

# CS Basic

Manual

Revision B

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## Alterations page

Revision	Alteration	Date	Editor
A	First edition	2018-05-16	GW
B	Addition	2019-03-19	GW
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Dear customer,

Every year thousands of customers buy our high-quality products.

And they do this for good reason:

- We offer an excellent price-performance ratio. Reliable quality at a fair price
- With a professional experience of over 20 years, we are able to provide you with the best possible measuring solutions
- Our high demand towards quality
- Of course all of our devices bear the CE Mark which is required by the EU
- Calibration certificates, workshops and consulting
- We are always happy to help you after your purchase

Our service guarantees a quick assistance.

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# 1 Introduction

Using the CS Soft Basic software, measured data from the devices of the new device family (from DS500) can be read out, saved, displayed and evaluated.

## 2 System requirements

Hardware PC	from Win 7x64 / Mac
Main memory requirement	min. 4 GB RAM – recommended 8 GB RAM
Disk space	min. 10 GB – recommended 20 GB

## 3 Installation

Start the "CSBasic-Setup-x.x.x.exe" to install the software and follow the installation instructions. The software is installed automatically.

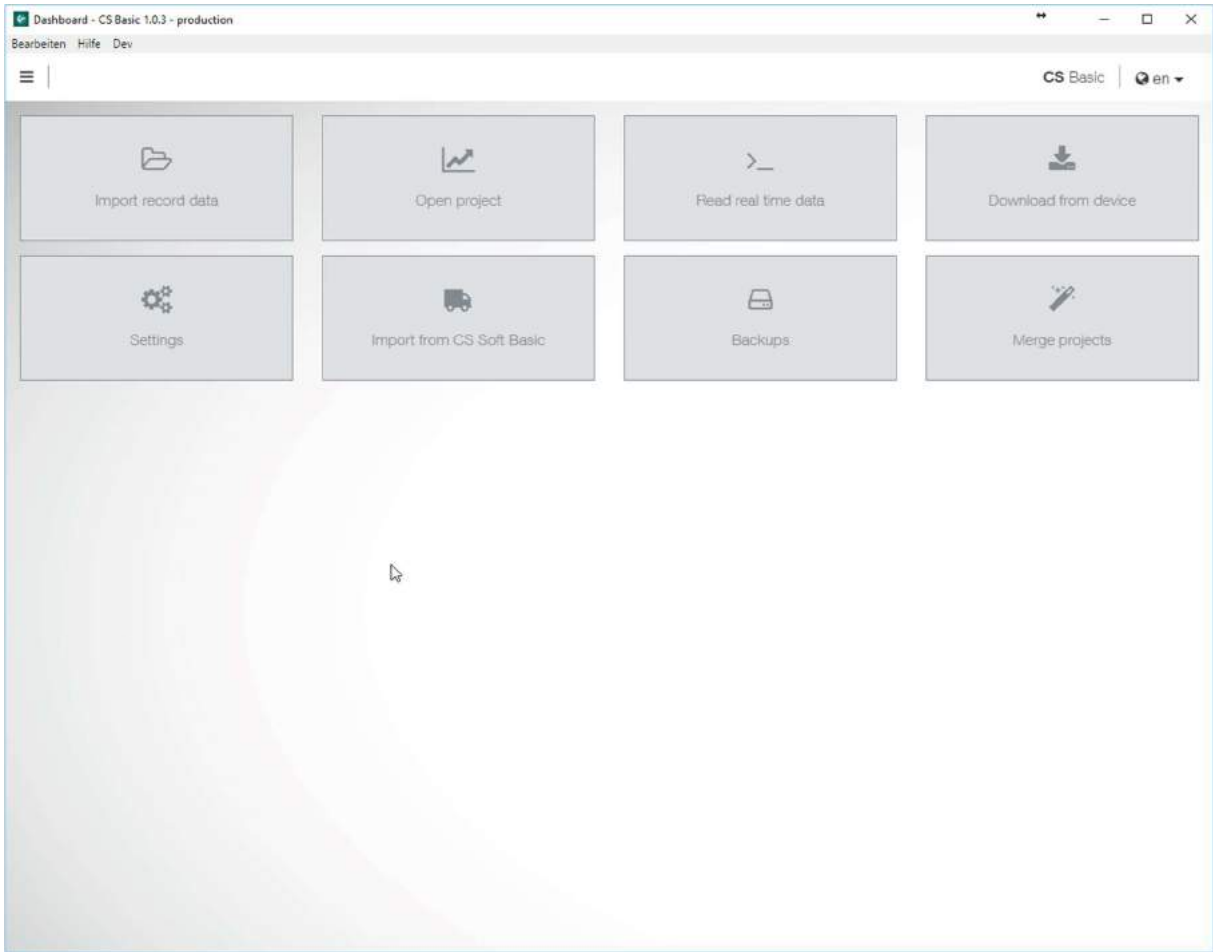
## 4 General

This chapter describes the menu items that have the same functionality in all screen views.

### 4.1 User interface



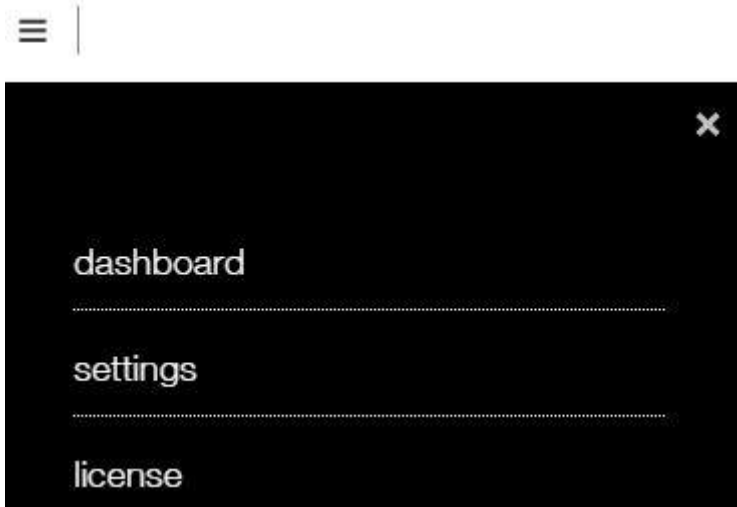
After starting via this button the following screen appears:



Select your language  from the top right pull-down menu.

The buttons on the dashboard can be used to branch to the respective function.

Click on the button on the top left, a sidebar opens:



#### 4.1.1 General settings

The general settings are defined in the menu item "settings". All changes must always be completed with the "Save" button.

