HEXAGON

Form Designer

General instructions

FAQ Handling/configuration
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Information about this document

Document History

Version	Date	Author(s)	Modifications / Remarks
	21.07.2021	GA, SJ	Initial Release

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1 Form Designer Functionality

Reports are one of the tools for the simple presentation of data collected and evaluated in Q-DAS applications. Properly configured and used, the reports enable evaluation time to be significantly reduced by providing all relevant information at a glance.

With Form Designer, new report templates (forms) can be created and existing ones modified. This document describes how to use Form Designer with a focus on the creation and modification of report templates in Q-DAS application qs-STAT. The special elements available in Form Designer, such as placeholders for printing current windows, and the handling of reports with data selections or special elements in other Q-DAS applications such as Solara.MP, are described in separate manuals. They can be found on our homepage at https://www.q-das.com/en/service/support-hotline#faqs|||.

Sound basic working knowledge of the Q-DAS application qs-STAT is required to use this manual successfully. Topics like the use of filters and the configuration of various graphics are outlined in this manual.

Unless otherwise stated, the case studies provided in this manual apply to the current standard version. If the preview window is to be used in Form Designer, a corresponding data set must be loaded for correct display.

To use individual report templates efficiently, it is recommended that the company's own K-fields are taken into account and that the report templates are managed in a document management system.

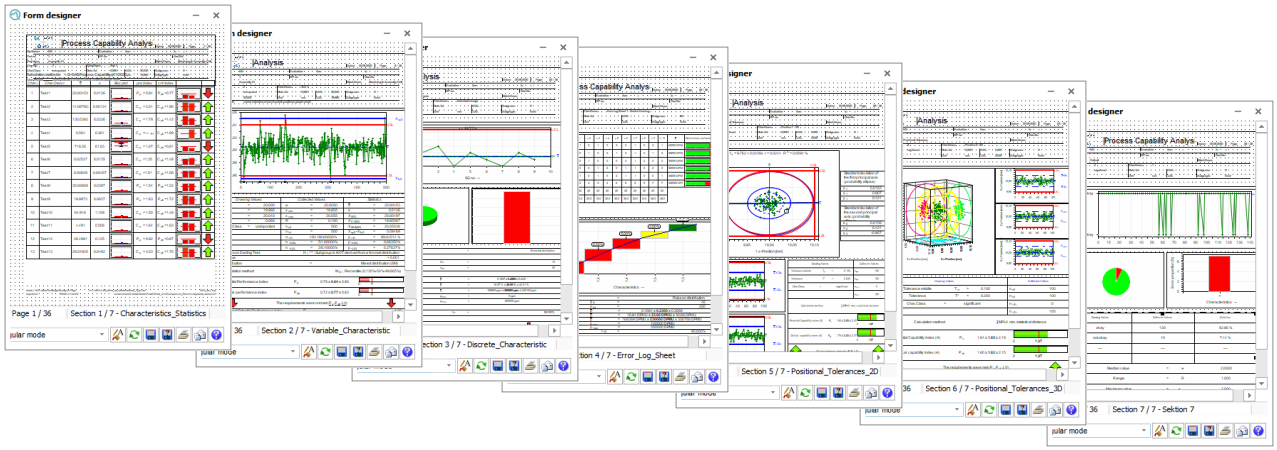
This manual is not a substitute for training. If you would like information about our training courses, please see https://www.q-das.com/en/training.

The Form Designer "Q-DAS FormDesigner" is a chargeable product and requires a valid licence to run. If you are interested, please contact your Q-DAS representative or send us an enquiry at info.qdas.mi@hexagon.com.

Form Designer enables you to create and modify report templates (forms). A report template can contain different sections even if it is saved to a single DEF file. Sections are, so to speak, individual summaries contained in the various display conditions and are used when generating reports.

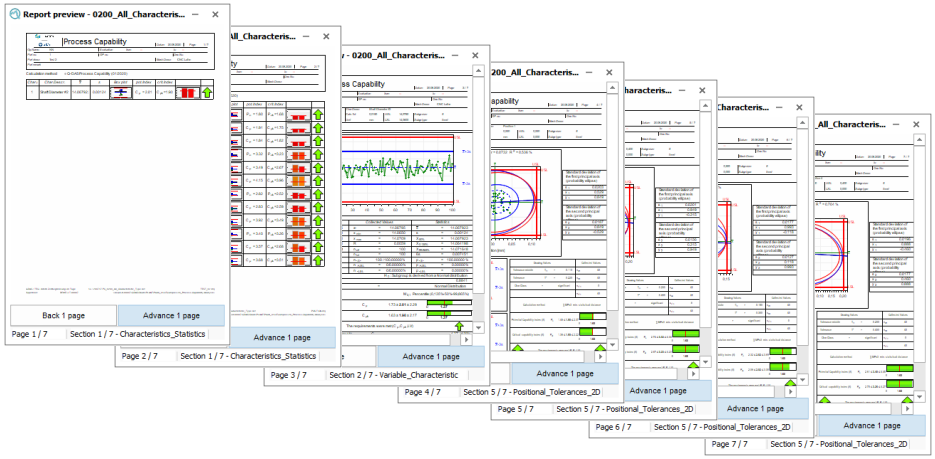
If you look at the file "0200_All_Characteristic_Type.def" in Form Designer, you can see that this report template consists of several sections. Each of the sections contains conditions, e.g., for graphic representation, or conditions specifying the data to be used for the display.

The first section of report template "0200_All_Characteristic_Type" contains an overview of various characteristics. Subsequent sections are configured to consider different types of characteristics. Variable characteristics, discrete characteristics, error log sheet, positional tolerances (2D), positional tolerances (3D), ordinal characteristics.



Even if the report template "0200_All_Characteristic_Type" was able to access different types of characteristics, only the sections that match the loaded data pool are used when printing a report.

For example, when the datasets "TEST_02.dfq" and "POSITION.dfq" are loaded, only the sections dealing with overview, variable characteristics and 2D position characteristics are used when printing a report using the report template "0200_All_Characteristic_Type". The report contains seven pages:



- One overview page per loaded part
- One page for the loaded variable characteristic
- One page for the loaded positional tolerance

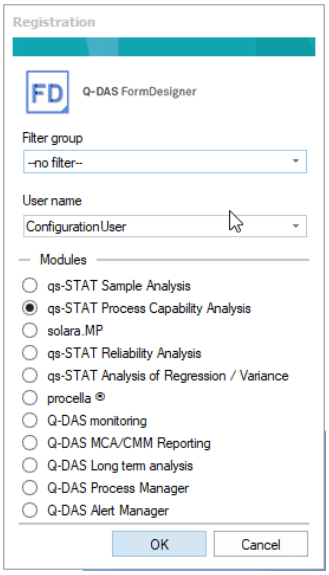
2 Launching Form Designer

There are two options for launching the Form Designer:

- As a stand-alone application
- As a function within another Q-DAS application.

Launching the "Q-DAS FormDesigner" application

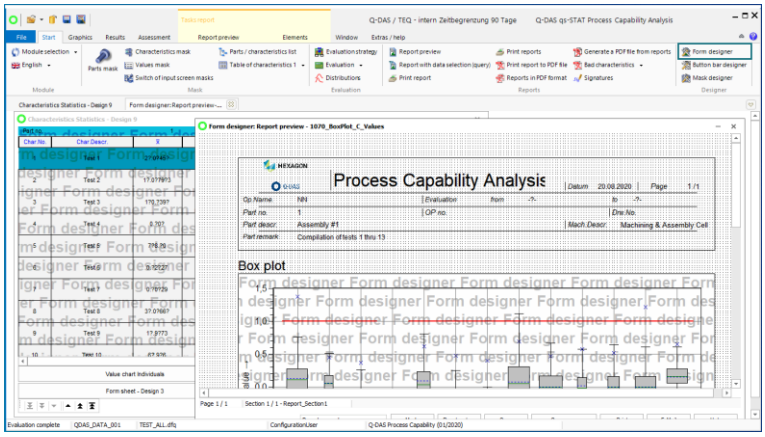
When launched as a stand-alone application, the Form Designer uses its own licence. The analysis methods, procedures, graphics and output points available in Form Designer are module-dependent. Therefore, it is necessary to select the module for which the Form Designer is to be started when it is launched.



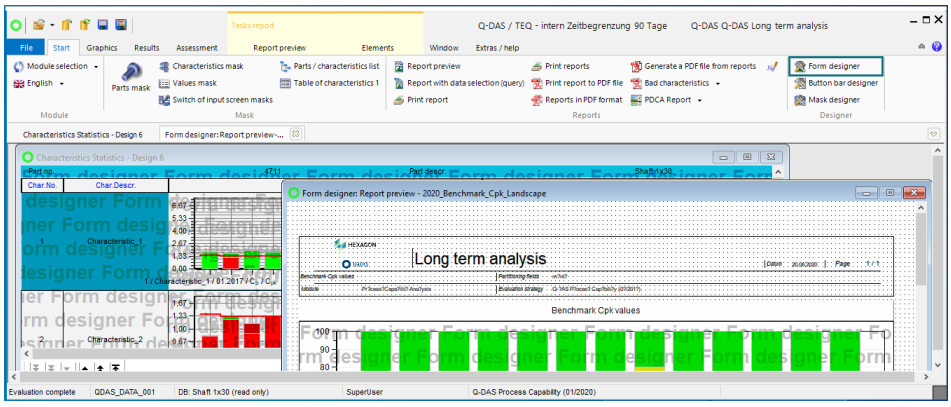
Due to the complexity of reports in the module Initial Sample Inspection Report "Q-DAS Q-ISR", this module is not available here.

First, the selected module is loaded. The Form Designer is used to generate report templates, therefore all graphics and reports are displayed with a watermark. The calculated characteristic values are displayed in encrypted form. Form Designer itself is launched via "Form Designer" in the "Start" tab of the ribbon.

Form Designer for the qs-STAT Process Capability Analysis Module



Form Designer for the Long Term Analysis Module



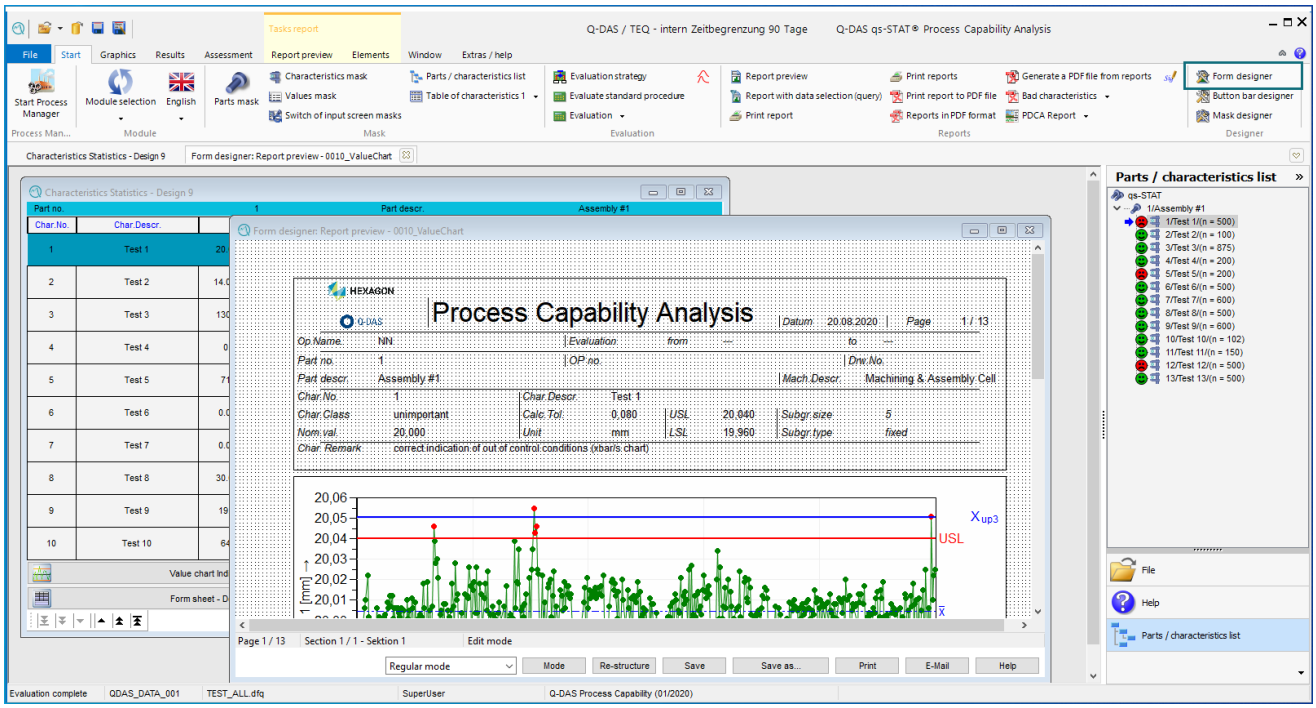
Launching Form Designer as a function in the ribbon of a previously launched Q-DAS application

When started as a function within another Q-DAS application, the Form Designer uses its own licence as well as the licence of the started module. The analysis methods, procedures, graphics and output points offered by Form Designer correspond to the started module.

In Q-DAS applications, Form Designer is started via "Form Designer" in the "Start" tab of the ribbon. If a Form Designer licence is available but the "Form Designer" button is not visible, it can be activated via configuration in the ribbon.

Using the licence of the started module, all graphics, reports and calculated characteristic values are displayed without encryption and watermark.

The following illustrates how to start Form Designer as a function in qs-STAT Process Capability Analysis.

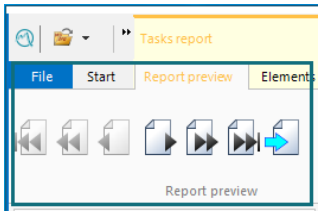


3 Structure of the user interface in Form Designer

In addition to the user interface within the "Form Designer" window, various navigation and control panels are also located in the ribbon. The content of the ribbon depends on context.

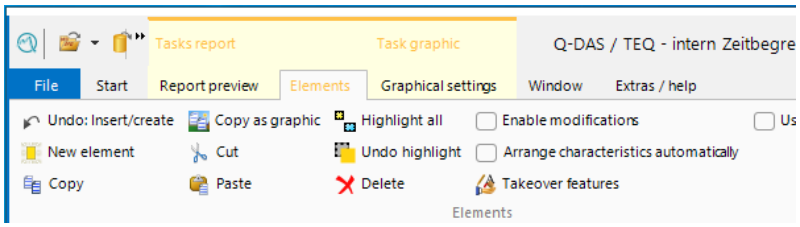
For example, the navigation elements in the "Tasks report" tab are only displayed if more than one section is available or if several report pages can be created for the loaded data set.

Navigation elements for switching between pages and sections in a report or a report template (form).

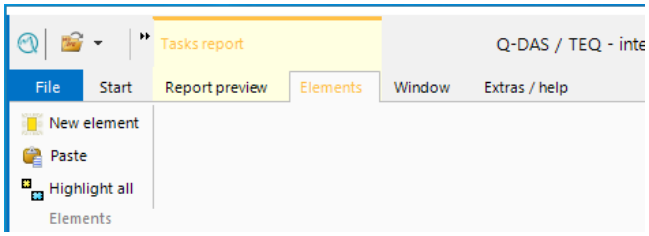


Elements are also displayed in the "Elements" tab according to the content of a report template.

The content of the "Elements" tab with the "Value chart" graphic added. When graphics are added, the "Graphics Settings" tab for configuring the graphic is also displayed.

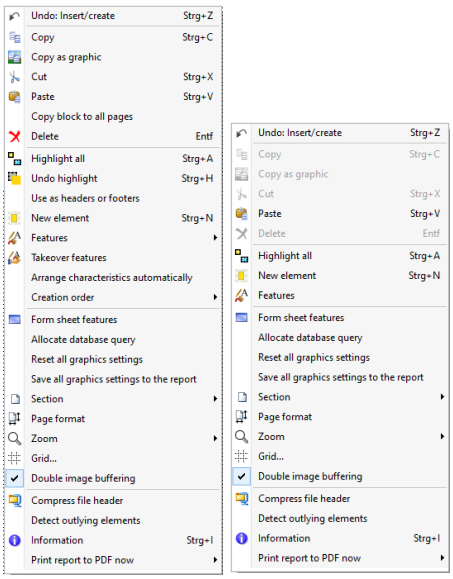


Contents of the "Elements" tab with an empty report template.



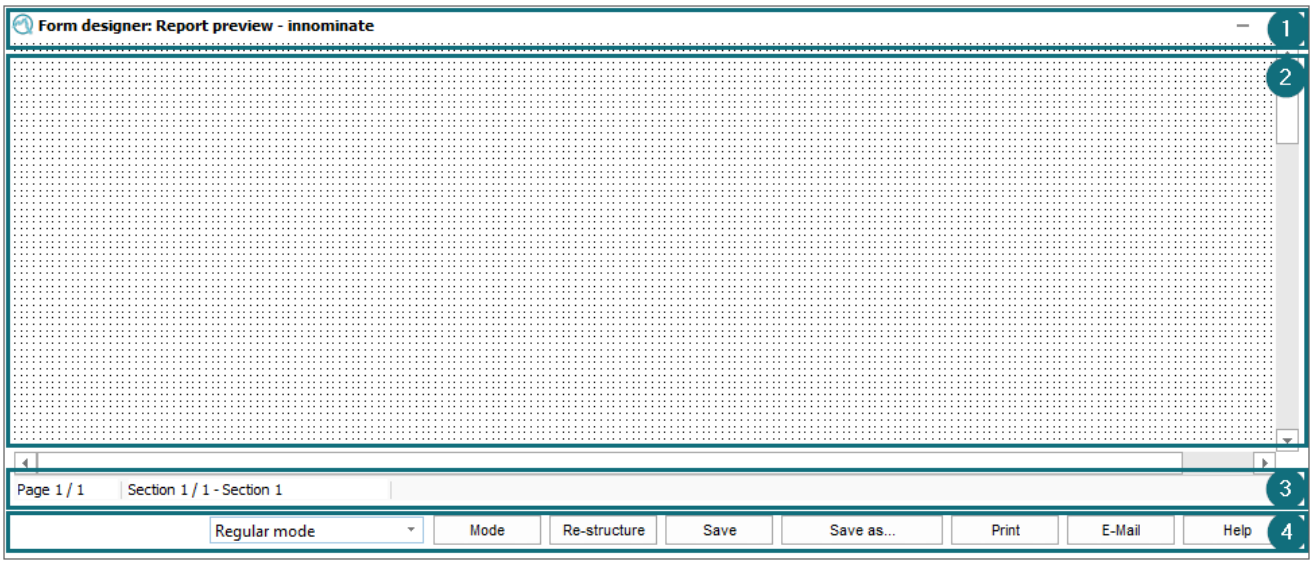
All the functions of the ribbon are also available in the context menu. Here, too, different contents are offered depending on where a right mouse click is performed.

For example, on the left is the context menu of the graphic "Value progression", positioned next to the context menu of the report template on the right.



Structure of the Form Designer window

The Form Designer window essentially consists of four areas.



1. Top info bar
The info bar at the top contains, among other things, the name of the form template.

2. Drawing area
Within the drawing area, the content of a report template is specified. Right-click on the drawing area to configure the basic settings of the Form Designer window, such as grid settings, zoom factor and page format.

