displayed zoom area via a filter.

When *ibaDaVIS* version 3 is installed, the configured events are transferred into virtual functions. The virtual functions have the names of the already configured events and are used in the same way as events defined in version 2.

### 7.1 Virtual functions in datasources

In the *Datasource Management*, you can add and edit virtual signals from different datasources to display comparison values for database tables, DAT files and HD stores. Virtual functions that have already been configured are displayed in tabular form. The currently selected and edited function is always highlighted in green.

Name	Function	Unit
Virtual		
Last 100 m	RTrig	
first 100 m	FTrig	

**Add**

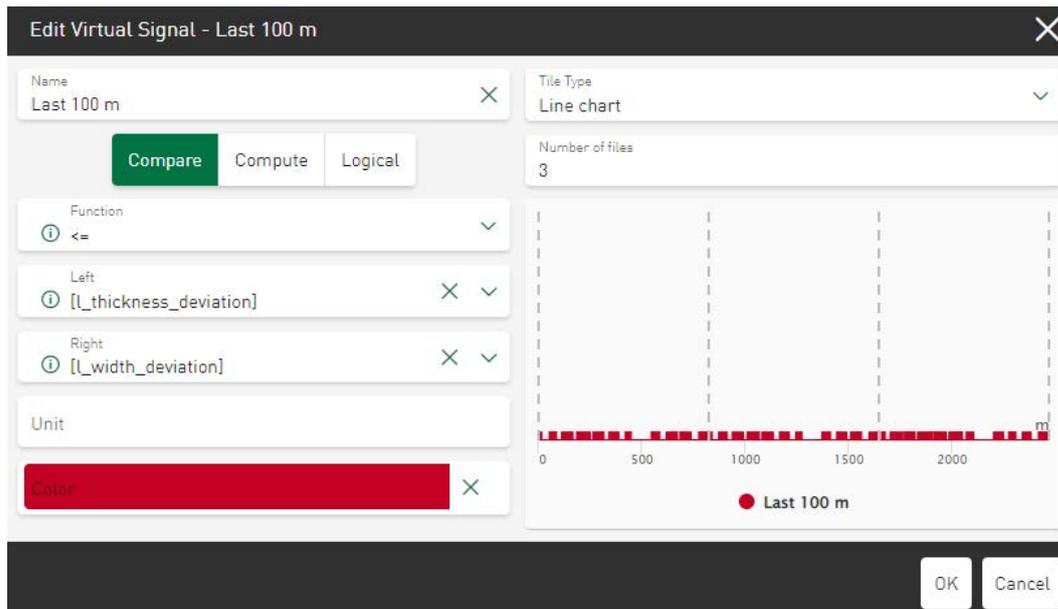
Add a virtual signal.

**Edit, Copy, Delete**

Modify, copy or delete a virtual signal

**Add and edit virtual signals**

The dialog window is divided into a configuration area and a preview area.



In the configuration area names, functions and operands as well as signal parameters for each virtual signal can be defined. In the preview area, the result for the virtual signal is displayed in accordance with the current datasource and the selected functions. The virtual signal is displayed as a line chart by default. However, other views such as histogram or gauge can also be selected, although not all functions are compatible with every available tile type.

The following inputs are possible for a virtual signal:

**Name**

Choose a unique name for the virtual signal. Under this name, the virtual signal is visible in the signal tree of the dashboard tiles and can be used for display or scaling tasks.

**Function**

The functions are divided into the groups *Compare*, *Compute* and *Logical*.

Functions from the *Compare* and *Logical* groups provide digital virtual signals, and functions from the *Compute* group provide analog virtual signals or structures as a result.

The *Compare* group provides operators such as > (greater than), < (less than), and = (equal to) as a function based on analog input signals for comparison operations.

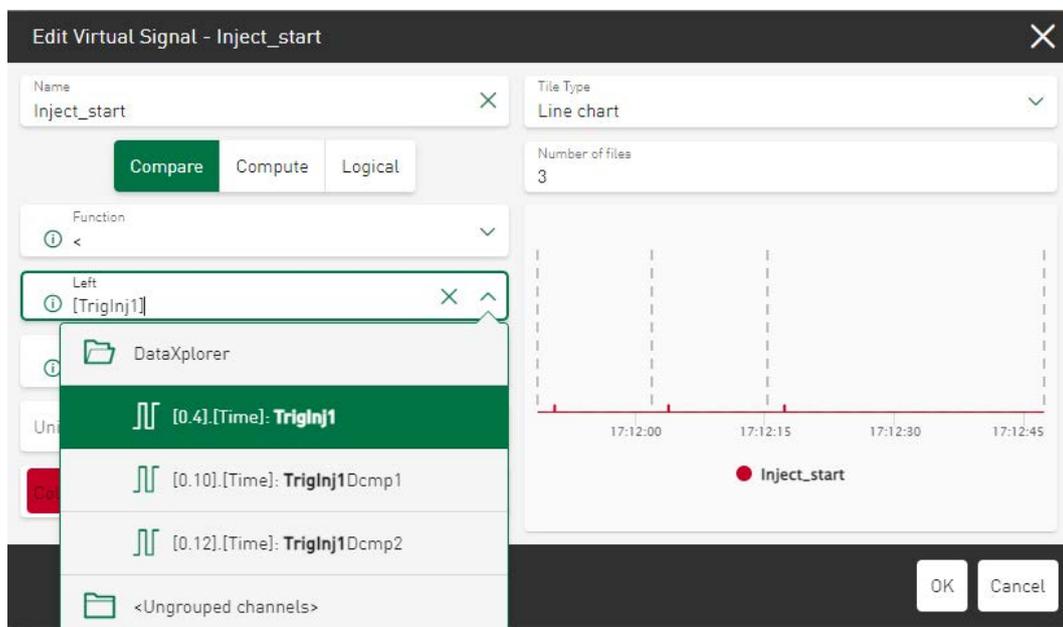
The *Logical* group requires digital signals as operands. Edge detections, such as for rising and falling edges of a digital signal or the logical linking of two or more digital signals via the OR operator or AND operator, are available. Rising and falling edge functions are especially useful to create event filters for referenced DAT files, see [Using the DAT file event filter](#), page 67

Functions are listed under the *Compute* group that either calculate information like the average value from input signals or offset several signals against each other. Analog virtual signals are the result of this.

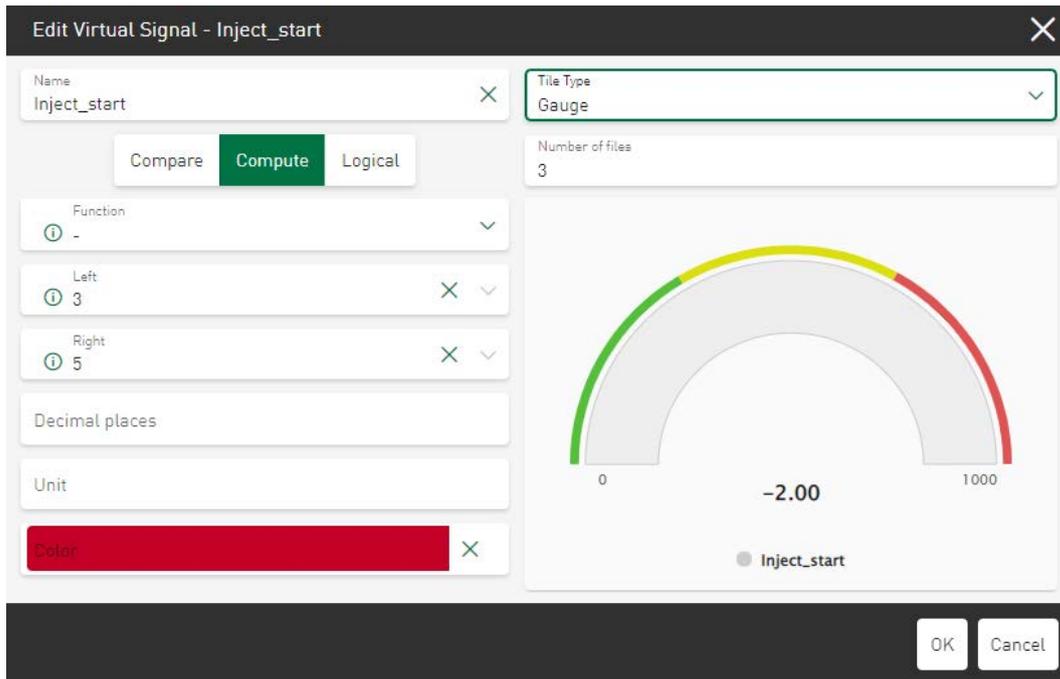
You can find a complete list of supported functions at [Overview of virtual functions](#), page 51

### Input fields for input and parameter values

The number of input and parameter input fields displayed in the dialog changes according to the selected function group. In the respective input fields, you can access the signal tree of the stored datasource via a drop-down menu. Tap on a name in the signal tree and select a specific value for the respective parameter field of the virtual signal. Depending on the selection, several values can also be selected.



The signal list available for selection can be effectively filtered by simply entering text in the input field. Furthermore, numerical values can be entered directly into parameter input fields.



**Unit**

Optionally, you can assign a unit to the virtual signal. Defining a unit is useful to apply the automatic axis settings in dashboard tiles and to quickly create useful visualizations.

**Color**

Optionally, you can assign a default color to the virtual signal. This default color is used in all charts in which this signal is shown.

**7.1.1 Overview of virtual functions**

Group	Function	Description
Compare	=	'same' operator
	>	'large' operator
	<	'small' operator
	>=	'greater than or equal' operator
	<=	'less than or equal' operator
	<>	'unequal' operator

Table 2: Group Compare

Group	Function	Description
Compute	+	'Add' operator
	-	'Subtract' operator
	*	'Multiply' operator
	/	'Divide' operator
	AVG	Returns the average value
	Constant tolerance band	Returns a tolerance band around the input value based on a constant value
	Constant value	Returns a constant value
	Count	Counts the number of 'level' passes of the input value
	Duration	Returns the duration in seconds between Start Trigger TRUE and Stop Trigger FALSE
	Inverse	Returns the inverse value
	Last number	Returns the last valid value
	MAX	Returns the maximum
	Median	Returns the median value
	MIN	Returns the minimum
	Percentage tolerance band	Returns a tolerance band around the input value based on the percentage value of the input value

Table 3: Group Compute

Group	Function	Description
Logical	AND	Logical AND
	OR	Logical OR
	Falling trigger	Returns TRUE for the transition from TRUE to FALSE in the input value
	Rising trigger	Returns TRUE for the transition from FALSE to TRUE in the input value

Table 4: Group Logical

## 7.2 Virtual functions in tiles

Virtual signals can be added in the dashboard tiles. To do this, open the column or signal selection of the tile in the configuration view and tap <New Virtual Signal>.



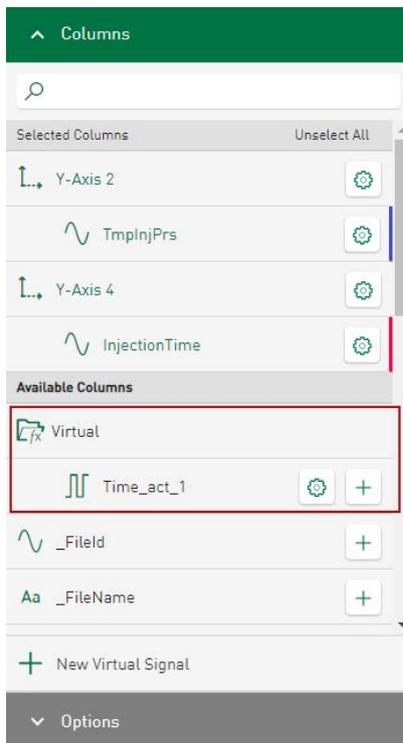
The configuration dialog for creating or modifying virtual signals in a tile is similar to the one in the *Datasource Management* area. However, in the tile view you can decide

- whether the virtual signal is stored in the datasource area and therefore also available in other dashboard tiles with the same datasource

or

- whether the virtual signal is only used within this tile

Configured virtual signals are initially listed in the signal tree under *Available Columns* in their own folder. If you tap on the plus sign  next to the signal name, the virtual signal appears in the display.

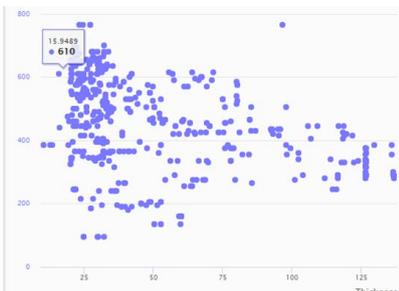
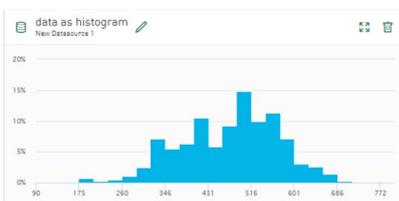
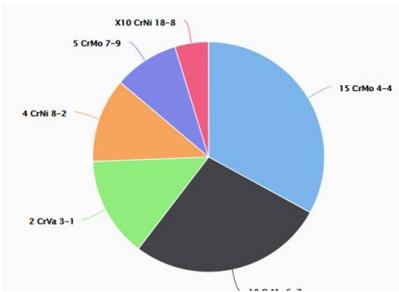
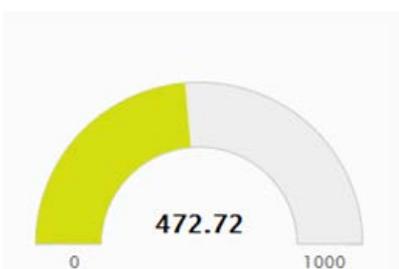


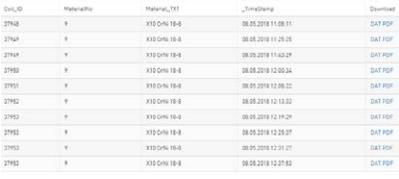
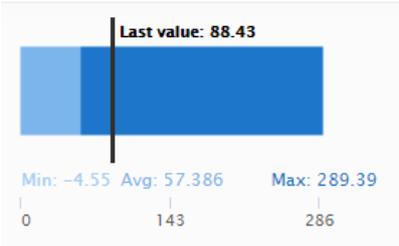
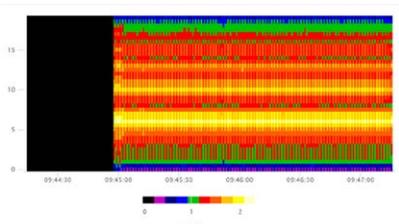
The signals listed in the folder  can be used like the signals from *ibaHD Server*, DAT files or values from database tables.

You can edit or delete the virtual signals using the gear symbol . Virtual signals can be used exactly like signals from the datasource for automatic scaling of the Y-axis.

# 8 Tile types

ibaDaVIS offers the following tile types:

Tile type	Applicable for	Comment
<p><b>Line chart</b></p> 	<p>Detection of parameter trends</p> <p>Visualization of interruption times</p> <p>Visual detection of abnormal trend developments</p>	<p>Zoom function used as interactive filter for all tiles on the dashboard</p> <p>Y-axis manually scalable</p>
<p><b>Scatter chart</b></p> 	<p>Visualization of correlations</p> <p>Monitoring of process deviations</p> <p>Visual detection of outliers</p>	<p>Switching the X-axis from time to one of the selected value columns</p> <p>Viewing the relationship e.g. between speed and momentum</p> <p>X- and Y-axis manually scalable</p>
<p><b>Histogram</b></p> 	<p>Visual detection of process deviations</p> <p>Visualization of process stability</p>	<p>Switching between total and percentage aggregation</p> <p>Displayed value range configurable</p>
<p><b>Pie chart</b></p> 	<p>Display of the distribution of data through non-numerical values, i.e. values represented by a text.</p> <p>This can be used, for example, to display the number of products per material class or the production output per customer.</p>	<p>Tapping on a segment applies the filter for the selected category to all tiles in the dashboard.</p> <p>The selected category is summarized by sum, number, average, maximum or minimum.</p>
<p><b>Gauge</b></p> 	<p>Visualization of individual values, e.g. average license time limit, total number of products or other characteristic values.</p>	<p>Aggregation of the selected value column by sum, count, average, max or min operator and display of the last determined value.</p>

Tile type	Applicable for	Comment
<p><b>Table</b></p> 	<p>Display of selected columns of your data table</p>	<p>Sorting the displayed values by tapping on the table header.</p> <p>Tapping the table header also opens a column-based filter that is applied to all tiles in the dashboard.</p> <p>Download the DAT file or a PDF report.</p>
<p><b>Bullet Graph</b></p> 	<p>Visualization of a selected individual value</p>	<p>Max, min and average values as well as the last determined value of a selected value series are displayed in a horizontal bar.</p>
<p><b>Bar chart</b></p> 	<p>Visualization of characteristic values</p>	<p>Characteristic values can be sorted by time or grouped by selected categories and displayed side by side or stacked in the bar chart.</p>
<p><b>Value display</b></p> 	<p>Visualization of single values in grid format</p>	<p>Single cells represent texts or numerical values and their position and size can be changed within the tile.</p>
<p><b>Heat map</b></p> 	<p>Visualization of a signal vector</p>	<p>Selection of an Ident column from the datasource</p> <p>Use of <i>ibaAnalyzer</i> standard colors for 2D plots</p>

## 8.1 Basic tile properties

*ibaDaVIS* offers different tile types for visualizing data and value series. The displayed options and selection fields are based on the selected datasource and tile type.

Each tile type allows the signal and value series selection via two basic functions:

- Columns or Signals
- Options

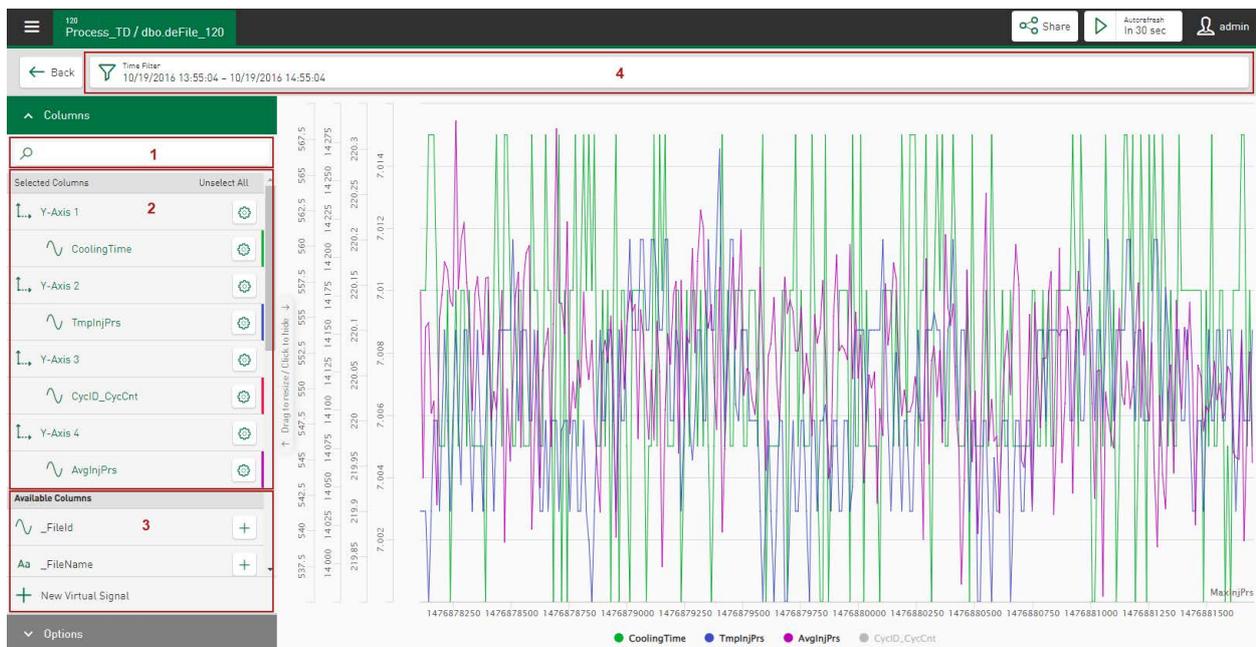
The following, tile-related buttons are available for this purpose:

- File idents
- Category
- X-axis Column
- Color axis

Regardless of the tile type, each tile can be edited, copied or deleted. Detailed information can be found under [Tiles in dashboard view, page 100](#) and [Edit dashboard, page 99](#)

### Adding / deselecting signals

In the edit dialog of all tiles, the names of the table columns are shown in the *Columns* or *Signals* section. The basis for this is the data table selected under *Datasource Management*. The table columns contain signals from iba measurement files or value series of characteristic values, which can be shown in the respective tile.



Tapping on the column name under *Available Columns* (3) selects the column and it appears under *Selected Columns*(2). Depending on the tile type, a selected column can be opened via a property field opened by tapping the icon, or removed by tapping on the icon. The column reappears under *Available Columns* and the display changes accordingly. Virtual signals for comparison calculations can also be added in area (3).

Several columns or only one column can be selected, depending on the tile type.

You can search by column name in the search field (1). If you enter the column name or only a part of the name, the matching columns appear in the list *Available Columns*. To reset the scan filter, the entry in the search field must be deleted.

The width of the areas (1), (2), (3) and the display field of the tile configuration can be changed by dragging the control bar <Drag to resize/Click to hide>. For example, signal names can be fully displayed, which were previously not visible. Tapping on the control bar hides the areas (1), (2) and (3) and the display field can use the full tile width. Tapping again restores the original view.

If no data is shown in the display, the time range may not be correctly selected. A time range must be selected in the dashboard filter in which there is definitely data.

If signal names and their respective defined color are listed in the lower area of the display field, the signal can be hidden and shown again by tapping on the signal name. The name of the hidden signals is displayed in light gray.

### Time filter

The time range can be changed or adjusted for each tile type. Tapping on the field *Time Filter* (4) opens the dialog *Select Time Period*.

The option *Relative Time period* makes it possible to directly select the pre-defined time ranges.

Tap on the field *Advanced Period* to open a drop-down menu for an even more accurate time selection. A specified time range can be defined for the parameters Last Minutes, Last Hours, Last Days, Last Weeks, Last Months, Last Quarters or Last Years. For this purpose, specify any number *x* in the field *Value*, which then stands for the desired time range. If a work shift filter has been set, the associated time range can also be used as a time filter via the parameter Last N work shifts - [Name].

The *Absolute Time Period* option offers the possibility to determine a specific time range down to the second.

### Note



All filters go back from the current time by the respective time range.

### Autorefresh

The field <Autorefresh In x sec> can be used to update the view in varying intervals. Tapping on the arrow in the field starts the application; tapping on the double bar exits the application.

## Share

Use the field <Share> to release the current dashboard as a link and share it with other users. See [➔ Share - Dashboards as links](#), page 103

## Saving the tile configuration

The buttons in the top row offer the following features:

- <Back>: Back to the dashboard pane
- <Save>: Changes are saved
- <Cancel>: Changes are dropped

### 8.1.1 Axis scaling and signal assignment

In diagrams with axis scaling (e.g. line chart) you can select signals listed in the *Available Columns* area for display by tapping on the plus sign . A new axis is created for the selected signal in the *Selected Columns* area. The signal will be assigned to this axis and for each additional signal selected, a new axis will be created again. Signals that have the same unit are initially merged on a common axis by default. However, another axis can be selected at any time via the signal settings. Selected signals can also be dragged and dropped to a new position in the signal tree and thus reassigned.

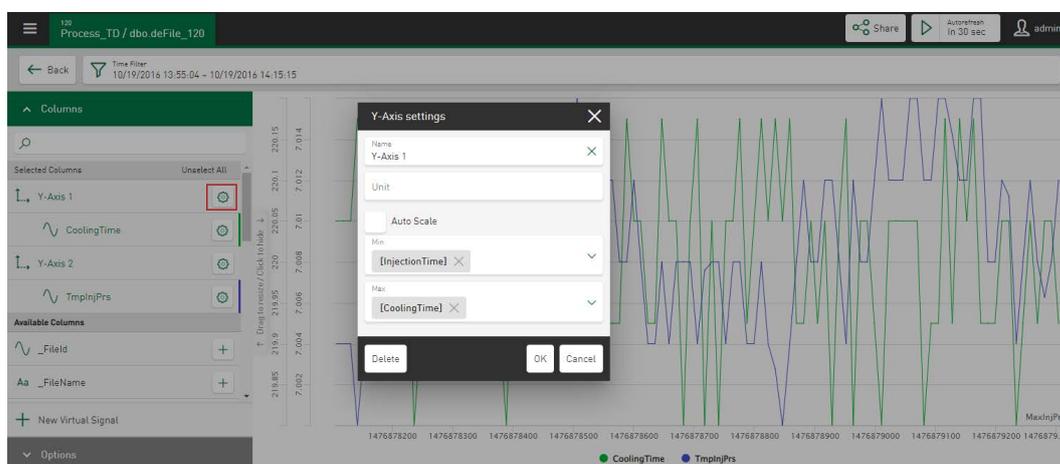
When you delete an axis, all associated signals are also removed from the range of selected columns and added back to the list of available columns.

The axis and signal settings can be defined via an input dialog. Tapping on the  icon in the respective line opens a properties window and the current settings are shown.

#### Axis settings

In the properties window of the axis settings the name, unit and type of scaling for the axis can be defined. The following example shows the settings on the tile type *Line chart*.

After deselecting the automatic scaling, fixed minimum and maximum values can be used to define the value range. In the drop-down list, the available, numeric column values from the *ibaFile Table* are displayed.



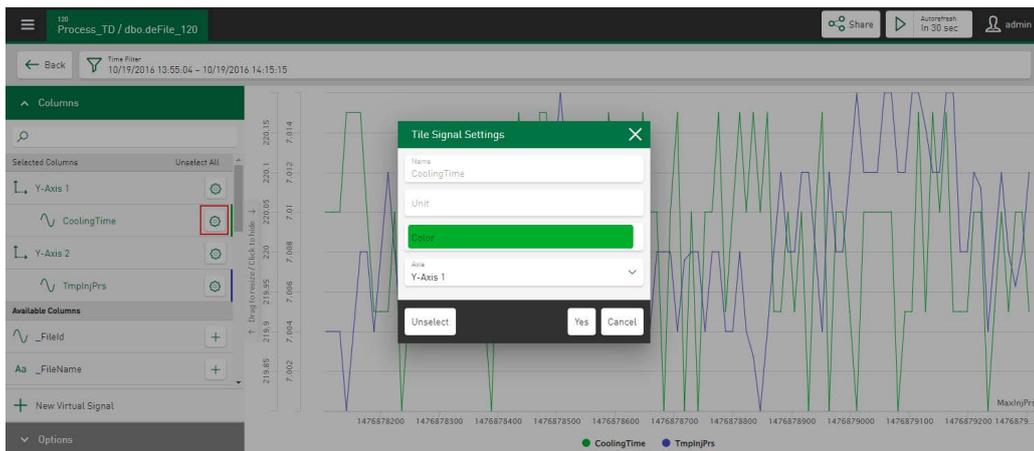
To enable dynamic scaling of trends and signals, other signals can also be used as the basis for the y-axis. To do this, select the minimum and maximum signal for scaling in the y-direction. The prerequisite for this is that all columns/signals are assigned to the same axis.

### Signal settings

In the properties window of the signal settings, the name, unit and display color can be defined for this signal, see also [Color selection in diagrams](#), page 127.

If no default color is set in the *Datasource Management*, a color is automatically assigned to the selected values.

The *Axis* option is used to select a different axis for the signal. All available axes are listed in a drop-down menu, and if necessary, a new axis can be created.

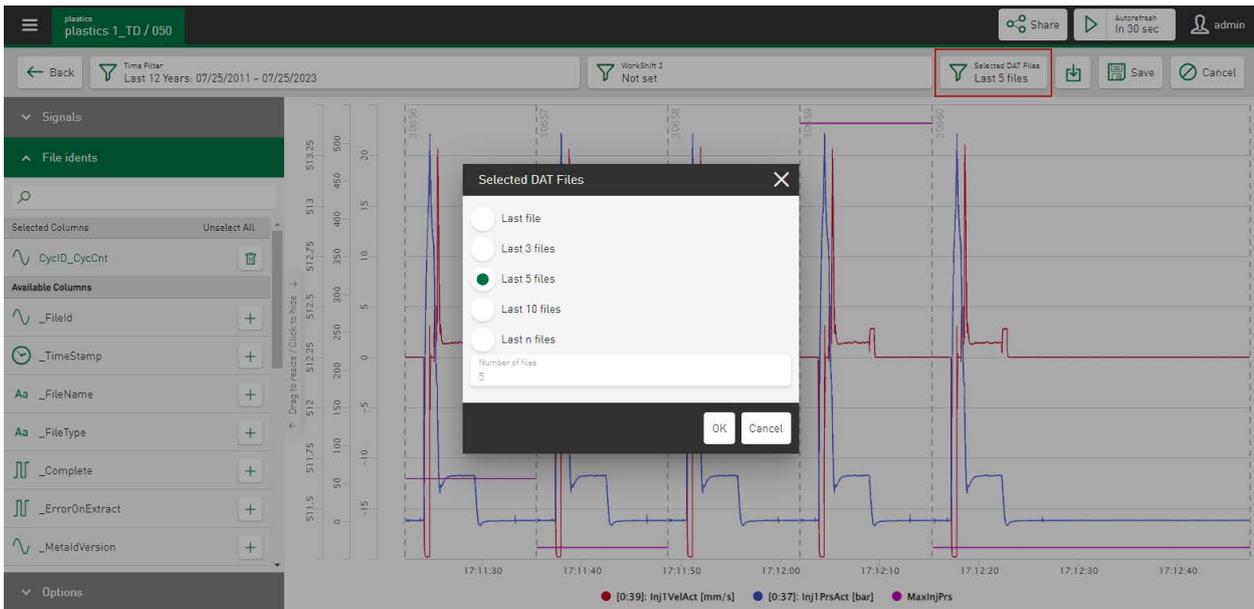


## 8.1.2 Selecting the DAT Files

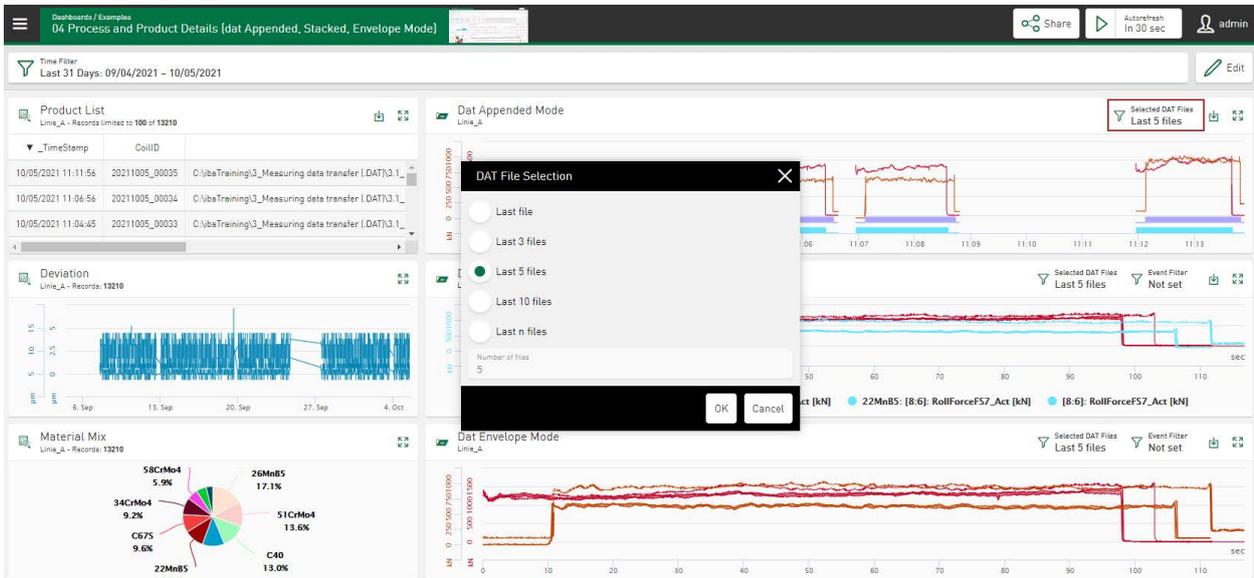
The tile types *Line chart*, *Histogram*, *Gauge*, *Bullet Graph* and *Heat map* enable the visualization of signal data from DAT files if you select a datasource configured as *ibaFile Table* or enable a segment table, see [DAT file signals in segment tables](#), page 29

The input field *Selected DAT Files* is available in the tile view in the filter area and in the dashboard pane directly on the tile. A drop-down menu allows the number of recently selected files to be specified. Tapping the filter icon opens the DAT file selection dialog. The number of automatically displayed last files can be changed directly via the dialog, with a maximum of 50 DAT files possible.

If signals are displayed in stacked view or envelope view, the labels of the x-axis show the relative time in seconds or the distance, depending on the length unit, in centimeters or meters.



**Dashboard view:**



**Note**



If an analysis configuration is linked to the datasource used, the menu item "Download with Analysis as PDC" can additionally be selected in the dashboard view. See [Using the Analysis configuration, page 120](#)

## 8.2 Line chart

In the *Line chart*, the signals or characteristic values are displayed as a trend over time. This makes it possible, for example, to identify parameter trends or interruption times.



### Columns

Select the signals for the display by tapping on the names under *Available Columns*. Selected signals are directly assigned to an axis and displayed in the trend display.

The  icon can be used to define axis and signal settings in a properties window, see [Axis scaling and signal assignment](#), page 59.