Tab "General":

The company data with logo and the number of data lines for the raw data list.

Tab "Units":

Set the decimal places for a unit in general.

Tab "Recycle bin":

The deleted projects appear here and could be restored.

Tab "Other":

The connection settings to an old CS Soft Basic are defined here. Please only make changes here after consultation with the internal IT, if you have already installed a local MySQL database with a different user / password.

#### 4.1.2 Activate license

Use the menu item "license" to switch to licensing - where you can enter the license number and activate the software.

The mandatory fields are marked with a \*.

It is possible to activate via e-mail – button: To do this, copy-paste the mail text from the software into the mail body and send it to the specified mail address. After a few minutes the answer will be sent – copy-paste the mail body from the mail into the software at the required place and then the software has to be activated via the button.


##### **Note:**

If the software is to be used on another PC, you must first transfer the data via a database export (see below). Then the license key should be noted. Subsequently, the license can be deactivated under this menu item.


The software can be used for 30 days without a license and can be activated twice.

#### 4.1.3 Disable license on computer change

If the workstation is to be changed, the software must first be deactivated on the old workstation

computer. This is done again as above under the menu  item. If the computer is connected


online to the internet, the button deactivate  should be used. If not, then as described

above with the button  via an e-mail message about another device which is connected online with the internet is the deactivation to process.

**Important: Only when this is completed, an activation can be made on the new workstation.**

#### 4.1.4 Last open project

As soon as a project has been selected in the software and has been loaded several times or has been slightly modified in the settings, a new entry is available in this menu:

 - click to open this project.

## 4.2 Dashboard

### 4.2.1 Import file

If data has been transferred to a USB stick, it can be read via this menu item



The folders stored on the USB stick can be stored on any medium. The files in the "Export" folder must always be in a folder. The file names must not be changed.

Click on the menu item and the following dialogue for selecting the data (RECORDS.LOG) is opened:

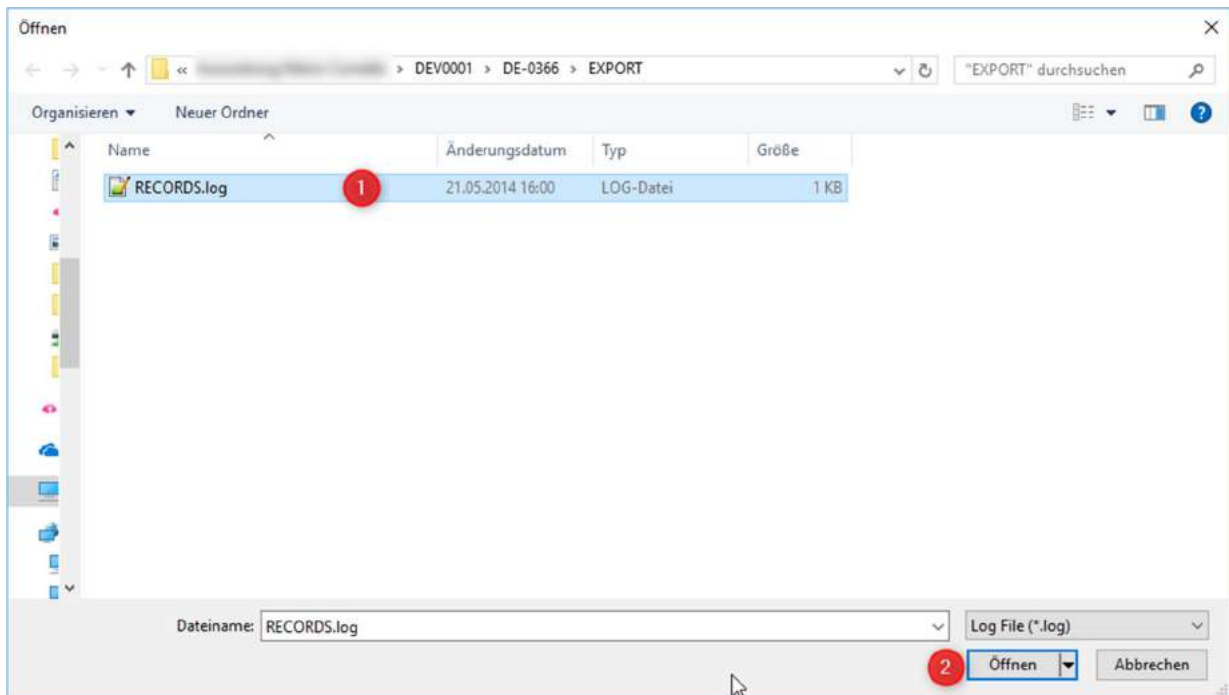


Illustration 1 : Open Records.log

Select the desired folder with the RECORDS.LOG file (1) and confirm by clicking the "Open" button (2).

After that, the dialogue appears with the name entered in the datalogger, the number of measurement data, the number of recording days and the time period.

If this line is selected, the following dialogue appears:



Select log record x

#	Comment	Amount measurements	Amount dat files	From	To
1058		110	1	06.04.17 06:58:22	06.04.17 07:02:03
1059		638	1	06.04.17 07:03:54	06.04.17 07:25:11
1060		140	1	06.04.17 07:28:22	06.04.17 07:33:03
1061		282	1	06.04.17 07:35:56	06.04.17 07:45:18
1062		264	1	06.04.17 08:15:43	06.04.17 08:24:32
1063		135	1	06.04.17 10:35:29	06.04.17 10:39:59
1064		102	1	06.04.17 11:30:24	06.04.17 11:33:47

< 1 2 >

Filter Time shift

06.04.17 10:35:29 - 06.04.17 10:39:59

Total time frame: 06.04.17 10:35:29 - 06.04.17 10:39:59

Import record data

Cancel

After 1) click on the desired time window under 2) the period of this recording can be changed.  
The date and time from – to can be filtered here.