3. Info bar at the bottom
The info bar at the bottom lists the current page number and the total number of pages, as well as the current section and the total number of sections. The distinction here is that the selections are displayed in general, while the page numbers and quantity are generated according to the loaded data pool. The page numbers for the loaded data pool correspond, so to speak, to the report that follows.

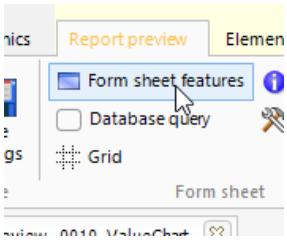
4. Application bar

- The display depends on the width of the window. If there is minimal space available for the application bar, symbols, rather than descriptors are displayed.

- Output display
  The display of K fields included in the drawing area can be selected from the drop-down menu.
  - Normal output
    Output points are displayed as short text, long text, content, etc., as selected.
  - Normal output + frame
    If the included elements do not already have a frame, they are displayed with the frame for normal output.
  - Key fields
    Output points are only displayed with K field numbers.
  - Key fields + frame
    If the included elements do not already have a frame, they are displayed with the frame for key field output.
- Mode
  With this button you can switch between view and edit mode. The edit mode is needed to create or adjust report templates. When the view mode is selected, a preview of the actual view of the report is displayed. The view mode is only used to display the elements and does not contain all available functions, such as bookmarks.
- Reload
  If a change is not immediately visible, the report template can be reloaded and updated by clicking this button.
- Save
  The loaded report template file is saved to the previous file path under the same name. The opened file is overwritten with the changes made without further prompts.
- If the file has been newly created and not yet saved, a "Save as" dialogue box opens automatically.
- Save as
  Clicking on this button opens a dialogue where you can specify a new storage location for the opened report template file. In this way, a copy of the open report template can be created.
- Print
  The "Print" dialogue allows you to specify how the opened report template file is to be printed. The printed pages correspond to the view mode.
- Email
  If an email client is installed, one JPG file per page is generated for the open report template and loaded data and are sent by email. If no email client is installed, a message is displayed.
- Help
  Call the Q-DAS helpline in the standard browser.

4 Form sheet features

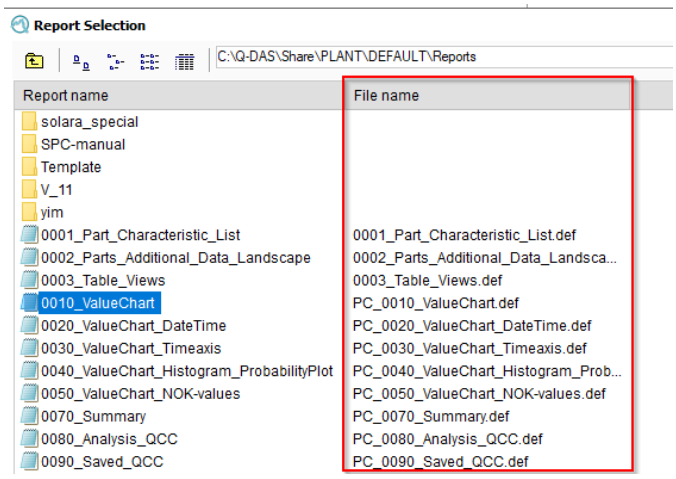
Basic settings are adjusted in Form sheet features. Depending on intended use, different tabs are offered and grouped by task.



4.1 Report name assignment

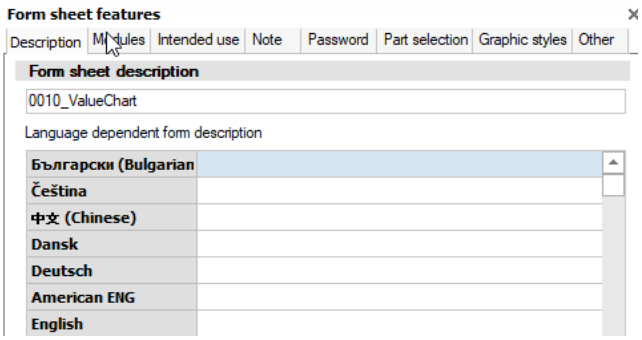
Each report template has a report name and a file name.

File name



For example, in Windows Explorer, the report template is listed as a DEF file.

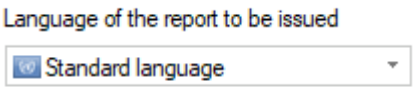
Report name



The report name can differ from the file name. It is shown in the report templates as well as in the reports themselves.

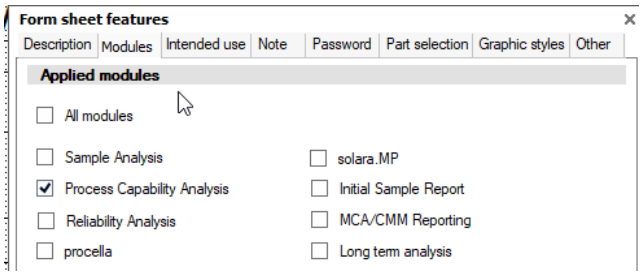
It is also possible to specify a different report name for each language in addition to the report name. This is useful if the report template is distributed across many language areas in a group.

This tab also provides the option to add a language to a report. If the corresponding language licence is available, the report is displayed in the specified language.



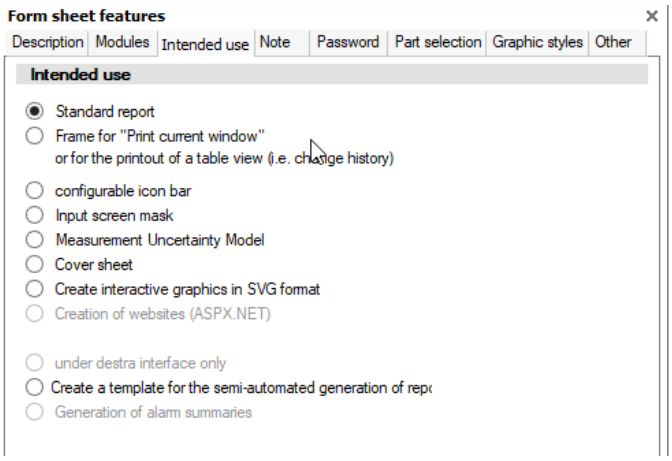
4.2 Assigning reports to modules

Due to the various different options in the modules, the modules for which the report is to be made available must be defined for each report. In each module, only the reports defined in "Form sheet features" are displayed for this module.



4.3 Assigning reports according to use

Report templates can be created for different purposes e.g., as placeholders for printing graphics or as cover sheets. When creating a report, only "normal reports" are listed in the report selection, while the report template selection in Form Designer lists all reports regardless of the defined purpose.



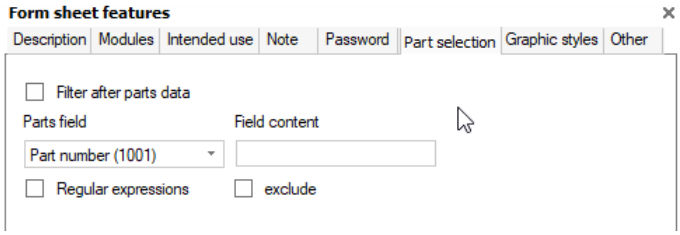
All other purposes are dealt with in separate documentations and are not explained here.

4.4 Password for reports

To protect report templates from changes, they can be assigned a password. A change to the report template can then only be made after entering the correct password.

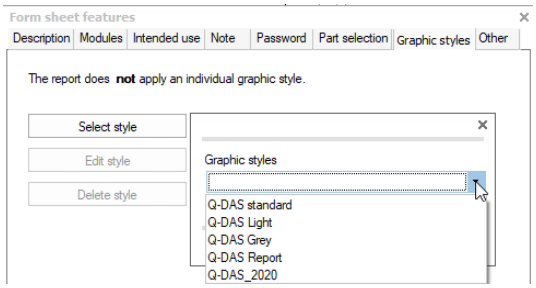
4.5 Part selection for reports

The report template itself can be prefiltered for part data.

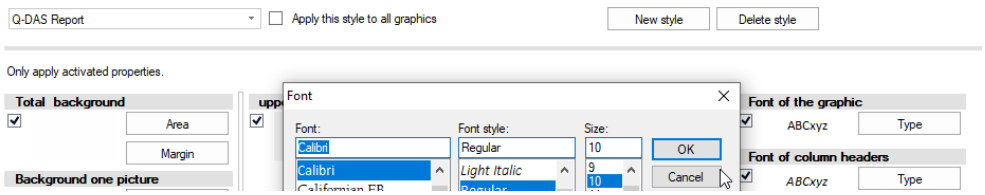


4.6 Graphic style for reports

From version 12 onwards, graphic styles are defined and offered for selection. With this setting, a specific style can be assigned to the report template directly.

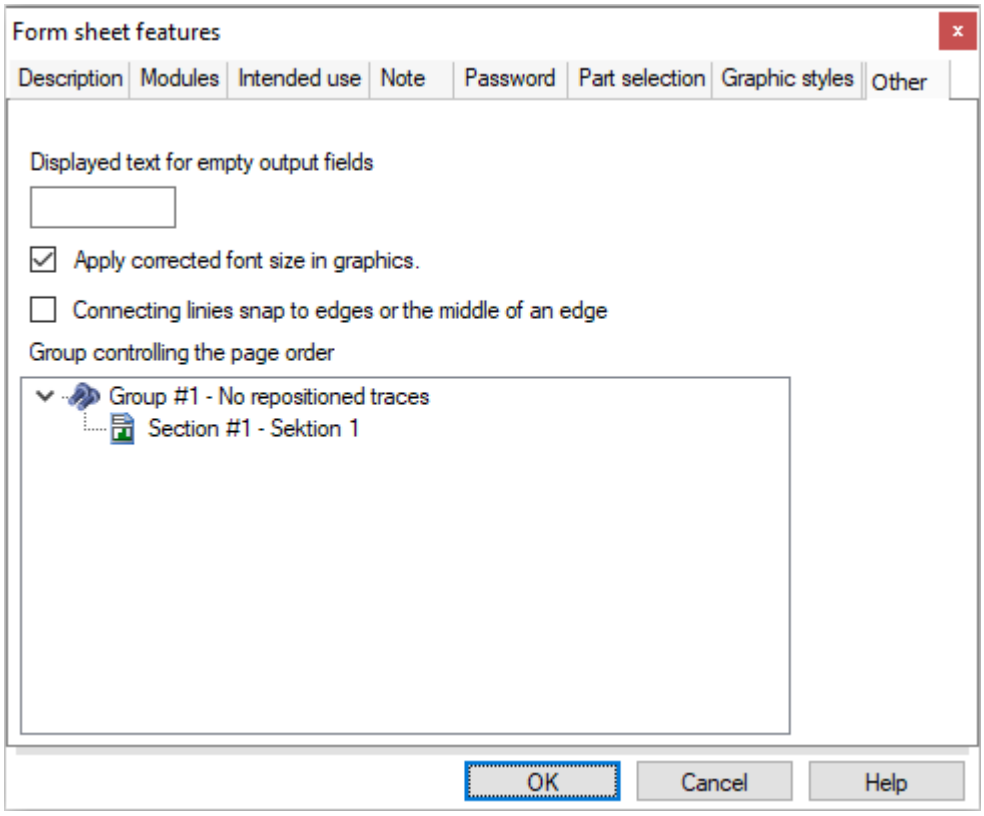


For reports, the recommendation is the style template "Q-DAS REPORT". The font "Calibri", which is considered to be particularly legible in paper form for western fonts, was used here.



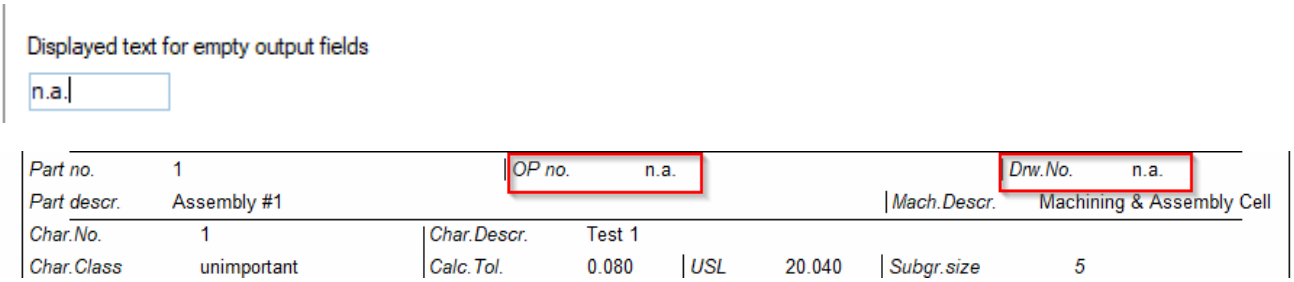
4.7 Other settings

In other settings, the way a report template behaves when creating a report can be configured individually.



4.7.1 Displayed text for empty output fields

In order to clearly indicate that the data set has no content for output fields without content, text can be entered here for all empty fields, e.g., "n.a." (not available).

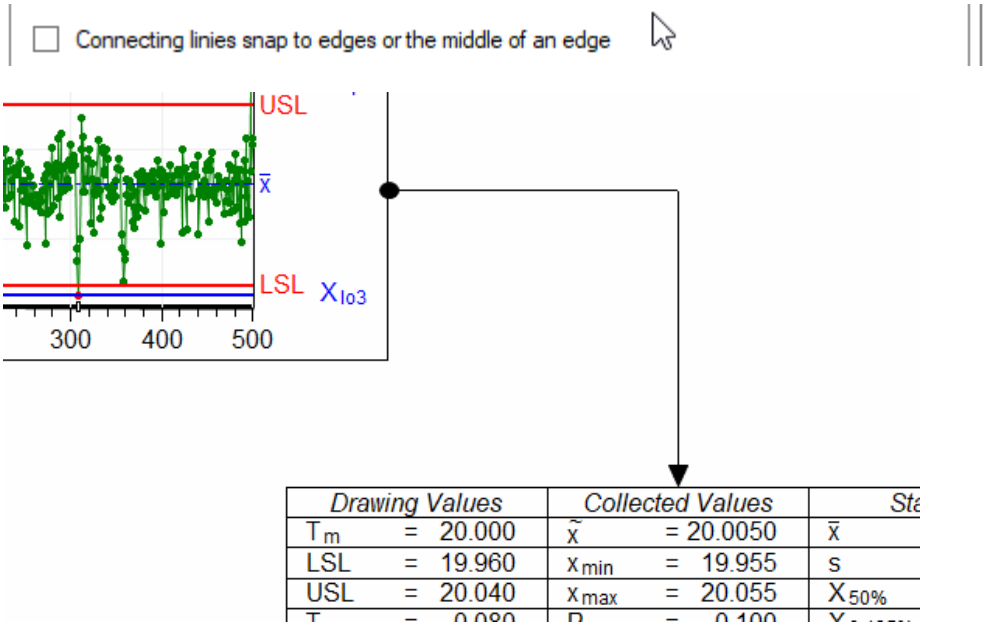


4.7.2 Apply corrected font size in graphics

This option is set by default. In graphics, fonts are attempted to be resized so that they are still legible.

4.7.3 Connecting lines snap to edges or the middle of an edge

If connecting lines are used, this option can be used to snap directly to corners or to the centre of the outer line.



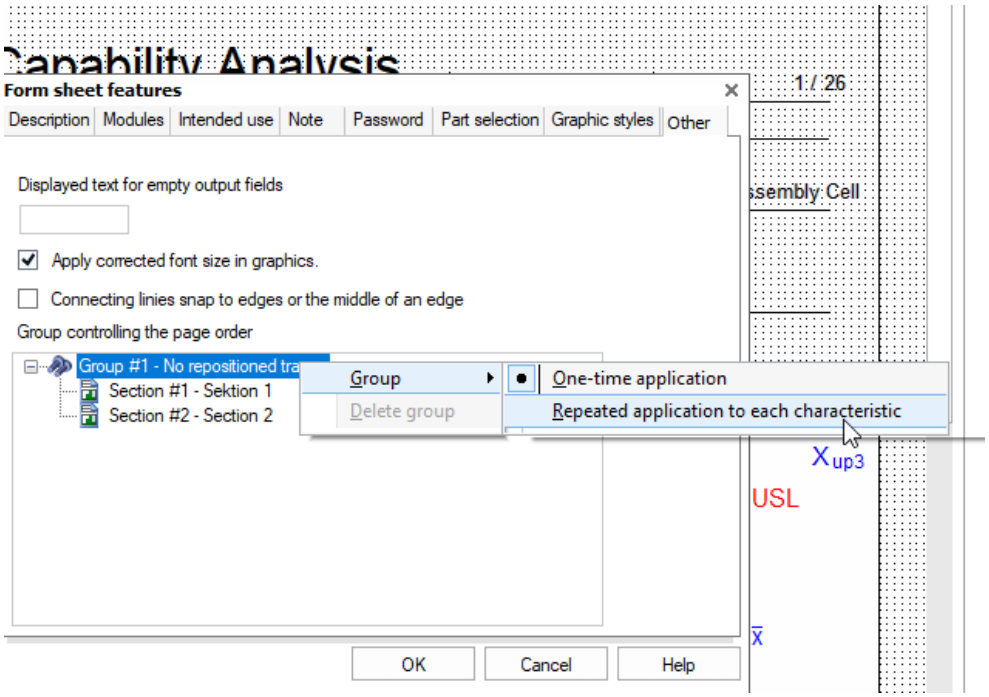
4.7.4 Page order group control

If several sections are included in a report template, the sections are printed one after the other (the creation of sections is explained in the following chapters).

Example: A report consists of two sections. In each section, one page is printed per characteristic. This amounts to a total of 26 pages for 13 characteristics.

- The first characteristic is printed on page 1 and on page 14.
- The second characteristic is printed on page 2 and on page 15.
- etc.

If, however, you first wish to repeat the characteristics in order to present these in a coherent manner, this can be done here.



If there are several sections, further groups can also be created here. They can then either first repeat the sections or the characteristics per section, independently of each other.

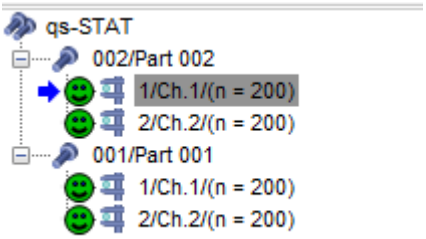
With reference to the above example, the following result will be obtained with the adapted configuration:

- The first characteristic is printed on page 1 and on page 2.
- The second characteristic is printed on page 3 and on page 4.
- etc.

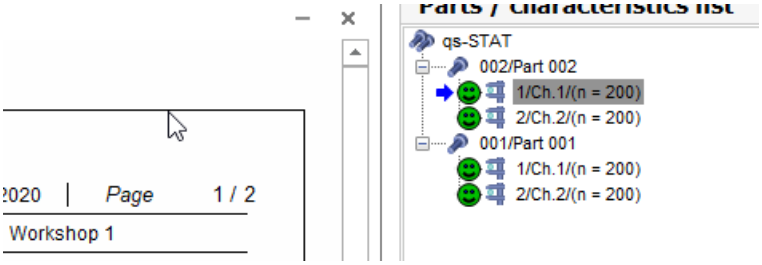
5 Section properties and page creation

Each report template contains at least one section. The majority of reports contain only one section, but there can be more than one section in a report. Each section controls its own page creation.