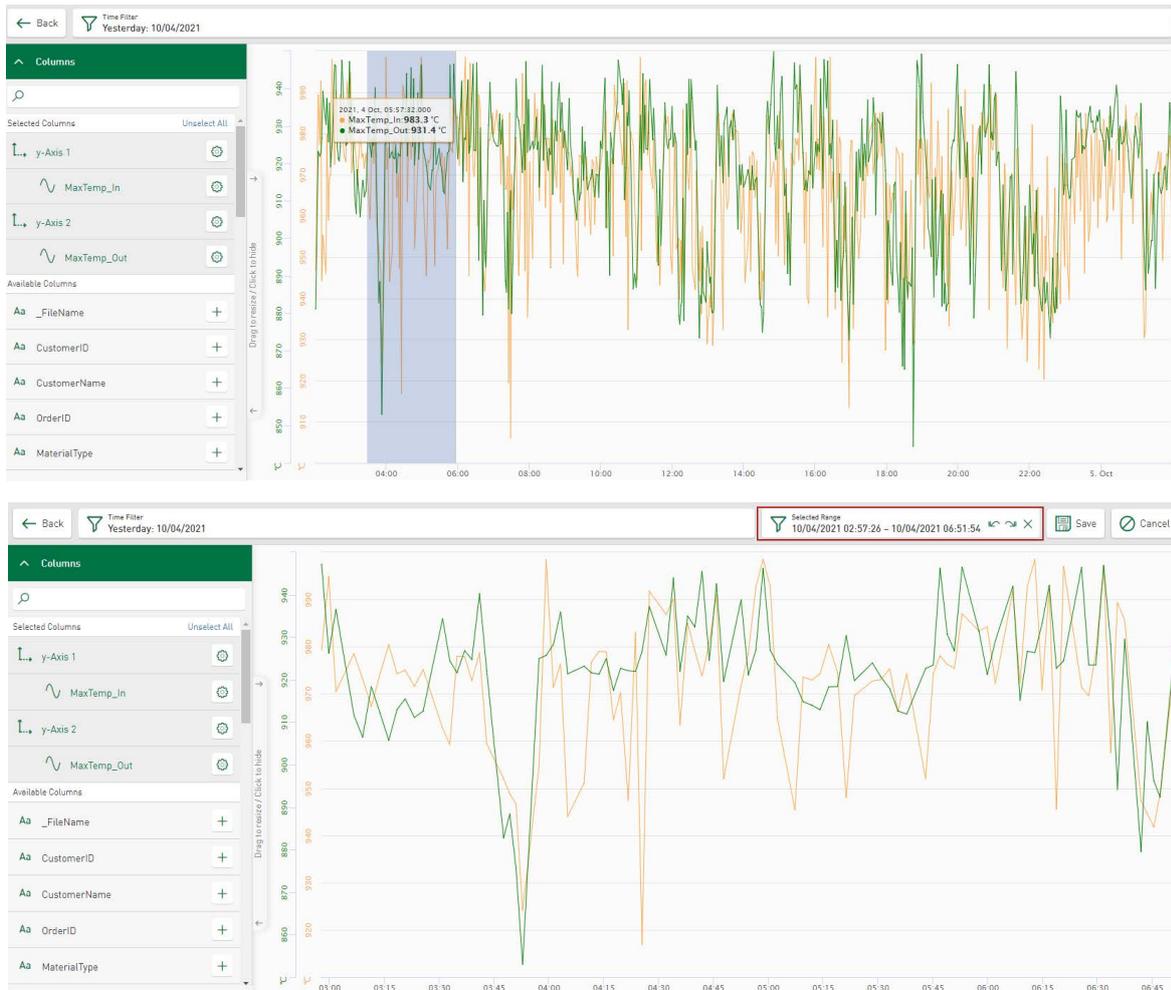
When you move the cursor over a trend, a tool tip appears specifying the time and measured values at the cursor position.

### Options

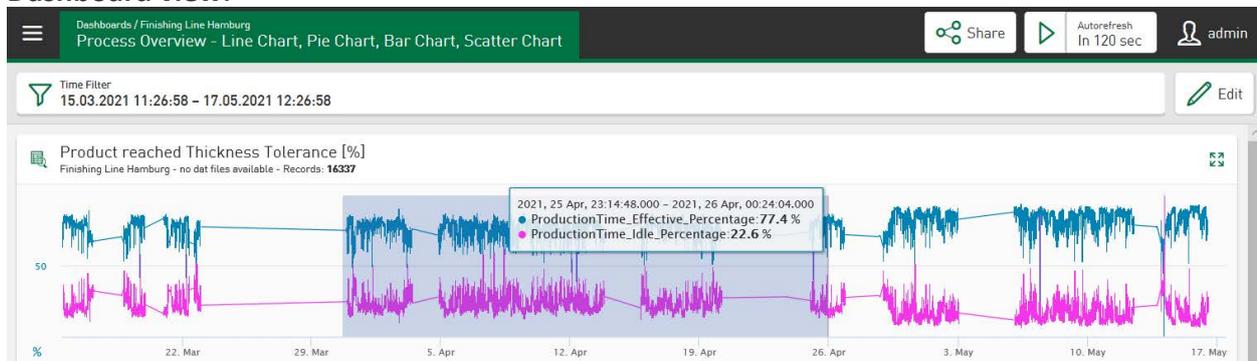
- Display event filter: Configured events can be selected using a filter function as start or stop events from DAT files.
- Display legend: The currently selected signal names appear not only in the tile's trend view, but also in the dashboard view.
- Hide repeated text marks: Duplicate text marks are no longer displayed.
- Ordered by sequence: The value trend is ordered in ascending order by time. The x-position of the result values in the trend corresponds to the sequential number in the query result.
- Fill gaps: Signal data from segment tables can be visualized if they were extracted based on the DB functionality of *ibaAnalyzer*. In this case, "ZERO" values in the data evaluation lead to gaps between the measuring points in the trend display. Enable this option if you want to connect the measuring points with a line to close the gaps.

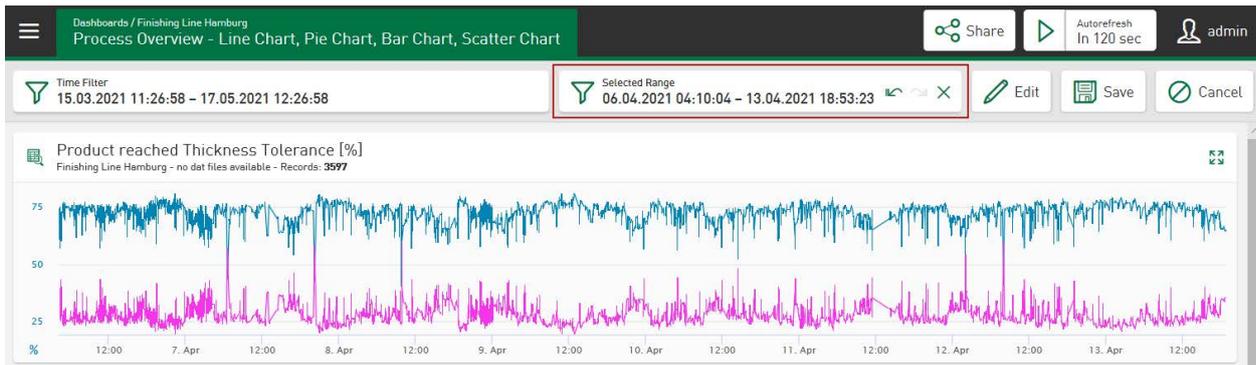
### 8.2.1 Zoom function - Line chart

You can zoom in the trend display by drawing a rectangle with the mouse button pressed down. The zoomed time range is shown in a new field *Selected Range*. If you zoom further in the range, the filter range is refreshed in this field. Tapping on the cross in this field will reset the zoom function. If the number of zoom levels is greater than 1, arrows are displayed that allow you to jump forward and back in the same zoom steps within the zoomed range. If the zoom range becomes larger than the total time range, the zoom function is completely reset and the filter is removed.



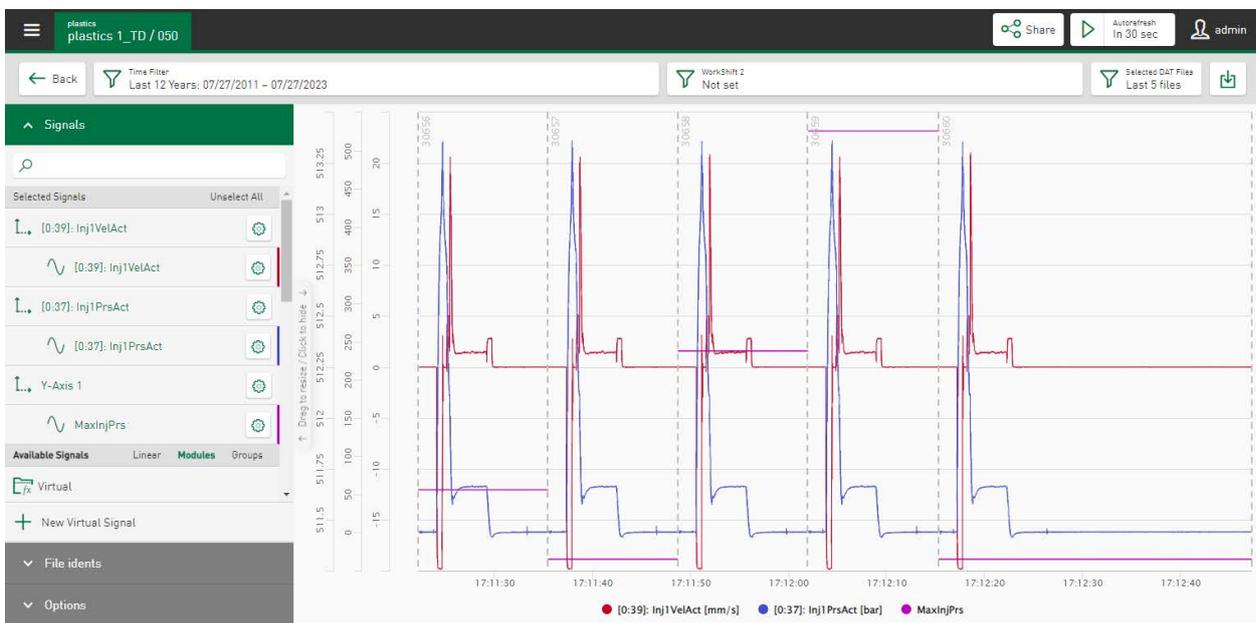
### Dashboard view:





## 8.2.2 Display DAT file signals

The *Line chart* tile type enables the visualization of length and time-based signals from DAT files.



### Signals

The list of available signals from each DAT file is displayed by default in a module-based tree structure. Tap on the option *Groups* in the *Available Signals* field to display the signal tree in a group-based sequence.

The measured signals are shown in the module view with the module number and module name. The assigned analog and digital signals are listed under the modules with the corresponding signal numbers and signal names. Analog and digital signals are identified by different icons:

 Analog signal

 Digital signal

Tap on the respective signal in the tree structure to enable the visualization in the diagram.

If the DAT files are recorded with *ibaQDR*, then the signals are generally shown as length-based signals. In the *Options* area, a function that is only available for QDR files is available that switches the currently selected signals to the time-based view. Signals can also be shown with different timebases in one diagram.

The signals are then identified by the following icons:  

The visualization of length-based signals in the line diagram always starts at 0 m.

**Note**

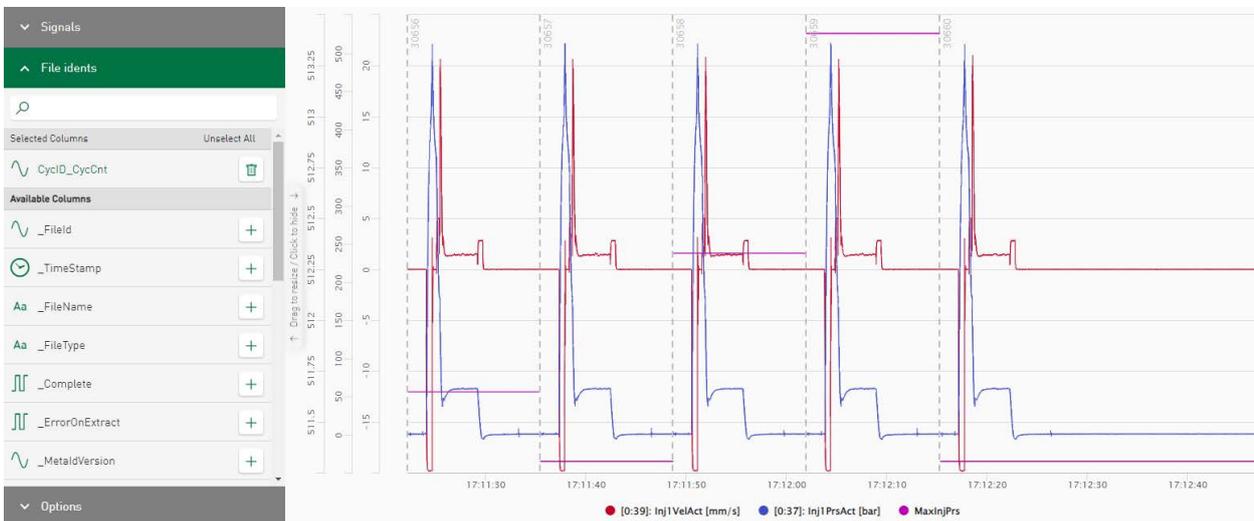


Time-based and length-based signals cannot be visualized together in a view. If, for example, a length-based signal is already selected, this view is cleared as soon as a time-based signal is selected.

**File idents**

*File idents* make it possible to select ident table columns. In addition to the name for the currently displayed measurement signals, additional values are shown in the legend, such as material designations. The signal values are displayed either in appended or stacked view.

In the appended view, the file idents are shown together with the beginning and end marking of the DAT file.



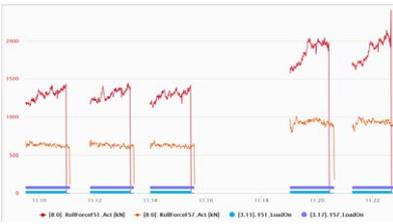
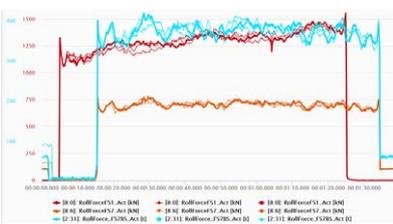
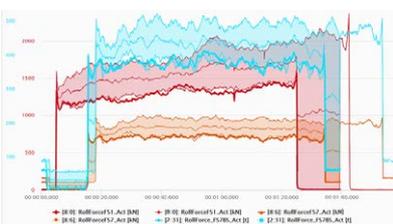
**Tip**



Proven method: Under *Options* switch to "Stacked view". Then select your ident table column. Together with the signal name, the identification value of the currently displayed DAT file signals is shown in the legend.

**Options**

The signal view can be changed here. The following options are available: Appended view, Stacked view and Envelope view. Only one option can be selected.

Type of view	Visualization	Operative range
<p><b>Appended view</b></p> 	<p>Display of analog or digital measurement signals.</p> <p>The signals are shown according to the file start time and measurement signal duration. The end of a measurement file and the start of a new measurement file is visualized by the interruption of the measurement signal trend.</p> <p>Vertical separators are shown at the file end when visualizing length-based signals.</p>	<p>Visualization of temporal signal trends in the measurement signals. For length-based signals, the length-based mapping of measurement signals per length segment.</p>
<p><b>Stacked view</b></p> 	<p>Display of the same measurement signals from different measurement files. The measurement signals are all synchronized to the same starting time 0:00:00 and are displayed. The displayed time range is derived from the respective longest measurement file.</p>	<p>Direct comparison of the same measurement signals from different files.</p> <p>Processes that are to run synchronously in all selected measurement files can be compared directly.</p>
<p><b>Envelope view</b></p> 	<p>Display of the envelope curve from the same analog measurement signals from different measurement files. The measurement signals are synchronized to the same starting time 0:00:00, as in the stacked view. In addition to the maximum and minimum, the calculated average is shown.</p>	<p>The comparison of many measurement signals from different measurement files is reduced to a flat visualization. The maximum, minimum and average values can be read directly. Deviations in repetitive process sequences become immediately apparent.</p>

You can find additional information on option settings in the following chapters:

➤ [Using the DAT file event filter](#), page 67

➤ [Highlighting signals from DAT files](#), page 67

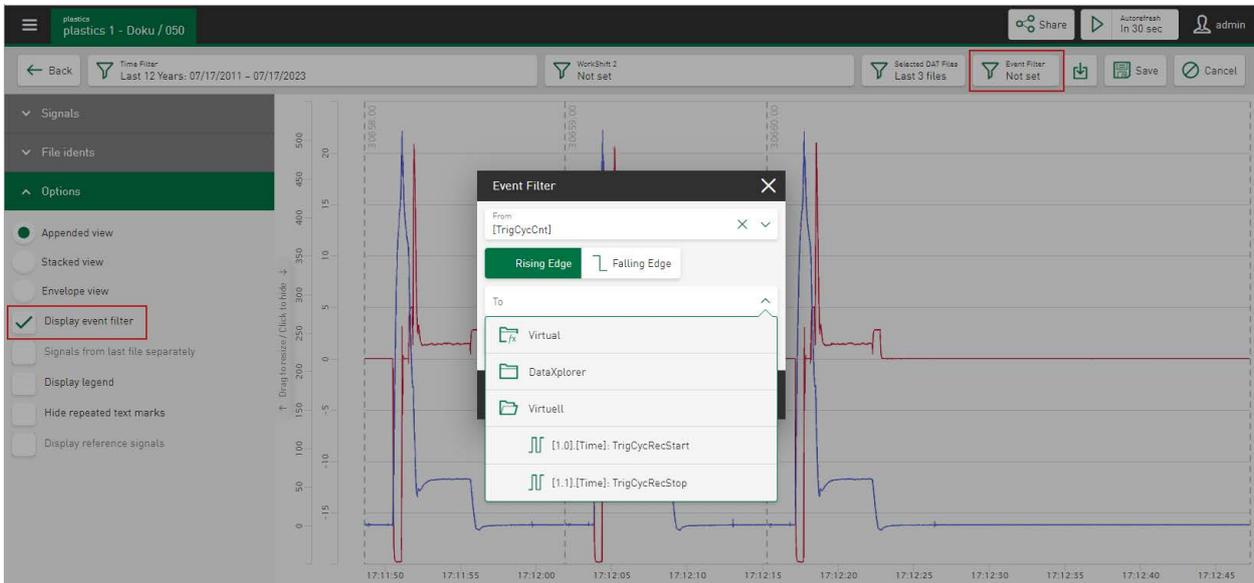
➤ [Visualize reference signals](#), page 68

### Download DAT file and analysis for datasource

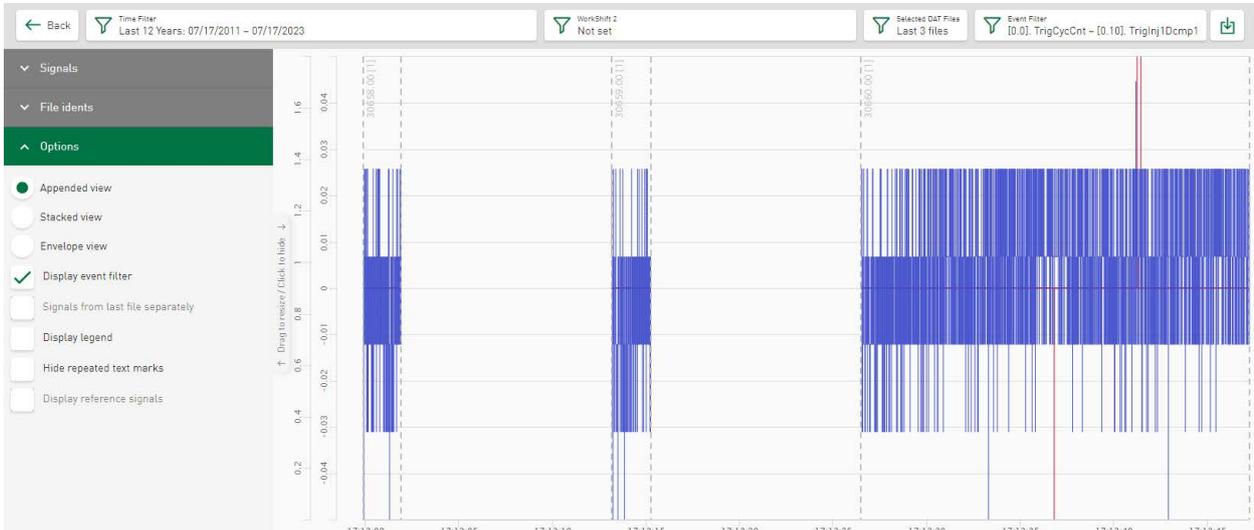
Under the button  functions are stored that enable the download of the DAT files in ZIP format together with an analysis as a PDC file. The download as a PDC file is only possible if an analysis has been configured for the datasource of the values currently shown, see [➤ Analysis](#), page 31

### 8.2.3 Using the DAT file event filter

Events defined in virtual functions can be selected as start or stop events using a filter function. The visualized area displaying signals from the currently selected DAT files can be limited by this. Select *Display event filter* under *Options*. Tap on the *Event filter* field and select the desired filter events via a drop-down menu.

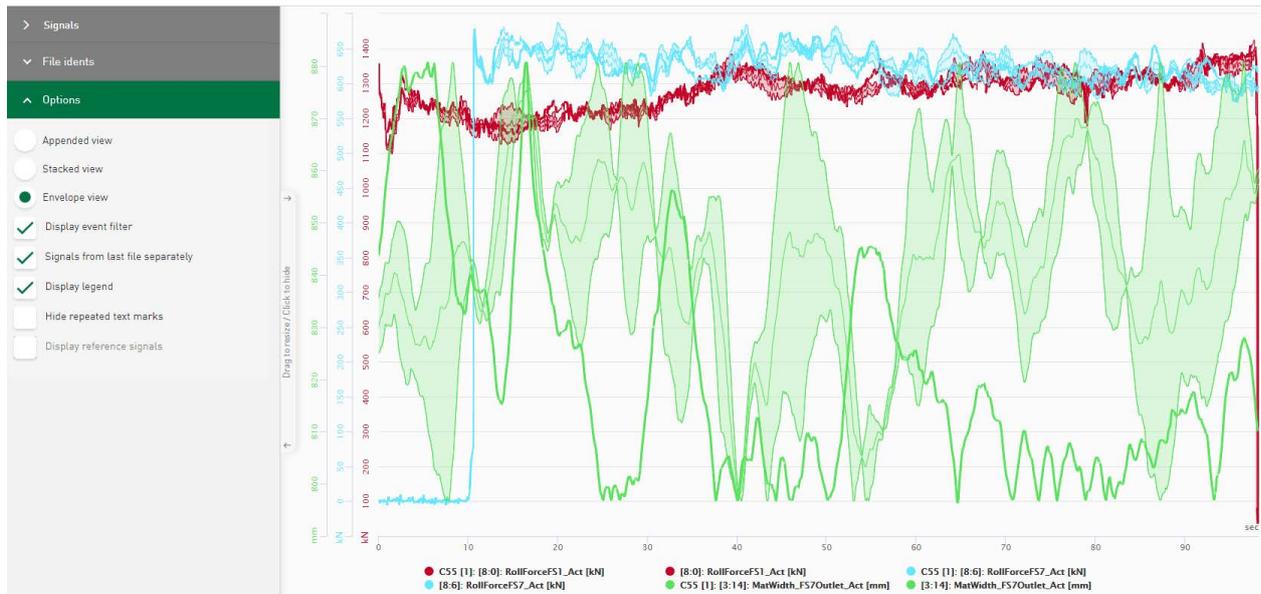


Signals of the selected DAT files are now synchronized and displayed in the defined range in the selected view, starting from the selected start event to the selected stop event.



### 8.2.4 Highlighting signals from DAT files

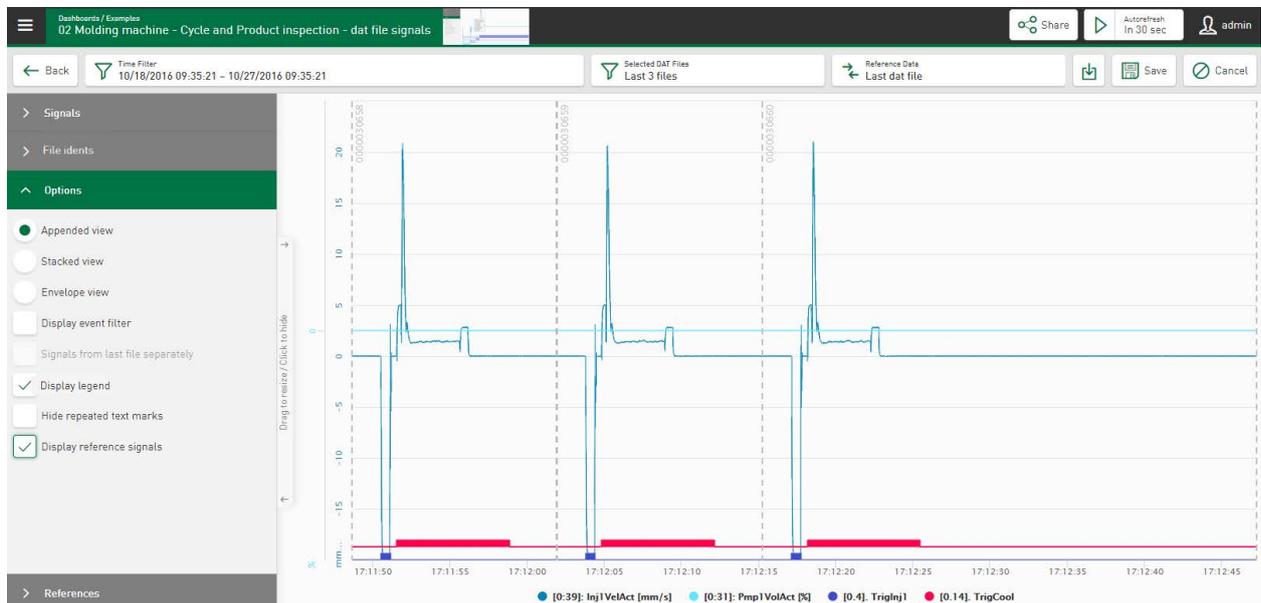
Signals from the last DAT file can be displayed separately if the *Stacked view* or *Envelope view* option is used for visualization. To do this, select the field *Signals from the last file separately*. The trend line for signals from the last DAT file is then displayed wider than the trend lines for signals from previous DAT files.



In the example above, in an envelope view, the DAT file filter is set to visualize signals from the last 3 files. The signals from two previously calculated DAT files are displayed unchanged, but the signals from the last DAT file determined are clearly highlighted.

### 8.2.5 Visualize reference signals

The tile type *Line chart* enables the visualization of signals from DAT files together with signals from reference files. To do this, under *Options* enable the *Display reference signals* function.

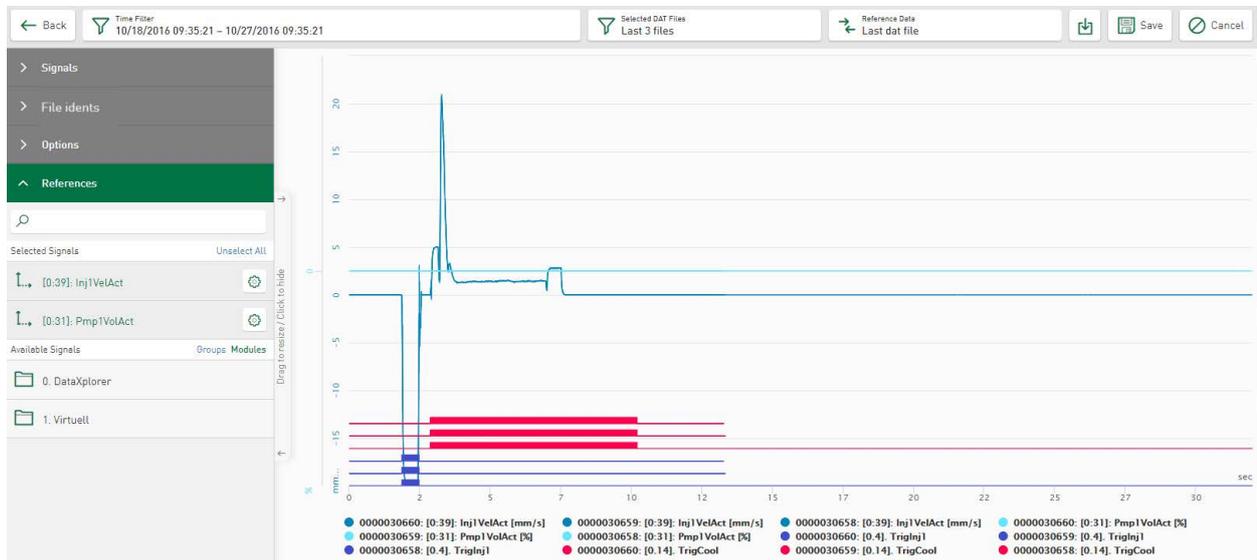


#### Reference Data

The selection filter *Reference Data* is visible if the option *Display reference signals* is enabled. The selection filter shows the values from the Ident column. By tapping in the field, the selection filter is displayed in the <Select reference by ident> dialog and another reference can be defined via a drop-down menu. The configuration of ident columns can be found in the *Reference* tab, see [Reference](#), page 32.

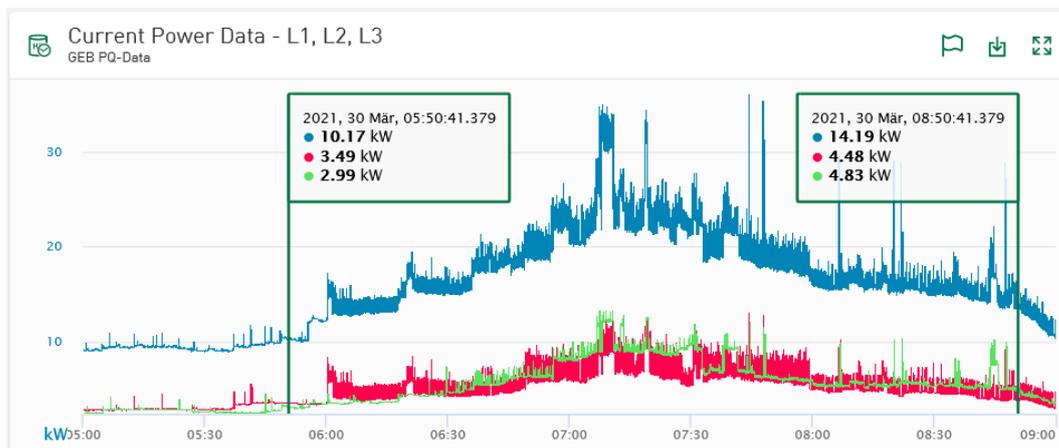
## References

If the reference defined in the drop-down menu changes, the selectable signals in the *Reference* tab are also updated according to the selected reference file. Signals can be selected from this selected reference file as reference signals for display. The selected reference signals are displayed highlighted together with the signals from the last produced or manually selected file signals. The rules for axis-related visualization of the reference files are applied.



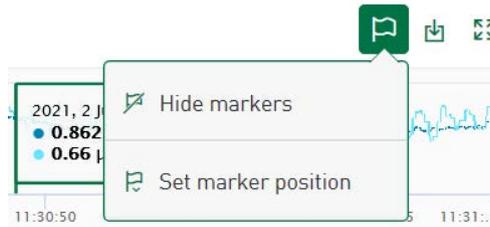
## 8.2.6 Markers in HD stores

In diagrams (e. g. line chart) showing signals from time-based or event-based stores and allowing interaction with *ibaAnalyzer*, markers can be displayed and placed freely. The time range between the markers can be transmitted directly into *ibaAnalyzer* for further analysis.

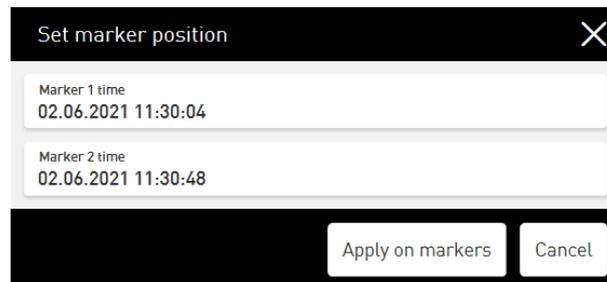


The markers are set in the diagram by tapping on the “Flag” button. The signal values of the respective marker position are displayed in the labeling fields. The labeling fields can also be used to interactively position the markers. Dragging the labeling field can move the respective marker directly at any position in the diagram.

Tapping the “Flag” button again enables a context menu, which makes it possible to hide or precisely position markers.



The *Set marker position* option opens an input dialog displaying the current time position of both markers. The values can be adjusted via the time input fields in the dialog window. If you confirm the dialog via <Apply on markers>, the values are directly applied to the markers in the diagram.



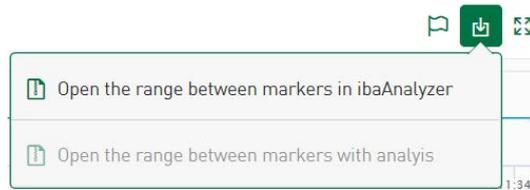
**Zoom behavior**

The markers remain at the selected position when zooming until they are hidden. If a marker is placed outside of the currently displayed time range, a transparent arrow indicates the direction in which the marker is positioned.



**Open the time range for analysis in ibaAnalyzer**

Once the markers are set, the time range between the markers can be transmitted to *ibaAnalyzer* for detailed analysis. Tapping on the download symbol in the header of the tile displays the following options via context menu:



### Open the range between markers in ibaAnalyzer

Tapping this option generates an HDQ file for download that opens the time range between the markers in *ibaAnalyzer*. The HDQ file adopts the connection information of the *ibaHD-Server* from the datasource configuration for this purpose and the times for the start and stop from the current marker positions. If the *ibaHD-Server* is accessible via *ibaAnalyzer*, the HDQ file shows the time range selected in *ibaDaVIS*.

### Open the range between markers with analysis

Tapping this option creates a PDC file for download that opens the time range between the markers together with an analysis file in *ibaAnalyzer*. The analysis file applies parts of the PDC file directly to the HD data. For this purpose, the corresponding analysis must be added to the datasource configuration of the *ibaDaVIS* for the HD stores beforehand in the *Analysis* tab. See [↗ Analysis](#), page 31.