1058	10019_0604g1	110	1	06.04.17	06:08:22	06.04.17	07:02:03
1059	10019_0604a1	638	1	06.04.17	07:03:54	06.04.17	07:25:11
1060	2006			06.04.2017		06.04.2017	Apply Cancel
1061	2006			10 : 35 : 29		10 : 39 : 59	
1062	1008			March 2017		April 2017	
1063	2012			W Tue Wed Thu Fri Sat Sun Mon		W Tue Wed Thu Fri Sat Sun Mon	
1064	2012			9 27 28 + 2 3 4 5		13 27 28 29 30 31 + 2	
				10 6 7 8 9 10 11 12		14 3 4 5 6 7 8 9	
				11 13 14 15 16 17 18 19		15 10 11 12 13 14 15 16	
				12 20 21 22 23 24 25 26		16 17 18 19 20 21 22 23	
				13 27 28 29 30 31 + 2		17 24 25 26 27 28 29 30	
				14 3 4 5 6 7 8 9		18 + 2 3 4 5 6 7	

06.04.17 10:35:29 - 06.04.17 10:39:59

Total time frame: 06.04.17 10:35:29 - 06.04.17 10:39:59

**Import record data**

Cancel

Under time offset, the start time can be moved. The whole timeline is then placed on this start time.

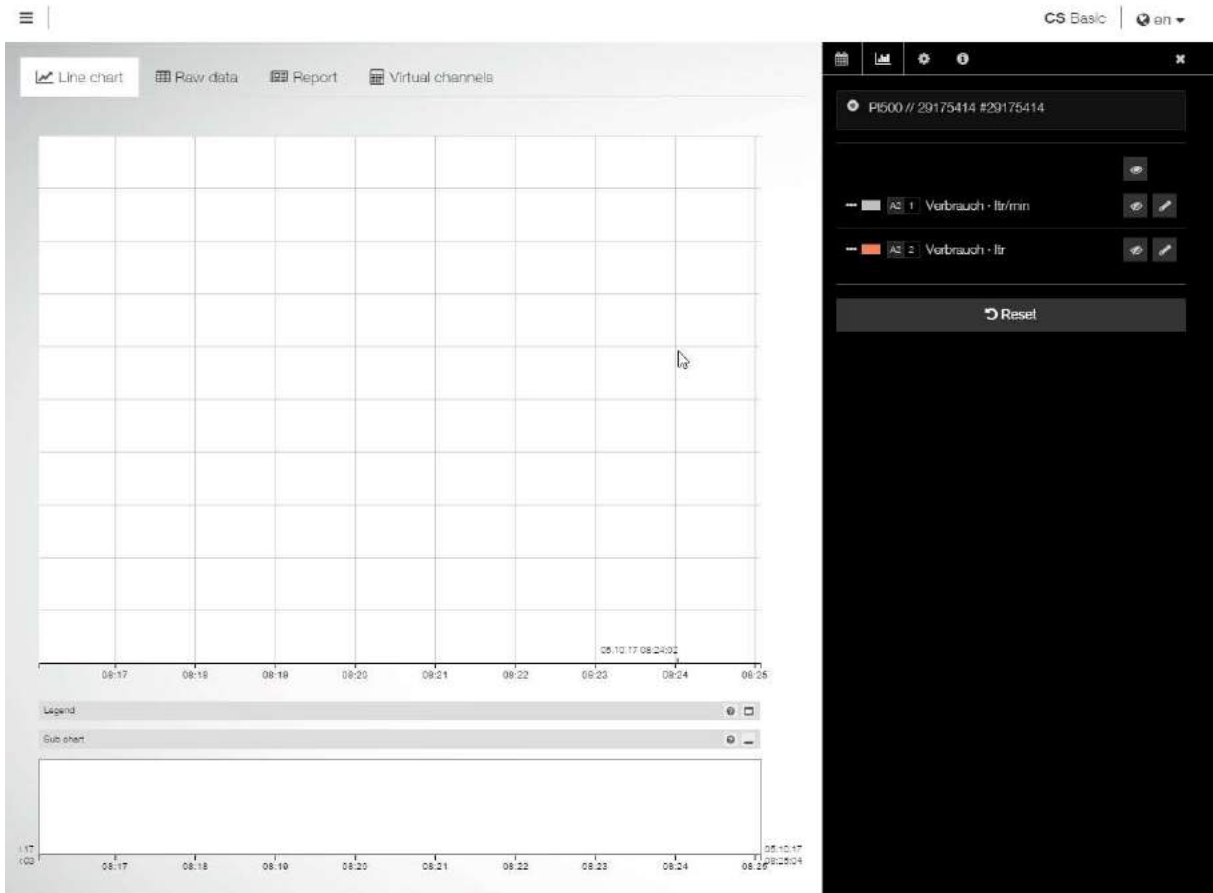
Tip: This is useful if you want to compare a fixed period of a measurement series with another fixed period of time. Serves to determine fluctuations / deviations within a period of time.

Under the tab **Add to project** the import can be added to an existing project.

The data import is read in with the button Import files.

The progress is shown in the lower right corner. At the top right, a process symbol is shown.

After the import, you switch directly to the diagram view:



### 4.2.2 Open project























Projects already created or read in are getting called with this button:

The following screen appears:

Select project ✕




Search...

#	Project	Recordings	From	To	Actions
00	Aufnahme vom 31.08.17 08:59:58 <i>_merged</i>	3	31.08.17 09:00:40	31.08.17 09:21:20	<span style="color: red;">✕</span>  
01	Recording from 23.04.18 11:27:59 <i>_merged</i>	2	23.04.18 11:28:37	24.04.18 11:55:25	<span style="color: red;">✕</span>  
02	Recording from 08.05.18 13:53:02 <i>_merged</i>	2	08.05.18 13:53:52	08.05.18 14:30:18	<span style="color: red;">✕</span>  
03	Aufnahme vom 15.05.18 16:33:36 <i>_merged</i>	2	16.02.18 13:29:23	16.05.18 10:03:07	<span style="color: red;">✕</span>  
04	bueru	1	16.02.18 13:29:23	16.02.18 13:59:10	<span style="color: red;">✕</span>  
05	Aufnahme vom 15.05.18 16:33:36	1	16.05.18 09:58:38	16.05.18 10:03:07	<span style="color: red;">✕</span>  
06	5227 Verbrauch 05.10.17	1	05.10.17 08:16:03	05.10.17 08:25:04	<span style="color: red;">✕</span>  
07	Recording from 08.05.18 14:42:16	1	08.05.18 14:43:33	08.05.18 14:51:52	<span style="color: red;">✕</span>  
08	Recording from 08.05.18 14:28:06	1	08.05.18 14:28:28	08.05.18 14:30:18	<span style="color: red;">✕</span>  
09	Recording from 08.05.18 13:53:02	1	08.05.18 13:53:52	08.05.18 14:28:03	<span style="color: red;">✕</span>  

<
1
2
3
4
5
>

Cancel

The following actions are available here:

- Click on a project name to open the project
- If several projects are available you can filter or search above
- Delete the project with this button ✕ – after a query
- Use the button  to export a project – assign any file name
- Use the button  to rename a project and to add a comment
- The table can also be sorted - see 

### 4.2.3 Read in real-time data



This button **Read real time data** can be used to establish a real-time connection to an Ethernet-enabled device. Data is then stored in the software and can be viewed simultaneously. The connection is made via ModBus TCP.