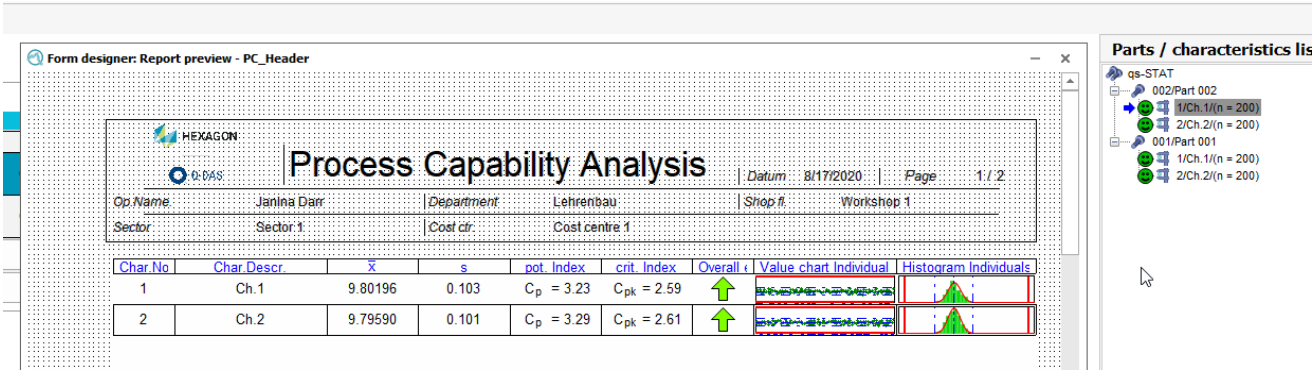
In general, page creation is automatic. To clarify this by way of example: 2 data sets are loaded at the same time, 2 characteristics per part, and a report template is opened which only shows the page numbers.



Even without any parts or characteristics content, one page per part is created:

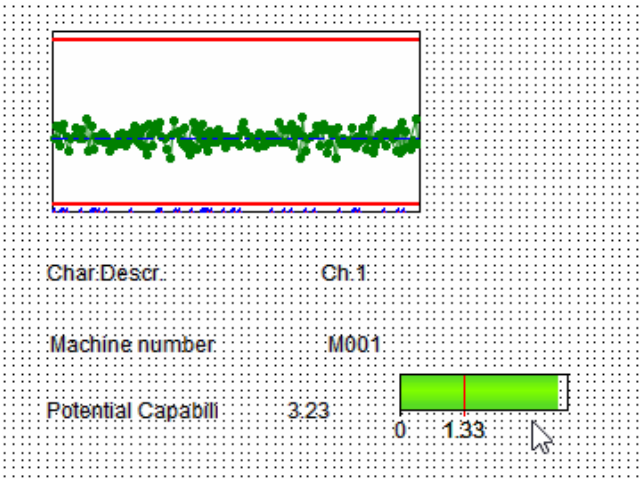


If part graphics are included, such as Characteristics Statistics, box plot or C-values, nothing changes in page creation, because these are graphics per part:

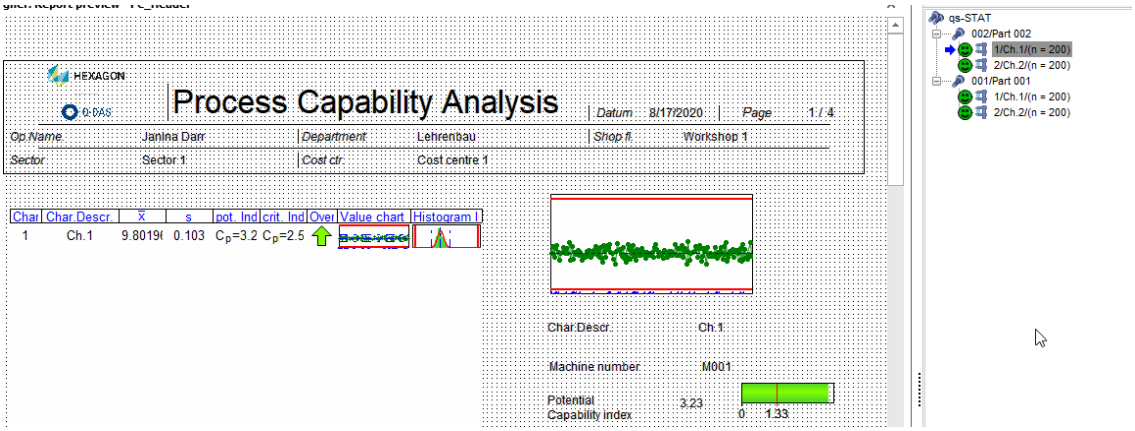


However, if an element with a characteristic reference is included, e.g.

- characteristic graphics (value chart, histogram...)
- K fields of characteristic level (K2xxx, K8xxx)
- K fields of value level (K00xx)
- results at characteristic level (Cp / Cpk.....),

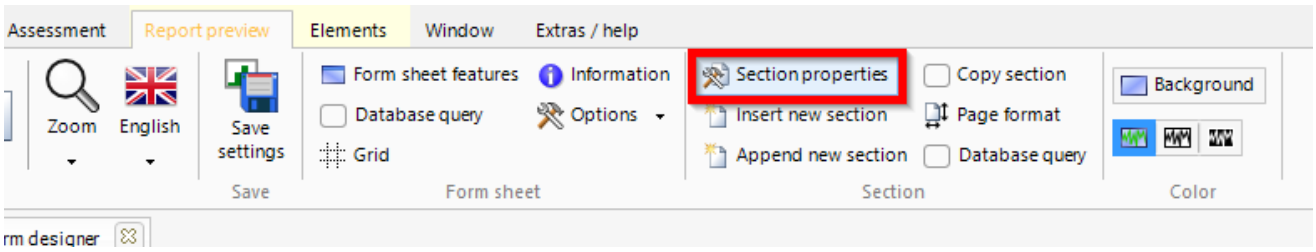


then a page is automatically generated per characteristic:



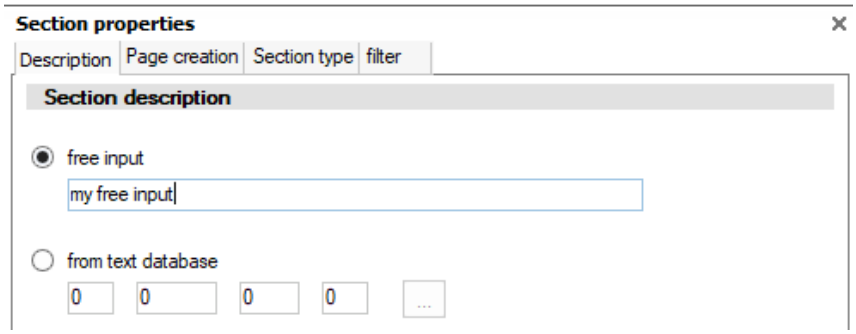
This also has an effect on part graphics. Also, only the current characteristic is shown in the part graphic.

This feature, among others, can be set in Section properties.

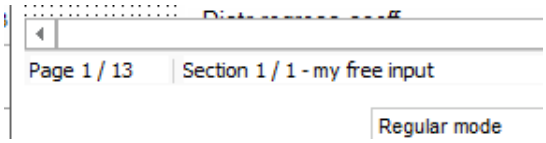


5.1 Description

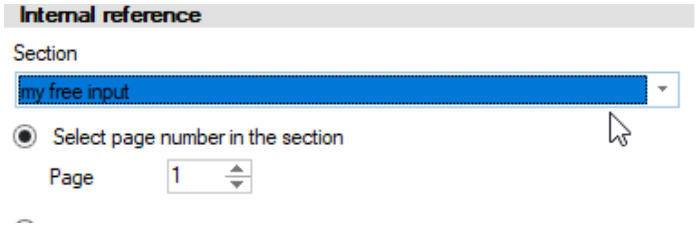
When using several sections, it is advisable to assign a precise name to each section:



This name is displayed, for example, at the bottom of the Form Designer:



Or used for links:

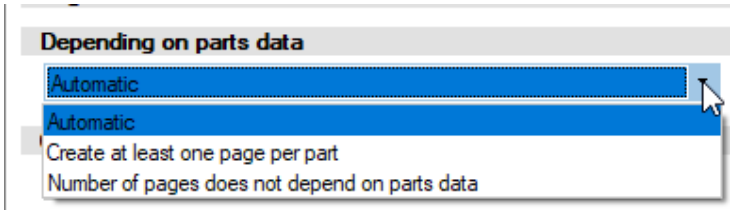


5.2 Page creation

For most reports, automated page creation is sufficient. However, depending on data pool or customer requirements, various settings can be adjusted.

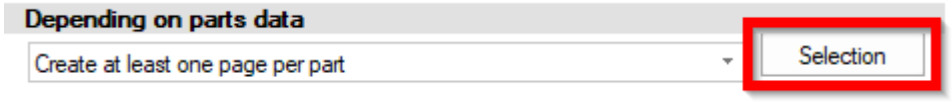
The options in connection with the graphics used in each section are so varied that it is not possible to describe them all here. For each of the selection options offered, an attempt is made to illustrate it with a relevant example.

5.2.1 Depending on parts data

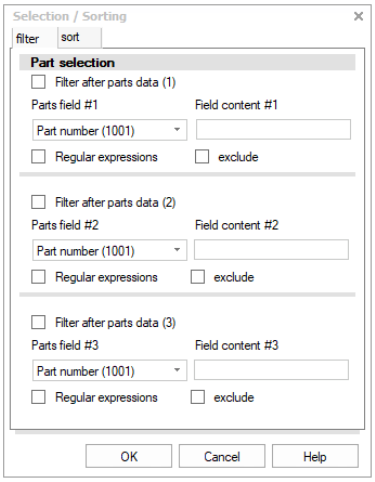


5.2.1.1 Create at least one page per part

At first glance, the option "Create at least one page per part" is nothing more than automatic page creation. The difference is that the selection option is active:

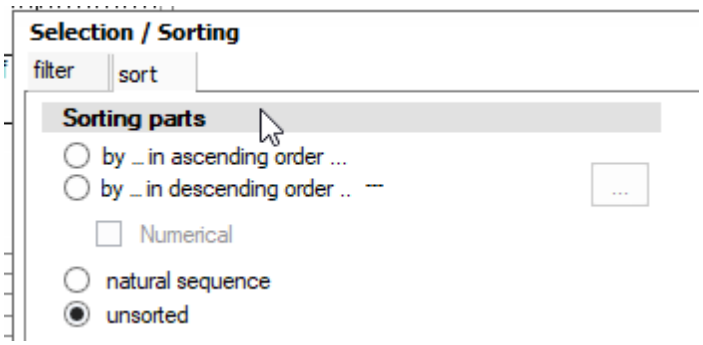


This provides further limited filtering options. If a larger data pool is loaded, but only certain parts are to be shown per section, you can apply a filter here.



If the report template consists of only one section, this option should not be used. In this case, filtering of this kind should be carried out in the "Read from database" dialogue.

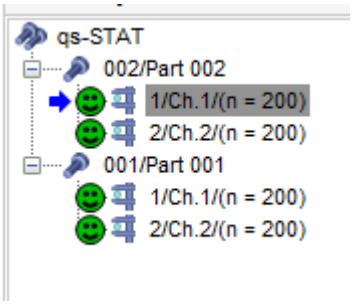
In addition to the filter option, a part sorting order can also be selected. In contrast to filtering, this is also of interest when only one section is used.



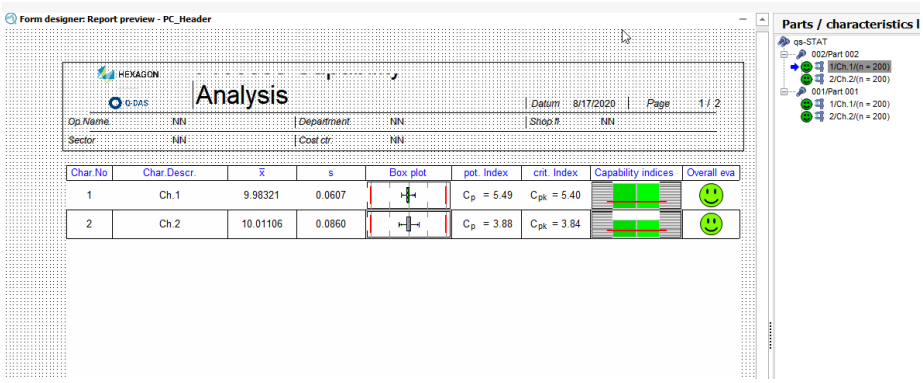
5.2.1.2 Number of pages does not depend on parts data

Especially when there are few measured values per part, this option is a useful option for report design.

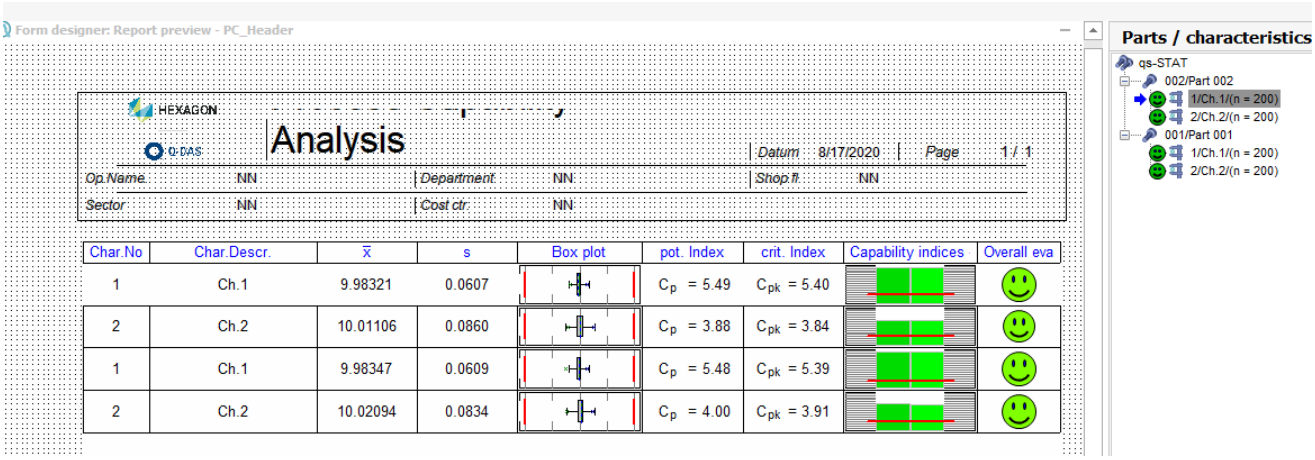
As an example, 2 parts with only 2 characteristics each were loaded:



If a report with e.g. Characteristics statistics is required, the automation would create one page per part. This would mean a lot of wasted space in the report:

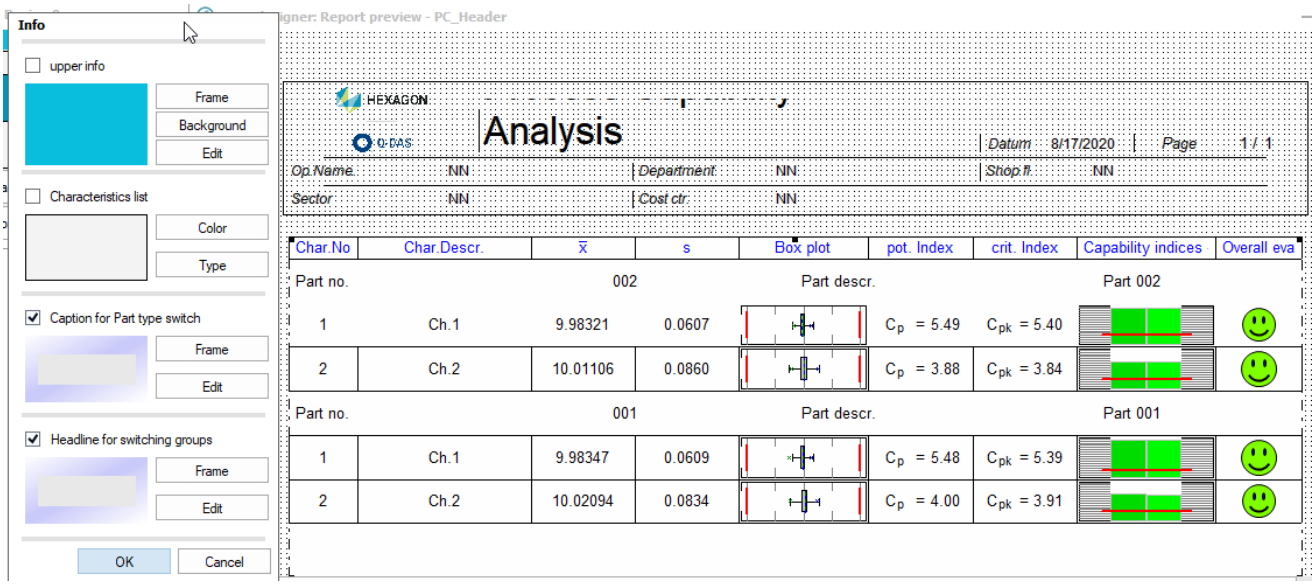


Switching to "Number of pages does not depend on parts data" means that all 4 characteristics of the 2 parts are shown.

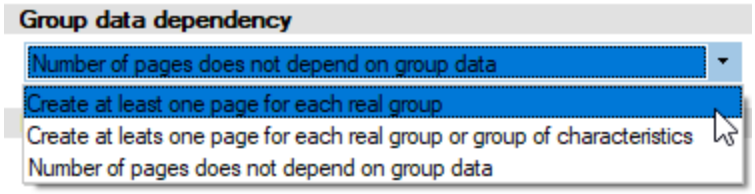


However, any allocation to the part is not visible in the characteristics for the time being. Similarly, it is not recommended to show part data in the header of the report, because this would only show the information of the first part!

Therefore, for such reports, information on the part would then have to be configured in the graphics. For example, in "Characteristics statistics", one heading per part would need to be inserted.