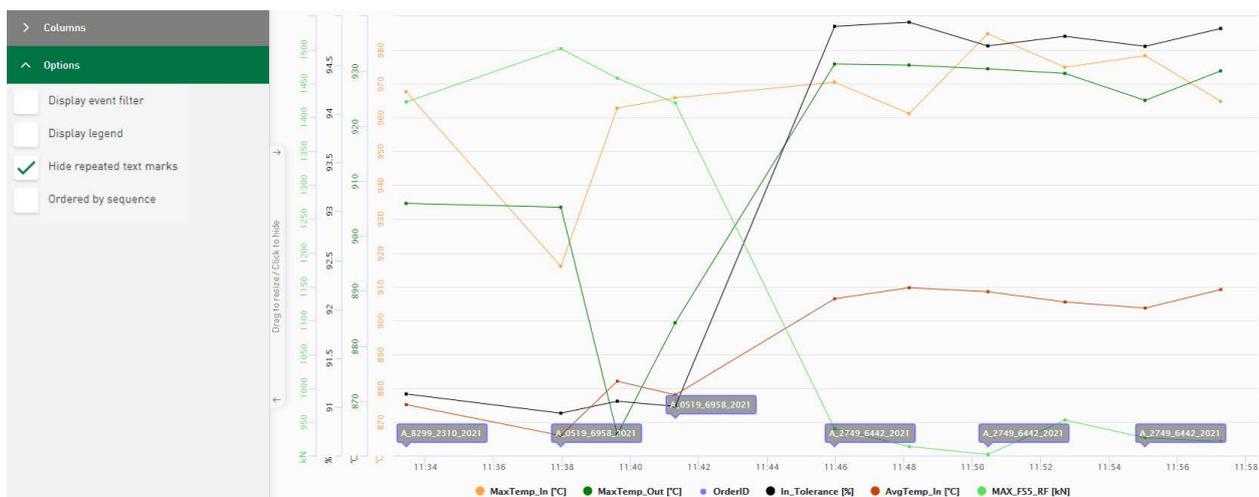
## 8.2.7 Appearance of text signals

Character or string columns can be added to the tile type *Line chart* as labels, which are pre-defined in the list of available columns. Select the columns as you would select other numerical columns to add them to the line chart.

### Note



You can hide text that repeats directly in succession to gain a better overview. To do this, select the function *Hide repeated text marks* under *Options*.



Text channels made of DAT files can also be used as text labels in the line chart.

The number of displayed labels is set to a maximum of 50 text labels per selected column or signal. No labels are shown in the line chart if the currently applied dashboard filter outputs more than 50 values.

**Note**



The number of visualized text signals can be edited in the configuration file *C:\ProgramData\iba\ibaDaVIS\config.json*.

Adding the following line in JSON format can either increase or reduce the number by a value "x:"

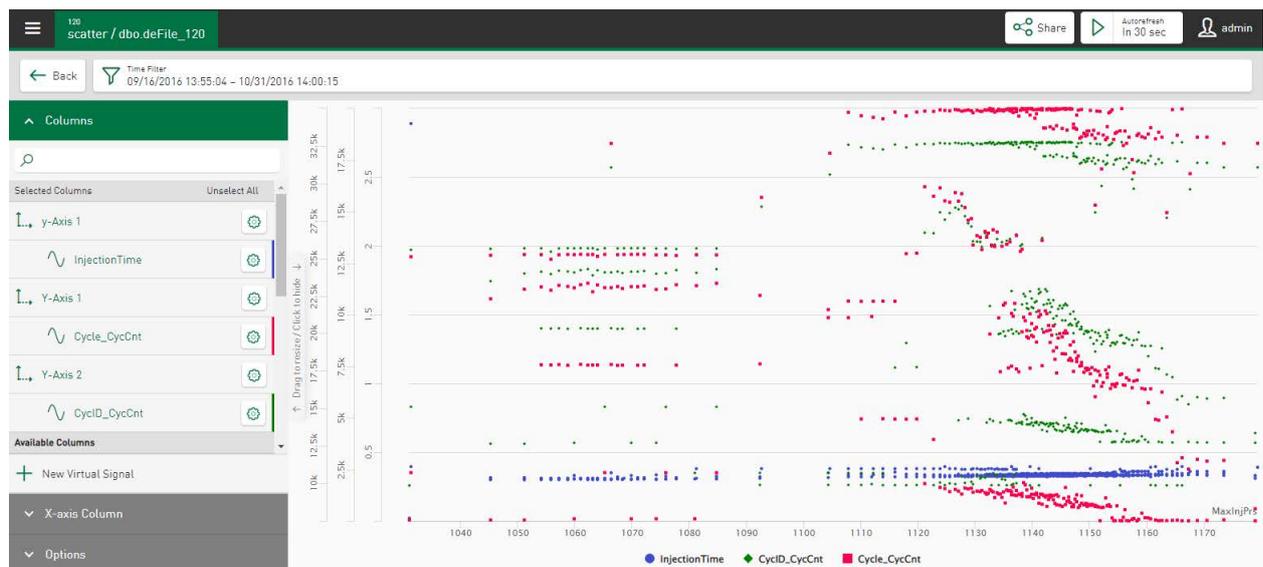
*"MaxPlottedLabelPoints":x*

### 8.3 Scatter chart

The relation between two values or value series can be displayed with a scatter chart by controlling the X and Y position of the points of 2 signals.

A signal is selected as the X-axis here and one or more other signals can be set in relation to this.

#### Columns



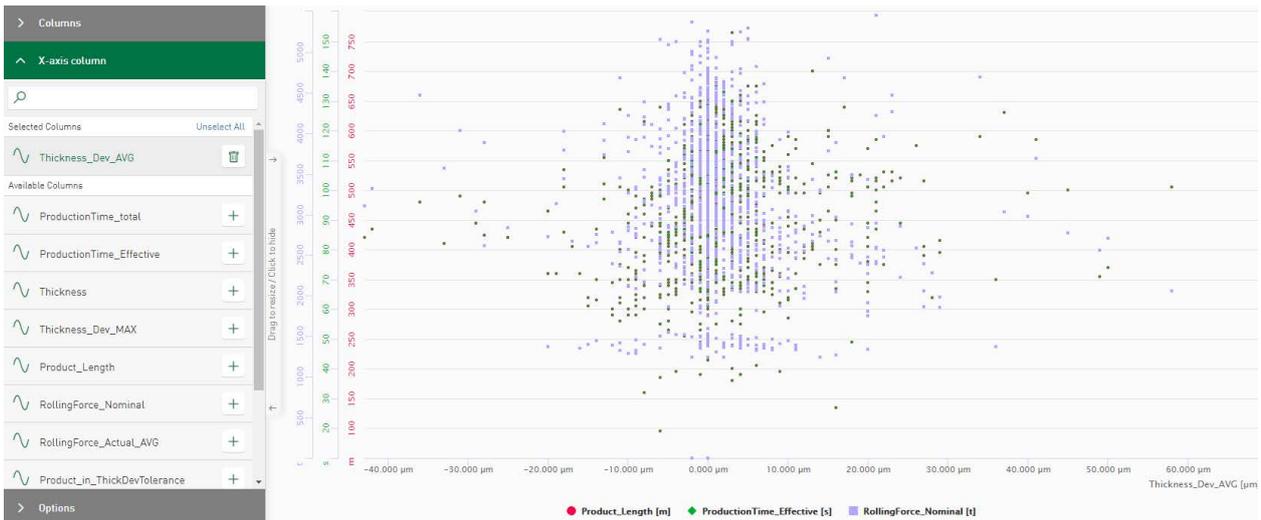
In the *Columns* section, select the signals that are to be shown in the scatter chart. The signals are shown in the chart first as points in relation to the time axis.

The  icon can be used to define the value range for each axis and signal individually, see [Axis scaling and signal assignment](#), page 59.

If you move the cursor over the points, a tool tip appears specifying the X and Y value at the mouse position.

#### X-axis Column

In the *X-axis Column*, a selected signal can be defined as an X-axis.

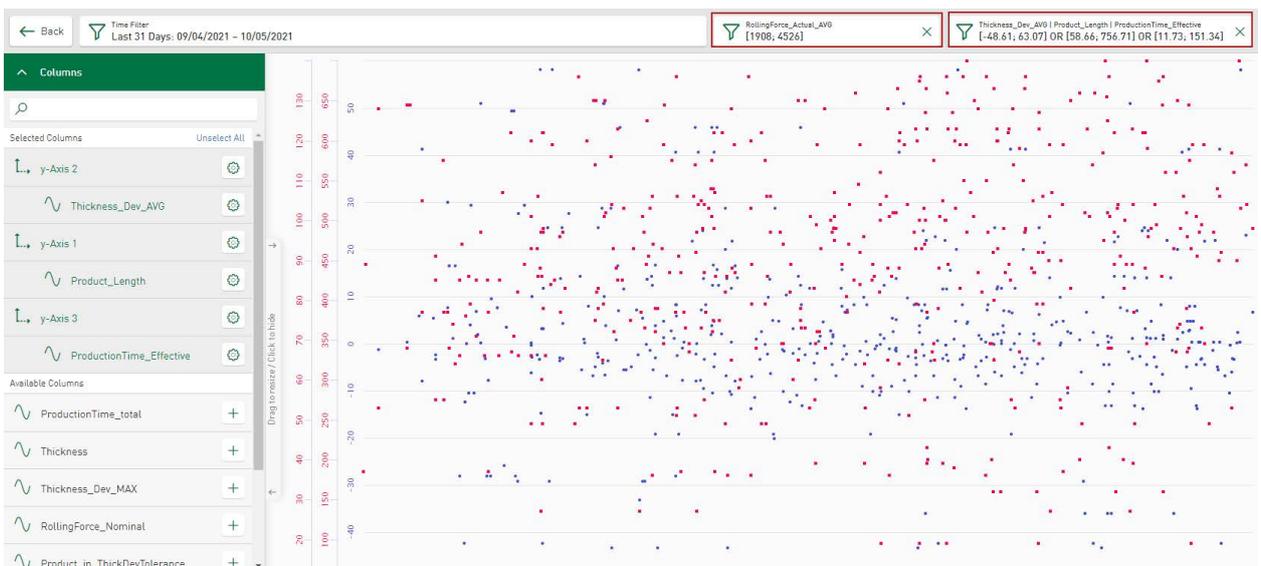


### Options

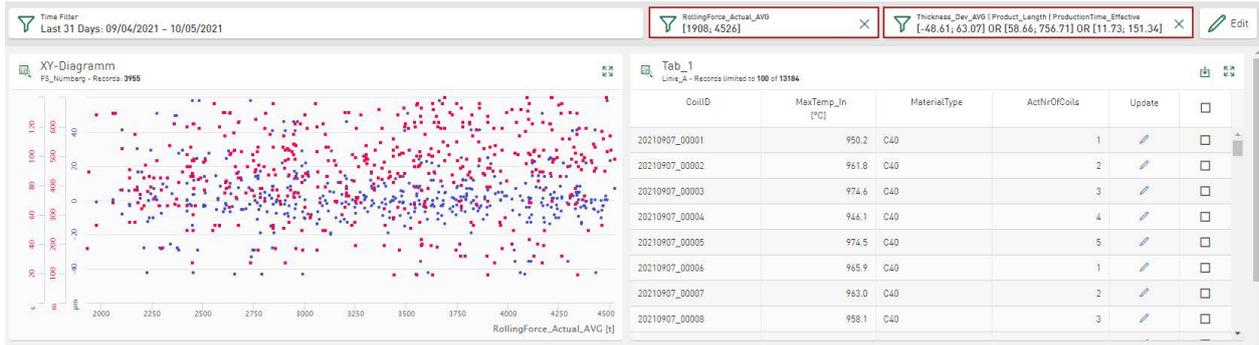
- **Ordered by sequence:** The value trend is ordered in ascending order by time. The x-position of the result values in the trend corresponds to the consecutive number in the query result. (If a value other than the X-axis is selected, this function will not be supported.)

### 8.3.1 Zoom function - Scatter chart

The zoom function is enabled by drawing a rectangle with the mouse button pressed. The zoomed area is now shown and the fields corresponding to the filter selection are displayed. The filter icon  can be used to access a menu for precisely defining the value range. If several values are selected for display in the Y-axis are selected for display, the areas filtered together by zooming are displayed together in one filter cell. Tapping on the cross in the respective fields will reset the zoom function.



Dashboard view:



A maximum of 2000 data point are displayed. If more than 2000 data points are provided for display, these will be reduced by an algorithm. The tool tip then displayed the range limits in which points are combined.

Note

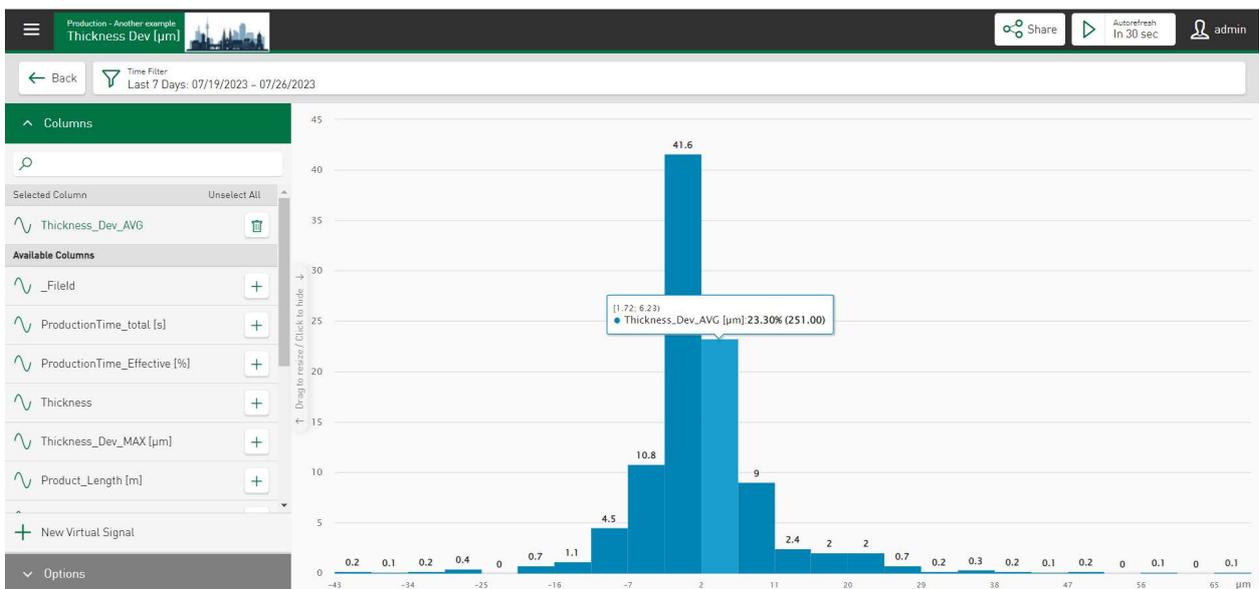


The maximum number of points shown can be individually set. In the JSON configuration file `C:\ProgramData\iba\ibaDaVIS\config.json`, the following addition can either reduce or increase the number (example: "500"):

`"MaxPlottedScatterchartPoints":500`

## 8.4 Histogram

The *Histogram* is suitable for displaying the value distribution of a characteristic value. The value distribution can be displayed as an absolute value or as a percentage. A histogram can be used, for example, to make statements about process stability or deviations.



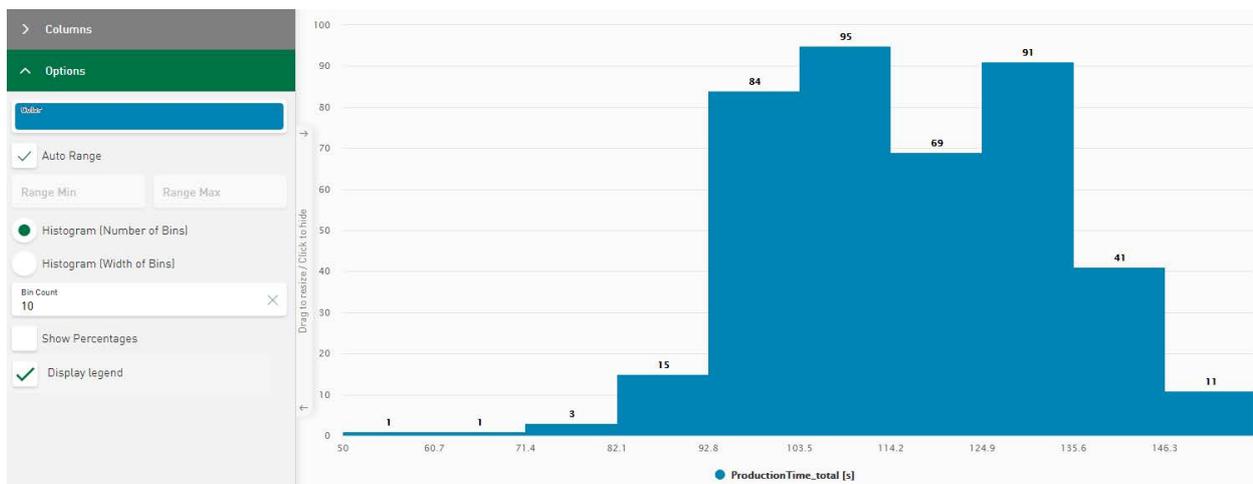
## Columns

In the *Columns* section a signal or characteristic value for the display can be selected. Only one signal can be selected. If a second signal is selected, the previously selected one will be removed.

## Options

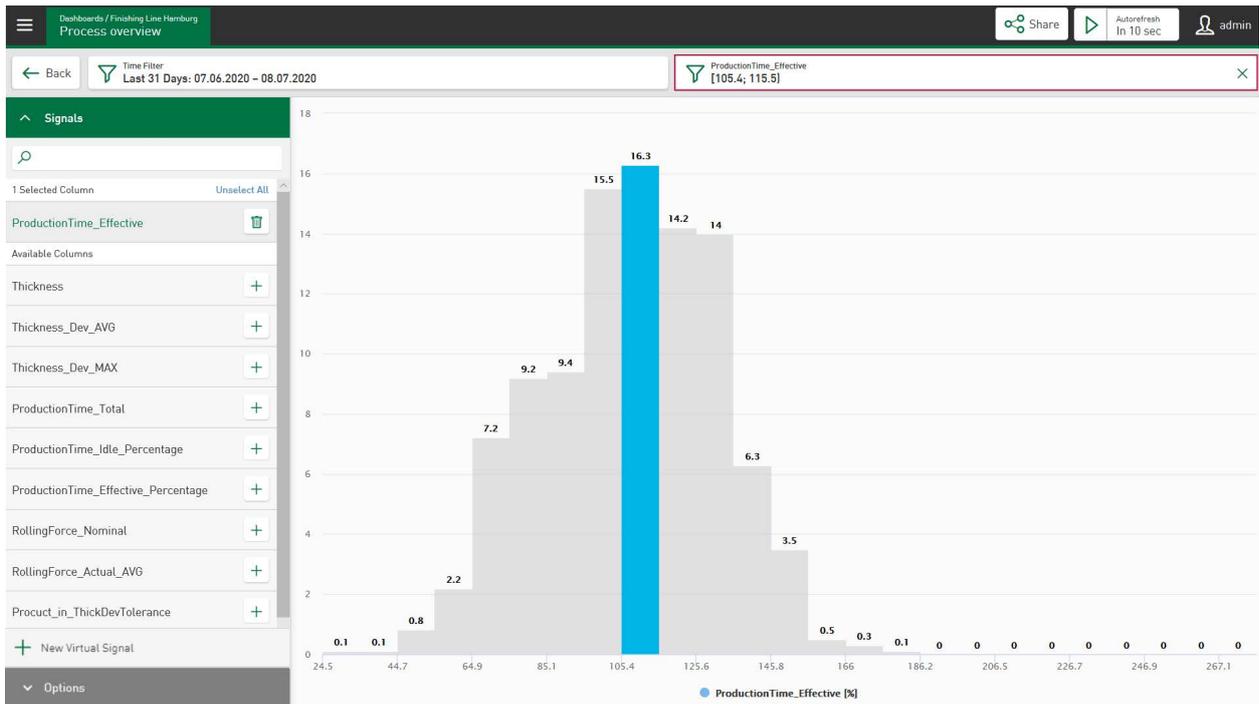
The color field can be used to assign any color to each value, see [↗ Color selection in diagrams](#), page 127

- **Auto range:** With the automatic setting, the entire range of values is mapped. However, you can also manually define the range by specifying a minimum and maximum value.
- **Histogram (Number of Bins):** The division can be made based on the number of bins. For this, enter the desired number in the *Bin Count* field. The width of the columns is then automatically calculated from the number of bins. The larger the number, the finer the subdivision.
- **Histogram (Width of Bins):** The division can also be made based on the width of a bin. For this, enter the desired width in the *Bin Width* field. The number of bins (number of bars displayed) is calculated from the bin width and the value range of the currently collected data.
- **Show Percentages:** The value distribution of a bin is displayed directly above the column. You can change from absolute values to percentages.



### 8.4.1 Class filter - Histogram

In the *Histogram*, you can filter according to underlying classes (bars). The filter is set by tapping on one or more bars. The *Histogram* then shows the filtered bar(s) in color. The other bars are grayed out. A new field corresponding to the filter selection appears. Tapping on the cross in this field will reset the zoom function. Tapping on the filter icon  opens a menu that can be used to precisely define the value range.



Dashboard view:

Time Filter: Last 31 Days: 07.06.2020 – 08.07.2020

ProductionTime\_Effective [105.4; 115.5]

### Actual Time per Product

Finishing Line Hamburg - Records: 8580

grid - last value

_TimeStamp Last value	ProductionTime_Total Last value
<b>07.07.2020 09:</b>	<b>135.25 s</b>

Product... Last value	Thickne... Last value	Thickne... Last value	Thickness Last value
<b>6.60 %</b>	<b>.13 µm</b>	<b>.11 µm</b>	<b>43 mm</b>

### Bar Chart

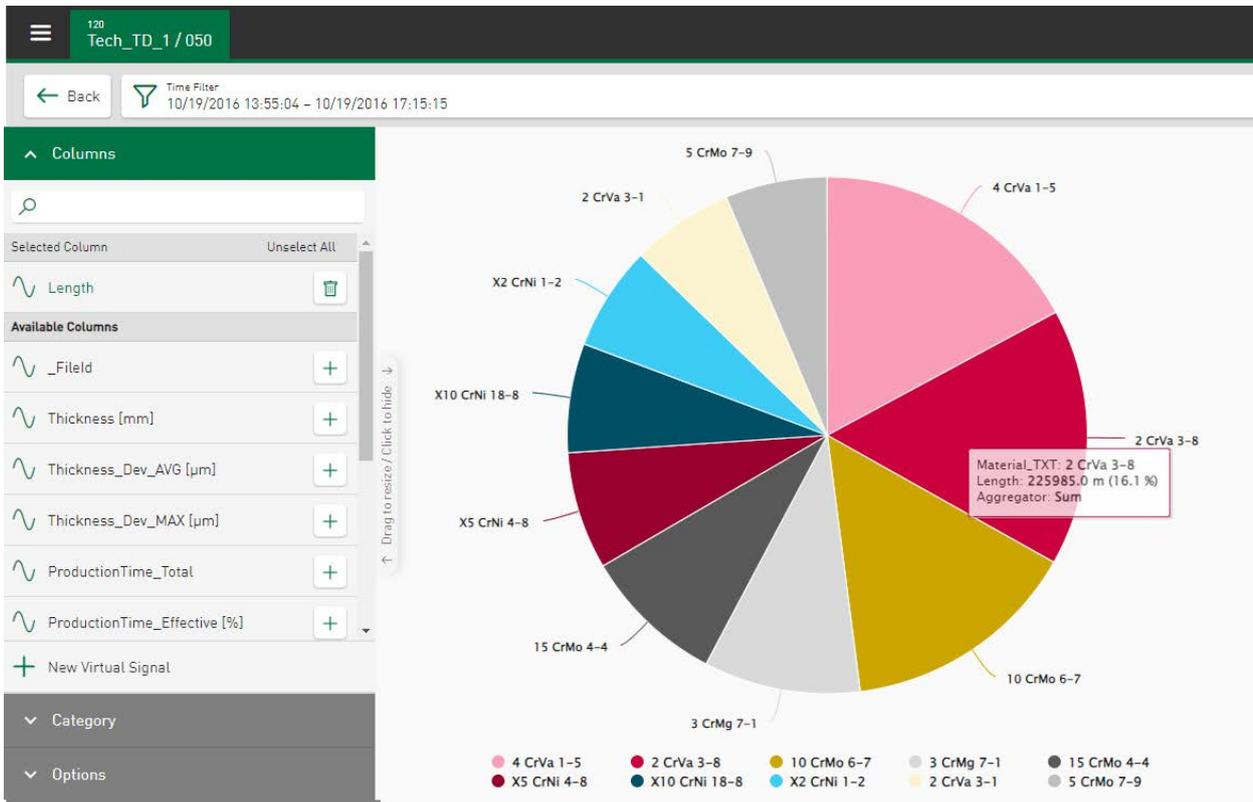
Finishing Line Hamburg - Records: 8580

Material\_TXT

- Thickness [mm]
- Length [m]
- ProductionTime\_Total [s]
- Product\_in\_ThickDevTolerance [%]

## 8.5 Pie chart

A pie chart is suitable for showing the distribution of a whole into parts (segments) corresponding to the frequency of a category or characteristic. The example below shows the distribution of the produced product length (in total) related to the different materials used. The product length is selected under *Columns* and the material designation is selected as the *Category*. The pie chart shows the product lengths added up per material group within the considered time range in descending order.



### Columns

Select the measured value or the value series whose distribution is to be displayed, e.g. the length of the produced material.

### Category

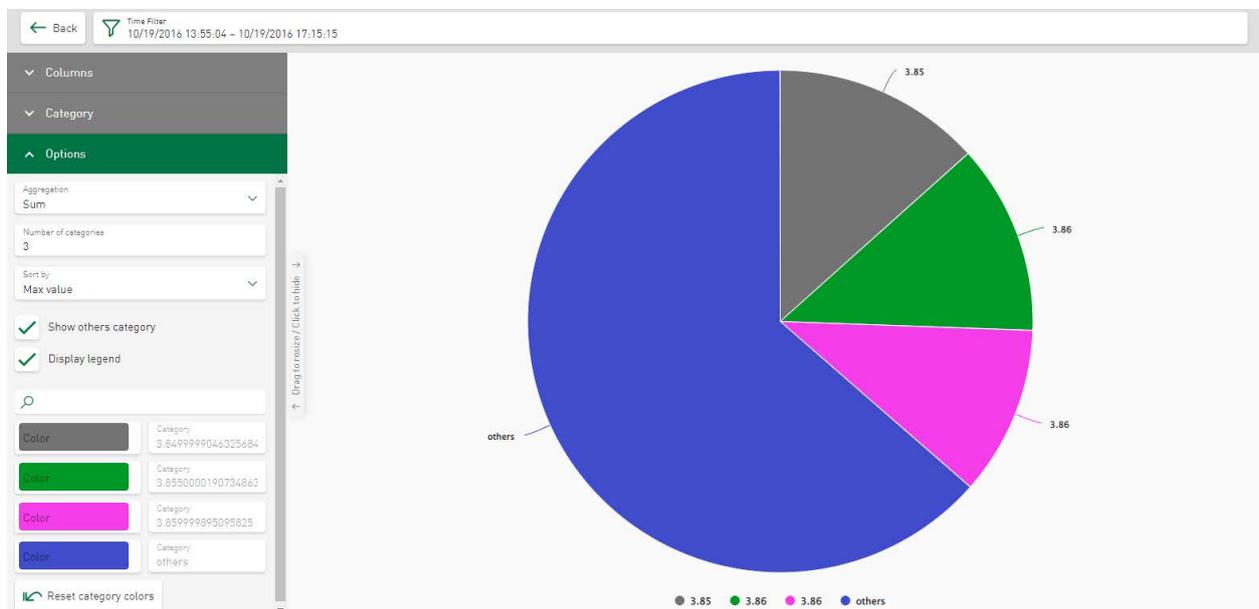
Select the category to which the distribution refers, e.g. material thickness.

### Options

- Aggregation: Here, an aggregate function can be selected. The function is applied to the value series selected under *Columns*.
  - Count: Quantity of values of the selected value series
  - Sum: Sum of values of the selected value series
  - Average: Average of values of the selected value series
  - Minimum: Minimum value of the selected value series
  - Maximum: Maximum value of the selected value series

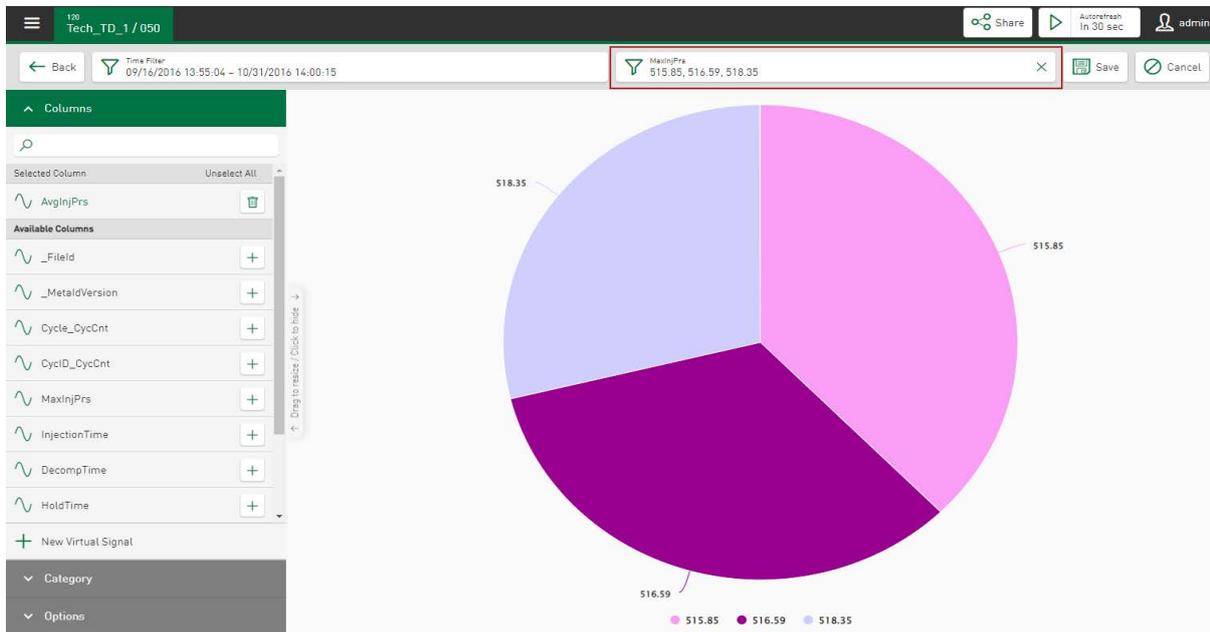
- Number of categories: Define how many categories should be displayed here.
- Sorted by: The following sort options are supported for displaying the respective aggregate function:
  - Category asc: sort alphanumerically by category in ascending order
  - Category desc: sort alphanumerically by category in descending order
  - Max. value: sort visualized categories by maximum value in descending order
  - Min. value: sort visualized categories by maximum value in ascending order
- Show others category: All categories that have not been recorded under *Number of categories* are summarized under *others*.

The search line can be used to filter for segment names from the *Columns* list. The colors of the displayed segments can be changed via the respective color field. The original colors are re-stored via the reset button.



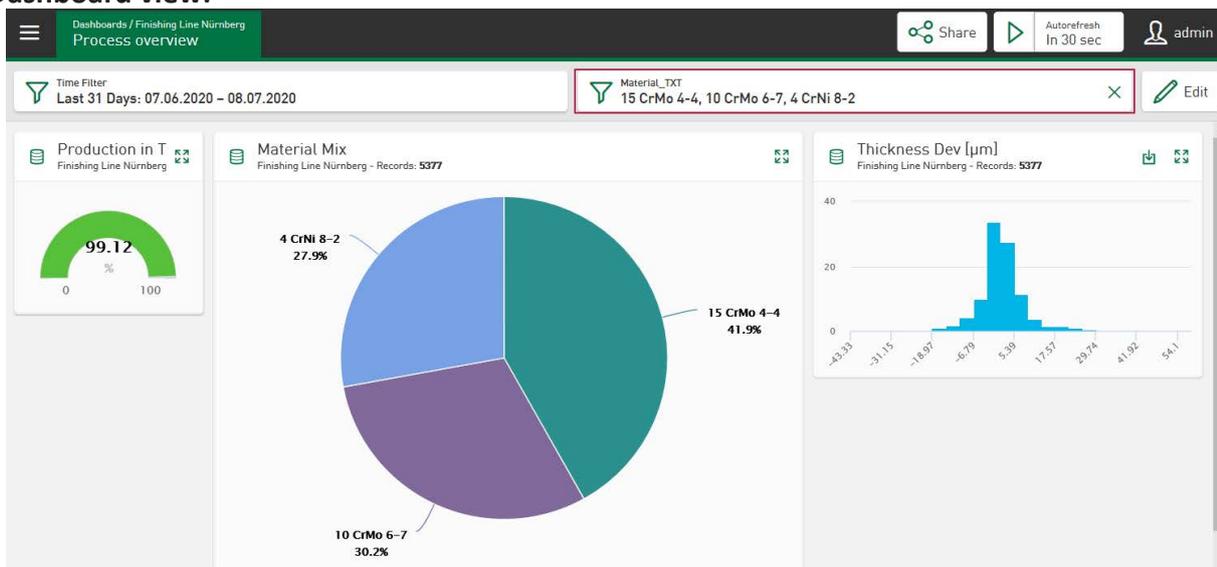
### 8.5.1 Circle segment filter - Pie chart

In the *Pie chart*, you can filter according to underlying groupings (circle segments). Tapping on one or more circle segments sets the filter. Tapping on the cross resets the filter.