Start the button and the following dialogue appears:

Establish connection via ModBus TCP
✕

---

Found devices (7) ⓘ
Searching for new CS devices

No device selected

IP address ⓘ

192.168.178.20

Port

502

Update interval(in seconds)

1 Second

Activate automatic reconnection

---

Project name ⓘ

Recording from 17.05.18 09:03:18

Save real time data to database

Establish connection

Cancel

Select the devices from the network from the drop-down list.

It is also possible to enter an IP address from this network directly.

The port is normally 502.

Select the update interval from the drop-down list. Initial setting is update per second.

If a connection has been interrupted, you can use a checkbox to activate the automatic reconnection.

The name for the recording can be entered in the field Project name - a default is given.

The data can then also be stored in the local database for later evaluation - the checkbox must then be activated.

When a device is selected or a valid IP address is entered, the available channels are displayed:

Port

Available channels

Kanal Ch-A1 | Subkanal 0 | A1a (-)

Kanal Ch-A2 | Subkanal 0 | A2a (kW)

Kanal Ch-A3 | Subkanal 0 | Flow (-)

Kanal Ch-A3 | Subkanal 1 | Consumption (-)

Illustration available channels

Establish a connection with this button . The connection is displayed on the top:

▶ 192.168.172.43 - Real time connection established ▾

▶ 192.168.172.80 - Real time connection established ▾

- ▢ Pause real time connection
- ▢ Close real time connection

Select the next action from the drop-down list for example:


- Pause real-time connection – project is paused
- Stop real-time display – project is completed


#### 4.2.4 Load from device



Load the log data from a network-enabled device with this button

As with reading the real-time data, a device can be selected from the network or the IP address entered directly.

Establish the connection with this button , a selection of the projects on the SD card of the selected device is displayed. By clicking the project, the dialogue for the selection of the time period and the time offset is displayed, as with the data import.

The loading process over TFTP is started via the button  and switched directly to the diagram view.

#### 4.2.5 Import from CS Soft Basic




With this button data from an old version can be transferred to this PC.

A selection shows the existing projects. Click to accept the desired project - a progress history will be displayed. The data transfer can take some time for large amounts of data.

After the transfer, the system switches to the diagram view.

#### 4.2.6 Backups



With the button a backup can be created. The path can be selected above and created with the button .

It is also possible to switch to a backup previously created.

**Attention:** All data that has been read / created since this backup time is no longer available!!

## 4.2.7 Merge projects



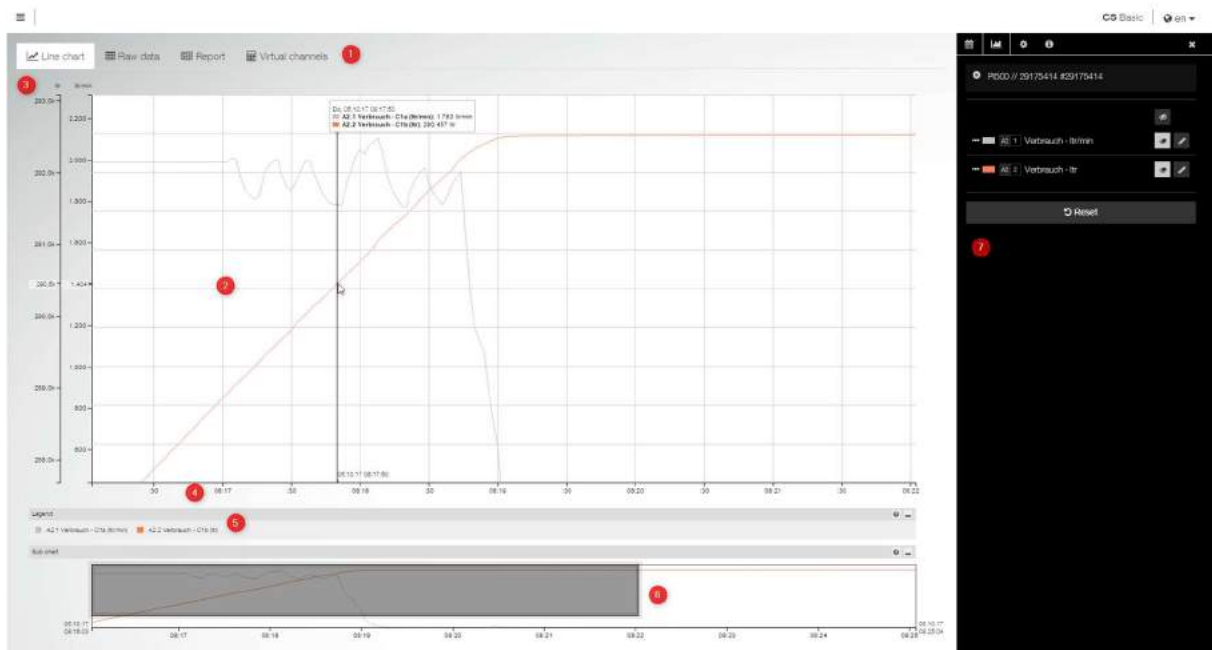
The button **Merge projects** can be used to merge two or more projects via a selection. It is possible to search projects by name or to use the sort function in the list.

The button **Merge projects** starts the processing and changes to the diagram view.

This means that several individual records can be merged into one project.

## 4.3 Diagram view

Several settings can be made in the diagram view. The basic view looks like this:



The individual elements are

1. Choice of presentation - optional the virtual channels
2. Display area of the selected representation - here line chart
3. x-axis range with the selected unit setting
4. y-axis range with the time representation
5. Legend representation - can be shown or hidden
6. Sub-chart for overview and zooming - can be shown or hidden
7. Settings for display area setting - can be shown or hidden.