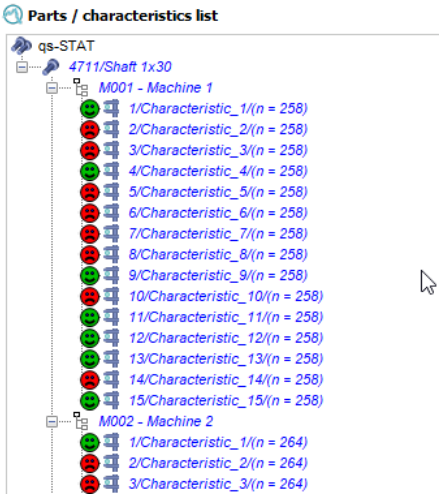


5.2.2 Group data dependency

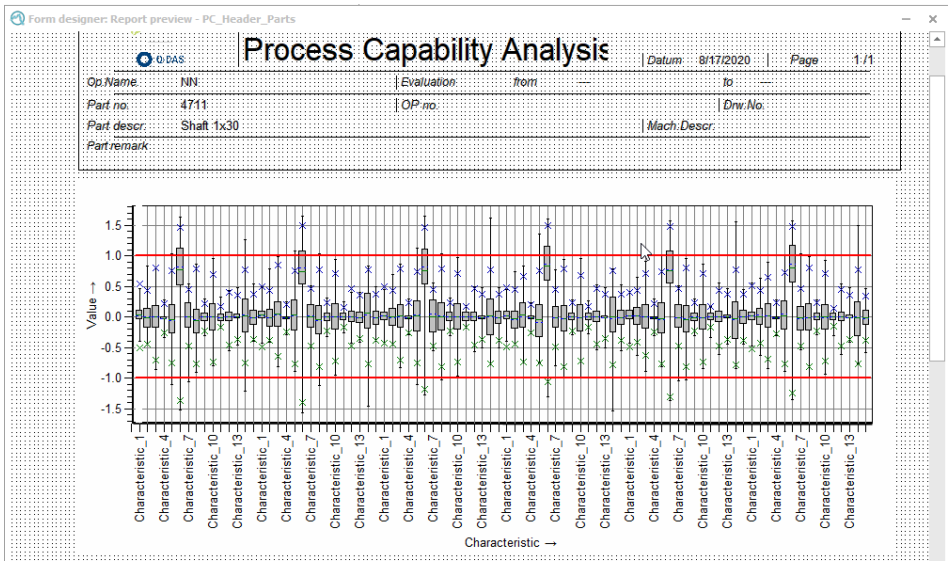


5.2.2.1 Create at least one page for each real group

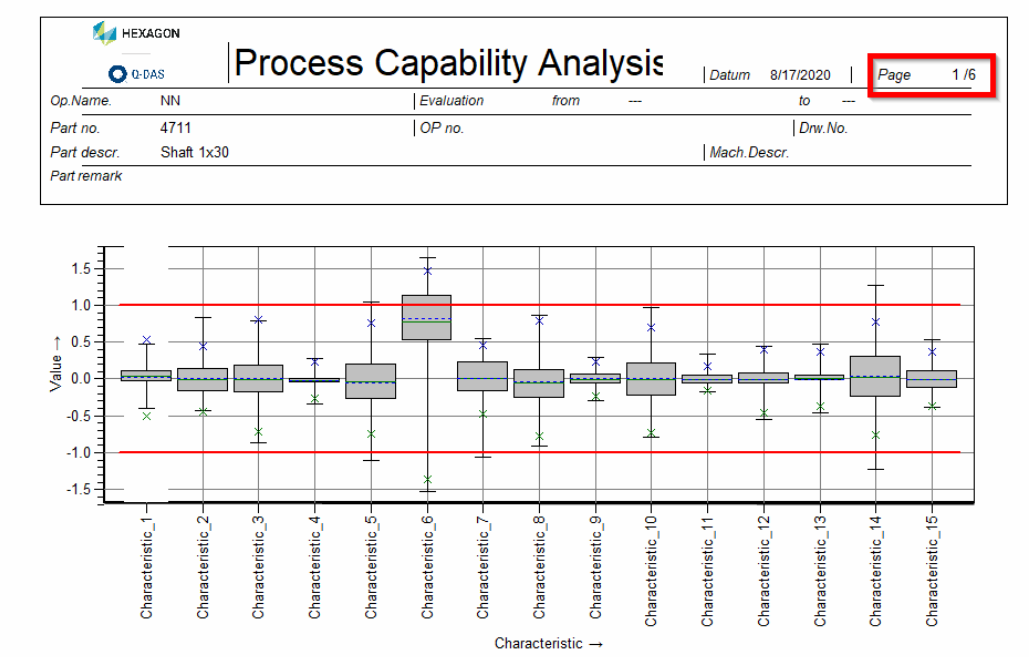
Real groups are groups that are neither part nor characteristic. An example: a part is loaded from the database, automatically divided by machines. A virtual group structure is formed and one group is created per machine:



Now a graphic like the box plot is inserted. In the first step, this tries to show all loaded characteristics. The higher-level groups, such as "M001 - Machine 1", are not listed separately.

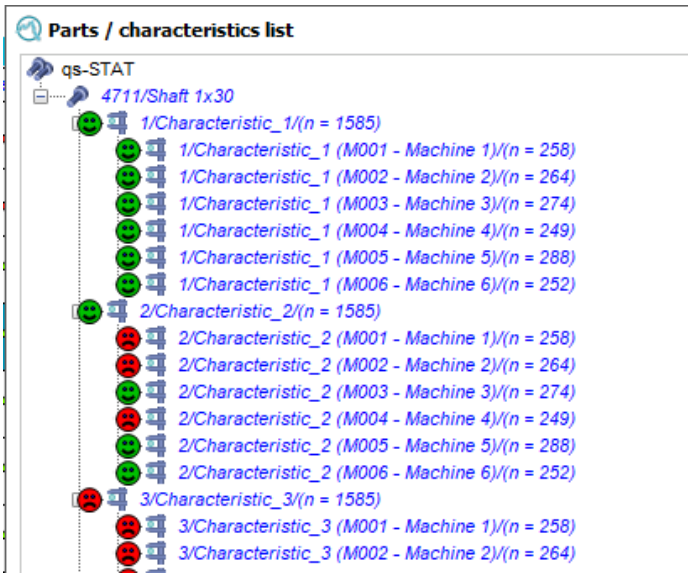


Changing to "Create at least one page for each real group" means that one page per characteristic group, in this example per machine, is created for the loaded data:

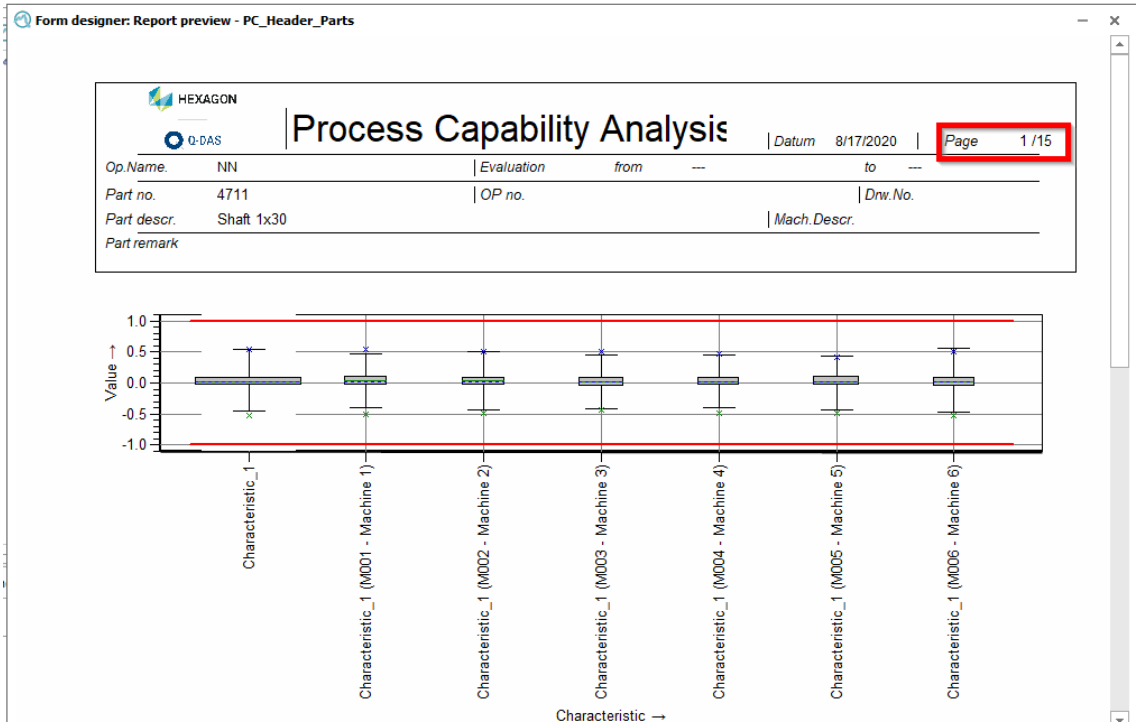


5.2.2.2 Create at least one page for each real group or group of characteristics

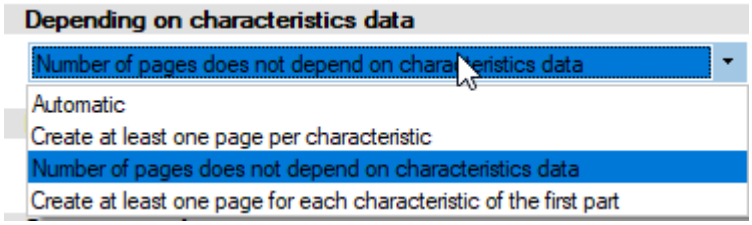
This option also covers characteristics groups where the group element itself contains measured values. An example: Another option of automatic selection, with the superordinate characteristics containing summary measured values.



With the option "Create at least one page for each real or characteristic group", this group type is also detected and gets its own page per superordinate characteristic group:



5.2.3 Depending on characteristics data



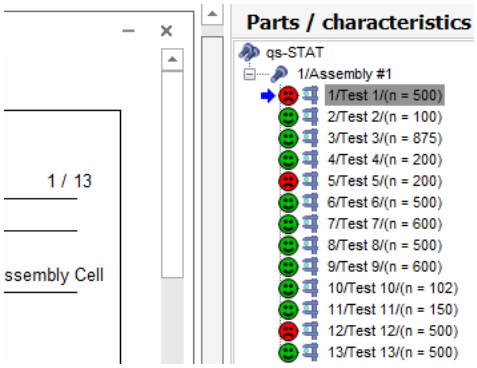
5.2.3.1 Create at least one page per characteristic

As with part data, this option without additional settings is the same as the "automatic" option. This option only acquires importance when settings are adjusted in "Selection".

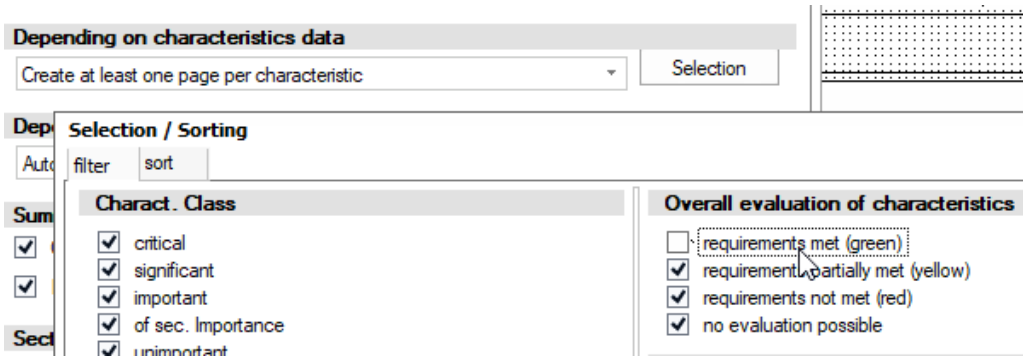
An example:

In the section, one page is to be printed for each characteristic, but only non-functioning or conditionally functioning characteristics are to be printed, as well as sorted according to the worst Cpk value.

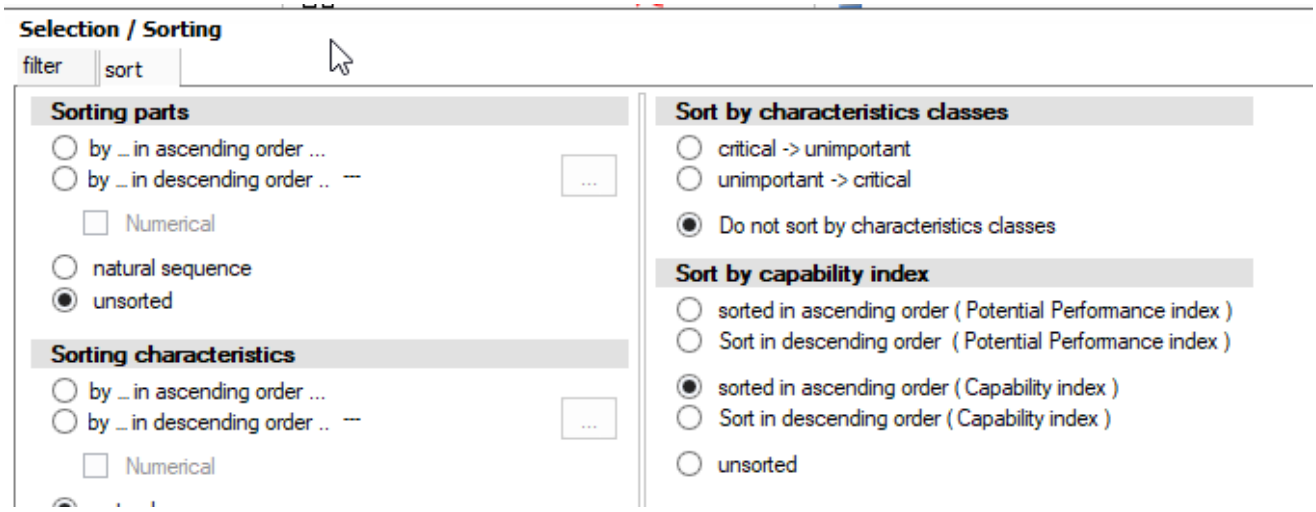
Using the Q-DAS - Strategy of 2020 and the file "Test_ALL.dfq", a standard report has 13 pages, with 13 features:



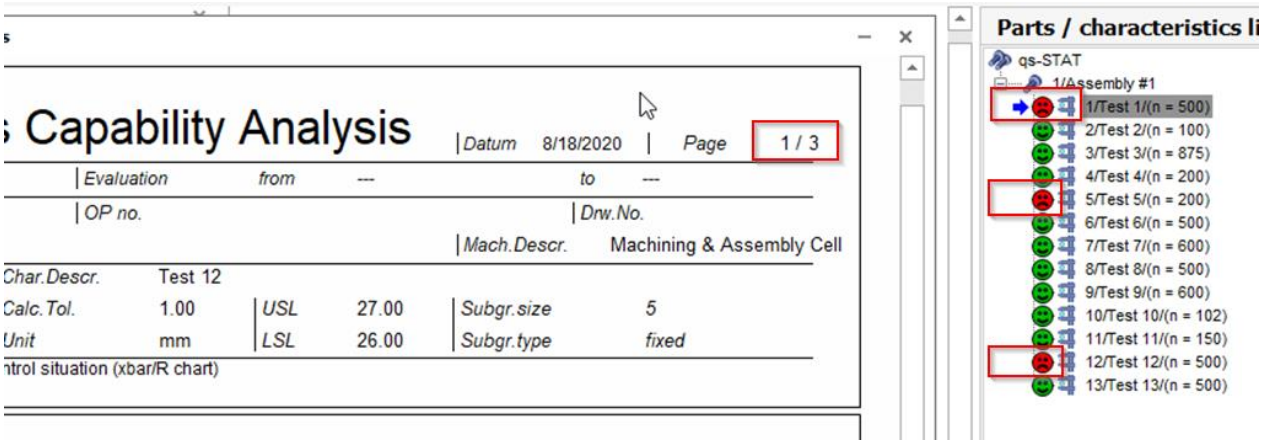
In section Properties, the functioning characteristics are now deactivated:



As with the sorting options, the worst Cpk value comes first:



The report now only shows the bad characteristics, starting with the worst Cpk value.

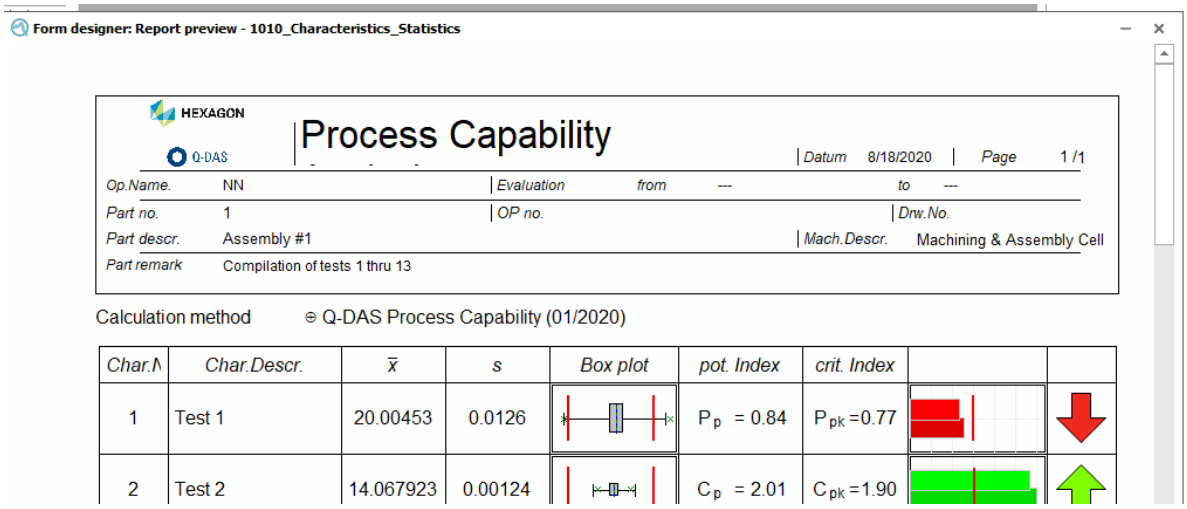


5.2.3.2 Number of pages does not depend on characteristics data

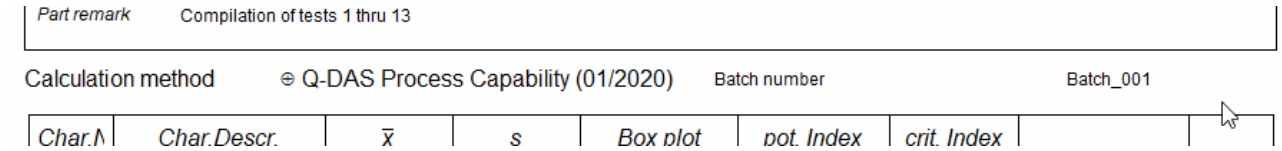
In most cases, this option is only needed if the report is to show one page per part but characteristic or measured value information is shown in the header data.