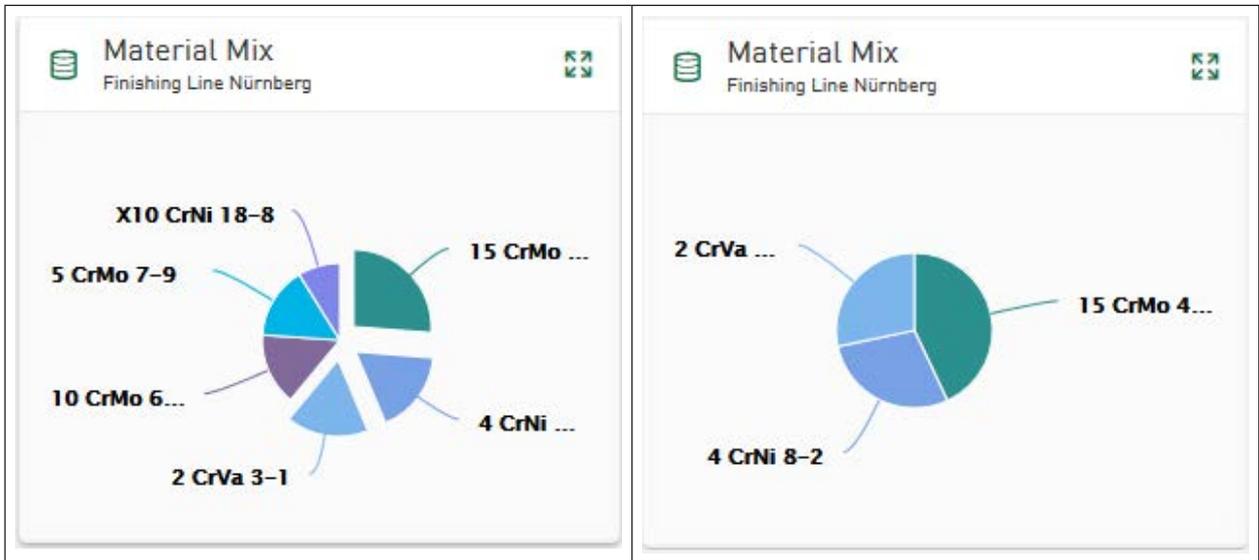


The appearance changes accordingly. The filtered materials appear in a field above the display. If you tap on the filter icon , a dialog opens in which the filter can be changed. The <Add Value> button can be used to add further filter criteria. Current filter values are displayed in a list and can be activated or deactivated via the respective checkbox. Deactivated values are no longer displayed; however, they are not removed from the list and can be retrieved at any time. By tapping on the icon , a value is finally removed from the list.

### Dashboard view:



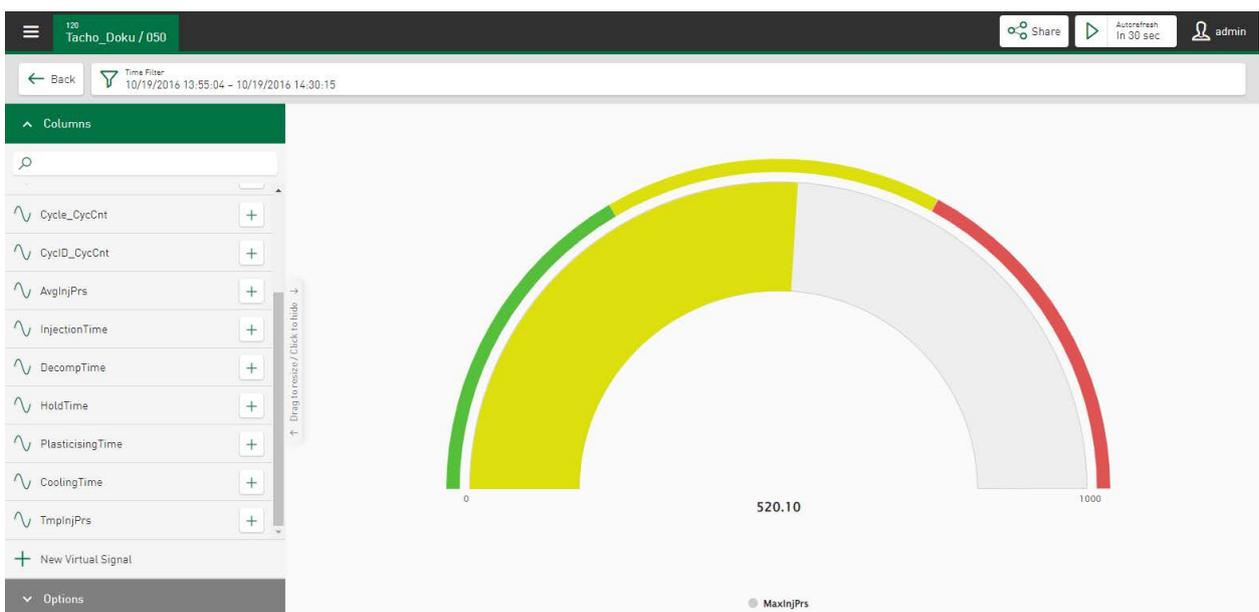
The filtered categories appear in a field above the dashboard. As in the tile view, the filter is set by tapping on one or more circle segments (bottom left image). The pie chart only shows the filtered segments (bottom right image). The display of all tiles changes accordingly. The filter icon can also be used here to access a dialog to adjust the filter.



## 8.6 Gauge

Individual values can be shown with the gauge. For a select value series, statistical features can be used to calculate and display a value, such as the average value of a parameter over a selected time period. The colored range always starts with the value “0” to make deviations more easily visible.

Constant values or signals or even virtual signals can be selected as minimum or maximum values. In the gauge, the minimum and maximum values of all configured parameters appear as the minimum and maximum of the spectrum arc, and the currently calculated value for the selected signal.

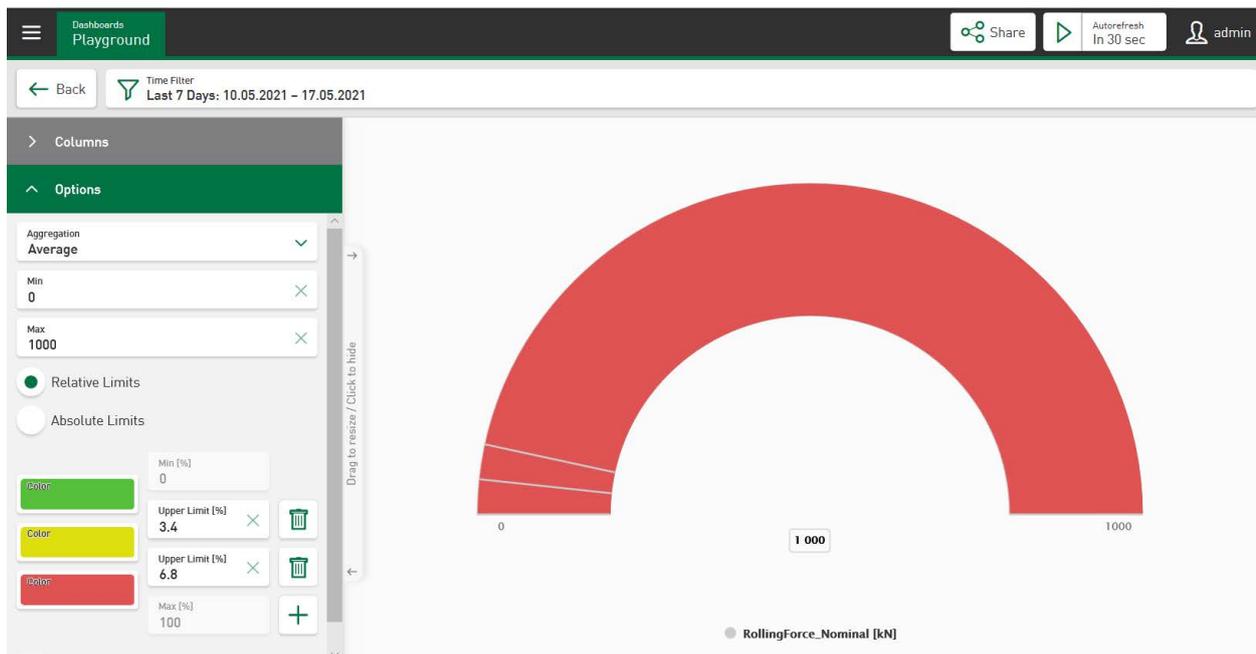


## Columns

In the *Columns* section, select the signal or a value series for the display. Only one signal can be selected. The range is set from 0 to 1000 by default, but it can be adjusted in the *Options* section.

## Options

- **Aggregation:** Here, an aggregate function can be selected.
  - **Count:** Quantity of values of the selected value series
  - **Sum:** Sum of values of the selected value series
  - **Average:** Average of values of the selected value series
  - **Minimum:** Minimum value of the selected value series
  - **Maximum:** Maximum value of the selected value series
  - **Last value:** Parameter display of the last acquired value
  
- **Min/Max:** Here you can define the displayed range. The display color changes from green to yellow to red, depending on whether the displayed value is in the range of the minimum, in the middle or at the maximum.



- **Relative limits/absolute limits:** Colors and limits for the color selection can be precisely specified and set. The basic setting specifies the color ranges with the relevant equal distribution in the set value range. Tapping on the buttons and can add or delete value ranges. The color field determines the definition of the color for the range. The ranges are initially set as percentage value ranges via the *Relative limits* option. They can be converted to absolute values. The currently set range limits can then be converted in relation to the current minimal and maximum values.

A maximum of 7 value ranges can be defined. The representation of the color bar begins with the value "0."

## 8.7 Table

Selected columns from the data table are shown in the table. The columns can be selected and arranged arbitrarily. The individual columns can be sorted and also offer a filter function.

If the characteristic value in the table is calculated from a DAT file, the associated DAT file can be made available for download and opened with *ibaAnalyzer*. A drill down on the measurement signals is thus possible for a detailed analysis. Moreover, an export menu can be called up to download CSV files. If a report is available as a PDF file for this series of measurements, the PDF file can also be made available for download.

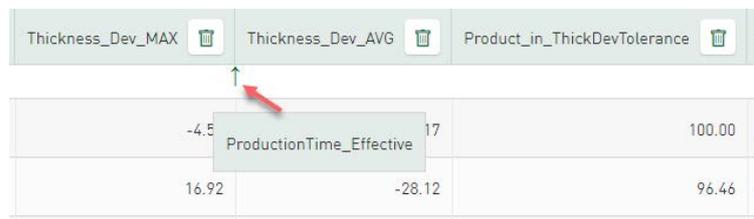
The screenshot shows a web application interface for data analysis. At the top, there's a navigation bar with a menu icon, the title '01 General Process Analysis - KPI values from database', and user information 'admin'. Below this is a time filter set to 'Last 90 Days: 06.01.2021 - 06.04.2021'. The main area contains a table with 6 selected columns. A sidebar on the left lists 'Available Columns' including \_FileId, \_FileName, and \_FileType, which can be added to the table. The table itself has columns for \_TimeStamp, CoilID, CustomerID, CustomerName, ThicknessDeviation\_Agv, and In\_Tolerance. The table shows 100 rows of data, with the first row highlighted.

_TimeStamp	CoilID	CustomerID	CustomerName	ThicknessDeviation_Agv	In_Tolerance
06.04.2021 10:52:47	20210406_00204	23423_2543	Kranbau DEBAG GmbH & Co.KG	0.403	94.892
06.04.2021 10:50:43	20210406_00203	23423_2543	Kranbau DEBAG GmbH & Co.KG	0.432	94.924
06.04.2021 10:45:43	20210406_00202	98452_3442	Honkong Steel Ltd.	0.055	94.910
06.04.2021 10:43:29	20210406_00201	98452_3442	Honkong Steel Ltd.	0.070	94.837
06.04.2021 10:41:14	20210406_00200	98452_3442	Honkong Steel Ltd.	0.050	94.964
06.04.2021 10:38:55	20210406_00199	98452_3442	Honkong Steel Ltd.	0.048	94.649
06.04.2021 10:36:44	20210406_00198	98452_3442	Honkong Steel Ltd.	0.032	94.687
06.04.2021 10:34:29	20210406_00197	98452_3442	Honkong Steel Ltd.	0.051	94.920
06.04.2021 10:32:08	20210406_00196	98452_3442	Honkong Steel Ltd.	0.054	94.737
06.04.2021 10:29:48	20210406_00195	98452_3442	Honkong Steel Ltd.	0.043	94.689
06.04.2021 10:27:34	20210406_00194	98452_3442	Honkong Steel Ltd.	0.056	94.728
06.04.2021 10:25:23	20210406_00193	98452_3442	Honkong Steel Ltd.	0.055	94.663

### Columns

From *Available Columns*, select the columns that are to be shown in the table. The column is inserted in the display all the way to the right by default. Tap on the symbol in the column header removes the column from the display.

You can move a column by tapping in the column header and inserting the column in the desired position using drag & drop.



## Options

- Use large text size on dashboard: Here you can enlarge the text size of the displayed values in the table. This text size setting is also transmitted to the dashboard pane.
- Enable DAT File Download: The DAT file, on which the characteristic value is based, can be released for download. An additional column *Download* appears and the DAT file can then either be saved or opened immediately with *ibaAnalyzer*.
- Enable PDF Report Download: If a report exists for this measurement (PDF file), the PDF file can also be allowed for a download.
- Enable PDF Report Direct Printing: An additional column *Print* appears and a printer icon in every line of the table. Tapping on the printer icon starts the direct printing of the report. In addition, a printer icon appears in the tile header, which allows direct printing of multiple reports. For this purpose, the reports must be selected in the dashboard view via the respective checkbox.
- Row selection column position: The checkbox in the table header and line can be either set to the left or to the right.
- Row Limit: The number of lines displayed can be limited. Enter the desired number for this purpose in this field. The preference is 100 lines.

Columns	Material_TXT	Thickness	ProductionTime_Effective	Thickness_Dev_AVG	Material_No	Width	Download	Print
Options								
<input type="checkbox"/> Use large text size on dashboard								
<input checked="" type="checkbox"/> Enable DAT File Download								
<input checked="" type="checkbox"/> Enable PDF Report Download								
<input checked="" type="checkbox"/> Enable PDF Report Direct Printing								
Row selection column position								
Right								
Row Limit								
15								
	X2 CrNi 1-2	11.59	78.4	8.15	7	695.0	DAT   PDF	
	X2 CrNi 1-2	11.02	78.3	6.43	7	692.0	DAT   PDF	
	X2 CrNi 1-2	10.01	80.7	9.39	7	681.0	DAT   PDF	
	X2 CrNi 1-2	9.11	62.5	4.08	7	654.0	DAT   PDF	
	X2 CrNi 1-2	6.01	92.2	9.11	7	652.0	DAT   PDF	
	X2 CrNi 1-2	5.04	94.3	13.65	7	641.0	DAT   PDF	
	X2 CrNi 1-2	5.04	96.8	14.31	7	641.0	DAT   PDF	
	X2 CrNi 1-2	5.04	98.3	12.80	7	641.0	DAT   PDF	

## Note



The database contains a reference to the DAT file, not the file itself. It is only possible to download the DAT file if the file is in its original storage location.

The PDF report must have the same name and be in the same folder as the DAT file so that it is possible to access it.

The installation of the software *ibaDatCoordinator* enables the automatic production of a report. More information can be found in the manual *ibaDatCoordinator*.

For additional information about downloads, see [➤ CSV Export, Download of DAT/PDF files](#), page 86

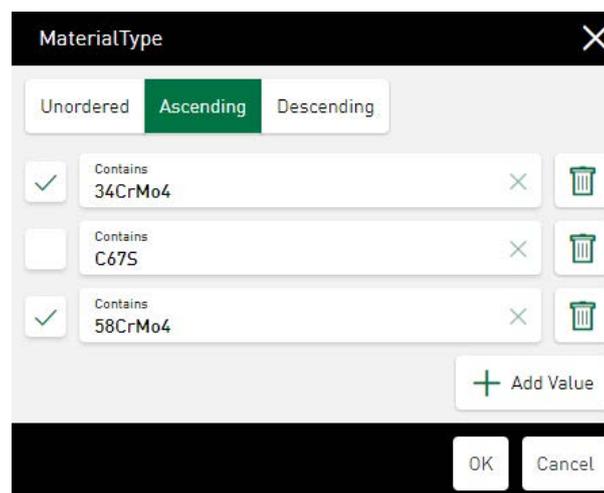
### 8.7.1 Sorting and filter function

The sorting and filter function is accessed by tapping in the column header. Column-related value ranges are filtered. Filters can be set in several columns here. You can sort the columns in descending or ascending order in the following dialog.

Length	Material_TXT	Thickness	ProductionTime_Effective	Thickness_Dev_AVG
172.1	X2 CrNi 1-2	13.56	76.8	3.30
169.6	X2 CrNi 1-2	13.56	73.1	0.91
168.1	X2 CrNi 1-2	13.19	68.7	3.36
168.0	X2		6	2.72
168.2	X2		1	3.61
159.7	X2		8	-2.23
159.2	X2		3	1.34

In the same dialog, a filter can be set on a value range by inserting a corresponding value in the *From* and/or *To* fields.

If the column does not contain any numerical values, but rather text fields, you can filter according to the letter or number. The <Add Value> button can be used to add further filter criteria. Current filter values are shown in a list and can be activated or deactivated via the respective checkbox. Deactivated values are no longer displayed in the current table; however, they are not removed from the list and can be retrieved at any time. By tapping on the icon , a value is finally removed from the list.



If a column is sorted, this is indicated by a triangle in the column header. A set filter is indicated by a filter symbol. In addition, a filter field appears over the table specifying the filtered value range. The filter can be reset by tapping on the cross in the filter field.

Order_No	Length	Material_TXT	Thickness	ProductionTime_Effective	Thickness_Dev_AVG
12	95.44	X10 CrNi 18-8	11.16	42.04	-16.00
43	101.29	3 CrMg 7-1	10.26	49.52	2.51
91	104.91	X5 CrNi 4-8	12.12	52.12	4.29
94	106.70	X5 CrNi 4-8	13.56	58.16	-11.41
33	115.86	15 CrMo 4-4	2.33	24.47	15.15
08	116.64	X5 CrNi 4-8	8.97	54.32	3.10
08	120.50	X5 CrNi 4-8	8.97	55.86	2.37
51	120.52	2 CrVa 3-1	8.39	57.78	7.23
57	122.82	5 CrMo 7-9	8.56	53.08	-14.80
09	122.93	X5 CrNi 4-8	8.97	54.56	3.26
45	124.35	2 CrVa 3-1	8.24	47.70	3.00
14	125.82	X10 CrNi 18-8	9.06	59.60	-14.77
14	126.03	X10 CrNi 18-8	9.06	56.26	-14.82

**Dashboard view:**

In the dashboard pane, the same filter and sort criteria apply as in the tile view described above. The filters are set by tapping on the corresponding column and indicated by a triangle and filter icon. A filter field appears above the dashboard specifying the filtered column and the value range.

Customer_No	Procut_in_ThickDevTolerance	CoilID	Order_No	Length	Material_TXT	Thickness	ProductionTime_Effective	Thickness_Dev_AVG	Material_No
8				722.98	3 CrMg 7-1	1.97	102.08	7.29	1
8				768.53	3 CrMg 7-1	1.97	113.36	6.64	1
8				770.16	3 CrMg 7-1	1.97	112.12	7.42	1
7				762.74	2 CrVa 3-1	1.87	120.04	11.54	2
7	97.37	12270	70	763.40	2 CrVa 3-1	1.87	118.88	11.31	2
7	96.32	12270	70	777.73	2 CrVa 3-1	1.87	117.44	11.84	2
7	84.91	12270	70	786.08	2 CrVa 3-1	1.87	117.78	11.11	2
7	85.26	12270	70	780.75	2 CrVa 3-1	1.87	116.69	10.18	2
8	91.82	12381	81	713.14	5 CrMo 7-9	1.92	107.86	15.06	3
0	90.36	12409	09	413.16	10 CrMo 6-7	1.92	68.34	8.27	4
0	91.40	12409	09	472.97	10 CrMo 6-7	1.92	75.22	7.99	4

**Product Mix**  
Finishing Line Hamburg - Records: 2700

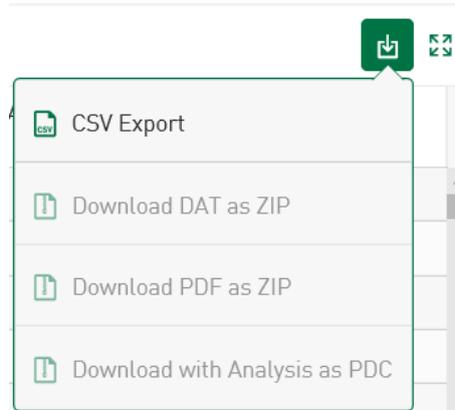
Material	Percentage
2 CrVa 3-1	27.7%
3 CrMg 7-1	26.9%
10 CrMo 6-7	22.5%
X10 CrNi 18-8	8.8%
5 CrMo 7-9	5.1%
15 CrMo 4-4	5.1%

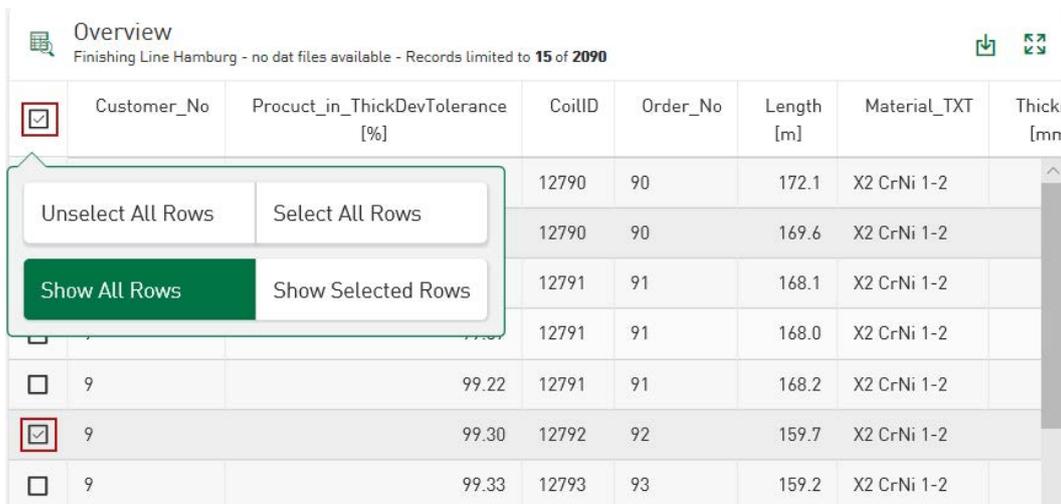
**Product Quality**  
Finishing Line Hamburg - Records: 2700

### 8.7.2 CSV Export, Download of DAT/PDF files

The *Table* tile type supports the download of CSV, DAT and PDF files. The download files are selected in the dashboard pane. Tapping on the download icon in the display bar of the tile opens the CSV export menu.

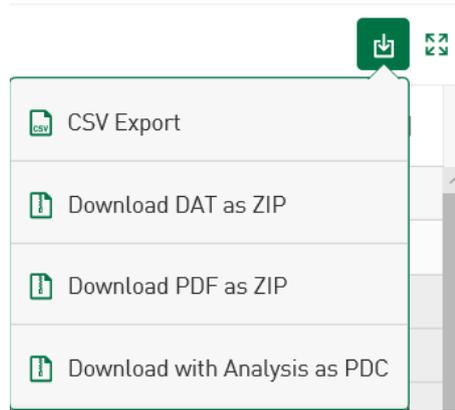


After tapping on the menu item “CSV Export,” *Field separators* (comma, semicolon, tab), *Decimal separator* (comma, period) and *String quotes* (Yes, No) can be defined. A CSV file is downloaded displaying the content of the currently selected table columns. The line selection occurs either via the checkbox on the edge of the table or via a context menu that is opened by tapping on the checkbox in the table header. The context menu offers the ability to select or deselect all table lines and to display all or individual lines.



#### Downloading selected DAT files and PDF reports

Downloads for DAT files and PDF reports are available in ZIP format for selected table content in the dashboard pane. For this purpose, the function “Enable DAT File Download” and/or “Enable PDF Report Download” must be enabled under *Options*. In the CSV export menu, the options “Download DAT as ZIP” and/or “Download PDF as ZIP” can then be selected. They are no longer grayed out.



The selection and deselection of the lines occurs via the respective checkbox or via the context menu by tapping on the checkbox in the table header.

Overview  
Finishing Line Hamburg - Records limited to 21 of 2700

CoilID	Order_No	Length	Material_TXT	Thickness	ProductionTime_Effective	Thickness_Dev_AVG	Material_No	Width	Download	<input checked="" type="checkbox"/>
11942	42	293.37	X10 CrNi 18-8	7.04	90.52	1.77	9	504.00	DAT   PDF	<input type="checkbox"/>
11866	66	771.16	X5 CrNi 4-8	2.12	107.12	4.42	8	394.00	DAT   PDF	<input type="checkbox"/>
11943	43	195.12	X10 CrNi 18-8	10.07	77.70	2.88	9	482.00	DAT   PDF	<input checked="" type="checkbox"/>
11866	66	408.08	X5 CrNi 4-8	2.12	59.32	4.43	8	394.00	DAT   PDF	<input checked="" type="checkbox"/>
11944	44	373.47	X10 CrNi 18-8	5.18	88.12	3.61	9	478.00	DAT   PDF	<input checked="" type="checkbox"/>
11866	66	774.47	X5 CrNi 4-8	2.12	103.30	3.13	8	394.00	DAT   PDF	<input type="checkbox"/>
11944	44	385.68	X10 CrNi 18-8	5.14	91.10	1.86	9	478.00	DAT   PDF	<input checked="" type="checkbox"/>
11866	66	776.17	X5 CrNi 4-8	2.12	105.83	4.27	8	394.00	DAT   PDF	<input type="checkbox"/>
11944	44	385.85	X10 CrNi 18-8	5.14	91.57	1.84	9	478.00	DAT   PDF	<input type="checkbox"/>
11866	66	791.60	X5 CrNi 4-8	2.12	107.89	4.22	8	394.00	DAT   PDF	<input type="checkbox"/>
11944	44	394.97	X10 CrNi 18-8	5.14	94.93	2.12	9	478.00	DAT   PDF	<input type="checkbox"/>

### Analysis for datasource configured

If an analysis is also configured for the datasource of the currently displayed values, the DAT files can also be downloaded together with the analysis as a PDC (Process Data Container) file. In the download menu, the option “Download with Analysis as PDC” can then also be selected. *ibaAnalyzer* can be used to open the analysis and DAT file together directly. Also see the following chapter

➤ *Connection of DAT Files/ibaHD data and analysis, page 120*

➤ *Using the Analysis configuration, page 120*

### 8.7.3 Download link for PDF, CSV, ZIP, PARQUET files

In the dashboard view, a direct download can be performed for files in the PDF, CSV, ZIP and PARQUET format. In the process, the file name must be registered as a reference in a database table. See ➤ *Options, page 28*.

Based on the settings in the datasource configuration, the strings are named with the endings .csv, .pdf, .zip or .parquet. The text in the table row is then shown highlighted as a download link.

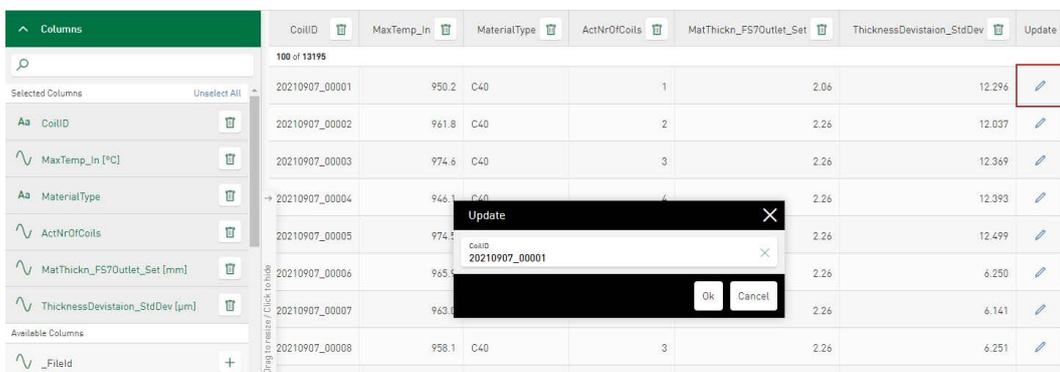
_TimeStamp	CSV_Files	PDF_Files	Parquet_Files	
22.08.2016 04:59:53	C:\csv_Export\ibaDaVIS_Export_2021-02-03_18-24-34.CSV	C:\PrintAllTest\Report_2.pdf	C:\DataSet2.parquet	<input type="checkbox"/>
22.08.2016 05:21:02				<input type="checkbox"/>

The referenced file is downloaded as soon as the link is tapped on.

### 8.7.4 Update database table records

If the currently logged-in user or user group is authorized to edit datasources, table contents can be changed record by record and database tables can be updated, see [↗ Datasource Permissions](#), page 114.

The  symbol is displayed in an additional column in the updatable table rows. Tapping the pencil icon opens an input field which allows the user to enter the new value or comment. Press <OK> to confirm the entry and update the contents of the database table for the currently selected record. After a successful update, the dashboard is automatically adjusted.

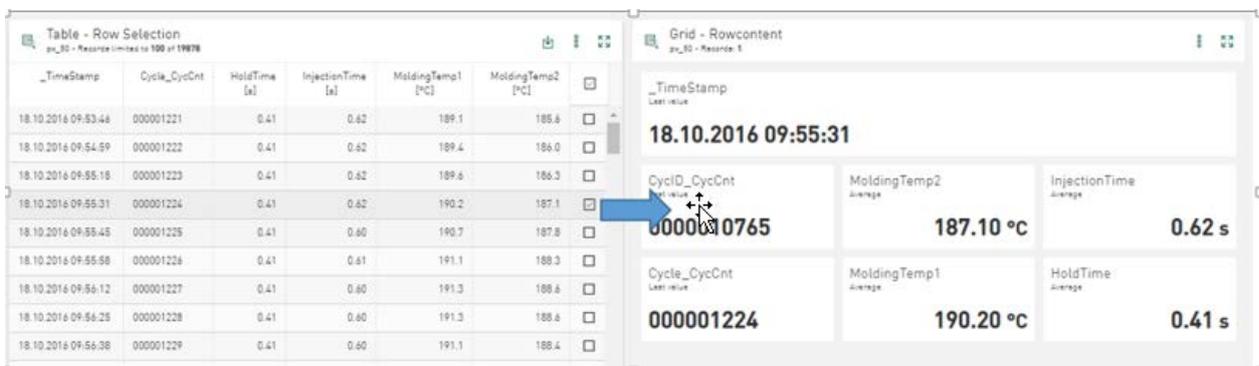


The screenshot shows a table with columns: CoilID, MaxTemp\_In, MaterialType, ActNrOfCoils, MatThickn\_F57Outlet\_Set, ThicknessDevistaion\_StdDev, and Update. An 'Update' dialog box is open over the row with CoilID 20210907\_00001, showing a text input field with the same CoilID and 'OK' and 'Cancel' buttons.

### 8.7.5 Interaction line selection

#### Value display tile type

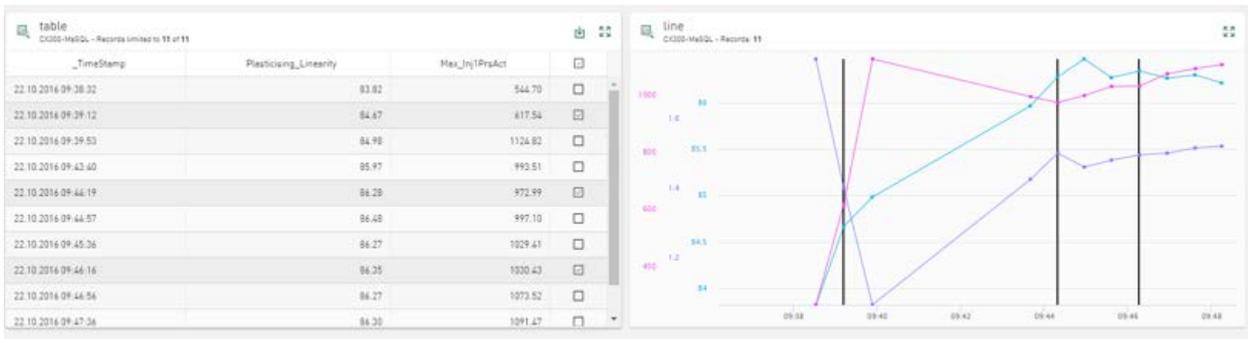
By selecting a line in the *Table* tile type, the associated content can be shown in all cells of the *Value display* tile type displaying the content of the same datasource. Multiple lines can be selected in the table.



The screenshot shows a 'Table - Row Selection' tile with columns: \_TimeStamp, Cycle\_CycCnt, HoldTime [s], InjectionTime [s], MoldingTemp1 [°C], and MoldingTemp2 [°C]. A blue arrow points from the row with Cycle\_CycCnt 0000010765 to a 'Grid - Rowcontent' tile. The grid tile displays the selected timestamp '18.10.2016 09:55:31' and shows average values for MoldingTemp2 (187.10 °C), InjectionTime (0.62 s), MoldingTemp1 (190.20 °C), and HoldTime (0.41 s).