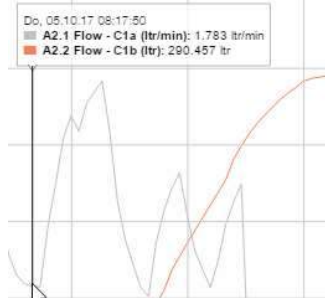
### 4.3.1 Representation

Select from the tab

- Line diagram
- Raw data
- Report
- and the virtual channels as an option

### 4.3.1.1 Line diagram

The line graph shows the selected channels from the settings. In this area you can zoom in and out with the mouse wheel. You can also click and drag the display area with the mouse. If the mouse pointer is moved in this area, the values of the displayed channels are displayed with the respective

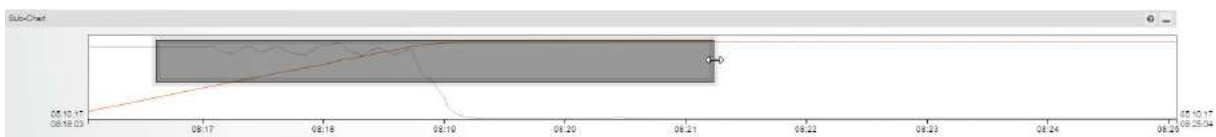


time in a window: Likewise, the intersection point on the x and y axes is displayed with the values.

Click right on a unit - then the associated channels which belong to the unit are highlighted and the others are displayed paler.

See below an additional legend which is normally hidden. Likewise, a short help can be faded in when the mouse pointer is moved over this small question mark symbol. You can also click on a unit in the legend area - the effect is the same as clicking the unit in the axis view.

In the sub-chart below, the display area above can also be controlled with either click and drag or by moving the dark area off the display window area:



As shown in the picture above, the mouse pointer then switches to a move symbol. Again, the mouse wheel can be used for zooming.

### 4.3.1.2 The settings / representation

After opening a project, the display of values is initially deactivated and the setting page of the line

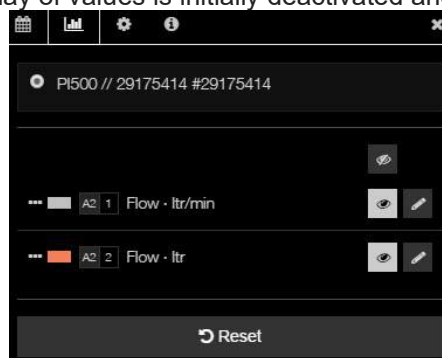


diagram (diagram tab) is shown:



The following can now be set on the diagram tab:

The upper part shows the device name and the serial number. If several devices are included in the project, a device can be selected using the radio button on the left in front of it.



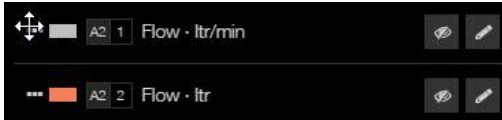
The button can be used to show / display all channels or a channel in the respective channel line.





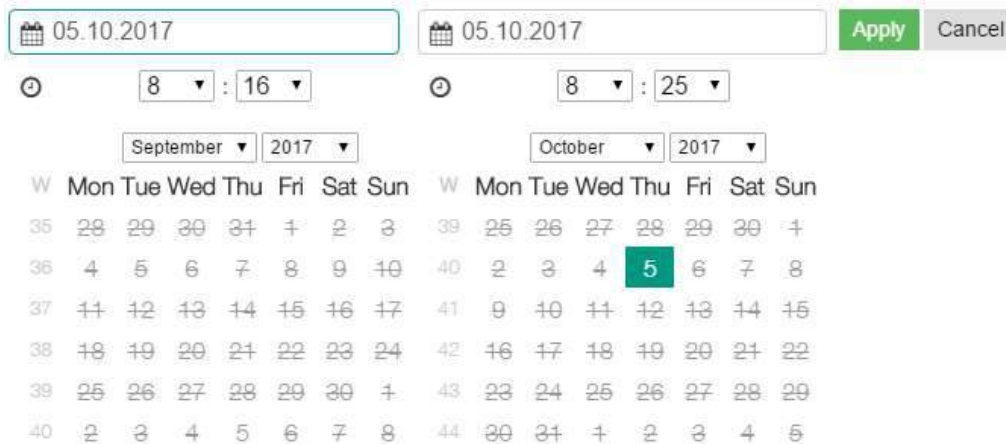
The button **Edit channel** can be used to edit the display / setting for this channel. You can define channel name, color of the line, line style, value range and increment for the axis, decimal places and a moving average for the entered number of data points. Click again to exit the settings.

The axis order can be moved in the front area on the button **...** the mouse pointer then becomes a



move symbol:

The period can be set on the period tab **📅**. Click on the date to open the selection of the period from (left area) to (right area). It can be set exactly down to the minute range:



The days crossed out in the calendar are not available in the project (there are no dates at this time). The green frame on the field indicates which area is currently selected.

The zoom range can also be fixed here via the button **📌 Set**.

You can also jump forward / backward through a selectable unit in the diagram:



The display can also be reset - below the complete project run time is displayed as a note:



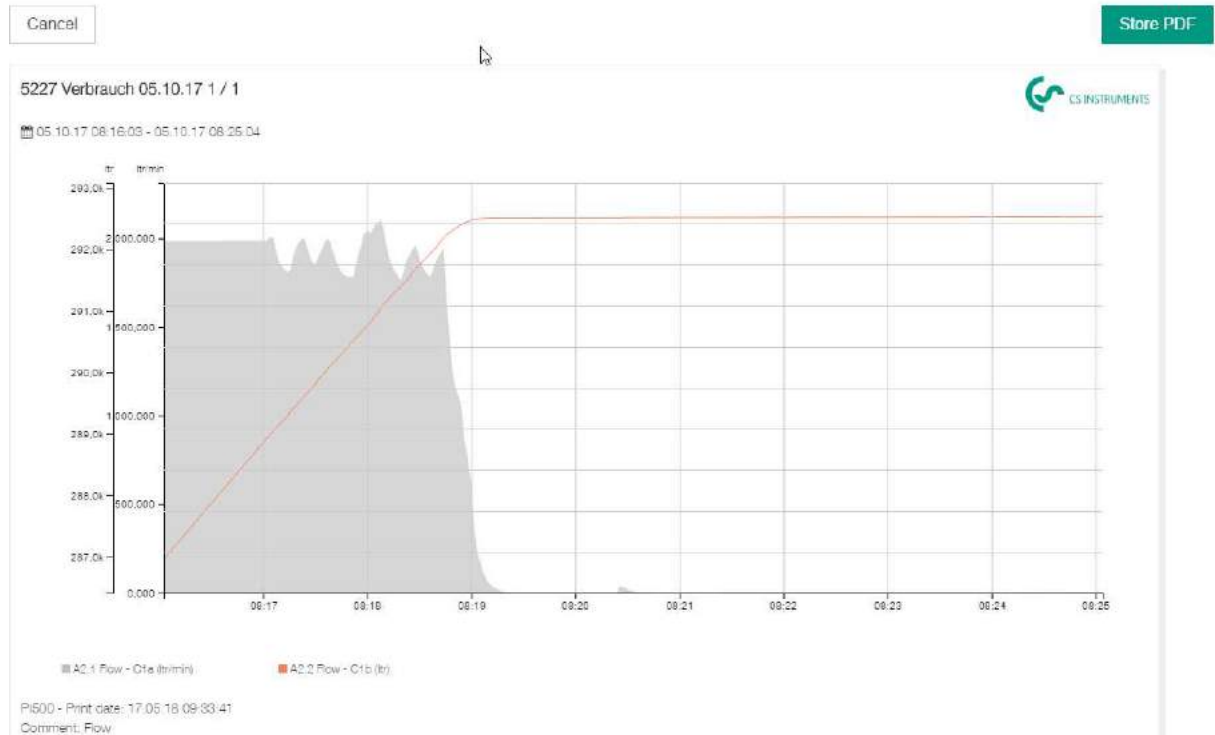
With the settings tab **⚙️** a unit can be displayed as a stacked area.