An example:

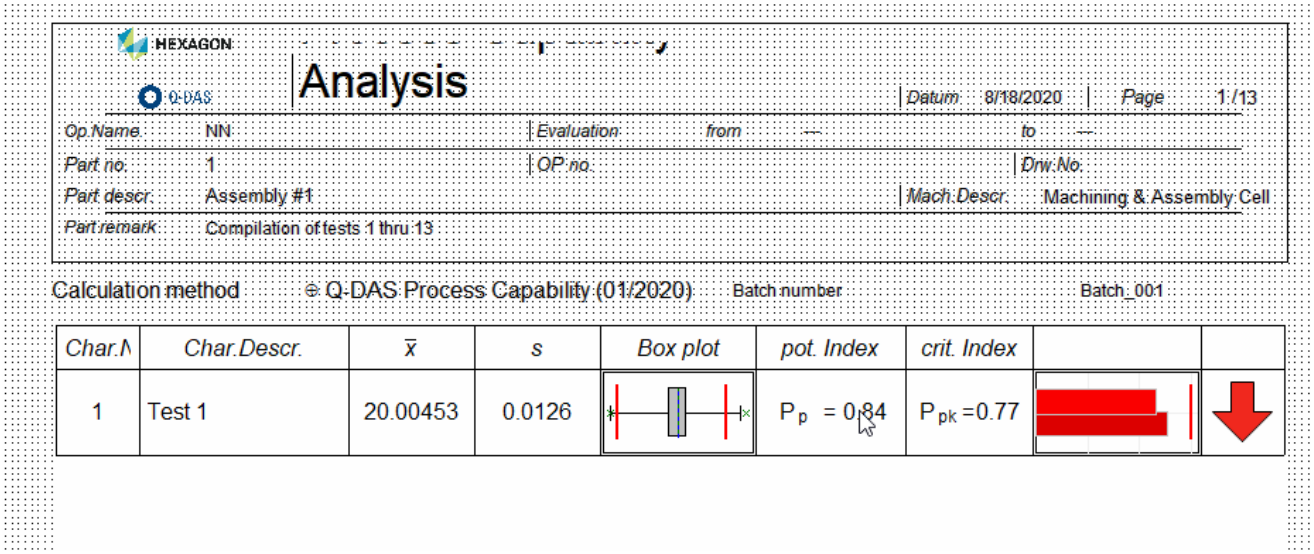
The basic report shows the graphic "Characteristics Statistics":



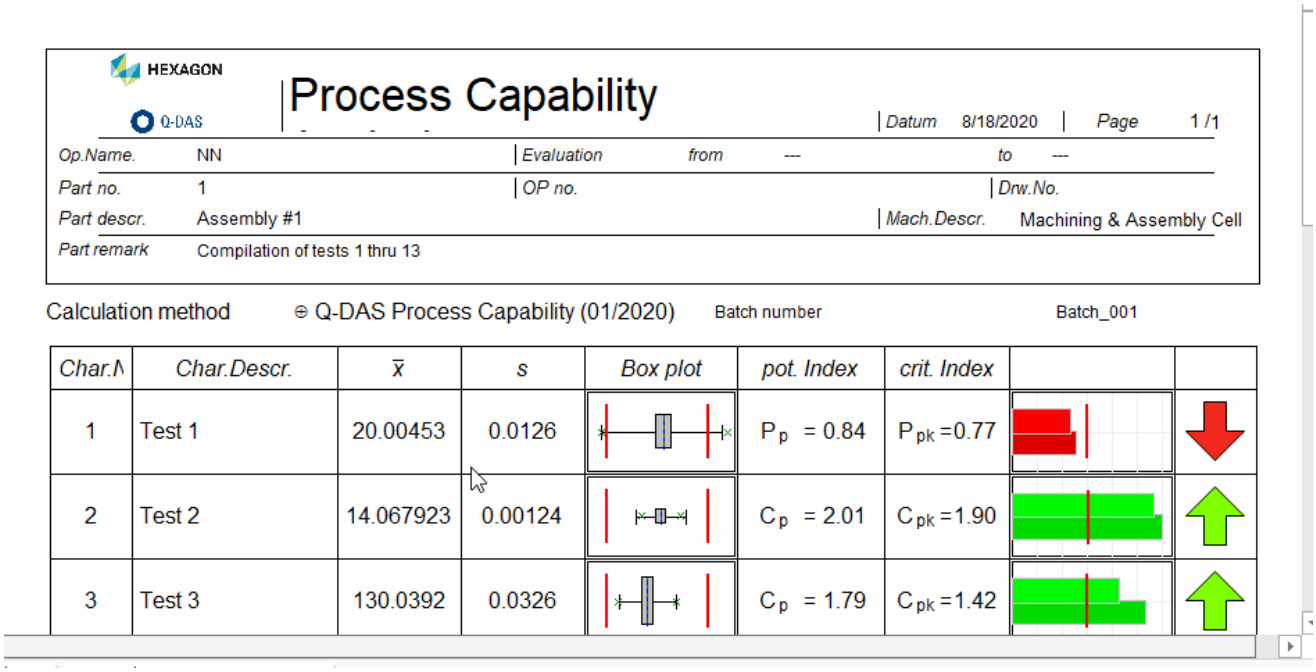
Due to the loaded data pool, only one batch number is loaded. However, this should now appear in the header:



This is value/characteristic information now, which automatically shows only one characteristic per page.



Only when the option to make the report independent of characteristic data is selected are all characteristics again displayed together on one page.



HEXAGON
Q-DAS

Process Capability

Datum 8/18/2020 | Page 1 /1

Op.Name.	NN	Evaluation	from ---	to ---	
Part no.	1	OP no.		Drw.No.	
Part descr.	Assembly #1			Mach.Descr.	Machining & Assembly Cell
Part remark	Compilation of tests 1 thru 13				

Calculation method ⊕ Q-DAS Process Capability (01/2020) Batch number Batch_001

Char.N	Char.Descr.	$\bar{x}$	s	Box plot	pot. Index	crit. Index		
1	Test 1	20.00453	0.0126		P_p = 0.84	P_{pk} =0.77		
2	Test 2	14.067923	0.00124		C_p = 2.01	C_{pk} =1.90		
3	Test 3	130.0392	0.0326		C_p = 1.79	C_{pk} =1.42		

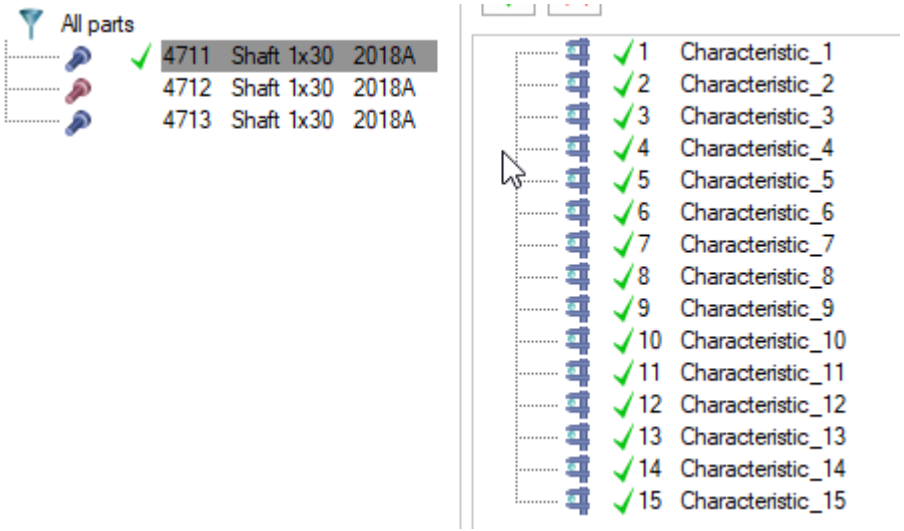
In this case, it has to be accepted that this characteristic information (here, the batch number) is only shown from the first characteristic / first measured value. All other information is ignored.

5.2.3.3 Create at least one page for each characteristic of the first part

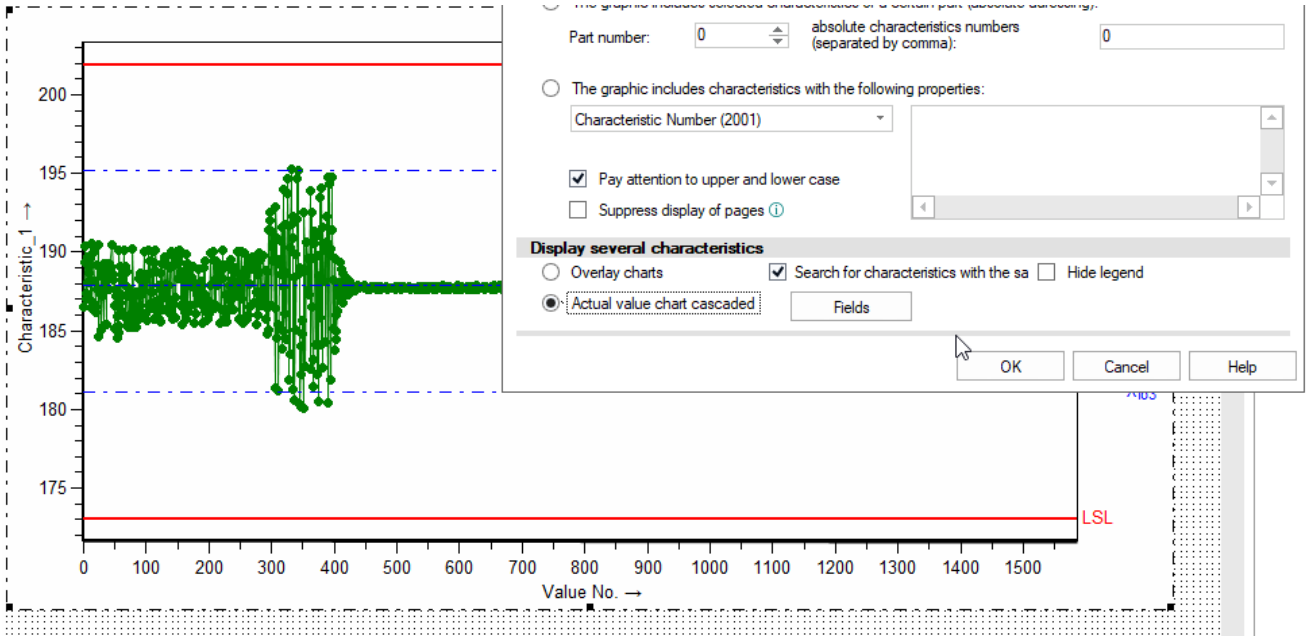
This special option enables a summary of the loaded datasets when generating the report. If the loaded data consists of several inspection plans with the same characteristic structure, only the first data set is used to generate the report pages. However, the characteristic information is displayed in summary for all loaded datasets.

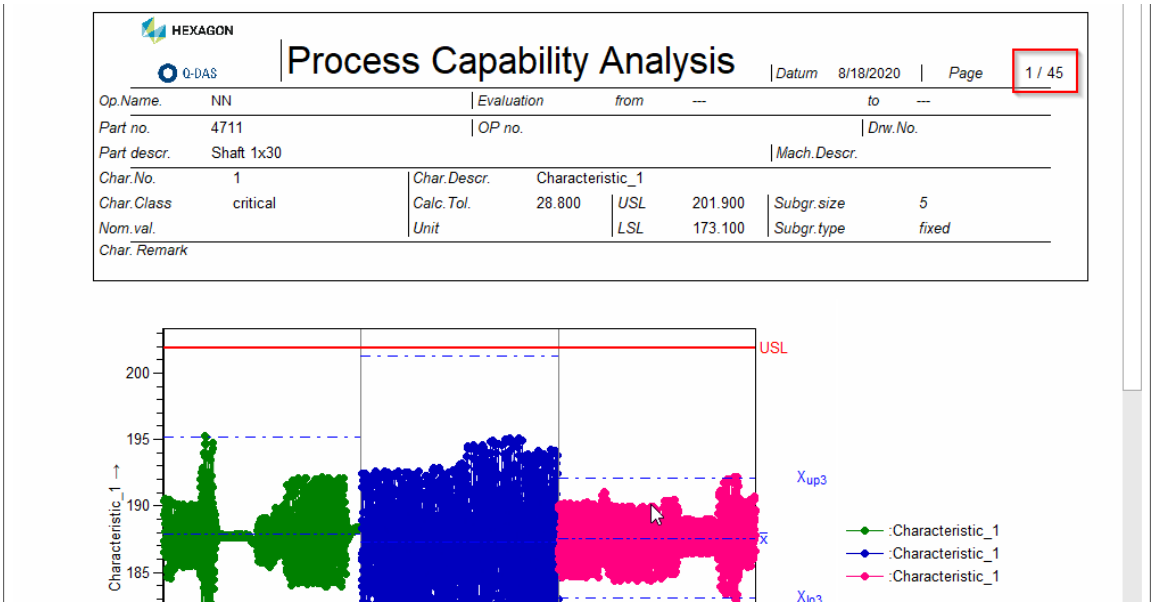
Example:

2 or more parts which have the same characteristics (compared with different systems / machines or similar) are loaded from the database.



However, the value chart displayed in the report is to show all characteristics with the same name sequentially across the entire opened data pool.





In spite of this, 45 pages (3 parts, 15 characteristics each) are still shown due to the dependency of characteristics. Each page then searches for the other characteristics with the same name in the data set, starting from this characteristic:

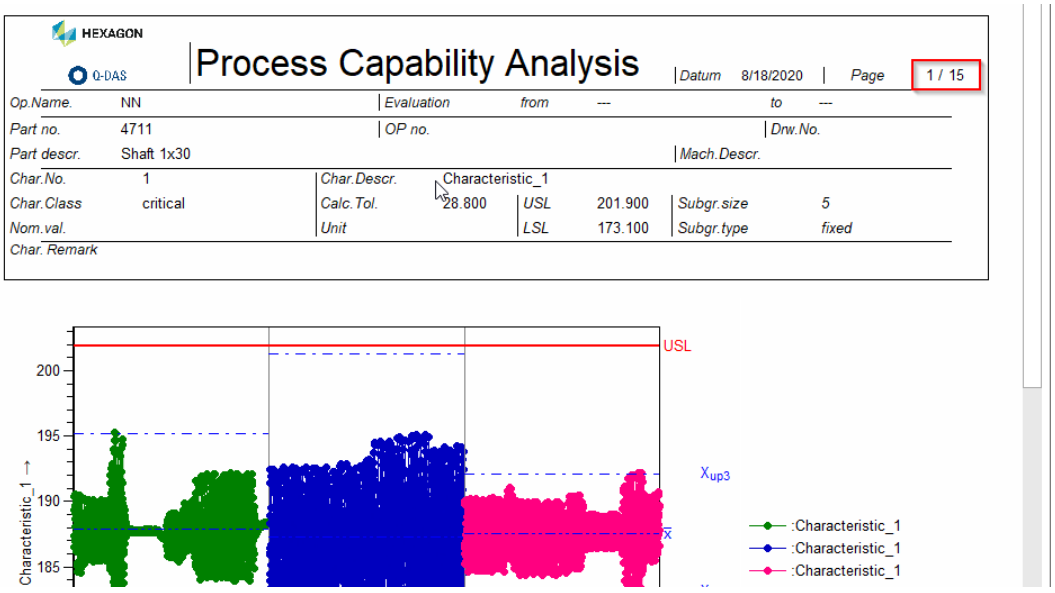
Page 1 shows part 1 characteristic 1, part 2 characteristic 1, part 3 characteristic 1

...

Page 16 shows part 2 characteristic 1, part 3 characteristic 1, part 1 characteristic 1

etc.

If the option "Create at least one page for each characteristic of the first part" is selected now, only 15 pages are created for the 15 characteristics of the first part, and on each page the characteristics of all parts are displayed in the value chart.



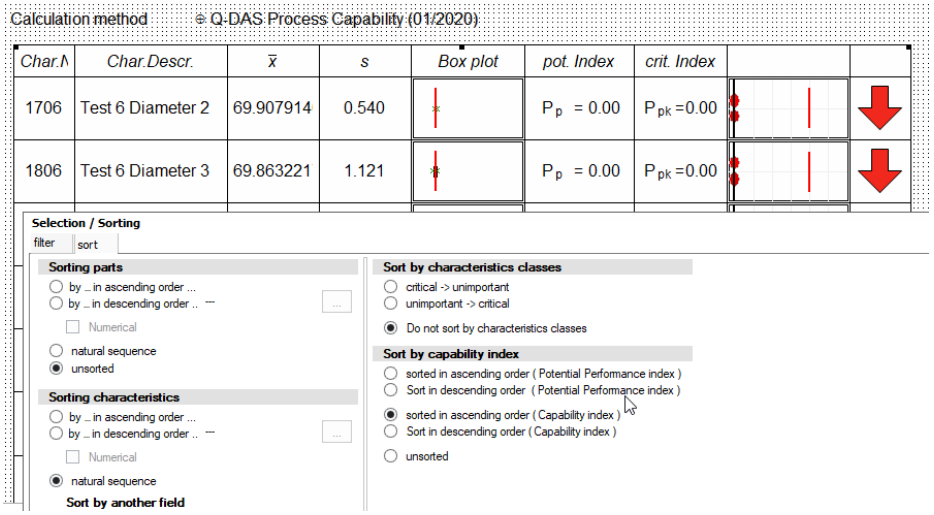
5.2.3.4 Create consecutive pages

☑ Create consecutive pages

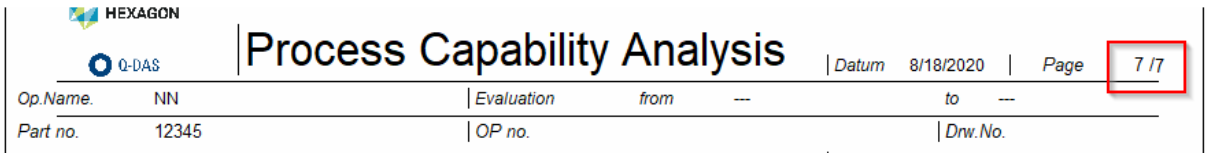
If summary graphics such as characteristics statistics or BoxPlot are used, continuation pages are automatically created after the defined number of characteristics has been reached.

If this option is deactivated, no further pages are generated. This is useful, for instance, for the display "The worst 15".

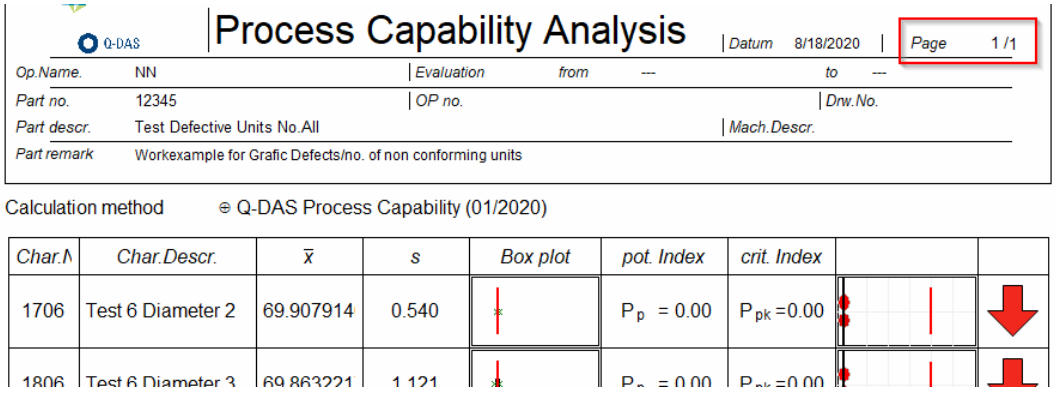
A data set with 105 characteristics is loaded. (Out_of_spec_all.dfq). In the report, characteristics statistics is sorted by Cpk, worst first:



7 pages are still printed due to the continuation page creation:

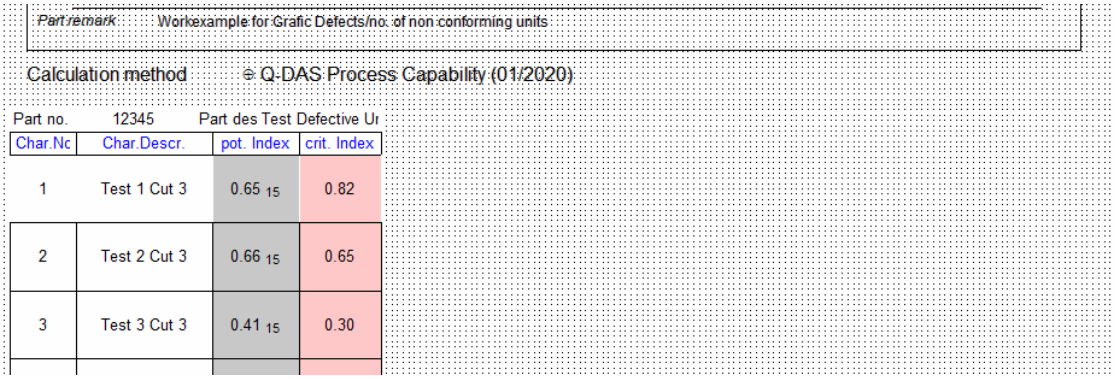


If this option is deactivated, only the first page with the 15 worst characteristics is printed, and the following pages are suppressed.