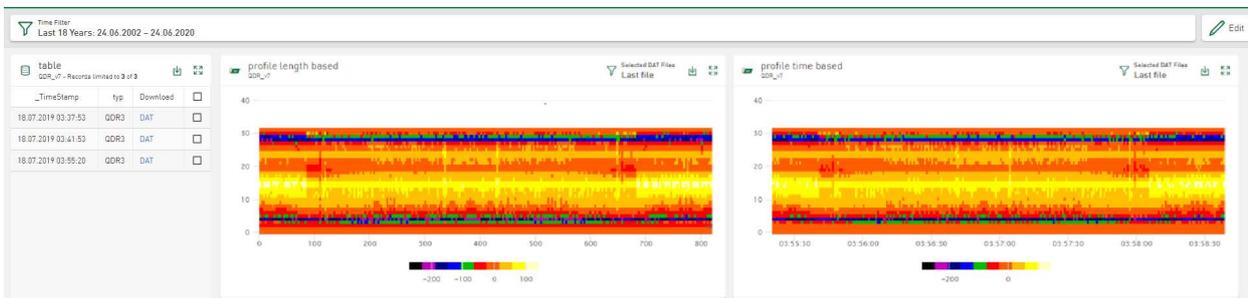
#### Markers in time-based charts

Selecting a table line takes the time stamp of the selected line and places a marker on all time-based charts for the selected time. Once again, multiple lines can be selected in the table.



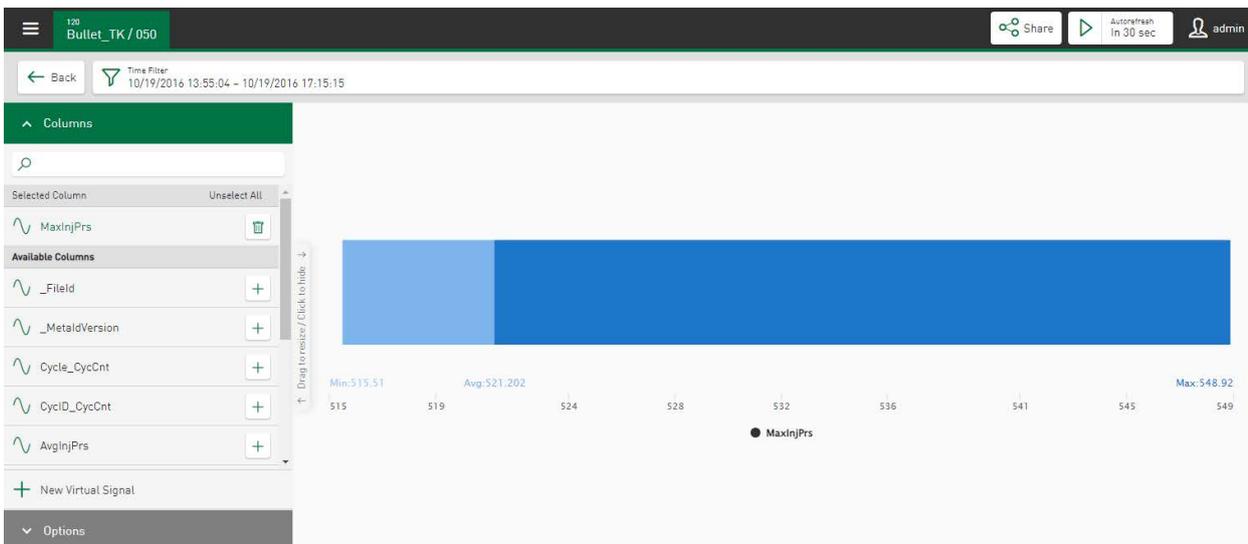
### Heat map tile type

By selecting one or more lines in the table, *Heat map* tiles can display the data of the selected DAT files referenced in the table. This feature is supported if *Table* and *Heat map* use the same datasource.



## 8.8 Bullet Graph

With the bullet graph, several statistical characteristic values of a value series can be displayed. The minimum, average and maximum values from the selected column as well as the last registered value from the value range currently defined via the time filter are displayed.

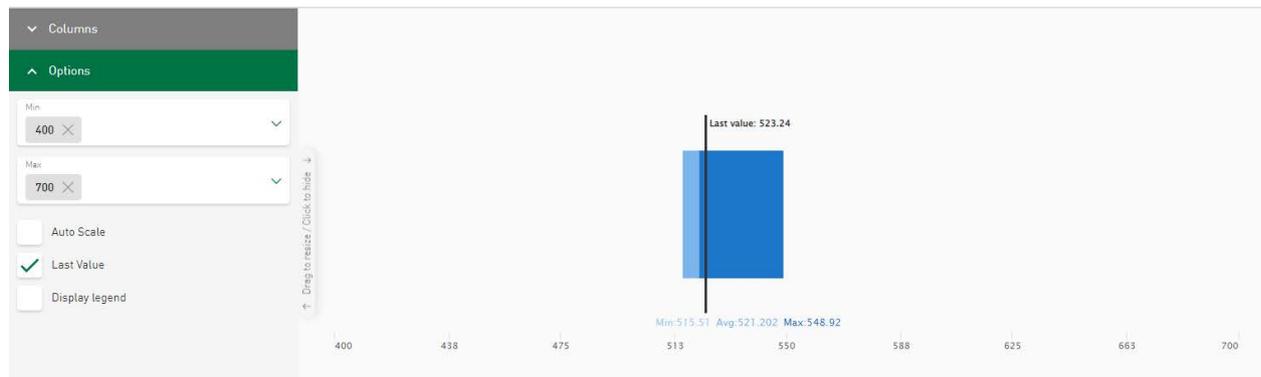


### Columns

In the *Columns* section, select the signal or a value series for the display. Only one signal/one value series can be selected. The range is set from 0 to 1000 by default.

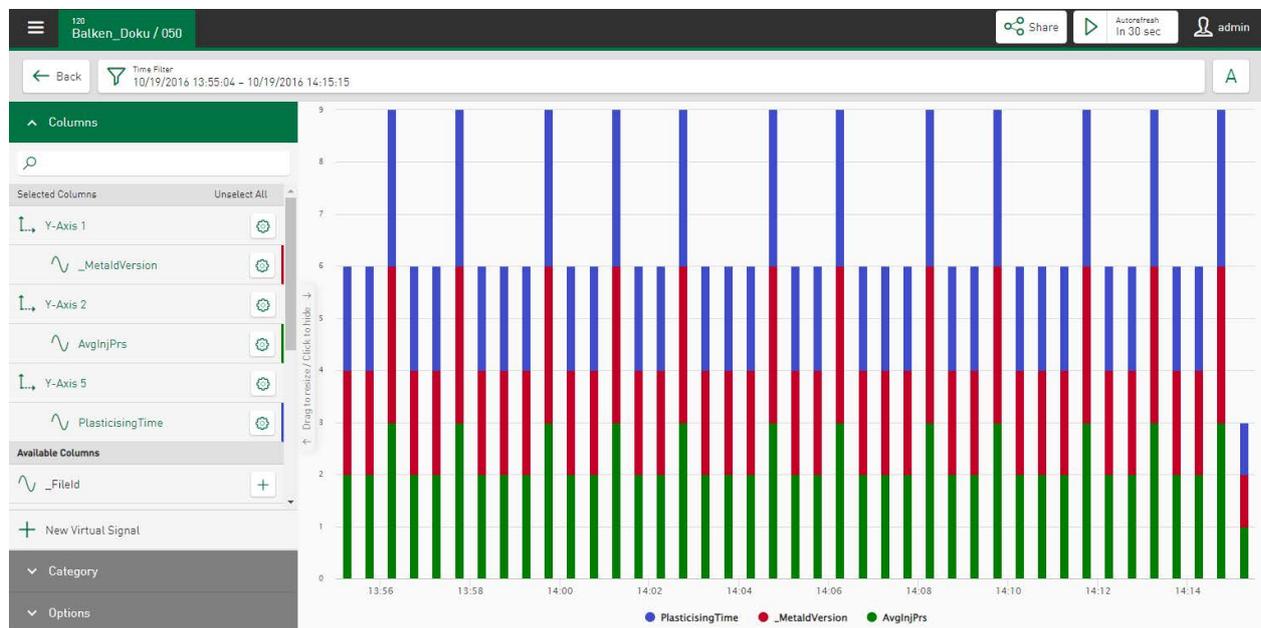
### Options

- **Auto Scale:** The *Auto Scale* selection shows the entire value range. After deselection, the scaling range can be set individually by entering a minimum and maximum value.
- **Last value:** Here, the parameter display of the last recorded value can be selected or deselected. This parameter is marked by a black line that runs vertically through the value range at the corresponding position.



## 8.9 Bar chart

Characteristic values from a database can be displayed in bars and grouped in selected time periods and categories in the *Bar chart*. The data can be displayed side by side or as a stacked chart.



### Columns

In this section, the measured values or the value series to be sorted or grouped are selected. The  icon can be used to the axis and signal settings in a property window, see [↗ Axis scaling and signal assignment](#), page 59.

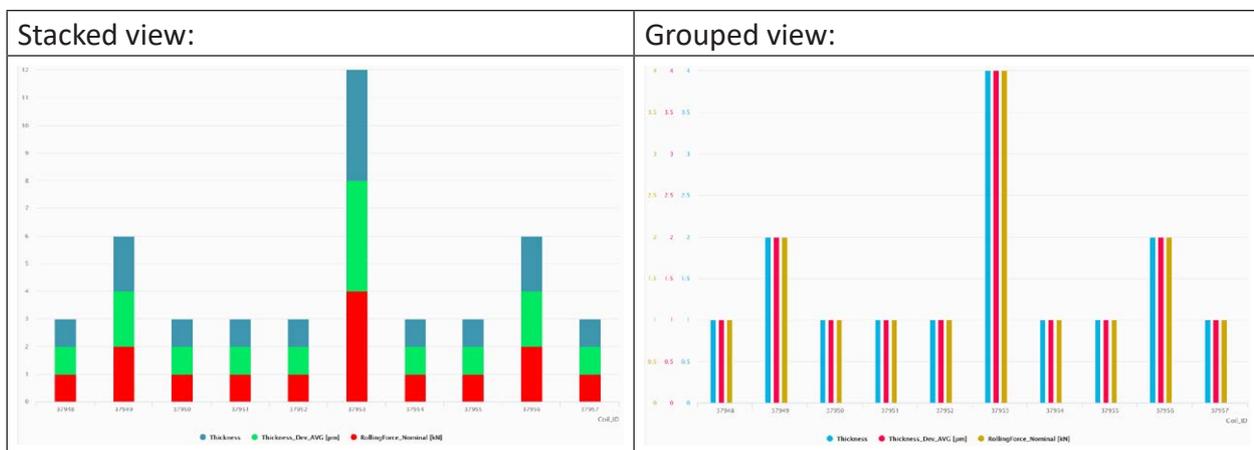
### Category

Here, the category is selected according to which the visualized data should be grouped, e.g. Material.

### Options

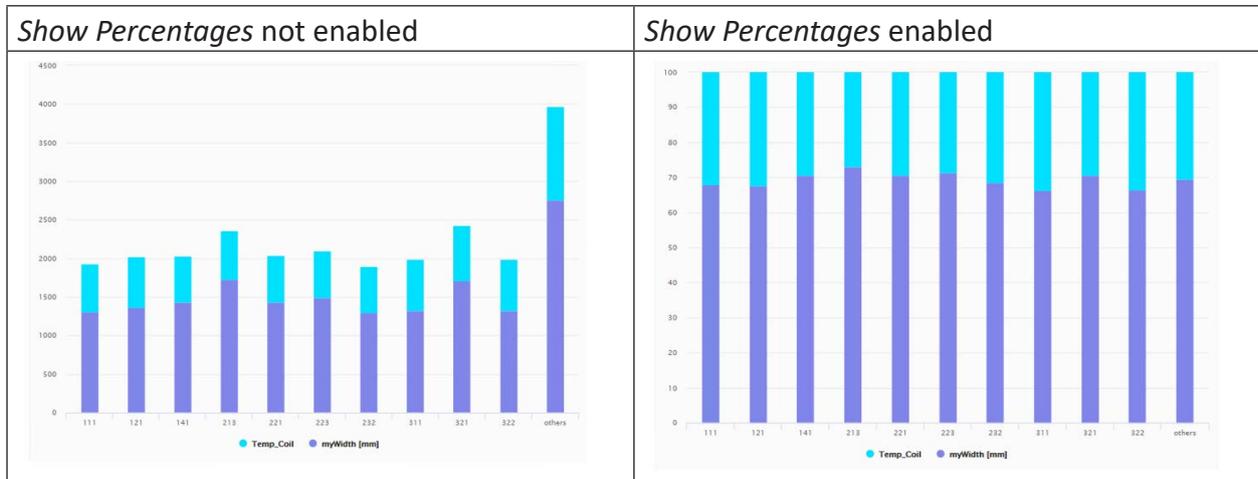
- **Basic Aggregation:** Select the aggregate function for the value series selected under *Column*, e.g. the sum of the material length.
  - **Count:** Quantity of values of the selected value series
  - **Sum:** Sum of values of the selected value series
  - **Average:** Average of values of the selected value series
  - **Minimum:** Minimum value of the selected value series
  - **Maximum:** Maximum value of the selected value series
- **Group Time by**

This option allows a selected time period for the selected value sequence to be specified in the bar chart. By default, the bar display is automatic depending on the selected time filter and tile size. Instead of automatic value aggregation (A), time-based aggregation enables specific selection in the time intervals year (Y), month (M), day (D), or hour (H). The graph is updated directly. Unlike automatic aggregation, settings made here do not change even if the time range is redefined using the time or zoom filter. Switching is not possible if the grouped view has been selected for a category.
- **Stacked view /Grouped view:** A distinction can be made between 2 different display formats.



- **Sort by:** The following sort options are supported for displaying the respective aggregate function:
  - **Category asc:** sort alphanumerically by category in ascending order
  - **Category desc:** sort alphanumerically by category in descending order
  - **Max. value:** sort visualized categories by maximum value in descending order
  - **Min. value:** sort visualized categories by maximum value in ascending order
- **Number of categories:** Define how many categories should be displayed here.

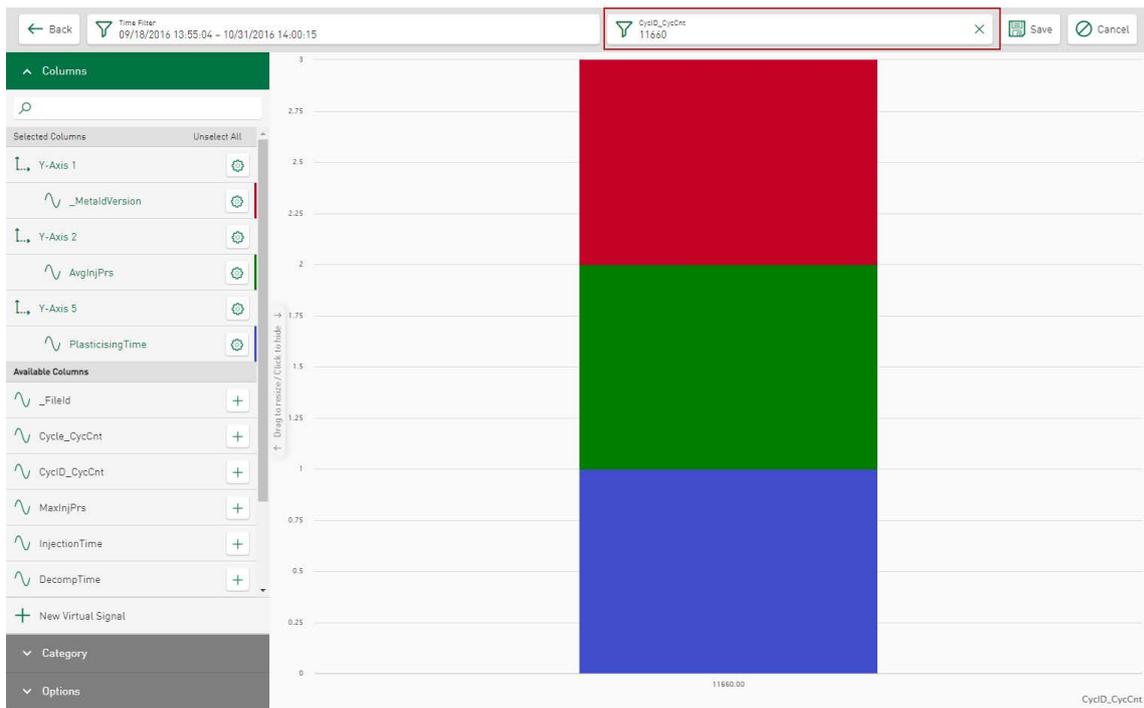
- Show others category: All categories that have not been recorded under *Number of categories* are summarized under *others*.
- Show Percentages: Here, the percentage values of the visualized values in relation to the total quantity can be set (only possible in stacked view).



### 8.9.1 Bar filter - Bar chart

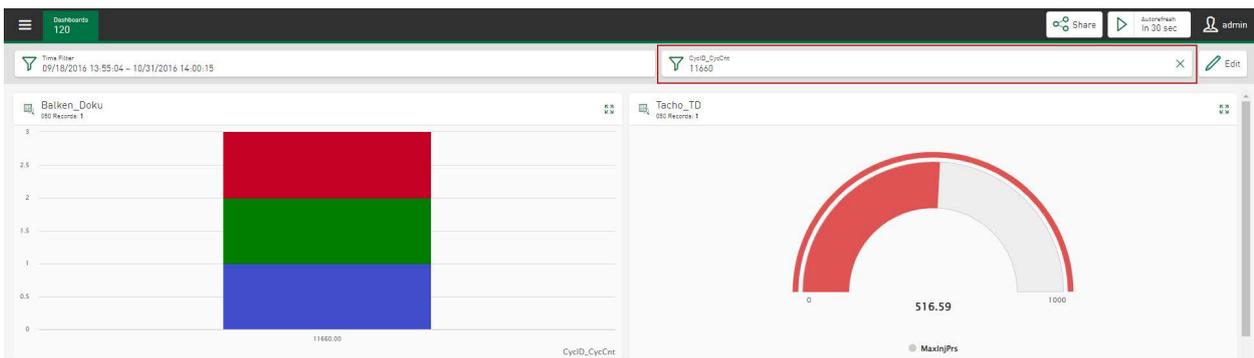
In addition to the time range, visualized bars can also be tapped individually and therefore filtered. The display changes accordingly, the filtered area appears in a field above the display. Tapping on the cross in the field resets the filter. Tapping on the filter icon  opens a dialog in which the filter values can be changed.

Use the <Add Value> button to add additional filter criteria. Current filter values are displayed in a list and can be enabled or disabled using the relevant check box. Disabled values are no longer mapped; however, they are not removed from the list and can be accessed at any time. A value is permanently removed from the list via the icon .



**Dashboard view:**

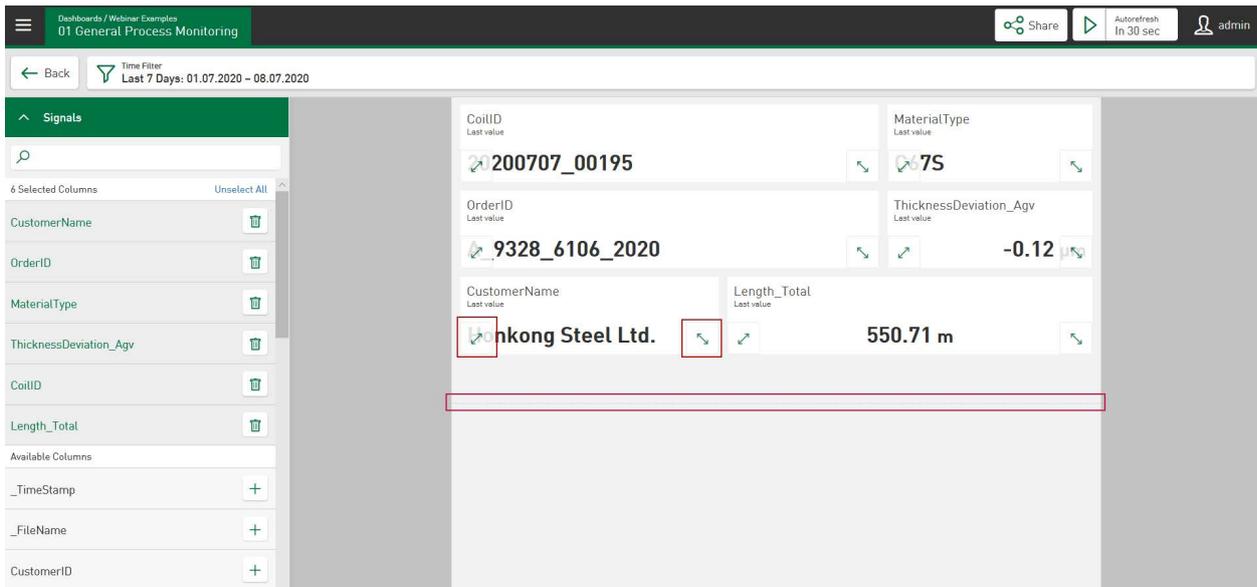
Time-based aggregation is also possible in the dashboard view.



**8.10 Value display**

The *Value display* tile type makes it possible to visualize several individual values on a tile as cells on the dashboard. For each selected column, a separate cell is created, the cell size and position can be individually adjusted and changed here. The size of the cell content shown is based on the height of the cell.

Columns selected to be displayed automatically appear in the visible area of the tile. The width of the area in which the cell can be positioned corresponds to the width of the value display on the dashboard. The current tile height is marked by the dotted line in the editing area, but is not limited.



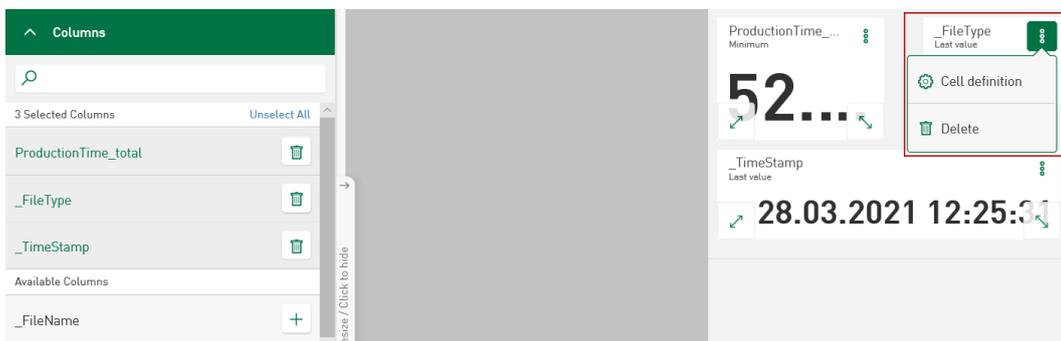
All cells located below this dotted line are not shown on the dashboard and can be accessed via a tile-related scrollbar. The height of the visible area can be changed by changing the height on the dashboard. Therefore, increase the width and height of your tile on the dashboard if you have configured cells that are not completely visible.

The size and position of a cell can be changed in the same way as any tile is changed on the dashboard, i.e. by tapping on the left and right double arrows at the bottom. The font size of the values increases or decreases with the size of the cell. If the cell width is insufficient for completely displaying the cell contents, ellipses will indicate that the content is not fully displayed.

The width and position of the cell remains the same if you go back to the dashboard. When designing your layout, you can use the full width of the design area.

### Cell definitions

For the selected columns, specific options are available via a context menu directly in the respective cell.



In the *Aggregator* field, with numerical values it is possible to display the selected column values via a dropdown menu instead of the last value (standard) of the calculated average, minimum, maximum or total value (sum).

The position of the value shown in the respective cell (left, center or right) can be determined in the *Alignment* field via a dropdown menu.

In the case of numerical values, the number of decimals shown in the *Decimal places* field can also be defined.

## Options

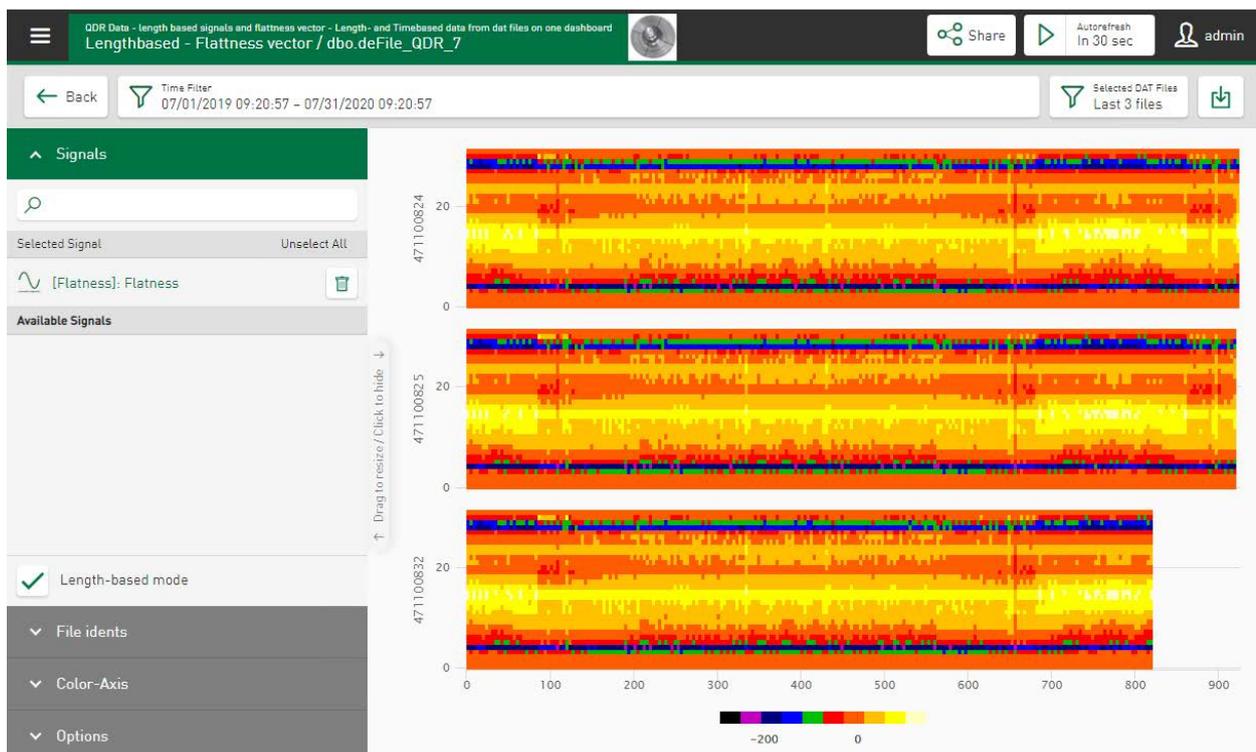
- Display table style: Here you have the option to list the selected columns in tabular form.

## Interaction of tile type Table

By selecting a line in the *Table* tile type, the associated content of the selected line index is shown in every cell displaying the content of the same datasource. See ↗ *Interaction line selection*, page 88.

## 8.11 Heat map

Signal from DAT files that are combined as a vector group can be visualized as a *Heat map*. This is useful for signals from flatness or profile inspection systems. The *Heat map* can be applied to time-based and length-based vectors.



### Signals

Select the vector group from the signal list and the *Heatmap* will immediately visualize the signal vector using the *ibaAnalyzer* and *ibaQPanel* default colors for 2D plots.

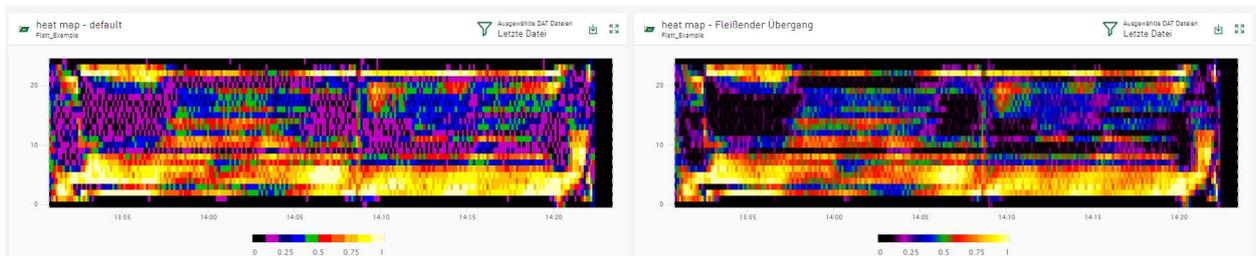
Vector data from measured values tables can also be displayed. For this purpose, signals assigned to the vector have to be extracted into your database using the DB functionality of *ibaAnalyzer*.

### File idents

As in the other DAT file views, it is possible to select a file ident column from the datasource. The current file ident column is displayed before the signal name of the visualized vector group name.

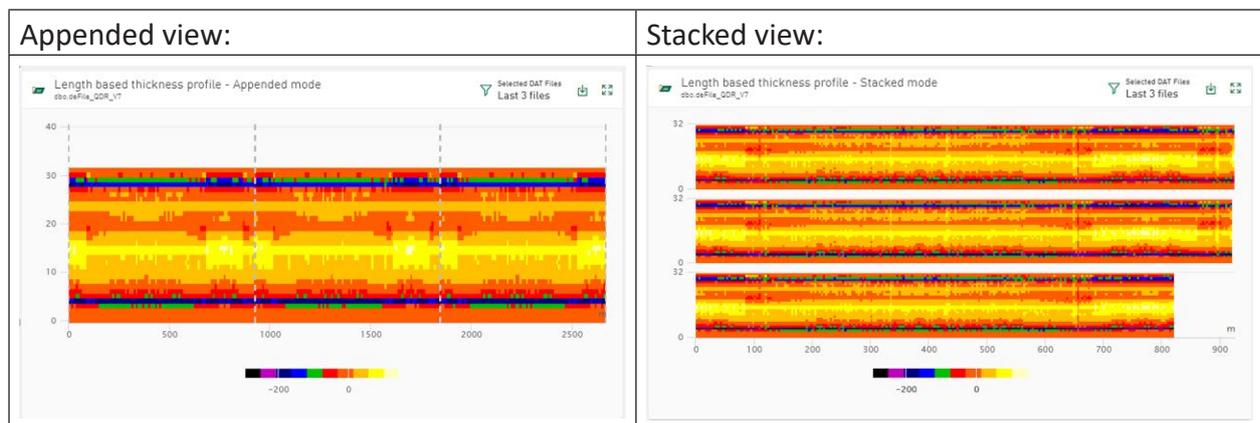
### Color Axis

- **Auto Scale:** After deselecting automatic scaling, minimum and maximum values can be determined for analysis.
- **Automatic coloring:** The default color setting is the same as in *ibaAnalyzer*. It is possible to change the color range by disabling the checkbox. To change the color, tap on a color field and select one of the default colors directly from the editing window that appears. You can also use the *Slider* or enter an RGB value/HEX code/HSL color code to make a color selection. The value in the Z-axis is colored according to the resulting gradient.
- **Relative limits/absolute limits:** Colors and limits for the color selection can be precisely specified and set. The basic setting specifies the color ranges with the relevant equal distribution in the set value range. Tapping on the buttons  and  can add or delete value ranges. The color field determines the definition of the color for the range. The ranges are initially set as percentage value ranges via the option. They can be converted to absolute values. The currently set range limits can then be converted in relation to the current minimal and maximum values.
- **Smooth transitions between colors:** Select this option if you find the color transitions between value ranges too abrupt. When enabled, the color transitions occur in gradations due to an optical softening effect in the graphics. The following example shows the same values without (fig. left) and with (fig. right) smooth color transitions:



### Options

- **Appended/Stacked view:** A distinction can be made between 2 different display formats.



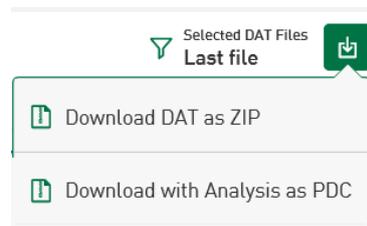
- Display event filter: To limit the visualized range from the selected DAT files, an event filter that has already been set can be used, see [Using the DAT file event filter](#), page 67.

### Selecting the DAT Files

A file-specific filter can be applied to the DAT file view. By default, signal data from the last DAT file is shown. Tap in the tile header on *Selected DAT Files* to change the number of DAT files considered for the data visualization.

### Download DAT files and analysis for datasource

Under *Download DAT as ZIP*, downloads are available in ZIP format for selected DAT files. If an analysis is configured for the datasource of the currently displayed values, the DAT files can also be downloaded together with the analysis as a PDC (Process Data Container) file. See [Analysis](#), page 31



### Markers in HD stores and interaction with ibaAnalyzer

If time-based HD data is visualized on the *Heat map*, markers can be placed via the  icon, which open a specific time range directly in *ibaAnalyzer*. As with the tile type *Line chart*, the interaction with *ibaAnalyzer* starts via a context menu which is enabled by tapping on the download icon. Thus both a file containing the connection information to HD store and time range, and an analysis file which opens HD data and the analysis together in *ibaAnalyzer* can be included in the download. For additional information, please see [Markers in HD stores](#), page 69.

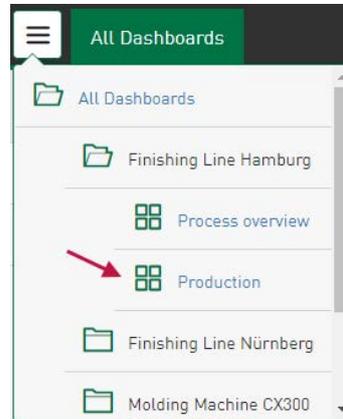


### Interaction of tile type Table

The *Heatmap* tile may be connected to the *Table* tile type if both tiles use the same datasource. Data from DAT files selected in the table can thus be displayed in the *Heatmap*. See [Interaction line selection](#), page 88

## 9 Working with the dashboards

You can select a dashboard via the base menu . The pane contains the configured tiles for the most recently set time range.