You can now switch to the report generation **📄 Create report** = consumption analysis - more on that later.

It is also possible to print a diagram: **🖨️ Print diagram** With the switch for the template, the diagram interval, with or without statistics sheet, a selection can be made and a comment can be recorded.

With the button **Go to print preview** the report is created. Here is a sample report:

Print preview



and the corresponding statistics sheet:

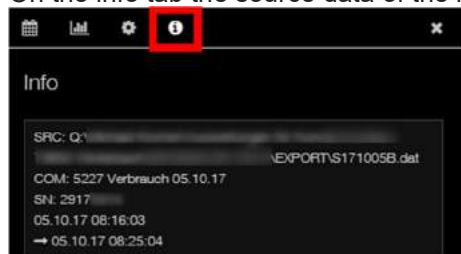
5227 Verbrauch 05.10.17

Channel	Average	Minimum	Date of minimum	Maximum	Date of maximum
A2.1 Flow - C1a (ltr/min)	458.3739 ltr/min	1.1761 ltr/min	05.10.17 08:19:34	2105.7947 ltr/min	05.10.17 08:18:08
A2.2 Flow - C1b (ltr)	292071.2058 ltr	286969 ltr	05.10.17 08:16:03	292531 ltr	05.10.17 08:24:54

PI500 - Print date: 17.05.18 09:33:41  
Comment: Flow

With the button **Store PDF** a pdf document is created (for further processing in the respective program of the pdf display of the client PC).

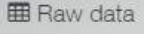
On the info tab the source data of the reading in and the project period are displayed.




The settings can be hidden with the icon

It can be shown again with the icon

### 4.3.1.3 Raw data

On the raw data display , the values for the project are displayed and can also be edited there. The field Jump to date opens a calendar for the direct switch to this period on the raw data

Jump to date 

17.05.18 09:35:28

Date	Device	A2.1 Flow C1a ltr/min
05.10.17 08:16:03	29175414	1.987,7355
05.10.17 08:17:02	29175414	1.989,0046

9 : 35 Apply Cancel

May 2018

W	Mon	Tue	Wed	Thu	Fri	Sat	Sun
18	30	1	2	3	4	5	6
19	7	8	9	10	11	12	13
20	14	15	16	17	18	19	20
21	21	22	23	24	25	26	27
22	28	29	30	31	1	2	3
23	4	5	6	7	8	9	10

page.

Below the following functions are available:

PI500

< 1 2 3 ... 23 24 25 > Jump to page 'Modify raw data Export as CSV

- jump left page by page or to a particular page ...
- Edit raw data with the button - the fields are then free for editing - the original value is always additionally stored and is also visible here:

05.10.17 08:17:06	29175414	2.001,6855	290.000 (289048)
----------------------	----------	------------	---------------------

The modified value is displayed in blue color.

- The raw data can be exported as a csv format - query of the period and the desired channels in a subsequent dialogue and then the file name for the export:

Export project as CSV ×

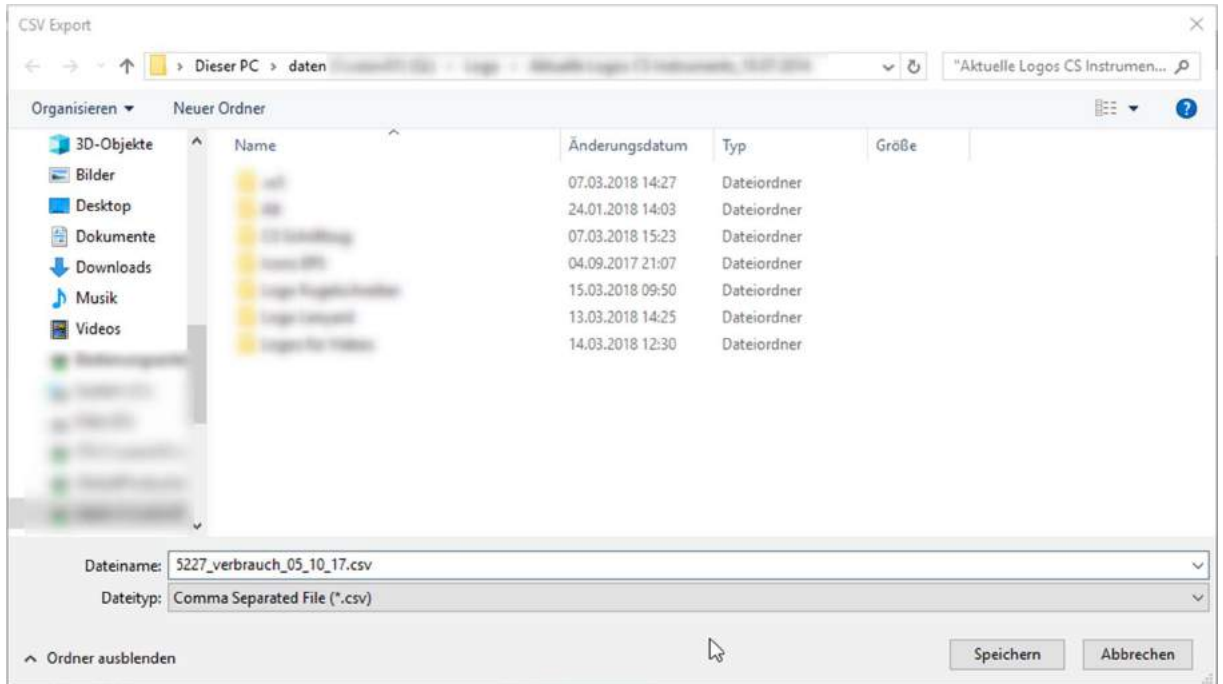
Channels

- A2 Flow
  - A2.1 Flow - C1a (ltr/min)
  - A2.2 Flow - C1b (ltr)

Period

05.10.17 08:16:03 - 05.10.17 08:25:04

Export as CSV Cancel



With save the file is created.