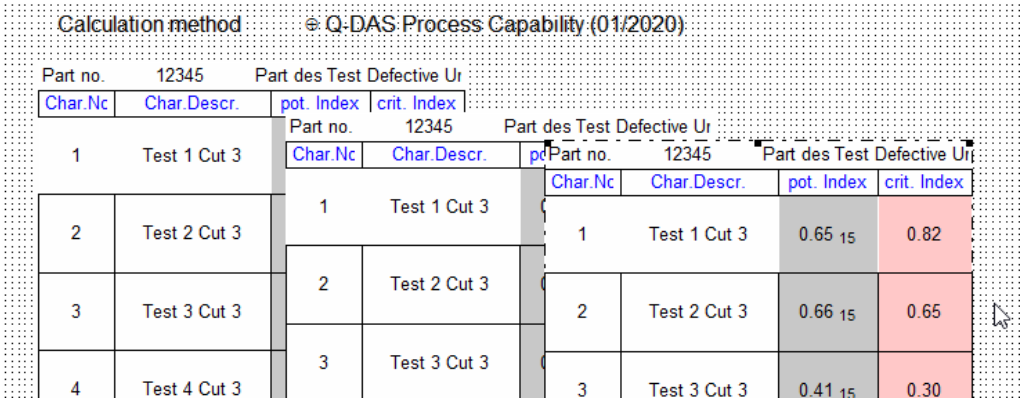


5.2.3.5 Multiple identical summary graphics may be printed on the same page

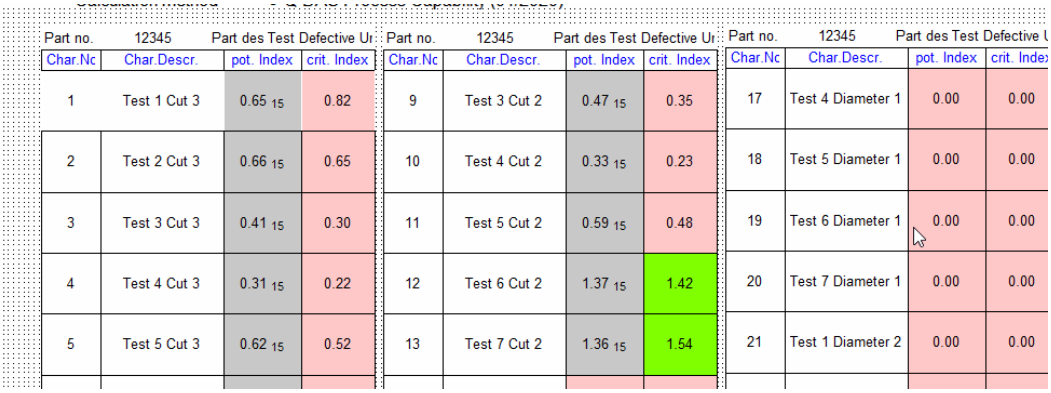
Sometimes it is useful to have several identical summary graphics on one page. This can be done, for instance, when the summary graphic itself can be kept very small and there is still space available:



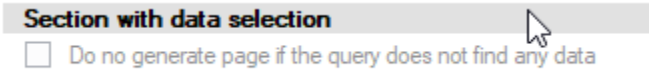
After configuring the first graphic, it is copied in Form Designer and pasted again (NOT recreated!):



After a reload of the form, the characteristic data is updated and shows the characteristics continuously next to each other:



5.2.3.6 Do no generate page if the query does not find any data

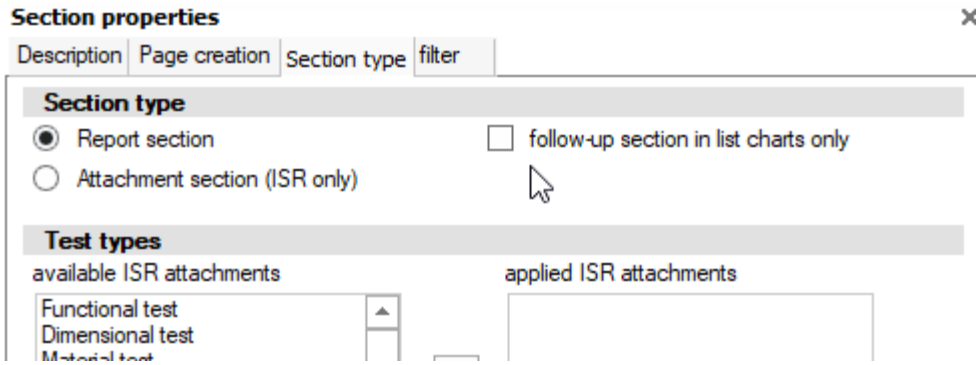


This is a special option when using reports with several sections, where each section has its own data selection. (For a description of how this can be done, see separate manual).

If the data selection of a specific section cannot load any data from the database, this option completely prevents the creation of pages.

This should only be activated if a data selection has been previously assigned to the section.

5.3 Section type

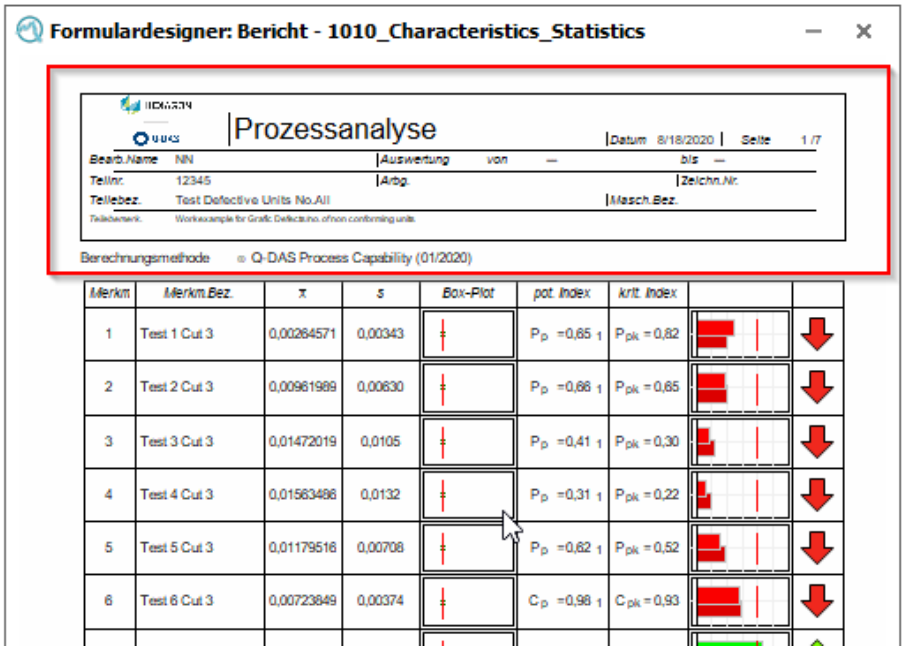


In section type, it is indicated what the section is used for. A special case is the section design for an initial sample inspection report and its special system types. The special features of report design for ISR must be worked out in a workshop with the Training Department.

In addition to "normal" definition for "report section", it can also be specified that this section is to be used as "follow-up section in list charts only".

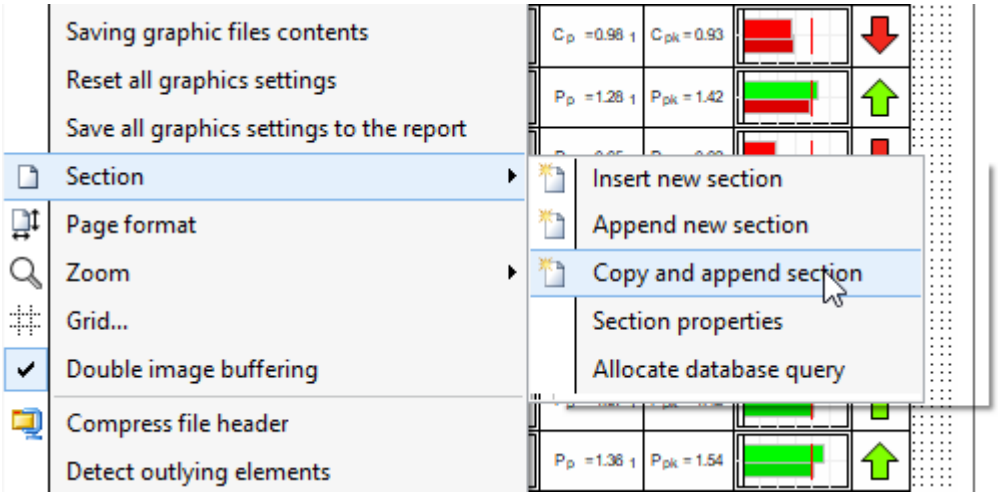
An example:

There are 105 characteristics in the data set. In combination with a large protocol header, 15 characteristics can be displayed on one page:

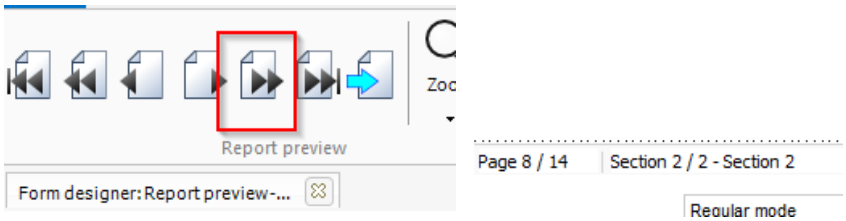


However, the large protocol header is not required on subsequent pages. If it were to be reduced or deleted, 20, rather than 15 characteristics could be shown per overview graphic on subsequent pages.

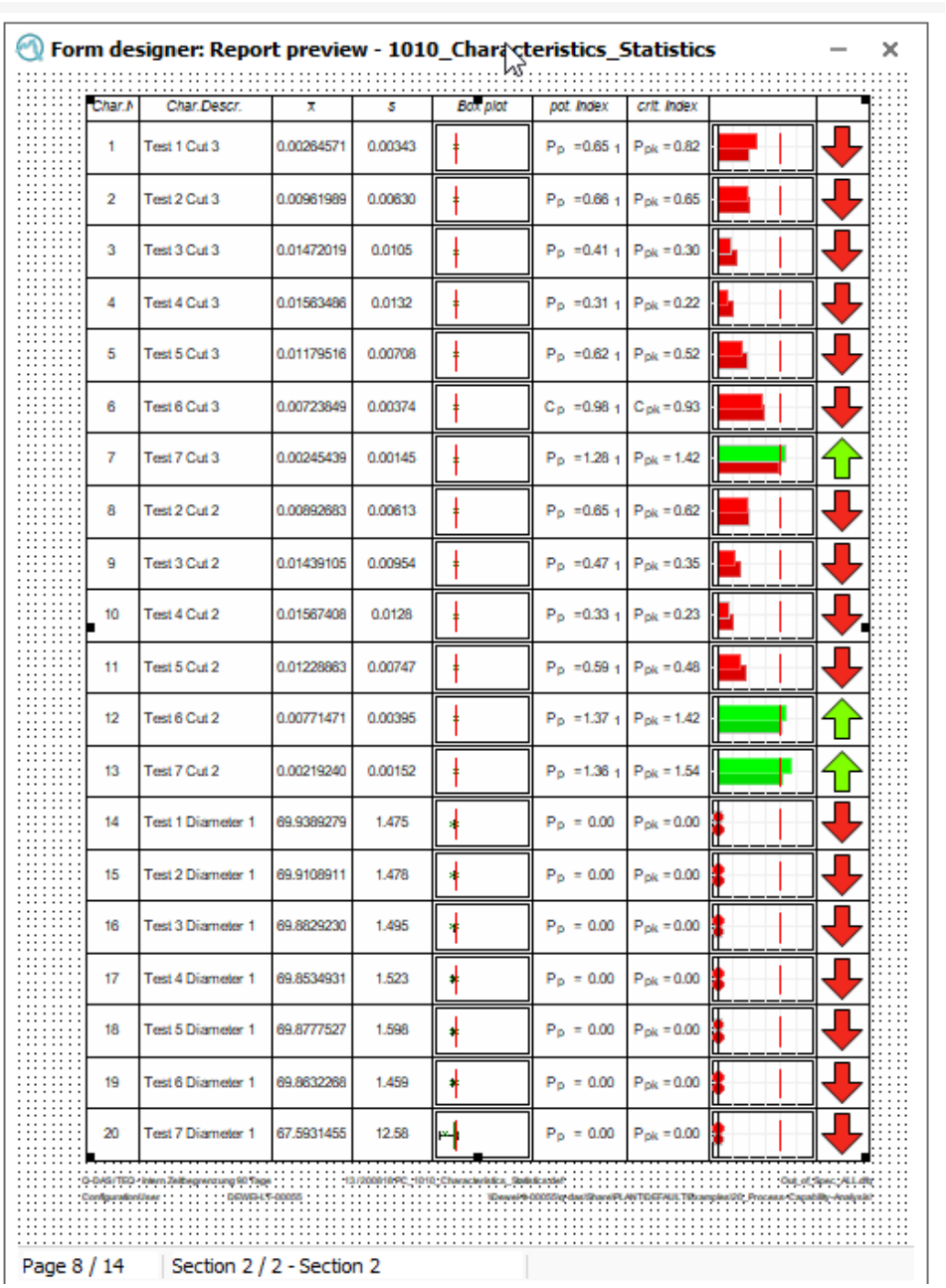
To achieve this, the section is copied and appended once the graphics of the first section have been completely configured.



Then change to the second section:

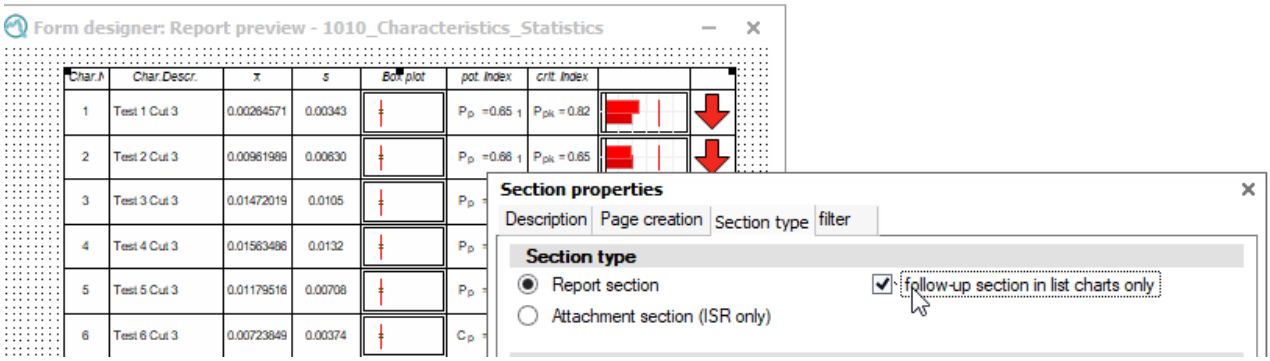


The header is removed and the number of columns shown has increased to 20.

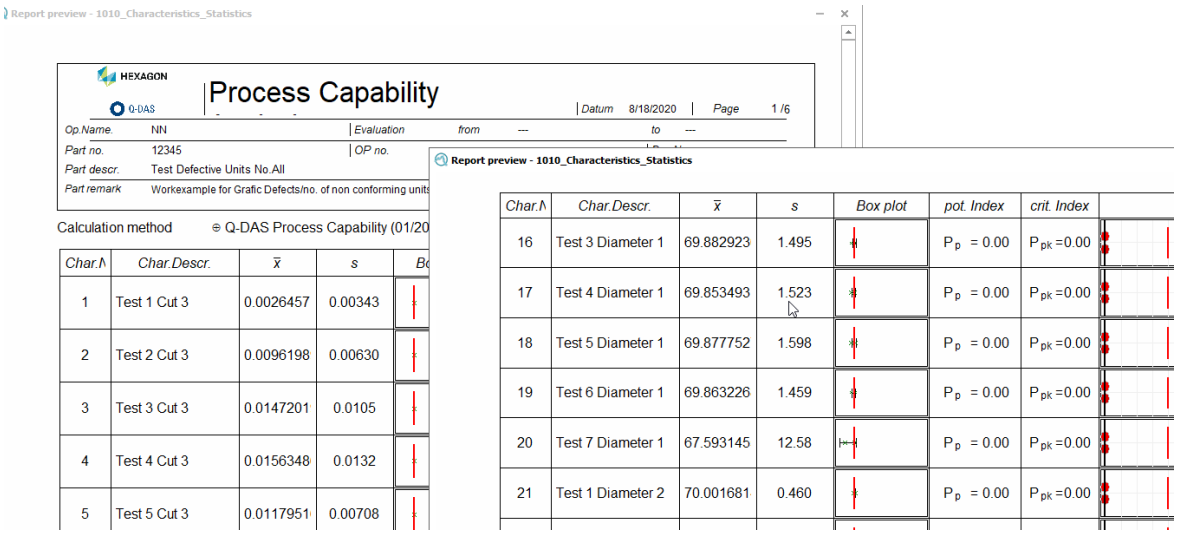


Char.N	Char.Descr.	x̄	s	Box plot	pot. Index	crit. Index	
1	Test 1 Cut 3	0.00264571	0.00343		P_p =0.65	P_{pk} = 0.82	
2	Test 2 Cut 3	0.00961989	0.00630		P_p =0.66	P_{pk} = 0.65	
3	Test 3 Cut 3	0.01472019	0.0105		P_p =0.41	P_{pk} = 0.30	
4	Test 4 Cut 3	0.01563486	0.0132		P_p =0.31	P_{pk} = 0.22	
5	Test 5 Cut 3	0.01179516	0.00708		P_p =0.62	P_{pk} = 0.52	
6	Test 6 Cut 3	0.00723849	0.00374		C_p =0.98	C_{pk} = 0.93	
7	Test 7 Cut 3	0.00245439	0.00145		P_p =1.28	P_{pk} = 1.42	
8	Test 2 Cut 2	0.00892683	0.00613		P_p =0.65	P_{pk} = 0.62	
9	Test 3 Cut 2	0.01439105	0.00954		P_p =0.47	P_{pk} = 0.35	
10	Test 4 Cut 2	0.01567408	0.0128		P_p =0.33	P_{pk} = 0.23	
11	Test 5 Cut 2	0.01228883	0.00747		P_p =0.59	P_{pk} = 0.48	
12	Test 6 Cut 2	0.00771471	0.00395		P_p =1.37	P_{pk} = 1.42	
13	Test 7 Cut 2	0.00219240	0.00152		P_p =1.36	P_{pk} = 1.54	
14	Test 1 Diameter 1	69.9389279	1.475		P_p = 0.00	P_{pk} = 0.00	
15	Test 2 Diameter 1	69.9108911	1.478		P_p = 0.00	P_{pk} = 0.00	
16	Test 3 Diameter 1	69.8829230	1.495		P_p = 0.00	P_{pk} = 0.00	
17	Test 4 Diameter 1	69.8534931	1.523		P_p = 0.00	P_{pk} = 0.00	
18	Test 5 Diameter 1	69.8777527	1.598		P_p = 0.00	P_{pk} = 0.00	
19	Test 6 Diameter 1	69.8632268	1.459		P_p = 0.00	P_{pk} = 0.00	
20	Test 7 Diameter 1	67.5931455	12.58		P_p = 0.00	P_{pk} = 0.00	