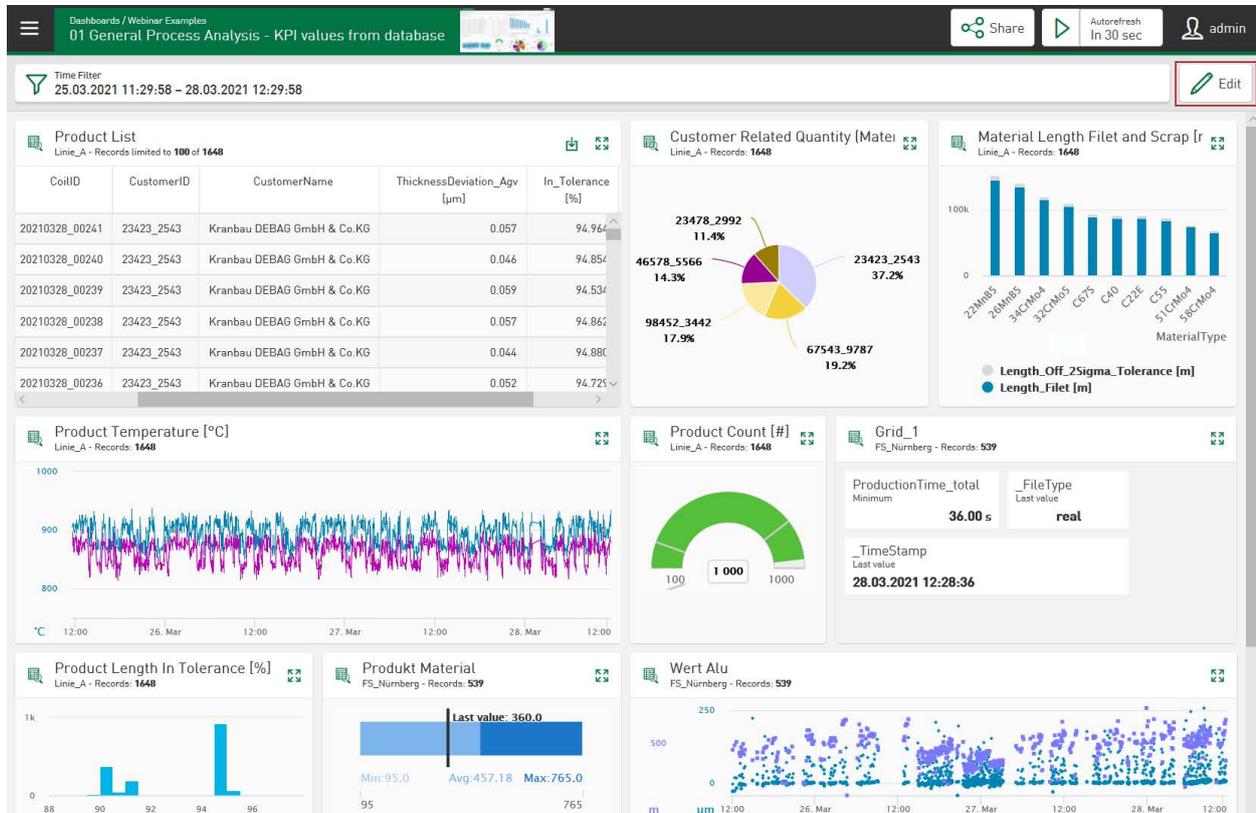


In the dashboard, you can

- set filters that are applied to all tiles in the dashboard, see chapter [↗ Filter options](#), page 104
- open the detailed pane for the individual tiles, see chapter [↗ Tiles in dashboard view](#), page 100
- enable the editing mode for the dashboard in order to add a new tile or to edit a tile, see [↗ Edit dashboard](#), page 99
- change size and position of a tile, see [↗ Shifting a tile and change tile size](#), page 101

## 9.1 Edit dashboard

You activate the edit mode by tapping on <Edit>. In the edit mode, you can create new tiles and edit existing tiles, such as renaming or deleting them. You can resize a tile and move its position in the dashboard view.



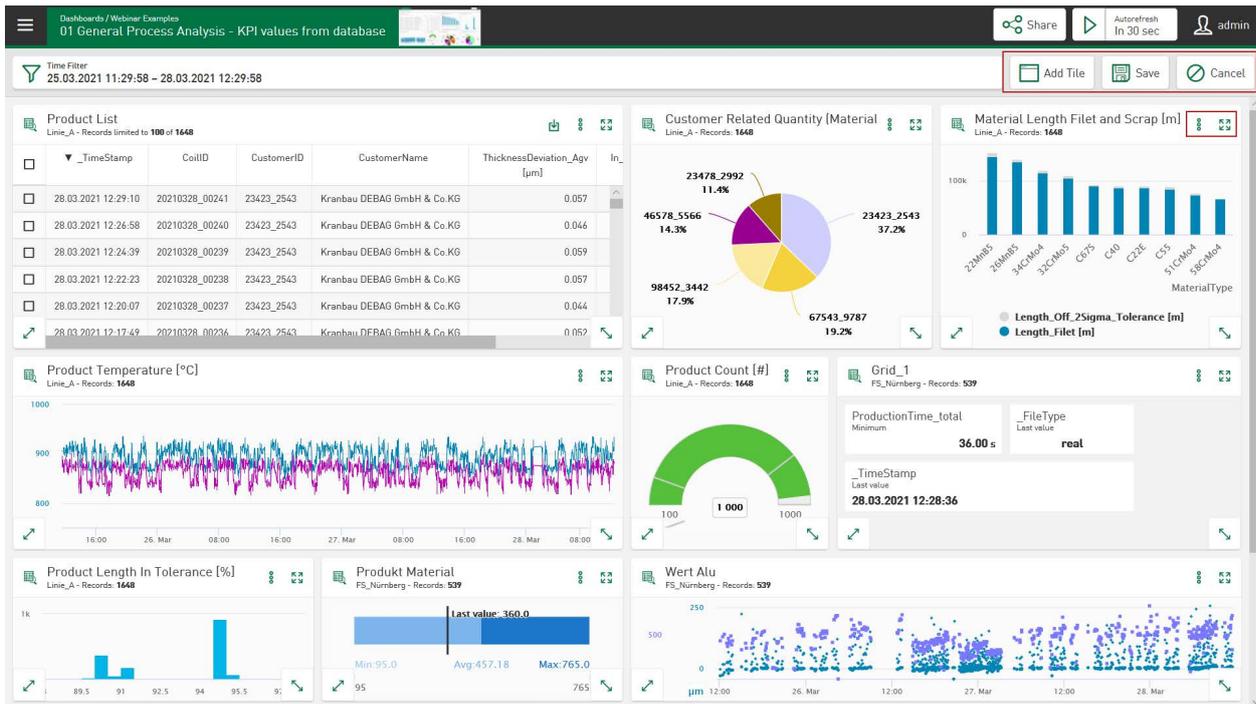
When edit mode is active the dashboard provides additional buttons on the top right:

<Add tile>: a new tile is added, for detailed information see [Adding the tiles, page 46](#)

<Save>: save the changes

<Cancel>: discard changes

The tile header also provides icons for editing the tiles, see chapter [Change a tile, page 101](#).



## 9.2 Tiles in dashboard view

Tapping on the editing symbol in the tile head opens the configuration dialog of the tile.

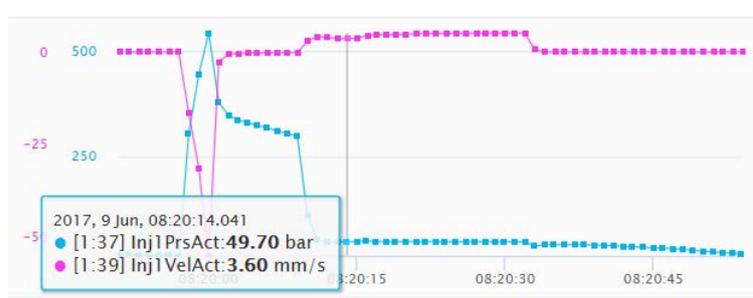


### Note



For detailed information about the respective tile type, see [Tile types](#), page 55

When you move the cursor over a tile, a tooltip appears (depending on the tile type) with the signal name and the measured values at this cursor position. Depending on the tile type, further information may be added.



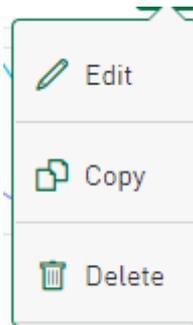
### 9.2.1 Change a tile

The tile header may have the following icons for editing a tile:



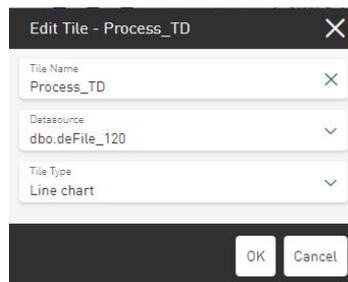
The icon  opens the detailed view or the configuration dialog for the tile properties.

The icon  opens a menu in which you can edit, copy or delete tiles:



#### Edit

Opens a dialog in which you can change the tile name, select a different datasource and a different tile type in the drop-down menu.



#### Copy

Makes it possible to copy a tile to the dashboard. The copy is then inserted under the original name with the addition “copy” below the original tile.

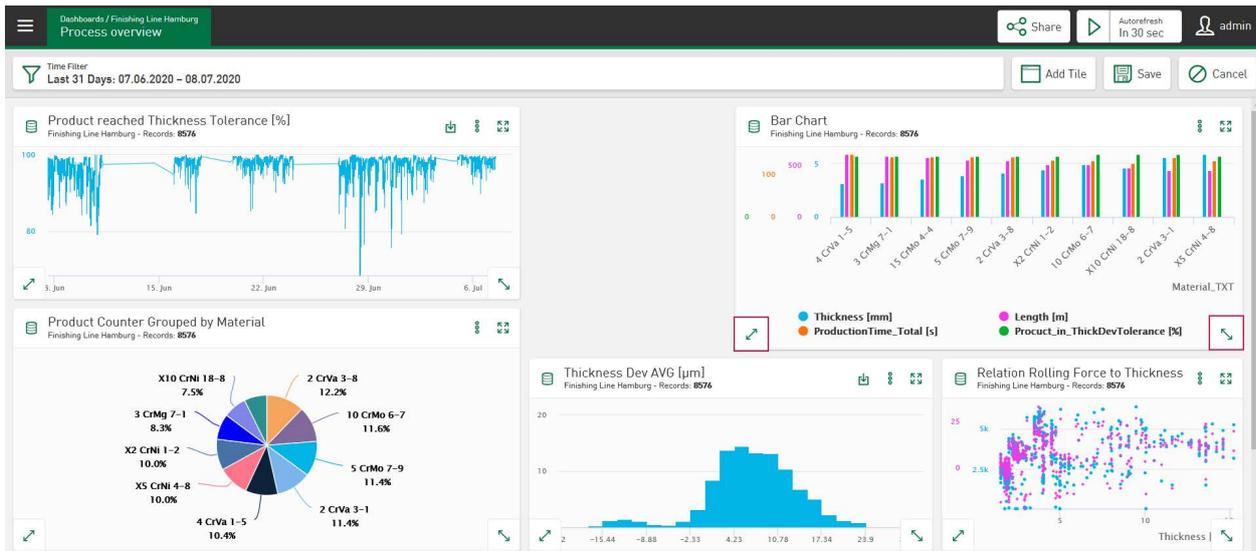
#### Delete

Deletes the tile from the dashboard.

### 9.2.2 Shifting a tile and change tile size

The edit mode must be active to shift the tiles. When tapping the tile header, you can shift this tile in the dashboard (possibly while keeping the left mouse button pressed). You can move the tile to the desired position with drag & drop.

To change the size of a tile, the edit mode must also be activated. Double arrows are now displayed in the lower left and right tile borders of all tiles on the dashboard. Tap on a double arrow to scale the tile to the desired size.



Arrange the tiles in this way according to your needs and save the new view. Thanks to Responsive Design, the display adapts to the resolution of the used device, such as desktop, tablet or smartphone. Therefore, the arrangement and size of the tiles can vary with the size of the display.

### 9.2.3 Display of the datasets on tiles

The number of datasets that is used under the current dashboard filter as a query result corresponds to the number of datasets on each tile in the header.



### 9.3 Share - Dashboards as links

*ibaDaVIS* allows to share dashboards as links and to provide them to other users. If you tap on the <Share> button, a link is generated to the current dashboard with the associated filters and provided as text for transfer to the clipboard.



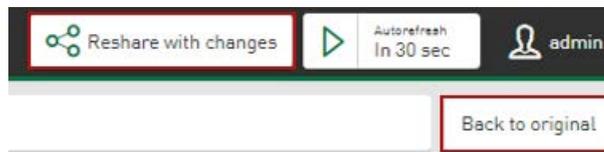
Other users can open the link to the shared dashboard in the browser and thus see your dashboard with the current filter settings at the time of link creation. In this way, you can easily share your analysis results with other users. Based on your dashboard, further detailed analyses can be performed and new filters can be set. Using the <Reshare with changes> function, other users can send the revised dashboard status back to you or share it with other *ibaDaVIS* users. The <Back to original> button can be used to return to the original dashboard at any time.

#### Note

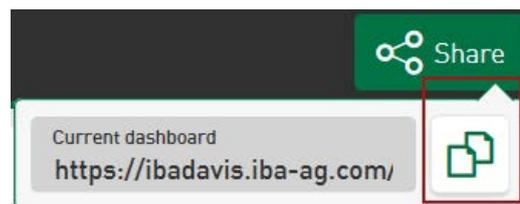


Please note:

The original dashboard can be used by other users for analysis, but it cannot be permanently changed.



Tap the button  in the submenu and the link will be copied to the clipboard as text and can be inserted into mails, for example.



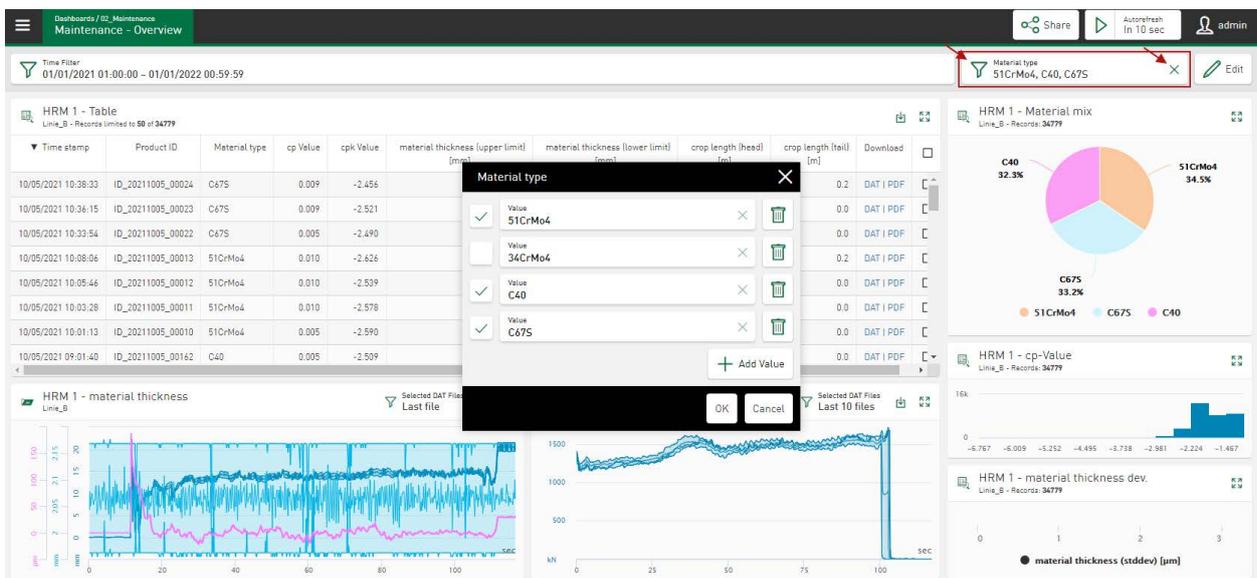
The provided dashboard link is available for 100 days.

## 9.4 Filter options

Like in the tile view, filters can also be defined in the dashboard view. Depending on the tile type, various filter options are available, but which are applied to all tiles in the dashboard, i.e. the display of all tiles changes accordingly.

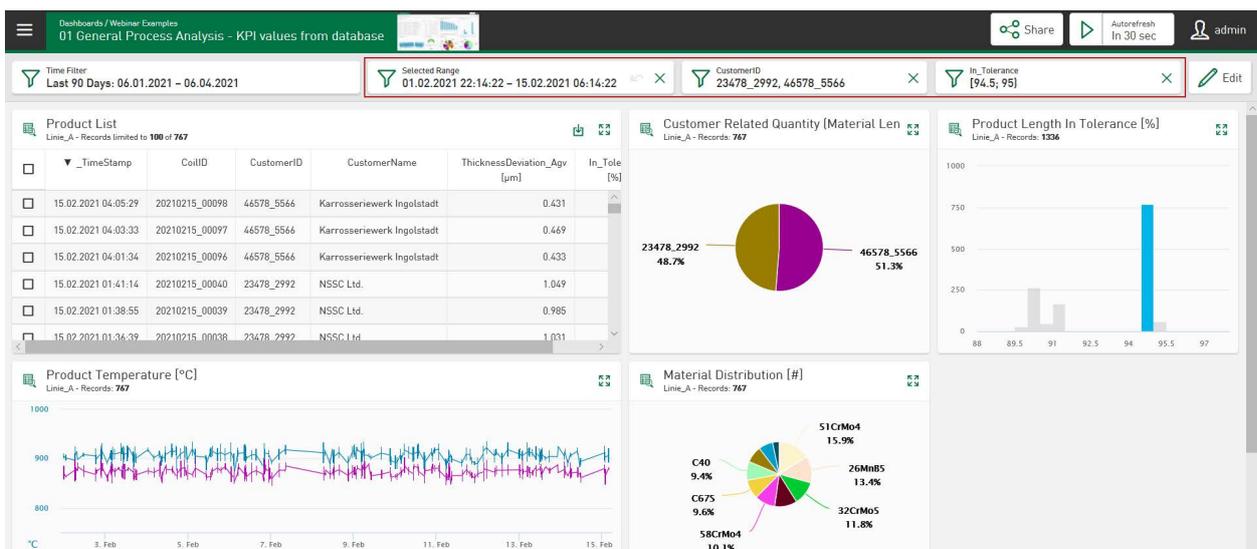
Tapping on the filter icon  opens a filter menu that can be used to change the value range of the filter. The respective filter option is reset by tapping on the cross.

Depending on the tile type, current filter values are displayed in a list and can be activated or deactivated via the respective checkbox. Deactivated values are no longer shown in the updated dashboard, but they are not removed from the list. Thus, filter values are permanently available and can be retrieved at any time to be included in the dashboard result again. By tapping on the icon , a value is finally removed from the list.



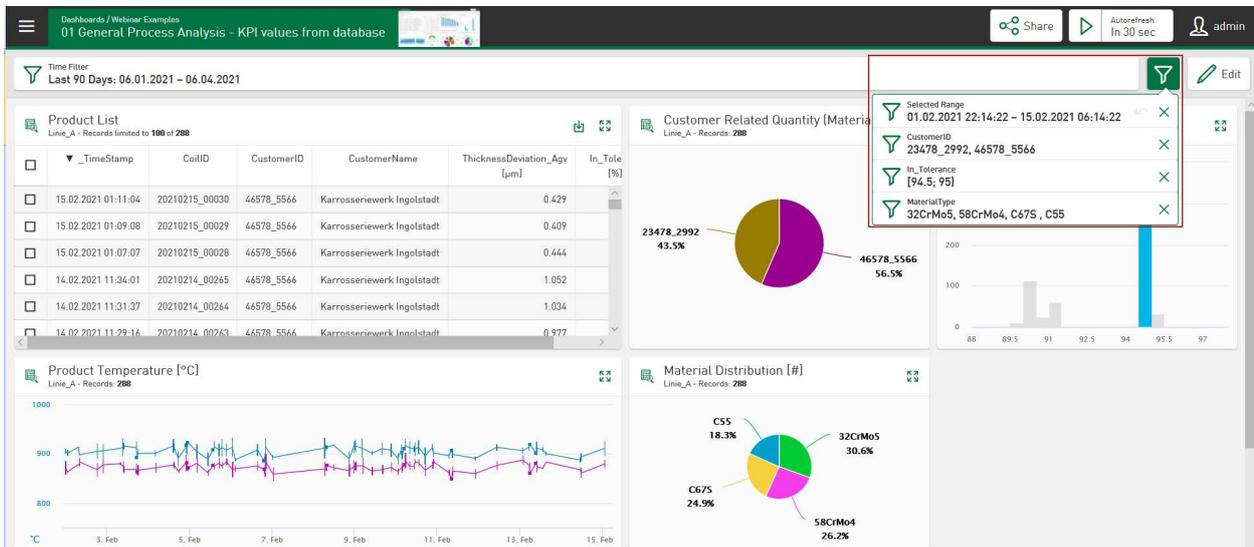
The screenshot shows a dashboard titled 'Maintenance - Overview'. At the top, there is a 'Time Filter' set to '01/01/2021 01:00:00 - 01/01/2022 00:59:59'. A filter menu is open, showing a list of material types: 51CrMo4 (checked), 34CrMo4 (unchecked), C40 (checked), and C675 (checked). Below the table, there are several charts: 'HRM 1 - Material mix' (pie chart showing 51CrMo4 at 34.5%, C675 at 33.2%, and C40 at 32.3%), 'HRM 1 - cp-Value' (bar chart), and 'HRM 1 - material thickness dev.' (line chart).

Several filters can be set simultaneously. All set filter options are applied simultaneously (AND-link) and shown in filter fields via the dashboard.



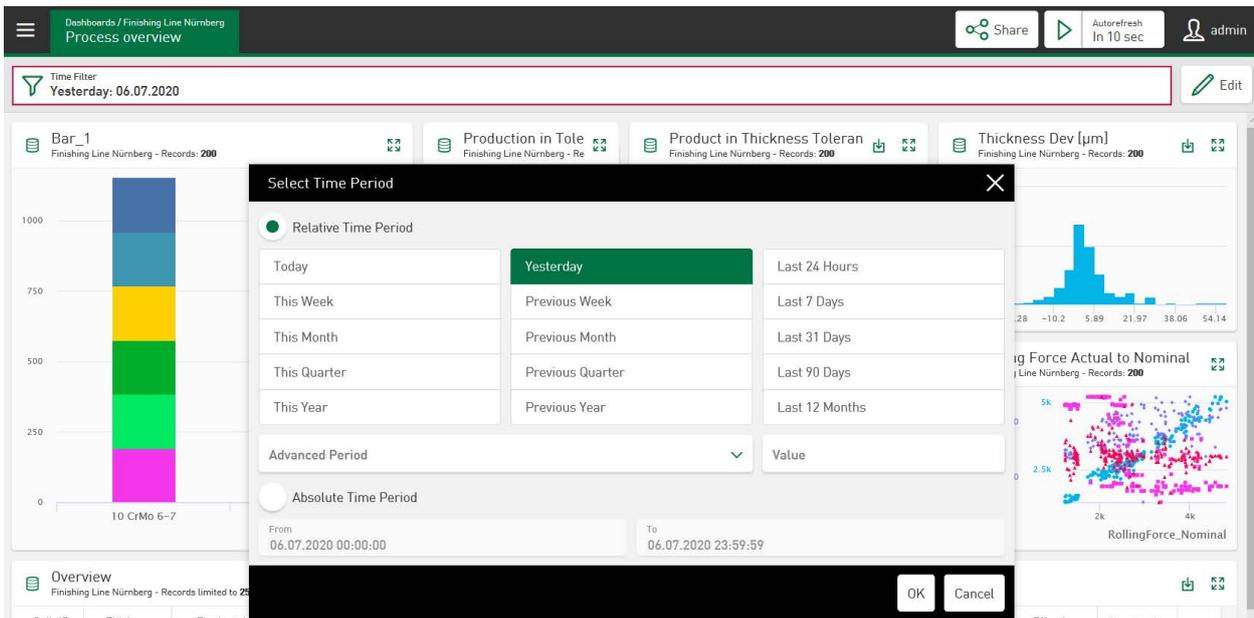
The screenshot shows a dashboard titled '01 General Process Analysis - KPI values from database'. It features four active filters: 'Time Filter: Last 90 Days: 06.01.2021 - 06.04.2021', 'Selected Range: 01.02.2021 22:14:22 - 15.02.2021 06:14:22', 'CustomerID: 23478\_2992, 46578\_5566', and 'In-Tolerance: [94.5; 95]'. The main content includes a 'Product List' table with columns for TimeStamp, CoilID, CustomerID, CustomerName, ThicknessDeviation\_Agry, and In\_Tole. Other tiles include 'Customer Related Quantity' (pie chart showing 23478\_2992 at 48.7% and 46578\_5566 at 51.3%), 'Product Length In Tolerance' (bar chart), 'Product Temperature' (line chart), and 'Material Distribution' (pie chart showing 51CrMo4 at 15.9%, 26MnB5 at 13.4%, 32CrMo5 at 11.8%, 58CrMo4 at 10.1%, C675 at 9.6%, and C40 at 9.4%).

If the width of the browser is insufficient for displaying all currently configured filters, these filters are summarized under a filter icon. Tapping on the filter icon displays the configured dashboard filters together. The filters can be individually changed or deleted by tapping on the filter input fields again.



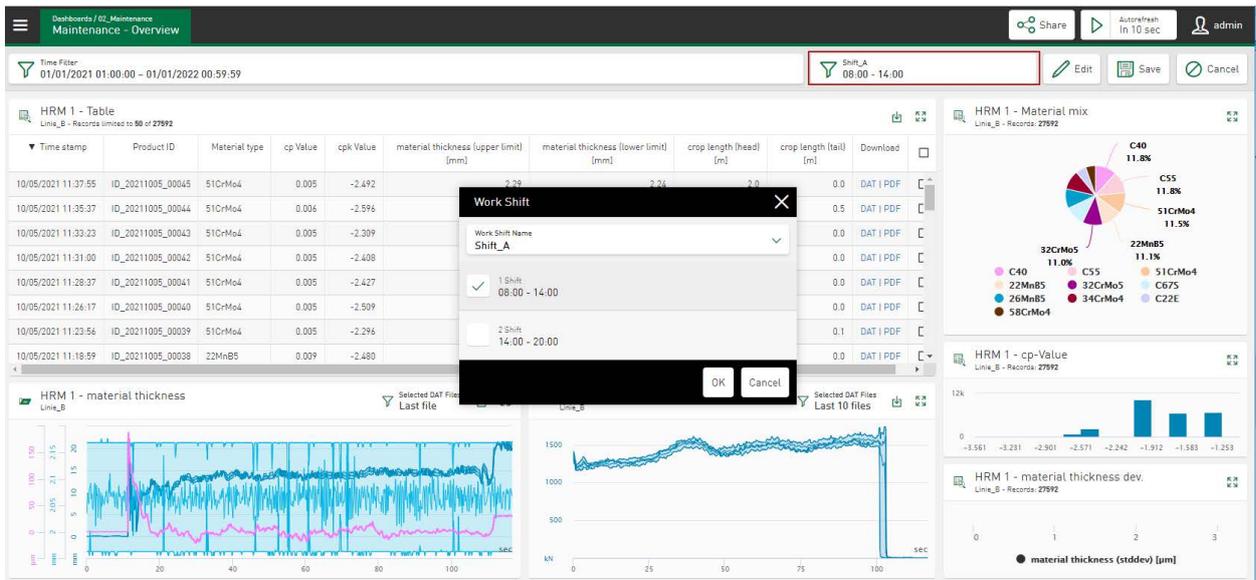
### Time filter

The time range of the tile view can be changed via a time filter. Also see [Basic tile properties](#), page 56



### Work shift filter

The work shift filter is an additional time filter. A work shift filter can be added per dashboard, which shows or hides the selected time ranges. Based on the current work shift, the defined shifts are applied directly to all dashboards as visual filters. Like all filters, the work shift filter goes back from the current time by the respective time range. This filter does not act like a zoom filter on graphs of line or scatter charts.



For additional information, please see [Work Shift Definition, page 122](#)

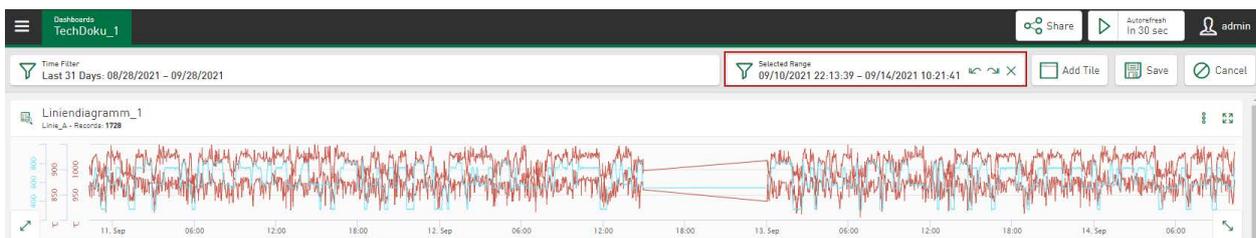
**Note**



You can find detailed information about filter options in the chapters of the respective tile type.

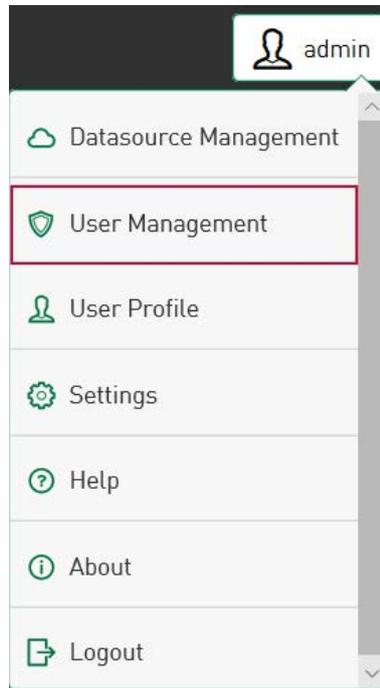
**9.4.1 Reset zoom filter**

By zooming in time-based diagrams, a represented area can gradually be displayed in increasingly high resolution. The additional dashboard filter shows the interactively selected time range and makes it possible to jump forward and back within this range in equal zoom steps. In the process, the button first appears if the number of zoom levels is greater than 1. Tapping on the cross in the filter field will reset the zoom function.



# 10 User Management in ibaDaVIS

The user management function is accessed via the administration menu.



User management allows the creation of different user accounts and supports both individual users and groups:

Local users / Local groups:	The access information is only valid for logging in to <i>ibaDaVIS</i> and is set up and managed by the administrator user.
Domain users / Domain groups	The administrator user registers the domain groups or domain users in the <i>ibaDaVIS</i> user management system. Thus, the access information for the domain can also be used to log in to <i>ibaDaVIS</i> .

Different permissions can be assigned to the users and groups. A user can be a member of one or more groups. These groups can have different permissions. The user's own rights and the rights of the groups complement each other to create the *Effective Permissions* for the user.

If the computer on which *ibaDaVIS* is running belongs to a domain, it is possible to add users and user groups from that domain. It should be noted that adding a domain group also grants access to *ibaDaVIS* to all domain users. If you add a single domain user, even though its domain group is already configured, this user can then be assigned special and advanced permissions over and above those assigned to its domain group.

**Note**



In most scenarios, *ibaDaVIS* runs under the system account. If the system account only has very limited domain permissions, it is recommended to run the *ibaDaVIS* service under a dedicated account with domain access.

---

**Note**

When logging in a domain user, it is not necessary to specify the domain name in the *User* field on the *ibaDaVIS* login page. It is possible to use only the user's user name or e-mail address.

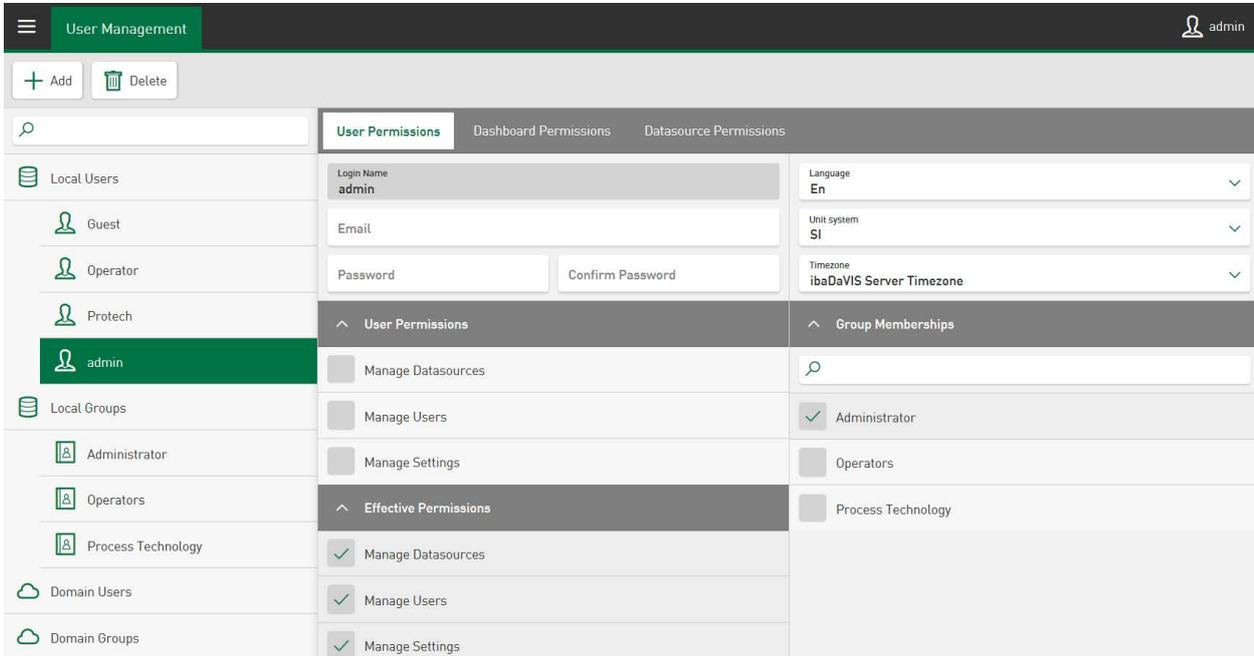
A screenshot of the login form. The 'Username' field contains the text 'Domainuser'. The 'Password' field is filled with ten black dots. A 'Log in' button is located below the password field.

However, if *ibaDaVIS* runs in an environment with multiple Active Directory domains, the user name should still be preceded by the domain name.