#### 4.3.1.4 Report (consumption analysis)

With the report tab Report the report (consumption analysis) can be created.

The prerequisite for the report is either a consumption unit (m<sup>3</sup>, ltr, ...) of a gas and / or a unit of measure for the output (kWh).

The report is created according to the following criteria:

Channels

- A1 Flow
  - A1.1 Flow (m<sup>3</sup>/h)
  - A1.2 Total (m<sup>3</sup>)
- A2
- A3
- A4 Power
  - A4.1 Power (kWh)
  - A4.2 Power (kW)
- B3
- B4
- C1 Total power


Period:

Type of report:





Price configuration:

By means of the checkboxes in front of channels, the selection for the report is made.

The period can be done again with a calendar with settings from - to. Furthermore, the report type year, month and week and a price template (global or project-specific template) can be selected. The price template can also be configured here.

The button  Price configuration... opens the settings:

### Price configuration for channels

Unit	Device	Channel	
m³	-- All systems	-- All channels	
kWh	-- All systems	-- All channels	
Select...	-- All systems	-- All channels	
Select...	-- All systems	-- All channels	

[+ Add channels filter](#)


---

Currency

€


[Cancel](#) [Save](#)

Select the unit and the settings here.

The button  opens the settings for this unit:

### Periods for channels filter

Channel filter: kWh · All systems · All channels

1. 01.01. 00:00:00 - 31.12. 23:59:59 

[+ Add date range](#)

[✕ Delete channels filter](#) [Cancel](#) [Apply](#)

Set a period of time (calendar function with click in the period) and within the period for each minute of the day an exact Euro amount for the selected unit.

Here's an example of different prices for consumptions over three time zones over the entire year:

## Periods for channels filter

Channel filter: m³ · All systems · All channels

1. 01.01.00:00:00 - 31.12.23:59:59 ✎

00:00
06:00
12:00
18:00
24:00

00:00 - 05:59 ✕

06:00 - 21:59 ✕

22:00 - 24:00 ✕

+

Day	€/m³	€/m³	€/m³	
Monday	<input type="checkbox"/> 0,02	<input type="checkbox"/> 0,03	<input type="checkbox"/> 0,02	
Tuesday	<input type="checkbox"/> 0,02	<input type="checkbox"/> 0,03	<input type="checkbox"/> 0,02	
Wednesday	<input type="checkbox"/> 0,02	<input type="checkbox"/> 0,03	<input type="checkbox"/> 0,02	
Thursday	<input type="checkbox"/> 0,02	<input type="checkbox"/> 0,03	<input type="checkbox"/> 0,02	
Friday	<input type="checkbox"/> 0,02	<input type="checkbox"/> 0,03	<input type="checkbox"/> 0,02	
Saturday	<input type="checkbox"/> 0,02	<input type="checkbox"/> 0,03	<input type="checkbox"/> 0,02	
Sunday	<input type="checkbox"/> 0,02	<input type="checkbox"/> 0,03	<input type="checkbox"/> 0,02	
Standard	<input checked="" type="checkbox"/> 0,02	<input checked="" type="checkbox"/> ,03	<input checked="" type="checkbox"/> ,02	

Use the + button to add a time interval to this period.

Use the + Add date range button to add another date range for a more detailed time differentiation.

The same applies for the performance:

Periods for channels filter

Channel filter: kWh -All systems -All channels

1. 01.01. 00:00:00 - 31.12. 23:59:59

00:00 06:00 12:00 18:00 24:00

Day	€/kWh
Monday	<input type="checkbox"/> 0,025
Tuesday	<input type="checkbox"/> 0,025
Wednesday	<input type="checkbox"/> 0,025
Thursday	<input type="checkbox"/> 0,025 <span style="color: red;">⊘</span>
Friday	<input type="checkbox"/> 0,025
Saturday	<input type="checkbox"/> 0,025
Sunday	<input type="checkbox"/> 0,025
Standard	<input checked="" type="checkbox"/> ,025

✖ Delete date range

+ Add date range

✖ Delete channels filter

Cancel Apply

Geldeinheit:

€

Set the unit / currency for this project

Use the **Save** button to save the settings for the selected template.

With the button **Create report** the calculation is triggered and the dialogue for the report creation opens:

General print settings



Select print form

Basic template for consumption report

Comment

Flow

Print price template

Cancel

Go to print preview

Here the report template, a comment and the print of the price template can be selected or entered and then switched to the print preview.

This is followed by the calculation – which is displayed with a processing note:

Please wait...

Create consumption report

The report is divided into the following parts:

First, the first channel is shown - in the example, the consumption with the monthly representation. The sums per unit and also the costs are shown. Also, the min / max and average values are displayed per period.

Consumption report: international sales meeting

Period: Donnerstag, 01.01.15 00:00:00 - Donnerstag, 31.12.15 23:59:59

A1 Flow H1-4

Note: Flow

		January	February	March	April	May	June	July	August	September	October	November	December	Sum
A1.2 Total H1-4 - A1b (m³)	Start (m³)	1.958.827	2.076.325	2.215.062	2.368.464	2.514.612	2.666.480	2.826.483	3.002.938	3.169.484	3.318.642	3.491.661	3.659.617	
	End (m³)	2.076.325	2.215.062	2.368.464	2.514.612	2.666.480	2.826.483	3.002.938	3.169.484	3.318.642	3.491.661	3.659.617	3.775.973	
	Consumption (m³)	117.498	138.737	153.402	146.148	151.868	160.003	176.455	166.546	149.158	173.019	167.956	116.356	1.817.146
	Cost (€)	3.135,79	3.706,34	4.104,91	3.895,68	4.056,77	4.266,87	4.749,51	4.445,37	4.033,46	4.618,60	4.496,18	3.111,03	48.620,51
A1.1 Flow H1-4 - A1a (m³/h)	Minimum	0	6,3	0	0	0	1,36	0	0	0	0	0	0	
	Average (m³/h)	157,6	205,98	205,8	202,54	203,52	221,66	236,5	223,25	206,67	232,19	232,67	155,99	
	Maximum (m³/h)	1.060,96	527,02	736,39	1.154	662,43	618,27	617,9	636,36	931,66	642,96	689,77	2.410,71	



Followed by the second channel - here in the example the performance - representation as mentioned above.