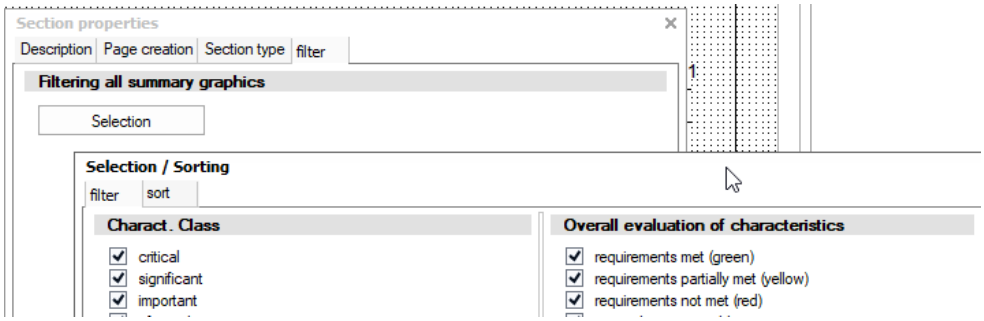
This section is then defined as the next report section:



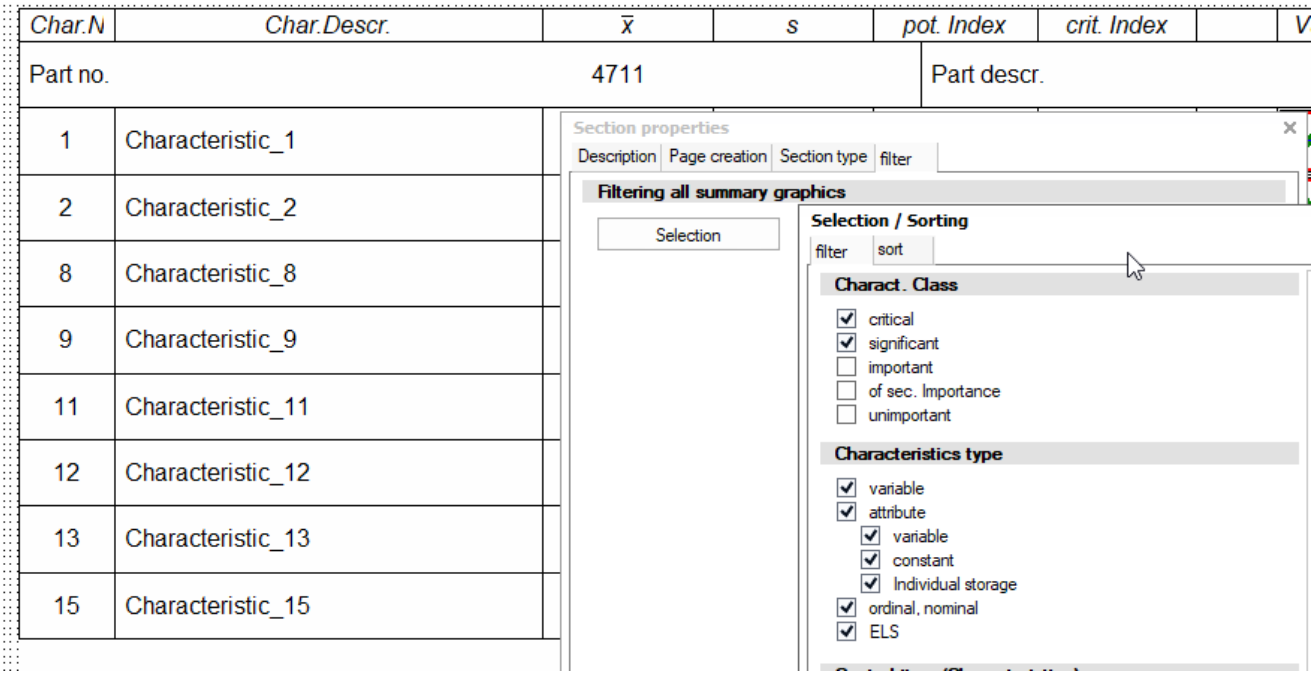
From page 2 onwards, the characteristics are neatly continued while the header is removed, so that more space is available in the report.



5.4 Section filter



Summary graphics can be filtered separately. To filter all summary graphics of a section at the same time, the filter of the Section properties can be used. As an example, for a data set with 15 characteristics, only the significant and critical characteristic classes are displayed:



6 Basic concepts in Form Designer

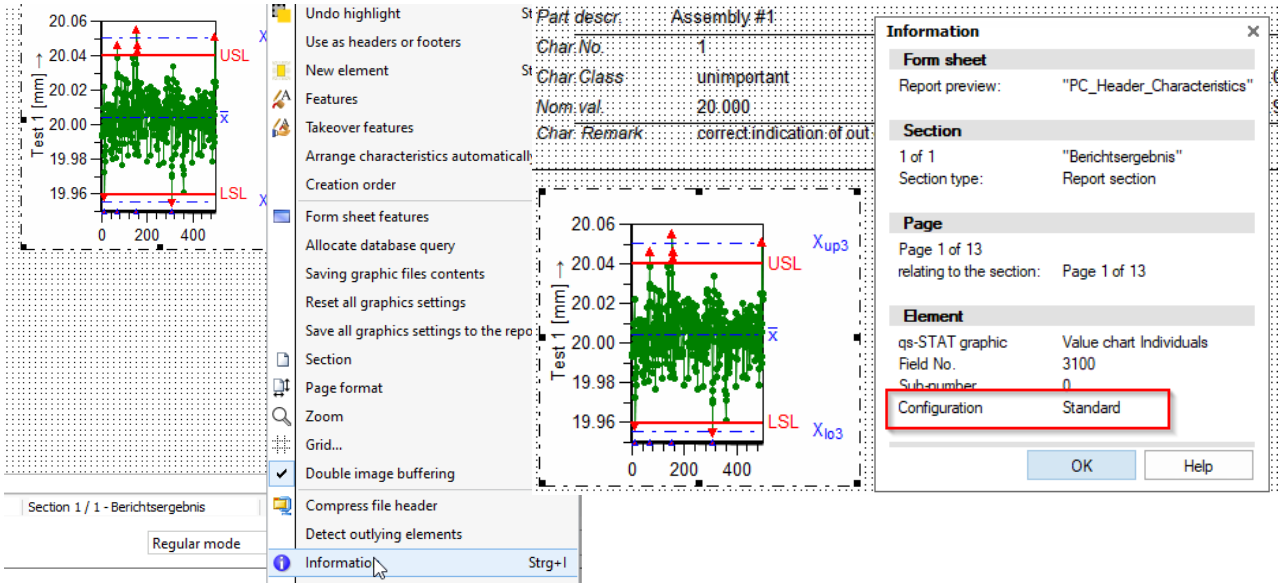
The foregoing describes the structural design of the report templates. This chapter is concerned with the content and configuration of individual elements and does not refer to page creation in any detail.

6.1 Configuring and fixing graphics

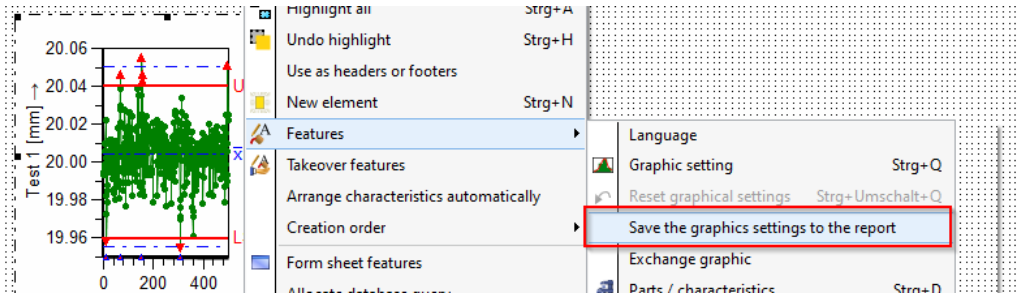
All graphics can be edited in Form Designer. Without editing, they have the status "standard". This means:

If a graphic is newly inserted into a report template and only its position and size are changed, the report template falls back on the graphic configuration of the logged-in user. In the worst-case scenario, this can mean that the report has a different appearance for each user.

With a right click on a graphic under "Information", this can be seen as "Configuration: Standard"

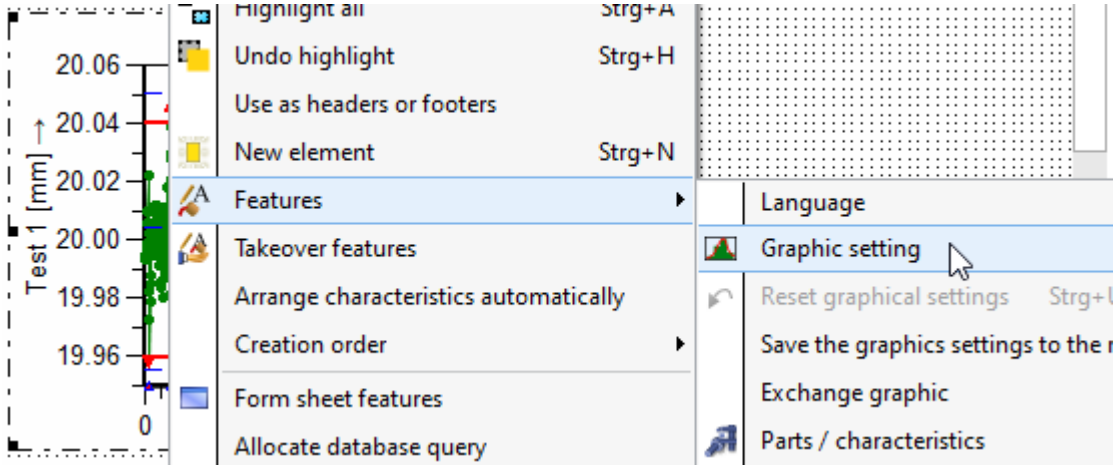


The graphic configuration in the report is no longer subject to change when configurations have been made or when the option to save and thus fix the graphic setting is used.

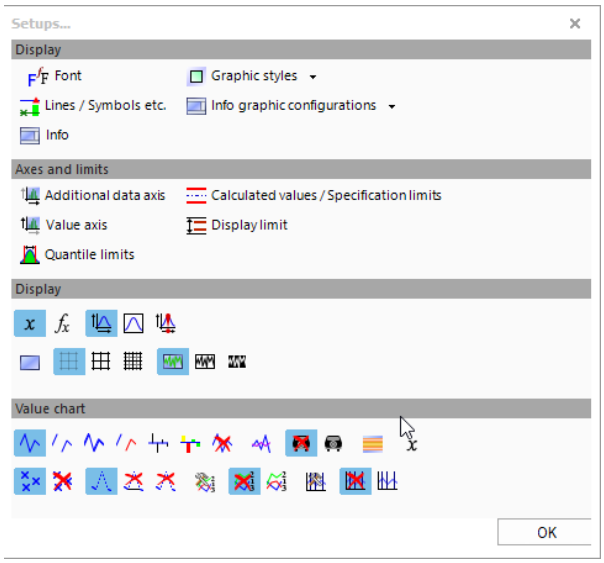


6.1.1 Individual characteristic graphics → e.g., value chart

To configure the view of an individual characteristic graphic, select the graphic and right-click to open a dialogue box. Click on *Features* | *Graphic Setting*



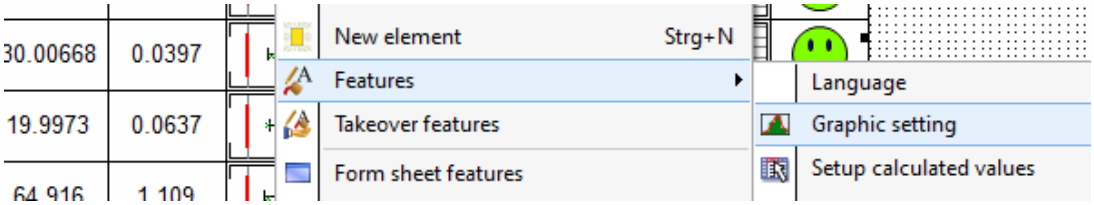
In the dialogue that appears, all graphic settings can be made directly:



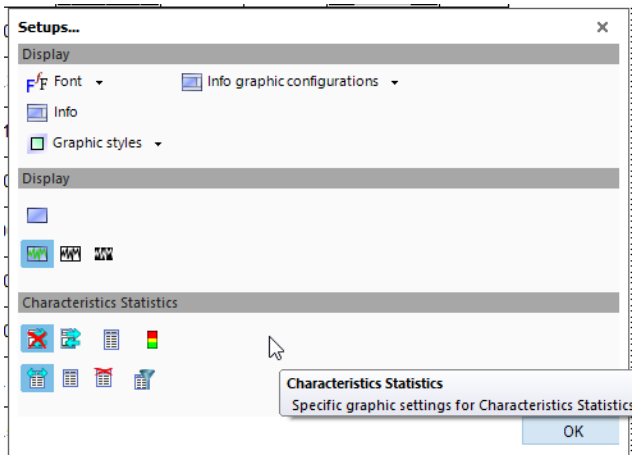
6.1.2 Summary graphics / Form sheets → e.g., characteristics statistics

Configurations of list graphics that can be used on continuation pages, such as characteristics statistics and form sheets, are divided into two parts.

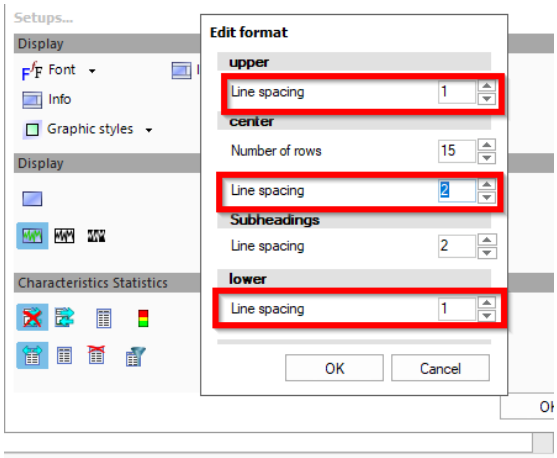
Settings for the table can be adjusted in Features | Graphic setting.



This applies to the header line, number of lines, filtering etc.

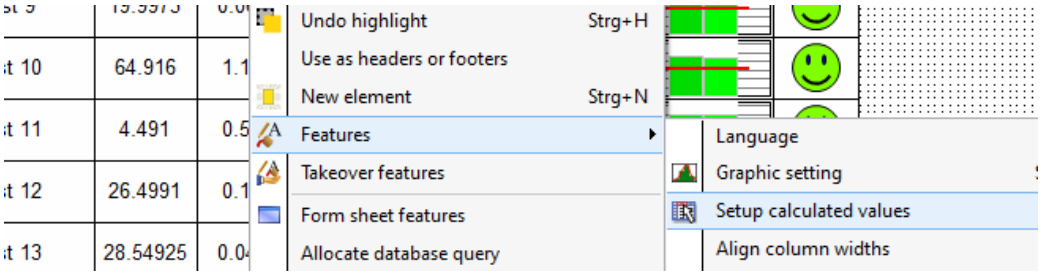


The only setting that has little significance in Form Designer is the line spacing.

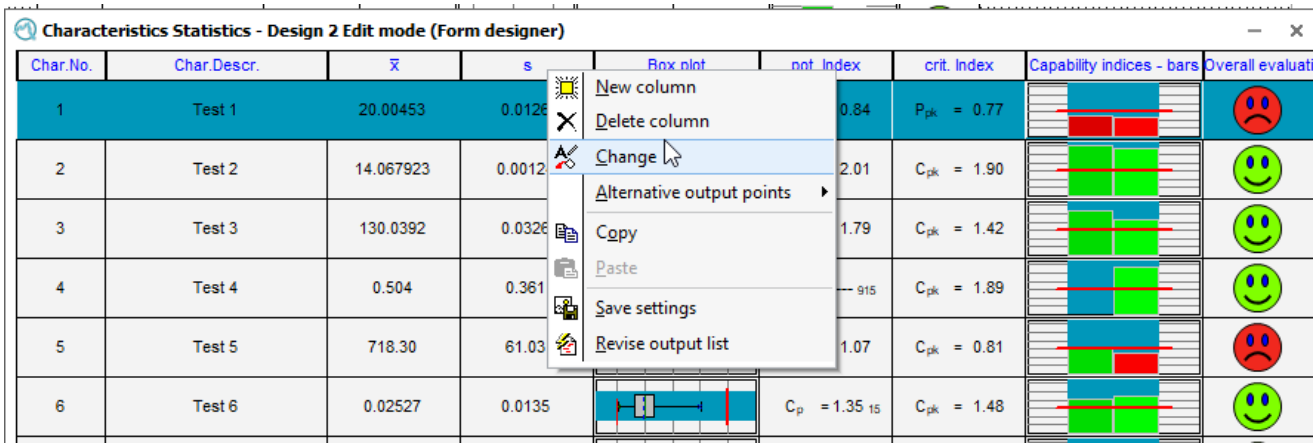


Only the difference between the header's line heights and characteristic lines is used. The height of a single line is determined by the height of the graphic, how it is positioned and the number of lines to be displayed.

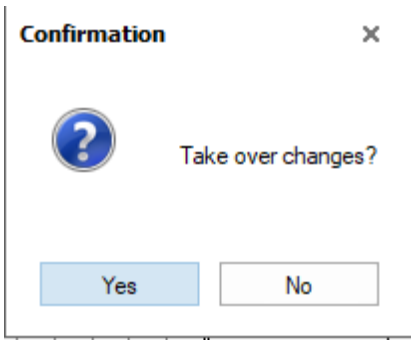
The configuration of columns is done via Features | Setup calculated values.



The selected graphic opens in the foreground, in change mode, with a note that this only applies to Form Designer. Afterwards, all configurations are carried out in the same way as in the original graphic.