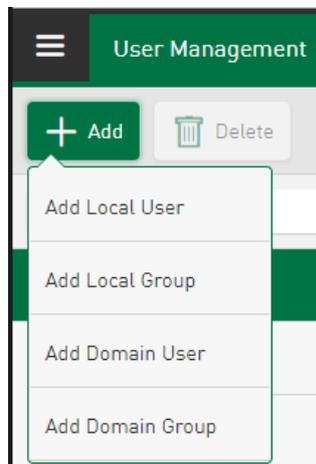
A screenshot of the login form. The 'Username' field contains the text 'somedomain\Domainuser'. The 'Password' field is filled with ten black dots. A 'Log in' button is located below the password field.

## 10.1 Users

After the initial installation, there exists only one administrator user *admin* which has all permissions. It is the only user who is not subject to any restrictions and can add or remove other users as well as change their user permissions. The name *admin* cannot be changed. All users or domain users added later can be assigned the same permissions as the administrator user.



With the <Add> button, you can add local/domain users or local/domain groups.



Enter name and password in the input fields. Entering an email address is optional.

**Note**



The name of the user may only consist of letters and numbers. Spaces and special characters are not supported.

**Note**

The password must be at least 6 characters long. It must contain digits and special characters.

User Permissions		Dashboard Permissions	Datasource Permissions
Login Name User_1	<input type="text"/>		Language Auto
Email	<input type="text"/>		Unit system US
Password ●●●●●●	<input type="text"/>	Confirm Password ●●●●●●	Timezone ibaDaVIS Server Timezone

Individual settings can be made in the fields *Language*, *Unit system* and *Timezone*. For more information, see [User Profile](#), page 117.

If you want to add a user from a domain, just select *Add Domain User*. For a domain user, you have to enter the full name of the domain and the login name.

User Permissions		Dashboard Permissions	Datasource Permissions
Domain myDomain	<input type="text"/>		Language En
Login Name Domain user	<input type="text"/>		Unit system US
Display Name	<input type="text"/>		Timezone ibaDaVIS Server Timezone

**Note**

The domain user name must not be identical to the local user name, otherwise the domain user cannot be saved.

With the <Save> button the inputs are confirmed.

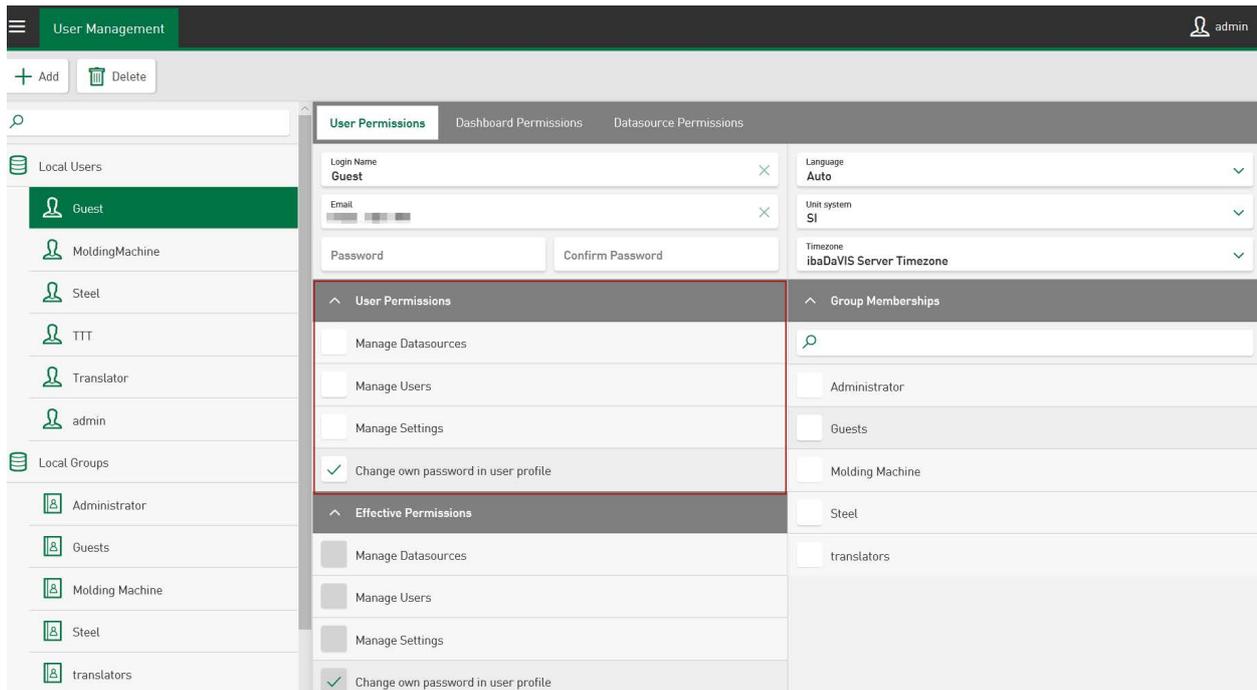
With the <Delete> button the selected user/domain user is deleted.

### 10.1.1 User Permissions

If a user is member of a group, he gets the permissions of that group. If a user belongs to several user groups, the rights of the user group with the most permissions apply to the user. If a user has more granted permissions than the user group, the user keeps his authorizations.

#### Allocate permissions

Different permissions can be assigned to a user. The rights of the currently selected user are selected and listed in the *User Permission* sub-tab. These rights make it possible to access the main panes *Datasource Management*, *User Management* and *Settings*.



When tapping on the permission, a checkmark will be set and assigned to the user. The permission for the selected user will be deleted by tapping once more on the checkmark.

Option	Description
Manage Datasources	Makes it possible to create, change and or delete datasources, including virtual signals.
Manage Users	Makes it possible to create, change and delete users and user groups.
Manage Settings	Makes it possible to access the Settings menu and therefore configure the <i>Analysis Configuration</i> and <i>Work Shift Definition</i> .

Option	Description
Change own password in the user profile	By default, the right to change your own password is set for all users, i.e. the checkmark is set. If it is no longer permitted to change your own password for users or groups, the checkmark must be removed. Users who do not have <i>Effective Permissions</i> to change their own password cannot change their password in the <i>user profile</i> .

Table 5: User management, user permissions

**Note**

For the *admin* user, this permission cannot be changed, since this user generally has the right to change their own password.

**Allocate groups**

The groups already created are listed under *Group Memberships*. To create new groups, see chapter [➤ User groups](#), page 115. When a user has been marked, you can define which group the user belongs to, by touching the group name.

Local users can only be assigned to local groups. For domain users, it is predefined which group they belong to. If a domain group has been integrated and the individually created user belongs to this group, only this group affiliation will be displayed; it cannot be changed (except for the IT domain management).

When being part of this group, the user gets the permissions of this group. One user can belong to several groups. The user then has the sum of all permissions of all groups he belongs to.

The rights applicable for the currently selected user from user rights and group permissions are shown as *Effective Permissions*.

The screenshot shows the 'User Management' interface with two tabs: 'User Permissions' and 'Group Memberships'. The 'User Permissions' tab is active and shows a list of permissions for a user named 'Guest'. The 'Group Memberships' tab is also visible, showing a list of groups that the user belongs to.

Permission	Status
Manage Datasources	✓
Manage Users	✓
Manage Settings	☐
Change own password in user profile	✓

Group	Membership
Administrator	☐
Guests	✓
Molding Machine	☐
Steel	☐
translators	☐

Thus, the group permissions are valid for all members of the group and cannot be revoked for individual group users. However, it is possible to assign additional permissions individually to single users of the group. The actual permissions that were assigned to a user are selected under *Effective Permissions*.

### 10.1.2 Dashboard Permissions

Individual users or user groups may receive authorizations to edit or display folders and the associated dashboards. It is also possible to hide folders and the dashboards they contain from users or user groups.

The screenshot shows the 'Dashboard Permissions' interface. It features a table with columns for 'Name', 'Group Permission', 'User Permission', and 'Effective Permission'. The 'User Permission' column includes buttons for 'None', 'View', and 'Edit'.

Name	Group Permission	User Permission	Effective Permission
All Dashboards	Edit	None View Edit	Edit
Finishing Line Hamburg	Edit	None View Edit	Edit
Finishing Line Nürnberg	Edit	None View Edit	Edit
Molding Machine CX300	Edit	None View Edit	Edit
Compare Finishing Lines			Edit
Dashboard neu			Edit
Playground			Edit

After calling up the tab, a dashboard tree is displayed and the Admin user can set the access right for any directory (folder/dashboard) to <None>, <View> or <Edit> per selected user or user

group. The selected authorization is inherited from the higher to the lower directory level. The set dashboard permissions always relate to the currently selected user or user group.

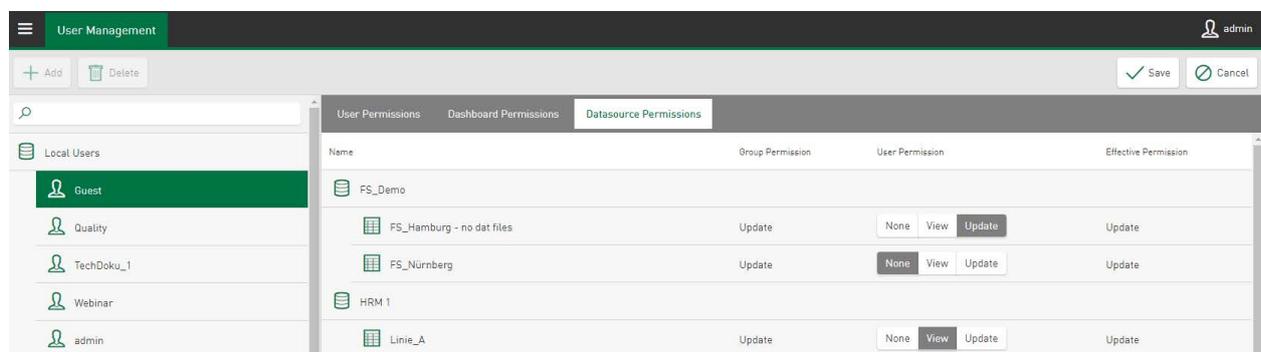
The rights from belonging to a group (*Group Permissions*) and the individual rights of the user (*User Permissions*) result in the *Effective Permissions* to datasources and folders.

User or user groups with the permission to edit dashboards can define and save virtual signals in tiles.

The dashboard rights replace the general user rights for displaying and editing all dashboards in previous versions of *ibaDaVIS*.

### 10.1.3 Datasource Permissions

Individual users or user groups can be given permission to view and edit data from any configured datasource.



The configured datasources are displayed in an overview and the permission to edit data from these datasources can be assigned. The <View> function only allows to display these data.

In order to edit datasource contents, users must first be authorized to manage datasources under *User Permissions* or *Group Permissions* as an individual permission. This automatically includes the right to view data from the configured datasources.

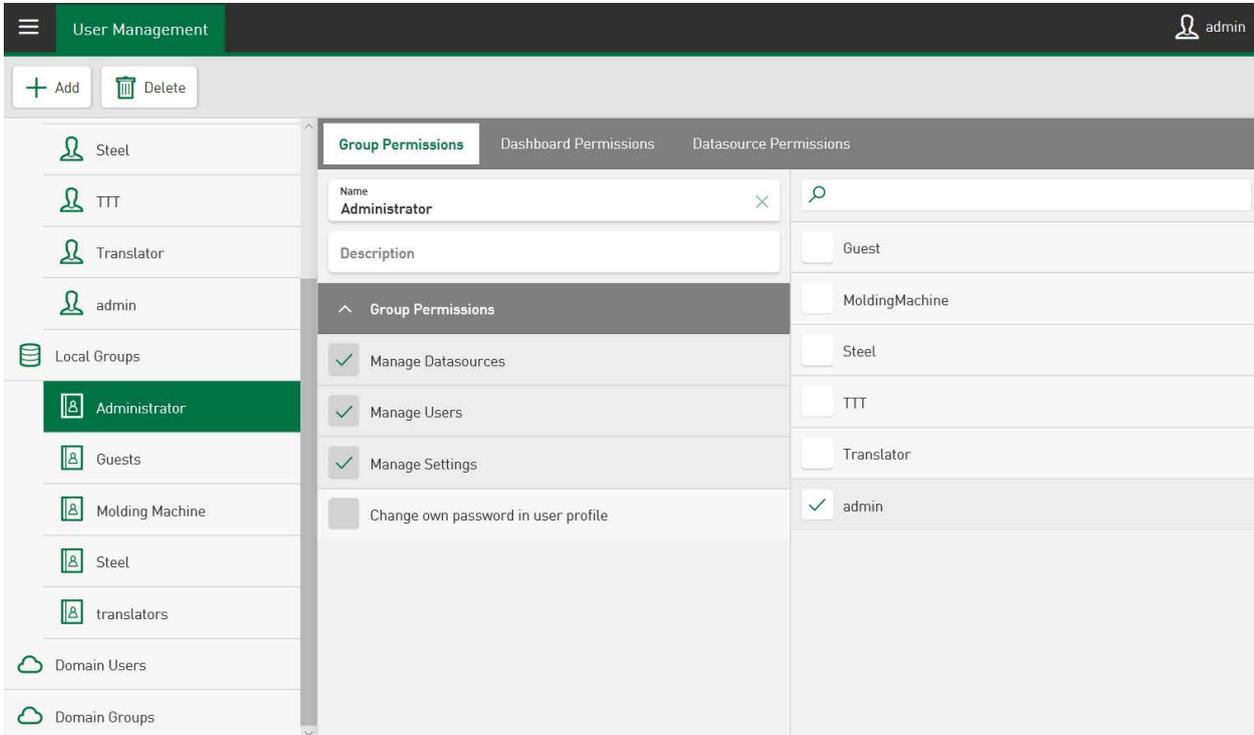


By selecting the <Update> function, the authorized user or members of authorized user groups can change the values of selected records directly on the dashboard. For this purpose, the permission to update contents in database tables must be activated in the datasource management, see [Table settings](#), page 26.

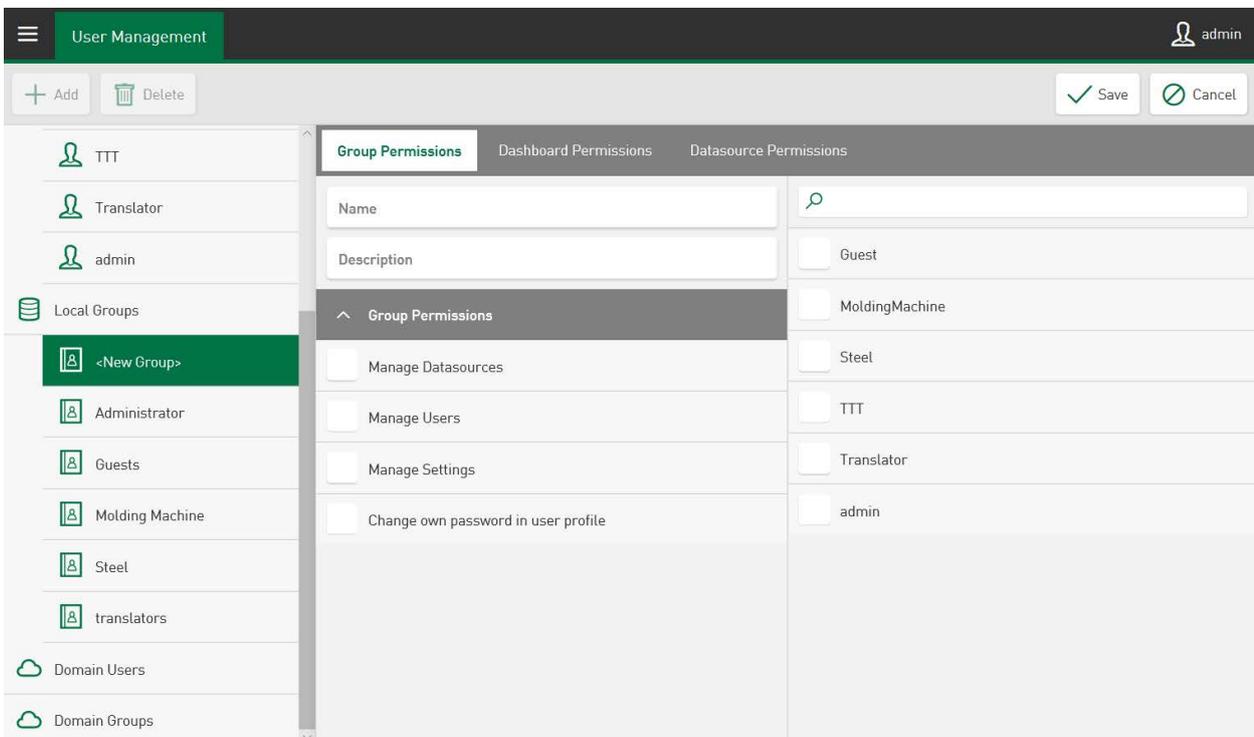
The datasource permissions from belonging to a group and the individual user permissions of the user result in the *Effective Permissions* to datasources.

## 10.2 User groups

Additionally to the users, you can create groups and assign different permissions to these groups. One user can belong to several groups. With the initial installation, the “Administrator” group is available, which has all the permissions. The right to change the password cannot be changed, because this permission exists for the "Administrator" group in principle.



You create a new group with the <Add> button, select *Add Add Local Group*.



Enter a group name, optionally a description or comment and confirm your entries by tapping on the <Save> button.

For domain groups, you additionally have to enter the domain name.

The screenshot shows a form with three tabs: 'Group Permissions' (active), 'Dashboard Permissions', and 'Datasource Permissions'. Under 'Group Permissions', there are two input fields: 'Domain' with the value 'myDomain' and 'Name' with the value 'Domain group'. Each field has a small 'x' icon to its right, indicating it can be cleared.

In case the specified group is not in the domain, you will see an error message.

### Allocate permissions

The screenshot shows the 'Group Permissions' form with the 'Group Permissions' section expanded. On the left, there are four permission items, each with a checkbox: 'Manage Datasources', 'Manage Users', 'Manage Settings', and 'Change own password in user profile'. On the right, there is a search bar and a list of users: 'Guest', 'MoldingMachine', 'Steel' (which has a checkmark), 'TTT', 'Translator', and 'admin'.

First, mark the group. A checkmark will be set and assigned to the group, when tapping the permission in the list under *Group Permissions*. When tapping once more, the checkmark and the permission will be deleted.

The users are assigned to the groups in the *User Permissions* tab in the *Group Memberships* section, see [➔ User Permissions](#), page 111.

You can edit the group name and the description by tapping in the respective field and change the entry. With the <Delete> button, you can delete the group.

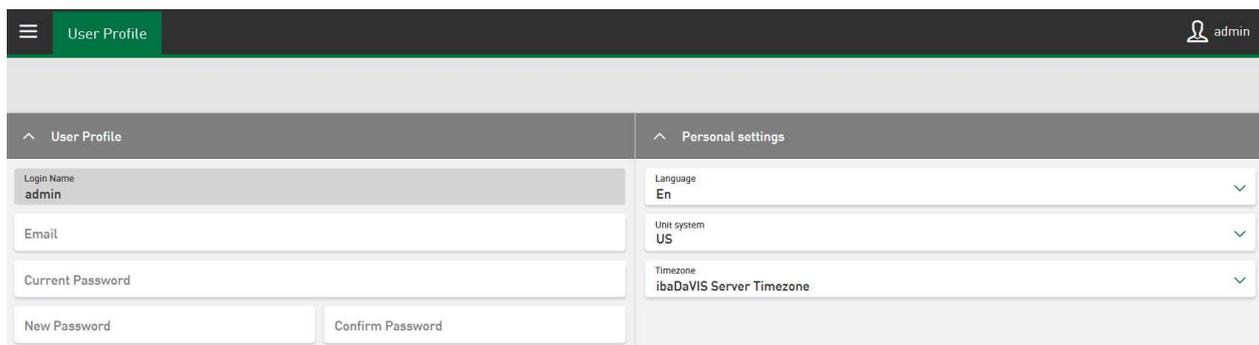
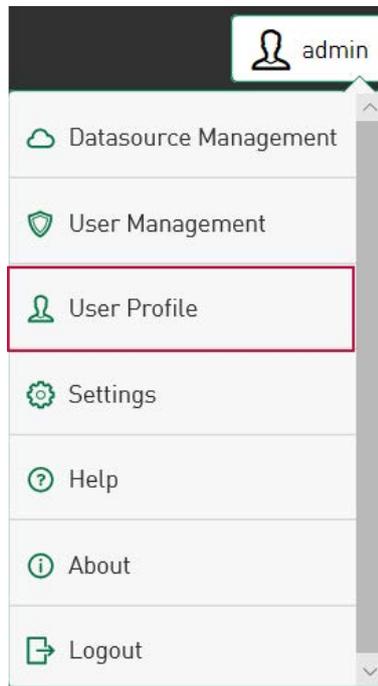
#### Note



Group names and descriptions can be assigned freely.

# 11 User Profile

ibaDaVIS allows the user to make individual settings to his application.



## User profile

The user can change his own password here. The e-mail address input is optional.

### Note



The password must be at least 6 characters long. It must contain digits and special characters.

### Personal settings

The displayed application language can be adjusted in the *Language* field. The following language packs are available via a drop-down menu:

- German (De)
- English (En)
- Spanish (Es)
- French (Fr)
- Italian (It)
- Japanese (Ja)
- Portuguese (Pt)
- Russian (Ru)
- Chinese (Zh)

The selection “Auto” corresponds to the preset browser language.

It is possible to switch between SI units and US units under *Unit system*. The changeover of the signals displayed from DAT files occurs automatically here. For example, the temperature for a signal is converted from Celsius °C to Fahrenheit °F if the profile is set to US units.

---

#### Note



You can expand the list of converted units according to your needs. The basis for the conversion are the formulas in the *units.JSON* file.

You will find a list of the currently supported units at:

*C:\Program Files\iba\ibaDaVIS\wwwroot\units.json.*

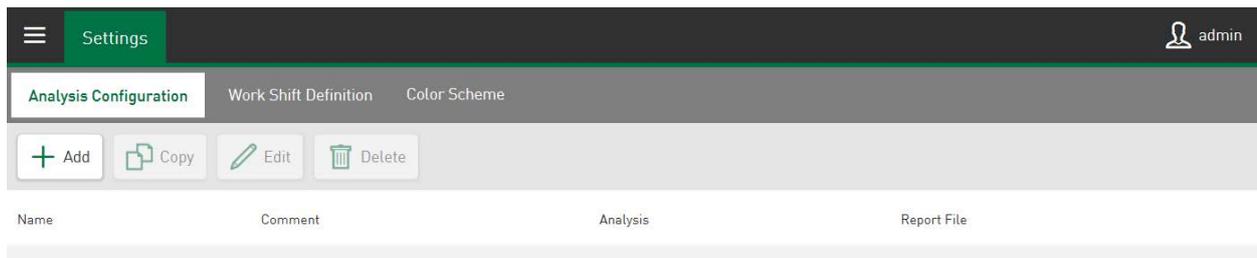
---

In the *Timezone* field, the desired service time zone can be selected via a drop-down menu.

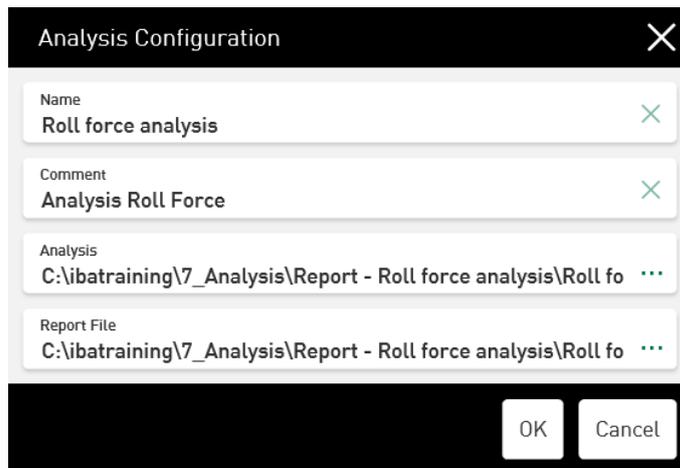
# 12 Settings

## 12.1 Analysis Configuration

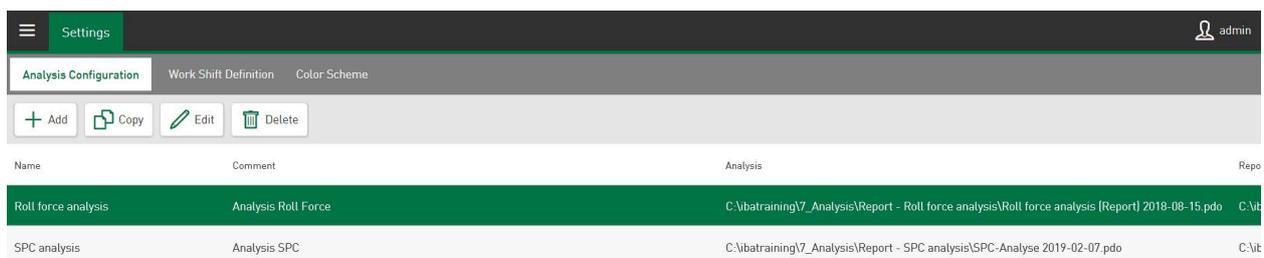
*ibaDaVIS* makes it possible to download DAT files or ibaHD data together with an assigned analysis file (.pdo) as a Process Data Container (.pdc). The Process Data Container is supported by *ibaAnalyzer* v7.1 or higher. If you open a PDC file with *ibaAnalyzer*, for example by double tapping, the contained DAT file is opened and the analysis file contained in the PDC file is then automatically applied. If the PDC file contains several DAT files, these are opened at the same time in *ibaAnalyzer*.



Use the <Add> button to add an analysis reference (.pdo) and an optional report file (.lst) to your analysis configuration. The fields *Name* and *Analysis* must be filled out. The fields *Comment* and *Report File* can be left blank.



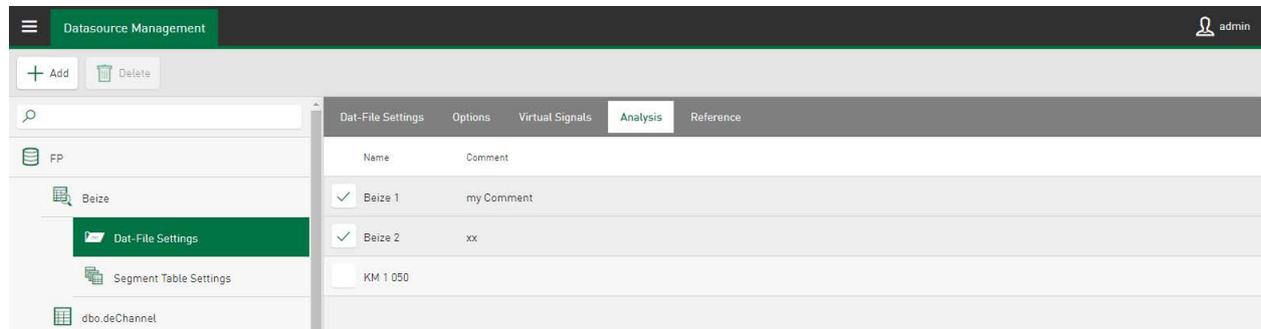
After pressing the <OK> button, the newly added dataset is displayed in the list of the analysis configuration.



The current settings are then saved directly in the project.

### 12.1.1 Connection of DAT Files/ibaHD data and analysis

Link the DAT files or ibaHD data with the matching analysis file (.pdo) in the range of the data-source. To do this, switch to *Datasource Management* and select the *DAT File Settings* folder that is part of the *ibaFile Table* of your database connection. Open the *Analysis* tab.



Your configured analysis is shown in a checklist. Select the associated analysis and close the current settings by pressing <Save>.

### 12.1.2 Using the Analysis configuration

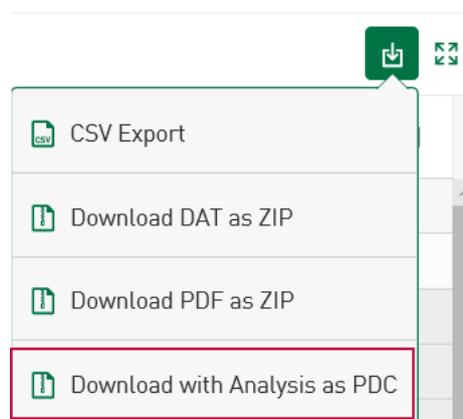
*ibaDaVIS* enables the download of DAT files for the tile type *Table*, see [➔ CSV Export, Download of DAT/PDF files](#), page 86.

In tiles that visualize signals from DAT files, the download of the respective displayed DAT file is available via the  button. Along with downloading the individual DAT file, it is also possible to download a suitable analysis rule together with the DAT file in the .pdc (Process Data Container) format.

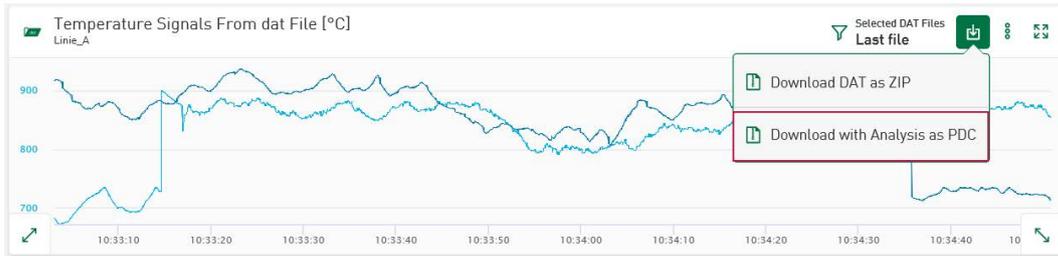
To start the analysis download together with the DAT file as a PDC file, the DAT files must be manually selected in the respective tile view and the download started via the corresponding menu item in the drop-down menu.

The following applies for the DAT file signal view: If you have linked an analysis configuration to the used datasource, the *Download with Analysis as PDC* menu item will be automatically displayed when you tap on the download button.

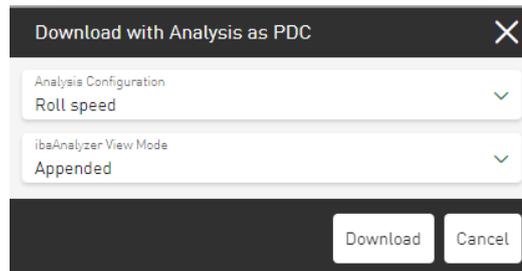
Example of tile type *Table*:



Example of tile type *Line chart*:



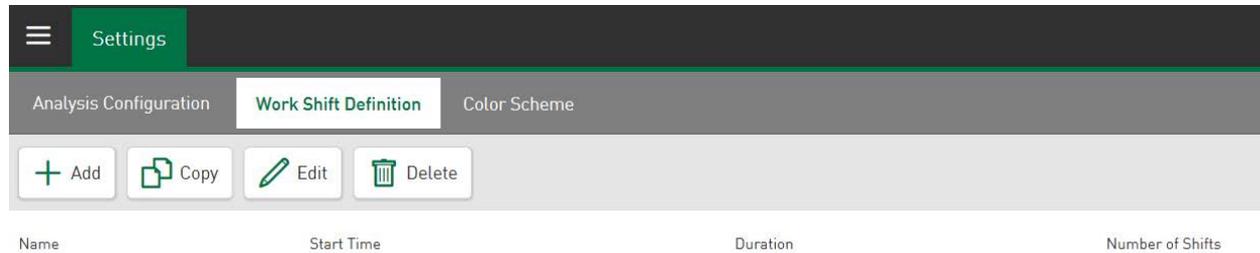
In a selection menu, you can decide which of the analysis files will be included in the PDC file just before the download starts.



If several DAT files are downloaded together, the rule for displaying the DAT files in *ibaAnalyzer* can be determined in this dialog. Depending on the selected option, the DAT files are opened together in *ibaAnalyzer* in appended or stacked view. The function is controlled by the use of an additional text file (Filetree.txt), which is embedded in the PDC file before the download.

## 12.2 Work Shift Definition

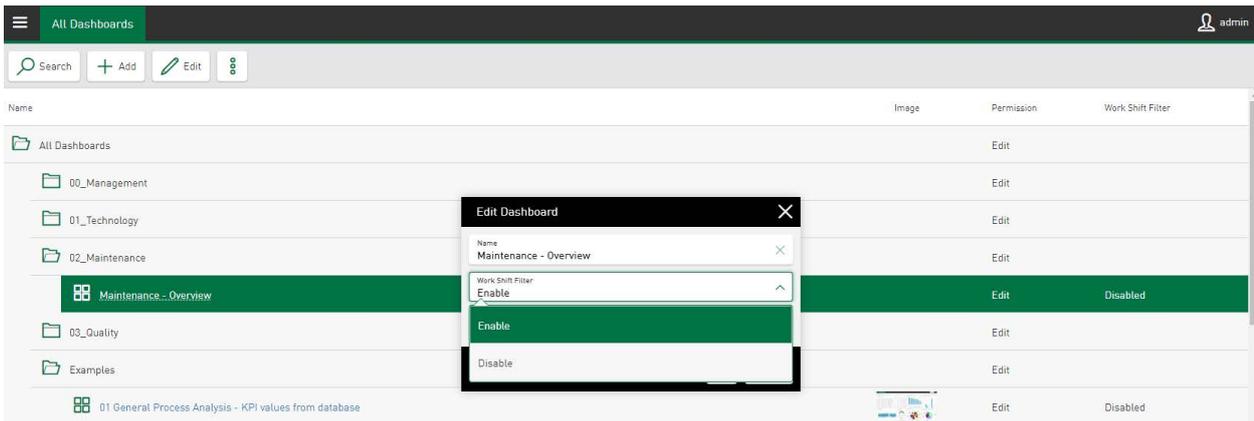
The additional *Work Shift Definition* time filter can be used to easily enable or disable a specified work shift. In this way, the displayed data can be reduced to a selected time period. All defined work shifts together cover a maximum of 24 hours.