A4 Power GA50VSD

Note: Flow

		January	February	March	April	May	June	July	August	September	October	November	December	Sum
A4.1 Power GA50VSD - A4a (kWh)	Start (kWh)	257.638,52	272.634,03	287.960,25	301.607,97	314.329,22	329.257,81	342.320,72	356.010,25	369.222,97	382.951,56	397.363,19	407.542,34	
	End (kWh)	272.634,03	287.960,25	301.607,97	314.329,22	329.257,81	342.320,72	356.010,25	369.222,97	382.951,56	397.363,19	407.542,34	414.742,03	
	Consumption (kWh)	14.995,52	15.326,22	13.647,72	12.721,25	14.928,59	13.062,91	13.689,53	13.212,72	13.728,59	14.411,63	10.179,16	7.199,69	157.103,51
	Cost (€)	374,89	383,16	341,19	318,03	373,21	326,57	342,24	330,32	343,21	360,29	254,48	179,99	3.927,5879
A4.2 Power GA50VSD - A4b (kW)	Minimum (kW)	0,1	0	0	0,21	0,15	0	0	1,94	0,09	0,14	1,8	0,04	
	Average (kW)	20,26	22,81	18,4	17,67	20,09	18,28	18,43	17,77	19,07	19,39	14,14	9,66	
	Maximum (kW)	63,06	52,47	65,06	60,78	64,21	61,06	61,21	61,78	60,66	61,2	60,9	72,06	

Then a sum sheet is always output over the units (regardless of the channel) for the selected periods.

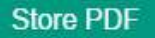
Sum

		January	February	March	April	May	June	July	August	September	October	November	December	Total
m³	Cost (€)	3.135,79	3.706,34	4.104,91	3.895,68	4.066,77	4.266,87	4.749,51	4.445,37	4.033,46	4.618,60	4.496,18	3.111,03	48.620,51
	Consumption (m³)	117,498	138,737	153,402	146,148	151,868	180,003	176,455	166,546	149,158	173,019	167,956	116,356	1.817,146
kWh	Cost (€)	374,89	383,16	341,19	318,03	373,21	326,57	342,24	330,32	343,21	360,29	254,48	179,99	52.548,10
	Consumption (kWh)	14.995,52	15.326,22	13.647,72	12.721,25	14.928,59	13.062,91	13.689,53	13.212,72	13.728,59	14.411,63	10.179,16	7.199,69	1.974.249,52

If the option "print price template" has been selected, it will be output with the corresponding settings for documentation purposes.

Global price template

Units: m³ - Devices: All systems - Channels: All channels											
Date	Time	Standard	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		
01.01.15 00:00:00 - 31.12.15 23:59:59	00:00 - 05:59 (€/m³)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
01.01.15 00:00:00 - 31.12.15 23:59:59	06:00 - 21:59 (€/m³)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
01.01.15 00:00:00 - 31.12.15 23:59:59	22:00 - 24:00 (€/m³)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Units: kWh - Devices: All systems - Channels: All channels											
Date	Time	Standard	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		
01.01.15 00:00:00 - 31.12.15 23:59:59	00:00 - 24:00 (€/kWh)	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Units: All units - Devices: All systems - Channels: All channels											
Date	Time	Standard	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		
01.01.15 00:00:00 - 31.12.15 23:59:59	00:00 - 24:00 (€)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Units: All units - Devices: All systems - Channels: All channels											
Date	Time	Standard	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		
01.01.15 00:00:00 - 31.12.15 23:59:59	00:00 - 24:00 (€)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

With the button  a pdf document is created (or further processing in the respective program of the pdf display of the client PC).

## 5 Optional modules

### 5.1 Virtual Channels

With this module, channel calculations can be added or done at any time after recording.

For example, it could be summation for consumption (medium / electricity).

Ablauf gem. Darstellung oben:

Under 1), the channels from the first device can be selected. Under 3) can also be changed immediately to another device. Then under 4) select a channel from this device.

If a channel has been marked, then a formula can be formed under 2) using the given operators. To complete it can be done via another channel selection under 1).

Completed is then under 5) with the name, 6) with the choice in which device the virtual channel should be added and under 7) the unit.

The calculation is then completed with 8).

Here's an example of a totals calculation:

Neuen Virtuellen Kanal erstellen

Formular

Verfügbare Operationen sind +, -, \*, /, ^ und sqrt(, )

$\$(5130217.3.1) + \$(5130217.6.1) + \$(5130217.7.1)$

- x0 + x1 + x2

DS500 - 5130217    PI500 - 17145006

A1.1 Flow HI-4 (m³/h)	A1.2 Total HI-4 (m³)	A2.1 Flow H7 (m³/h)
A2.2 Total H7 (m³)	A3.1 Flow HI,HI0 (m³/h)	A3.2 Total HI,HI0 (m³)
A4.1 Power GA50VSD (kWh)	A4.2 Power GA50VSD (kW)	B1.1 Pressure CS16 (bar)
B2.1 Dew point FA416 (°C/d)	B2.3 Dew point FA416 (°C)	B3.1 Power GA55VSD (kWh)
B3.2 Power GA55VSD (kW)	B4.1 Strom GA55 (kWh)	B4.2 Power GA55 (kW)

Bezeichnung für Kanal: Total power    Gerät: DS500 - 5130217

Einheit: [57] Kilowatt (kW)

Virtuelle Kanäle

- 8.0 Total power
- 9.0 flow addition
- 2.0 addition flow

If data is supplemented by a data logger at a later time, then this button can be used to update / update the virtual channel.

Editing / changing is done via this button .

A virtual channel is deleted via this button .

## 6 Support and Service

If you have any questions about our products, need technical support during installation or use of our software, please contact us by e-mail at:

[info@cs-instruments.com](mailto:info@cs-instruments.com)

or by phone:

**+49 461 8071 50 - 0**

Phone support and Teamviewer access  
(15min - 30 Euro, Minimum 45min)

We will answer all inquiries within 24-48 hours.