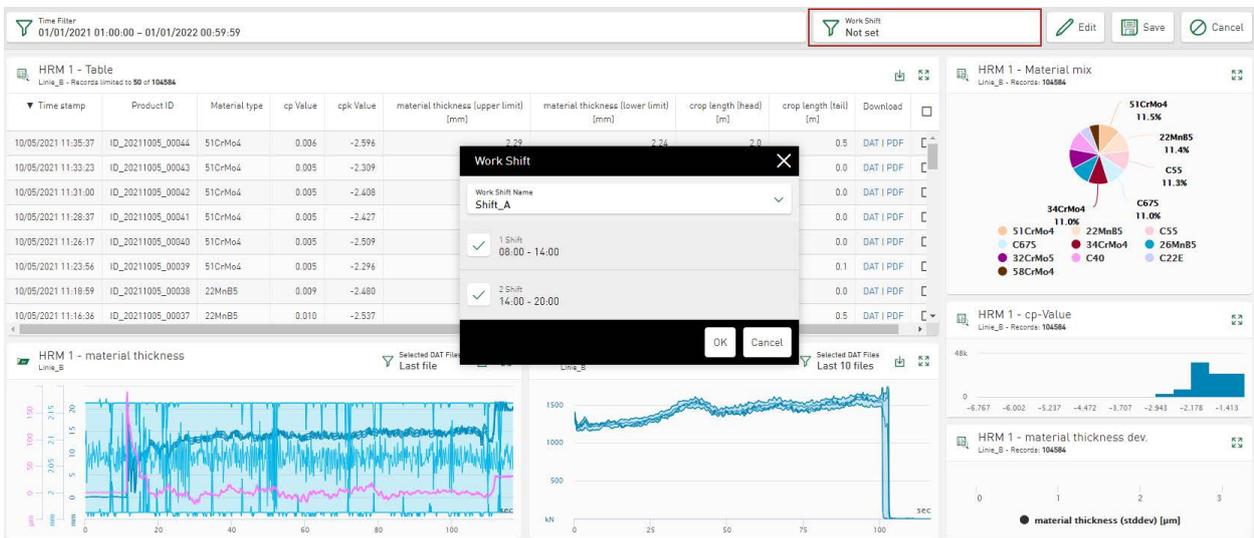
Tap on <Add> to define a new work shift. If you want to edit a work shift that already exists, tap on it to select it and make the changes via <Edit>.

Go in the base menu  to *All Dashboards* to assign the *Work Shift Definition* to any dashboard as an additional filter.

The dialog field <Add> for a new dashboard or <Edit> for an existing dashboard offers the option to select a defined work shift under *Work Shift Filter* as a filter for the currently selected dashboard. To do this, select the *Enable* option. If this time filter is not relevant, it can be deselected via the *Disable* option.



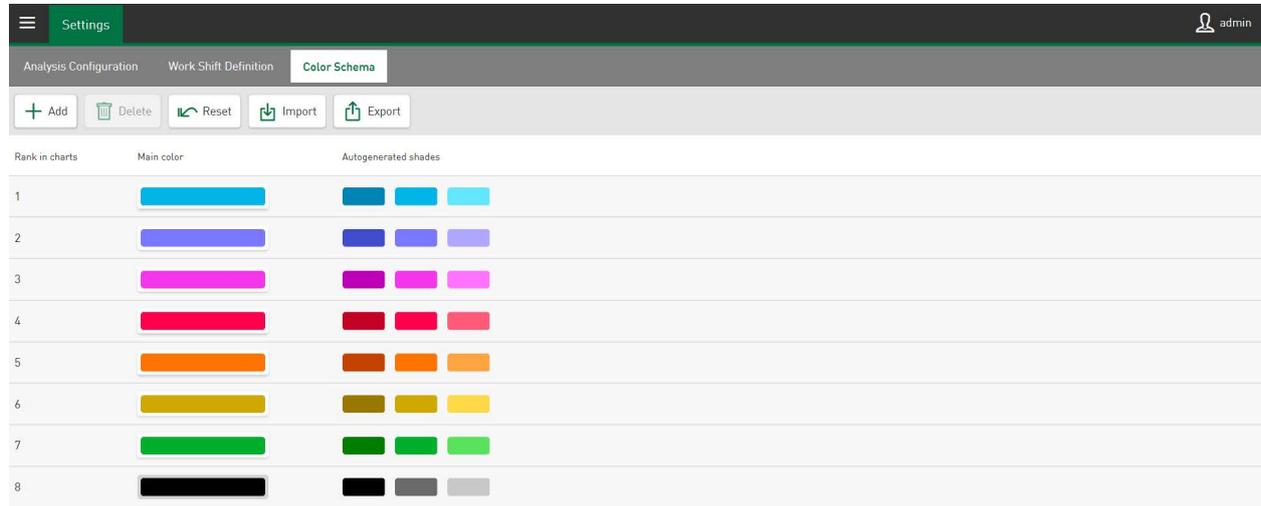
An additional filter field is activated on the current dashboard, which lists the available work shifts in a drop-down menu. After selecting the desired shift, the individual time periods are shown and can be set individually or together as the active filter for this dashboard. Press <Save> to apply the current settings.



## 13 Color Scheme

The *Color Scheme* tab lists the standard colors of the *ibaDaVIS*, which can be used as individually definable colors for values and trends in the charts of tile diagrams (e.g. line chart).

The currently applied color scheme can be manually changed or by importing a new color scheme by users who have access permissions to the menu *Settings*.



The position of the colors in the list and therefore the ranking of the colors in the chart can be changed by the user via drag & drop. The rank of the color corresponds to the order of colors, which are automatically assigned if new signals or values are added to tiles.

There are 8 different main colors that are pre-defined, whereby each color can be individually changed by tapping on the color button. In addition to the main colors, the editing dialog that appears also offers an interactive color selection via the *Slider* and a text input field to define the color via RGB value, HEX code or HSL color code. Tapping on the field *Slider* opens a color field and a color scale for configuration of additional color spectra.

Use *Reset* to reset the current color selection to the last saved color selection.



Up to 2 *Autogenerated shades* can be used per main color. These are derived from the main colors to, for example, distinguish multiple signals with the same unit from each other in the tile view.

#### <Add>

Use this function to add another line to define a new color in the existing color list. It is possible to extend this to up to 24 main colors.

#### <Reset>

Use this function to return to the standard color scheme.

#### <Import>, <Export>

The import and export of a color scheme is based on text files in JSON format. Tapping on the <Import> button can import a color scheme for the chart appearance via a selected folder. <Export> exports a JSON file created during export or the JSON file is expected as the input for the color scheme. See also [↗ Import/export color scheme](#), page 128.

## 13.1 Color selection in datasources

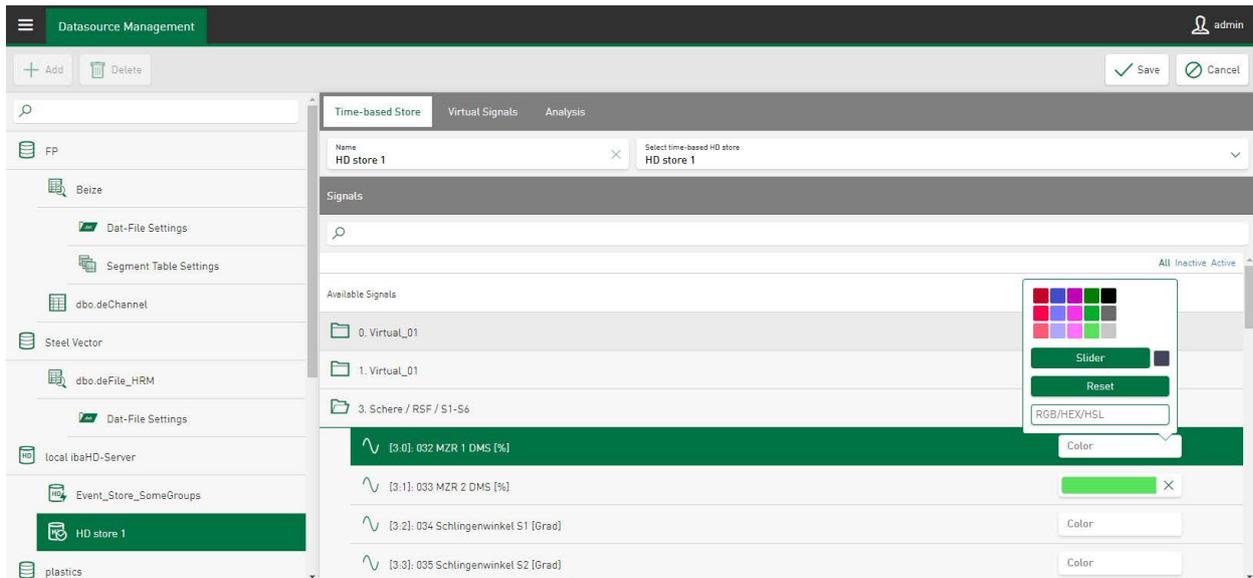
A specific color can be allocated to a signal, a value or a virtual signal for display in the tiles under *Datasource Management* in the administration menu. This means a color can be permanently defined for a signal, which is then used on all tiles and all dashboards for this signal. The color definition at this point increases the recognition effect of individual signals and saves the individual color configuration in the individual tiles on every dashboard.

The color selection is made at the table settings level or the time-based or event-based HD storage of a datasource and is transferred to the corresponding tile types.

“ibaFile Table” example:

The screenshot displays the 'Datasource Management' interface. On the left, a sidebar shows a tree view of data sources including 'FP', 'Beize', 'Dat-File Settings', 'Segment Table Settings', 'dbo.deChannel', 'Steel Vector', 'dbo.deFile\_HRM', and 'local ibaHD-Server'. The main area shows the 'Table Settings' for the 'Beize' table. The table has columns for 'frames', 'Einsatzbund', 'COIL\_ID', 'Thickness\_abs', 'Width\_abs', 'L\_thickness\_deviation\_avg', 'L\_thickness\_deviation\_max', and 'L\_width\_deviation\_avg'. A color selection dialog box is overlaid on the table, showing a color palette and options for 'Slider', 'Reset', and 'RGB/HEX/HSL'. The table data includes values like 1645, 100797000, 100797, 3.29, 1652.90, 0.49, 115.30, and 0.00.

“Time-based HD store” example:



Tapping in the corresponding color field opens the color selection dialog, which displays the colors from the currently defined color scheme. If none of the specified colors work for the specific value, the color selection can also be defined via a slider or by inputting an RGB, HEX or HSL color code.

Tapping on the cross in the color field deletes the individual color definition and the original color scheme of is enabled.



### Ranking of the color definition

For different tile types (e.g. line chart), the color for signals or values can be defined in the datasource management or in the tile view of the tile itself. Also see [↗ Color selection in diagrams](#), page 127.

The color definitions differ here in that the assignment in the datasource management always applies for all tiles of this datasource. However, the assignment in the tile view only applies individually for the respective tile and also only as long as the color definition in the datasource management is not changed.

Color definitions that are subsequently made in the datasource configuration also affect existing tiles and change them accordingly.

If a color definition is not defined in datasource management or in the tile view, the default color selection of *ibaDaVIS* applies.

**Note**

The following applies to all color definitions:

The import of a new color scheme replaces the entire existing color scheme. See [↗ Import/export color scheme, page 128](#).

If colors different than the colors of the newly imported color scheme are used in the datasource management or on the tiles, a note appears. The user can then define in a selection dialog whether the existing colors are to be retained or if they are to be replaced by the colors of the new color scheme.

**Automatic color definition**

The colors for newly added signals or values are automatically assigned in the diagrams and can then be changed individually afterwards. The colors automatically assigned to the signals are based on the color sequence of the respective color scheme.

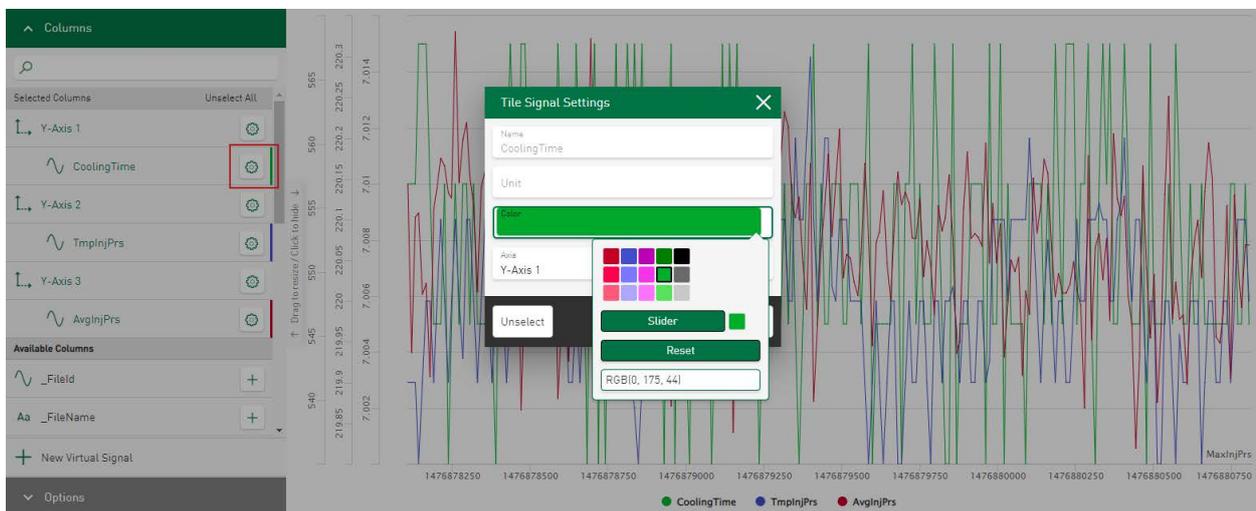
**Characteristic of the line chart:**

Signals with the same unit are not only shown together on one axis in a line chart, but also in the same main color in different shades.

**13.2 Color selection in diagrams**

The colors of values or trends that are shown as diagrams (e. g. line chart) can be manually changed.

Using the properties window of the signal settings or in the *Options* section of the respective tile type, a color selection field is assigned to each selected column/signal.



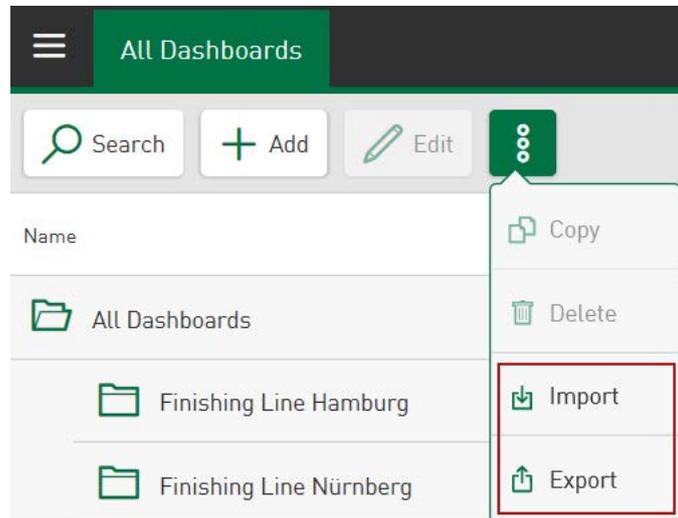
You can choose directly from a number of different standard colors or color shades. Tapping on the field *Slider* opens a color field and a color scale for additional color spectra. In addition, an RGB value, a HEX code or an HSL color code can be entered directly in the specified input field. Use *Reset* to reset the current color selection to the last saved color selection.

The newly selected colors are immediately applied in the chart.

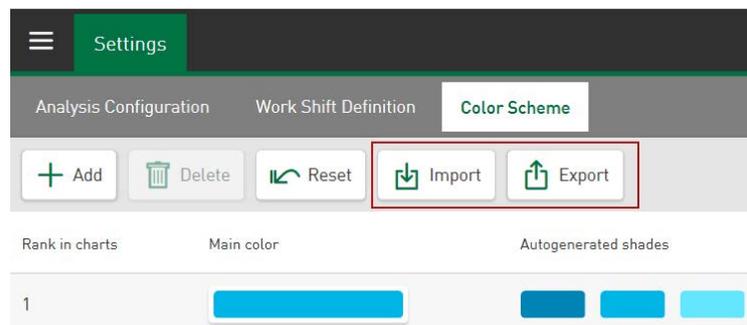
### 13.3 Import/export color scheme

Importing a new color scheme refreshes all color definitions in the datasource management and in the tiles. Existing color definitions are dropped and the newly imported color scheme serves as the basis for displaying signals and values in the charts.

A color scheme is imported and exported either in the base menu via the corresponding context menu, see [↗ Configuration of dashboards, page 41](#)

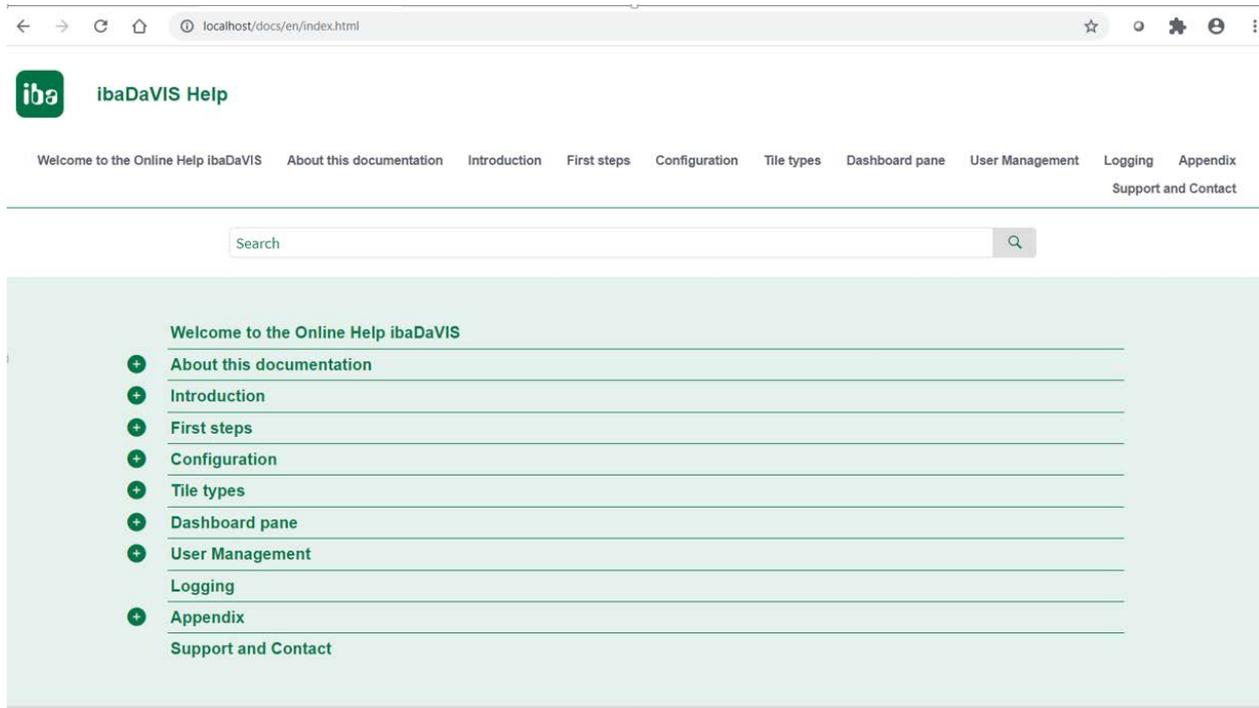


or in the administration menu under *Settings* in the *Color scheme* tab, see [↗ Color Scheme, page 124](#)



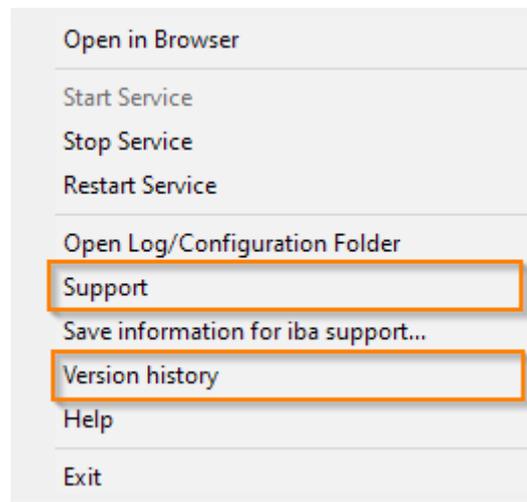
# 14 Help

ibaDaVIS offers a help document in HTML format. The help can be accessed via the web browser.

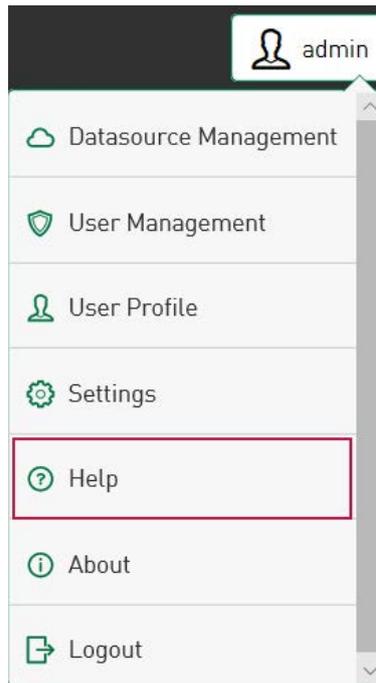


The online help can be accessed via the following options:

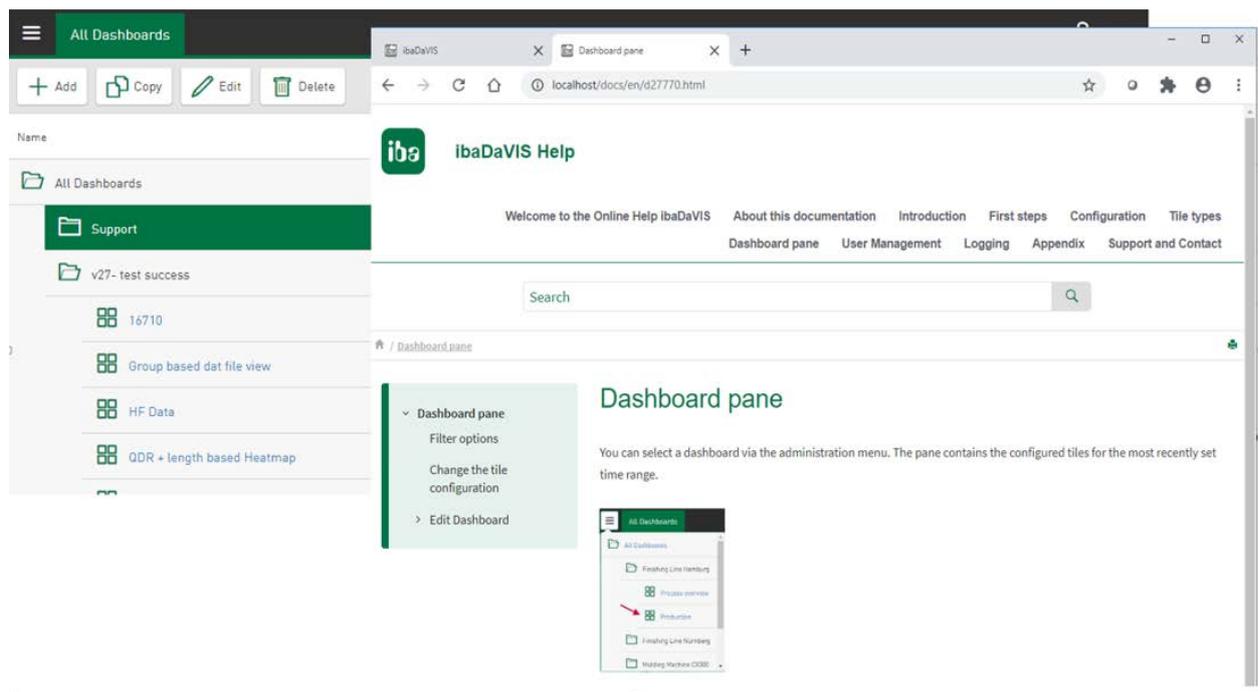
- The context menu of the tray icon  in the *ibaDaVIS* status app



- Tapping on the menu item in the *ibaDaVIS* administration menu



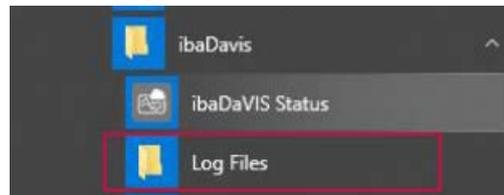
- Pressing the button <F1> if the content of the currently opened page is to be called up.



## 15 Logging

Log files for the iba support are stored under *C:\ProgramData\iba\ibaDaVIS\log*. Using these log files, you can retrace procedures like the log-on and the log-off procedures and internal procedures concerning data communication. The files of the last 20 days remain unchanged as zipped text files.

The Windows start menu offers a direct link to the log files.



## 16 Appendix

If you make changes to the configuration files specified below or to the service settings, it is necessary to restart the *ibaDaVIS* service to make the changes effective.

### 16.1 General

Storage locations:

- Configuration file in JSON format:

C:\ProgramData\iba\ibaDaVIS\config.json

Content:

URL

Port number

Log level project file

- Project as DB

C:\ProgramData\iba\ibaDaVIS\db\ibaDaVISv2.db

Content:

Entire *ibaDaVIS* project included in the DB

Datasources, dashboards, filters, user management

- Access to tables in iba format and open database tables

---

#### Note



In *ibaDaVIS*, the tables displayed for selection are filtered. For the datasource type *ibaFile table*, only tables that are recognized as file tableds in iba format are available for selection. The default name of the file table is preset in *ibaAnalyzer* as "deFile" and can be changed for the user. If the name of the file table currently in use is not known, it can be read in the analysis rule that is used for database extraction. In the *ibaAnalyzer* area "Database link", the names of the tables can be changed and read in iba format. For more information, see the *ibaAnalyzer* manual.

For the *General Table* datasource type, all available tables and database views can be selected from a list.

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- Installation of CodeMeter to support the WIBU license concept

To run the version *ibaDaVIS* 3.0.0, the use of CodeMeter Runtime 7.21a or higher is required. CodeMeter Runtime 7.60a (7.60.5609.501) is installed together with *ibaDaVIS*. Older versions of CodeMeter Runtime already installed on your system will be updated when *ibaDaVIS* 3.0.0 or higher is installed.

Higher versions of CodeMeter Runtime can also be installed separately to the version of *ibaDaVIS* used. Higher versions of CodeMeter Runtime than the installed CodeMeter Runtime 7.21a cannot be used in conjunction with Windows 7, Windows Server 2008, Windows Server 2008 R2, Windows 8, Windows Server 2012.

### Note



If you have further questions about the installation of CodeMeter Runtime, contact iba support.

## 16.2 Installation under Windows user account

**Service User**

Click Install to install as Local System account or select user manually.

Select service user:

Local System Account

This User:

Domain

Username

Password

### ■ Local system account (default)

The local system account has administrator rights for the local computer. This is sufficient if the server only requires local access.

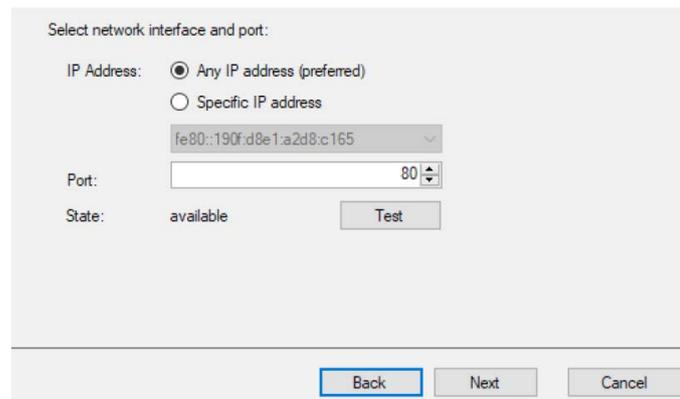
### ■ This user

You must select this option if the server must access other computers in the network. This is the case, for example, if the dat files are to be stored on a file server in the network and not on the local computer.

The user account that you enter here must have administrator rights on all participating computers.

## 16.3 Installer IP Address

Any IP address can be specified separately via the installer. If the PC on which the *ibaDaVIS* service is being operated is connected to several networks, you can specify the IP address here by which *ibaDaVIS* is accessible.



The screenshot shows a dialog box titled "Select network interface and port:". It contains the following elements:

- IP Address:** Two radio buttons are present. The first is "Any IP address (preferred)" and is selected. The second is "Specific IP address".
- IP Address Field:** A text box containing the IPv6 address "fe80::190f:d8e1:a2d8:c165".
- Port:** A text box containing the number "80".
- State:** The text "available" is displayed next to a "Test" button.
- Navigation:** At the bottom of the dialog, there are three buttons: "Back", "Next", and "Cancel".

There is an entry for the JSON port number in the configuration file `config.json`.

## 16.4 HTTPS protocols

An SSL certificate must be provided to enable support for the HTTPS protocol. In addition, it is recommended to use the standard HTTPS port 443. After setting up the configuration, *ibaDaVIS* needs to be restarted. The URL for access to the web interface in the browser must have the prefix `https://` instead of `http://`.

There are two options for configuring HTTPS for *ibaDaVIS* while using the file `config.json`, which can be found under the following path:

### C:\ProgramData\iba\ibaDaVIS\config.json

- *config.json* when using a file-based SSL certificate in the PFX format

```
{
  "loglevel": "info",
  "kestrel": {
    "Endpoints": {
      "HttpsInlineCertFile": {
        "Url": "https://localhost:443",
        "Certificate": {
          "Path": "<path to .pfx file>",
          "Password": "<optional certificate password>"
        }
      }
    }
  }
}
```

- *config.json* when using an SSL certificate, which has been imported into the Windows certificate store

```
{
  "loglevel": "info",
  "kestrel": {
    "Endpoints": {
      "HttpsInlineCertStore": {
        "Url": "https://localhost:443",
        "Certificate": {
          "Subject": "<subject; required>",
          "Store": "My",
          "Location": "CurrentUser",
          "AllowInvalid": "<true or false; defaults to false>"
        }
      }
    }
  }
}
```

Valid values for “Location” are: *CurrentUser, LocalMachine*

Source:<https://docs.microsoft.com/en-us/dotnet/api/system.security.cryptography.x509certificates.storelocation?view=netframework-4.7.2>

Valid values for “Store” area: *AddressBook, AuthRo, CertificateAuthority, Disallowed, My, Root, TrustedPeople, TrustedPublisher*

Source:<https://docs.microsoft.com/en-us/dotnet/api/system.security.cryptography.x509certificates.storename?view=netframework-4.7.2>

There is an entry for the JSON port number in the configuration file `config.json`.

## 16.5 Changing the application's basic color

The basic color of green is preset for menus and icons. However, you can always change this to a different color. The JSON configuration file supports the following dataset to change the basic color, for example to blue:

```
"theme": {"primaryColor": "blue"}
```

The colors can also be named after supported X11 color names in hex code.

The following websites have a list of all supported colors:

[https://en.wikipedia.org/wiki/X11\\_color\\_names](https://en.wikipedia.org/wiki/X11_color_names)

or

<https://www.w3.org/TR/2018/PR-css-color-3-20180315/>

---

### Note



The *ibaDaVIS* application must be restarted to apply changes.

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## 16.6 Localization files

The texts for menus or dialogs shown in the application are available in several languages. There are translation files for other languages in JSON format for the basic texts in the English language.

These translation files can be found in the root directory of the *ibaDaVIS* at:

- *C:\Program Files\iba\ibaDaVIS\wwwroot\locales*

The translation files for the translation texts from menus and dialogs can be found in the file:

- *application.json*

In addition to the translation files for menus and dialogs, displayed content such as table column names, signal names or the names for the file-related event filters can also be translated. The content of the file *signals.json* available in JSON format is used to translate the texts displayed in the browser.

- *signals.json*

## 16.7 Open source licenses

Sources for the used open source licenses are directly selectable via *ibaDaVIS* (see ↗ *Program interface*, page 19) and stored in the following file:

*C:\Program Files\iba\ibaDaVIS\wwwroot\licenses.txt*

## 16.8 Embedding ibaDaVIS

*ibaDaVIS* web pages can be embedded into other applications via HMI systems, such as WinCC or standard HTML pages. The behavior of the embedded browser will be similar to a common browser.

Procedure:

1. Switch to a SSL based communication.
2. Add the following tag to the *ibaDaVIS* configuration [config.json] file at the install directory  
`"CookieSameSiteMode": "None"`

Example: config.json

```

1  {
2      "LogLevel": "info",
3      "CookieSameSiteMode": "None",
4      "Kestrel": {
5          "Endpoints": {
6              "HttpsInlineCertFile": {
7                  "Url": "https://*:443",
8                  "Certificate": {
9                      "Path": "C:\\temp\\[redacted].pfx",
10                     "Password": [redacted]
11                 }
12             }
13         }
14     }
15 }

```

3. Add a web browser container at your HMI screen and navigate to the *ibaDaVIS* address.
4. Now log in to *ibaDaVIS*.

### Hinweis



The same steps are required if you want to embed *ibaDaVIS* in HTML 5 pages, e.g. using `iFrame`.

```

1  <!DOCTYPE html>
2  <html>
3  <body>
4  <h2>Target the link</h2>
5  <iframe src="https://localhost:443" height="800" width="1200" style="border:none:"></iframe>
6  </body>
7  </html>

```

## 16.9 Refresh Browser

*ibaDaVIS* is a web service whose presentation level is accessible and visualized by web browsers. After an update of the *ibaDaVIS* service or if several users are working on a dashboard view at the same time, the program and the views can be initially loaded by clearing the browser cache. Clearing the cache is especially useful if expected functions are not achieved after an update or if different views on different end devices result for the same dashboard view. The key combination **[CTRL]+[F5]** can be used to clear the browser cache.

## 17 Support and contact

### Support

Phone: +49 911 97282-14  
Fax: +49 911 97282-33  
Email: support@iba-ag.com

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#### Note



If you need support for software products, please state the number of the license container. For hardware products, please have the serial number of the device ready.

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### Contact

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[www.iba-ag.com](http://www.iba-ag.com)