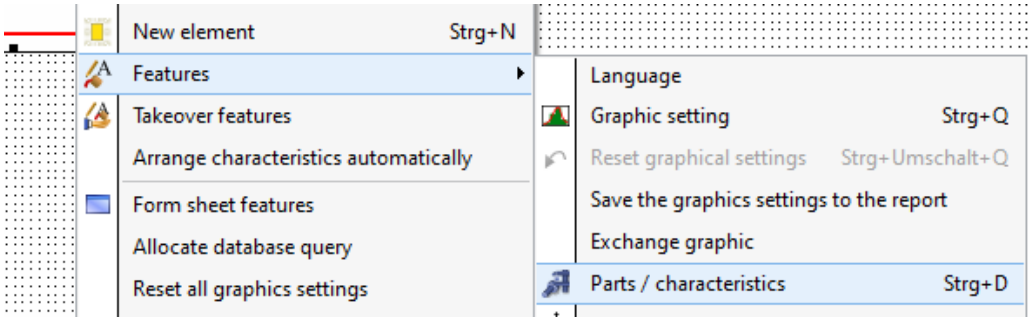
When the configuration is finished, the graphic is closed by pressing X. The following query appears: "Take over changes?"



6.2 Assign parts/characteristics

Sometimes it is desirable to display only certain parts, characteristics, measurements or measured values, rather than all the information. Or to have several characteristics or parts defined on one page. The dialogue "Parts / Characteristics" is available for this purpose.

This is accessed by right-clicking on the graphic *Features* | *Parts / characteristics.*



The assignment of parts and characteristics must be considered in conjunction with the section features and the simultaneous display of other graphics in the same section. Therefore, all explanations assume that a report template is used which has neither parts nor characteristics information in the header data, and that page creation is set to "automatic" (section features). Other options are addressed as required.

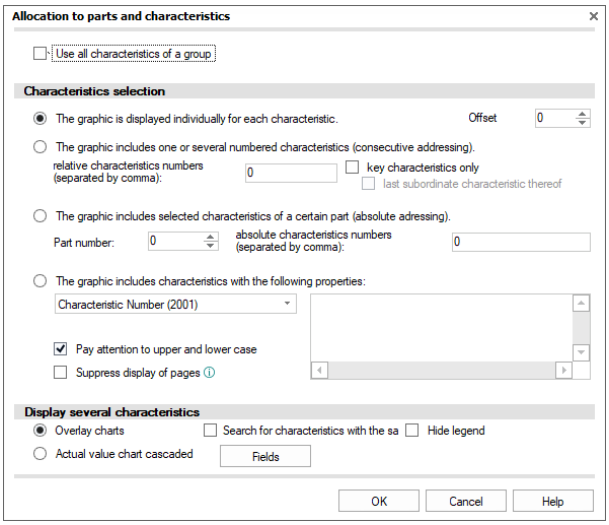
The report template "PC_Header.DEF" is used for the display.

The dialogue is structured according to graphic type. In the following, 3 main types of assignment are addressed, which for some graphics only changes the amount of options.

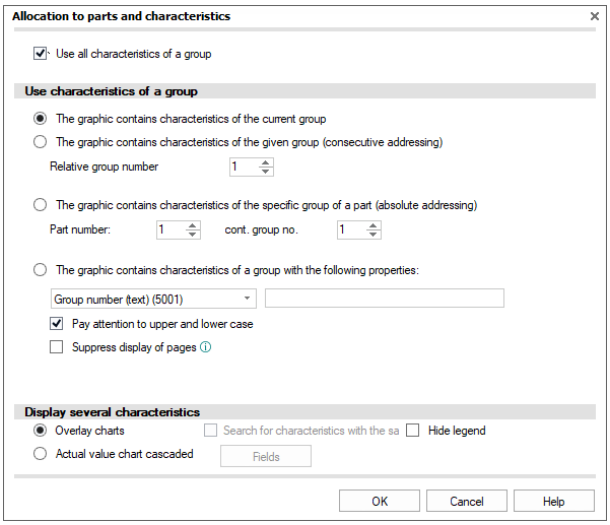
6.2.1 Individual characteristic graphics → e.g. value chart

The dialogue for the assignment of parts/characteristics enables the assignment of characteristics or groups of characteristics, such as individually grouped characteristics or groups according to an automatic selection. Depending on selection, different options are offered in the dialogue.

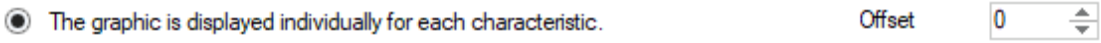
Dialogue "Allocation to parts and characteristics" corresponds to the specified characteristics.



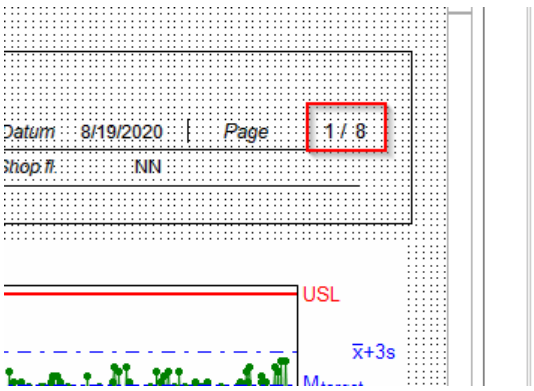
Dialogue "Allocation to parts and characteristics" corresponds to specified characteristics groups.

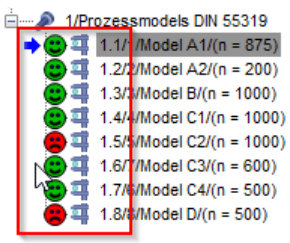


6.2.1.1 The graphic is displayed individually for each characteristic



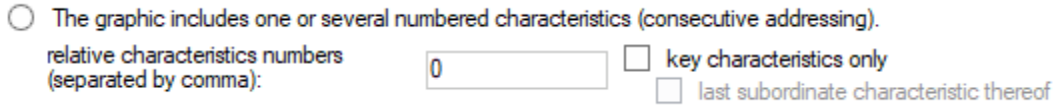
This is the default setting. With a characteristic graphic in the section, one page is created per characteristic.





The offset option could be set to show the value chart of the second characteristic on the page of the first characteristic, and so on. This is a historical setting for special reports, such as for position tolerances. One page is created for the position tolerance, one value chart per axis, with offsets 1 and 2. With the ability to flange the axes directly to the graphic X-Y plot position tolerance, this offset option is no longer important.

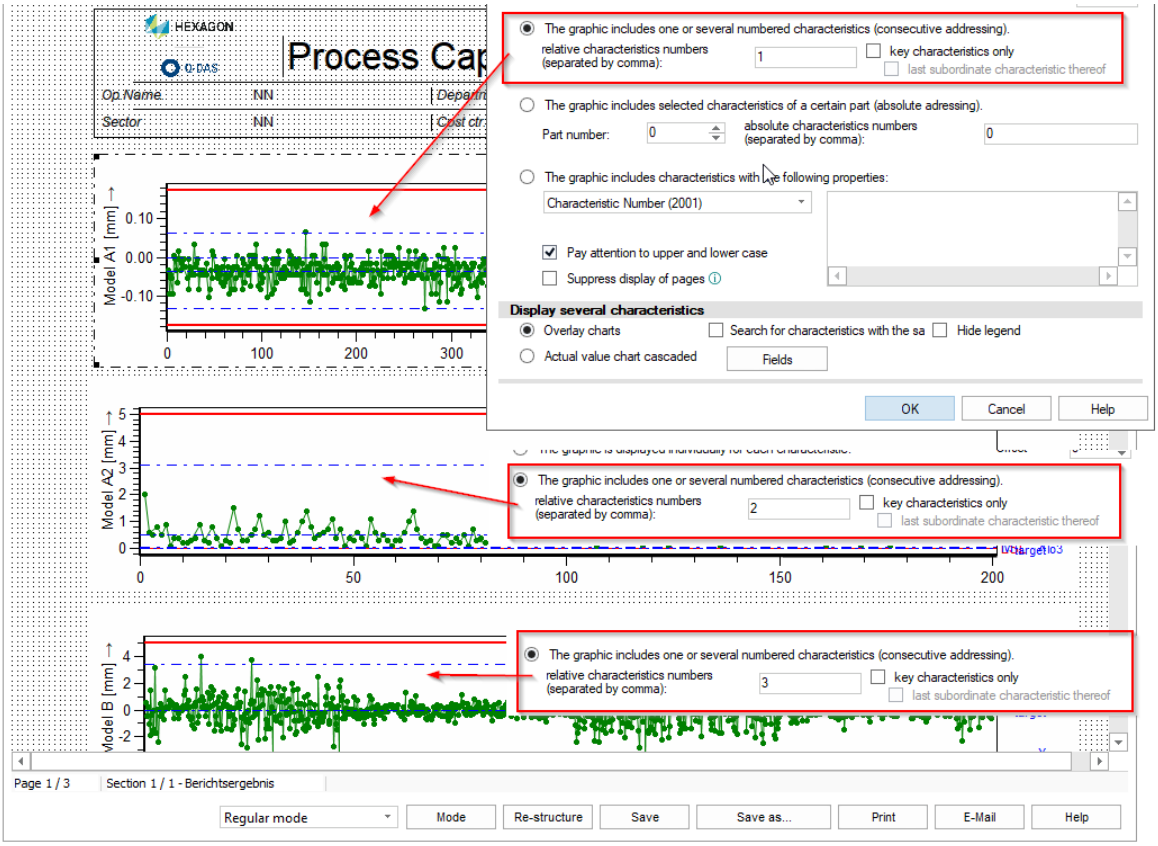
6.2.1.2 The graphic includes one or several numbered characteristics (consecutive addressing)



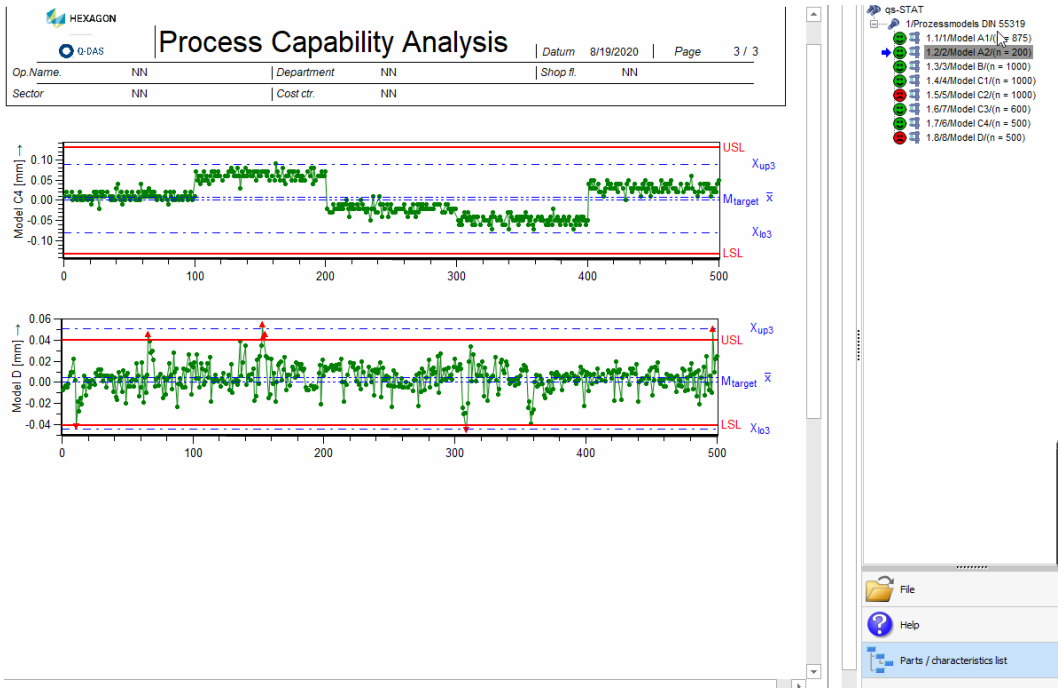
This option is recommended if several individual characteristic graphics are to be displayed on one page for many characteristics.

Example: 3 value chart graphics are included in one section. These are to show characteristics 1-3 on the first page, characteristics 4-6 on the second page and so on.

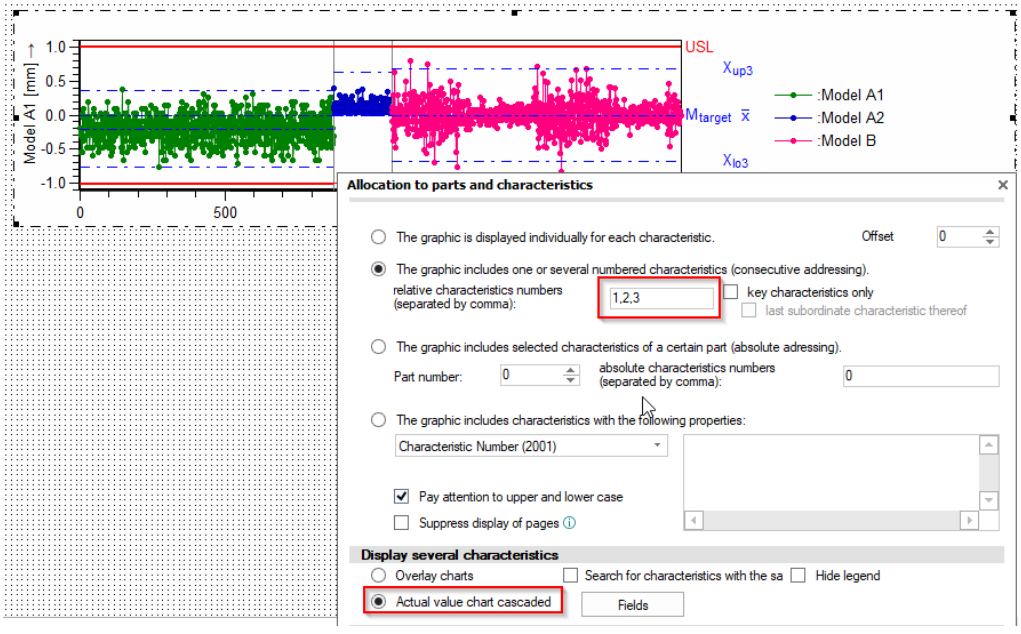
For this, the 3 value progression graphics are then specified relatively:



For 8 characteristics, this creates 3 pages, on the final page the last value progression is hidden.

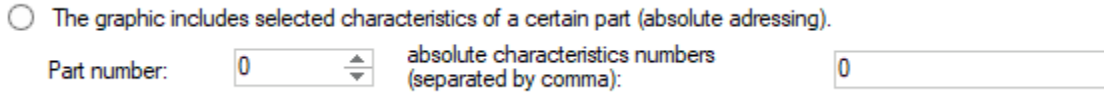


If only one graphic is used but the continuous assignment contains several characteristics, the option works together with the option at the end as to whether the characteristics are to be cascaded or presented sequentially.



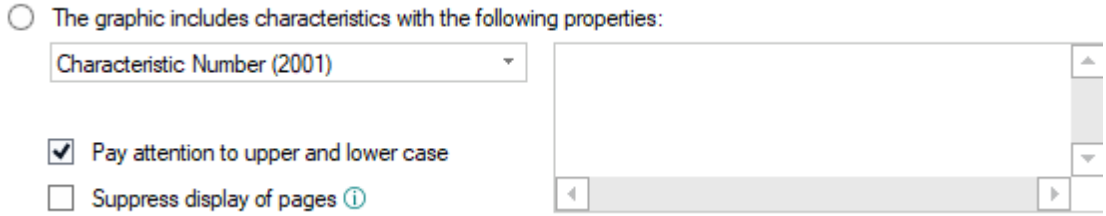
Page creation is not affected. The additional options "key characteristics only" and "last subordinate characteristic thereof" are historical settings that are only still visible for updating purposes. Due to new section functions and graphics options, these are no longer used for new reports.

6.2.1.3 The graphic includes selected characteristics of a certain part (absolute addressing)

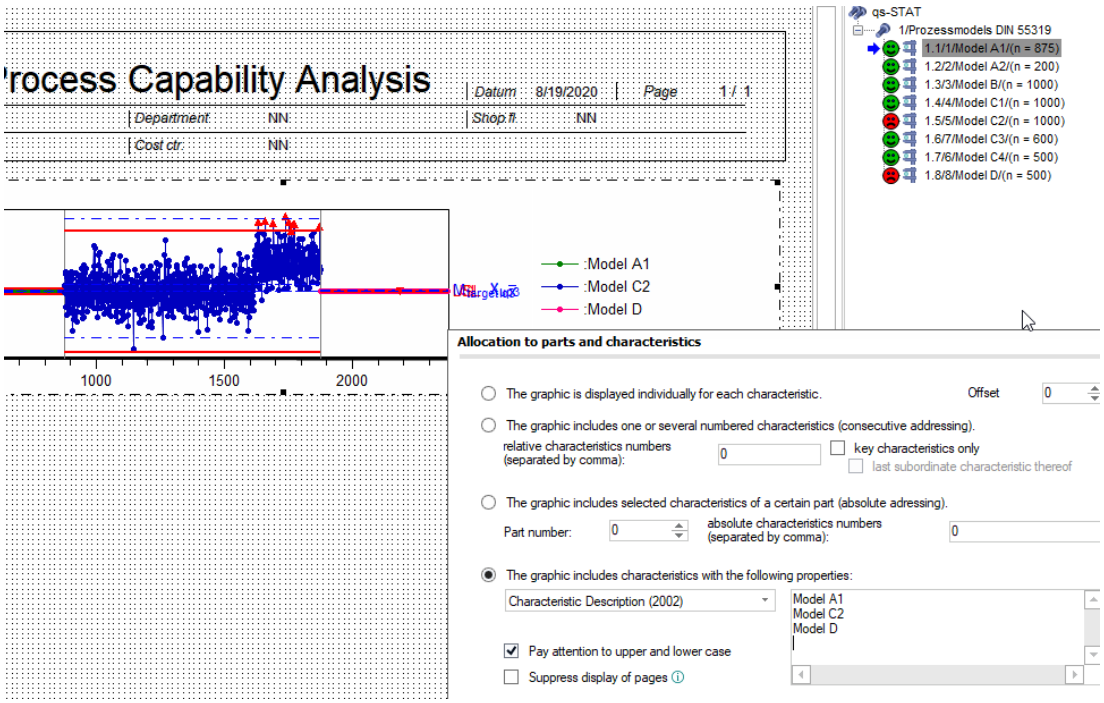


Absolute addressing is usually only used when a separate report template is created for a specific part or part type. In this case, it can be specified from which exact part number, or which exact characteristic number the graphic is to be displayed. Continuation pages are not created.

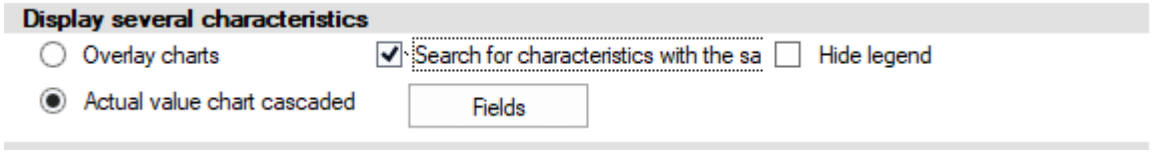
6.2.1.4 The graphic includes characteristics with the following properties



This option is a type of filtering in the graphic itself. A list can be entered for the available fields at the characteristic level. Characteristics with these entries are either cascaded or presented sequentially.



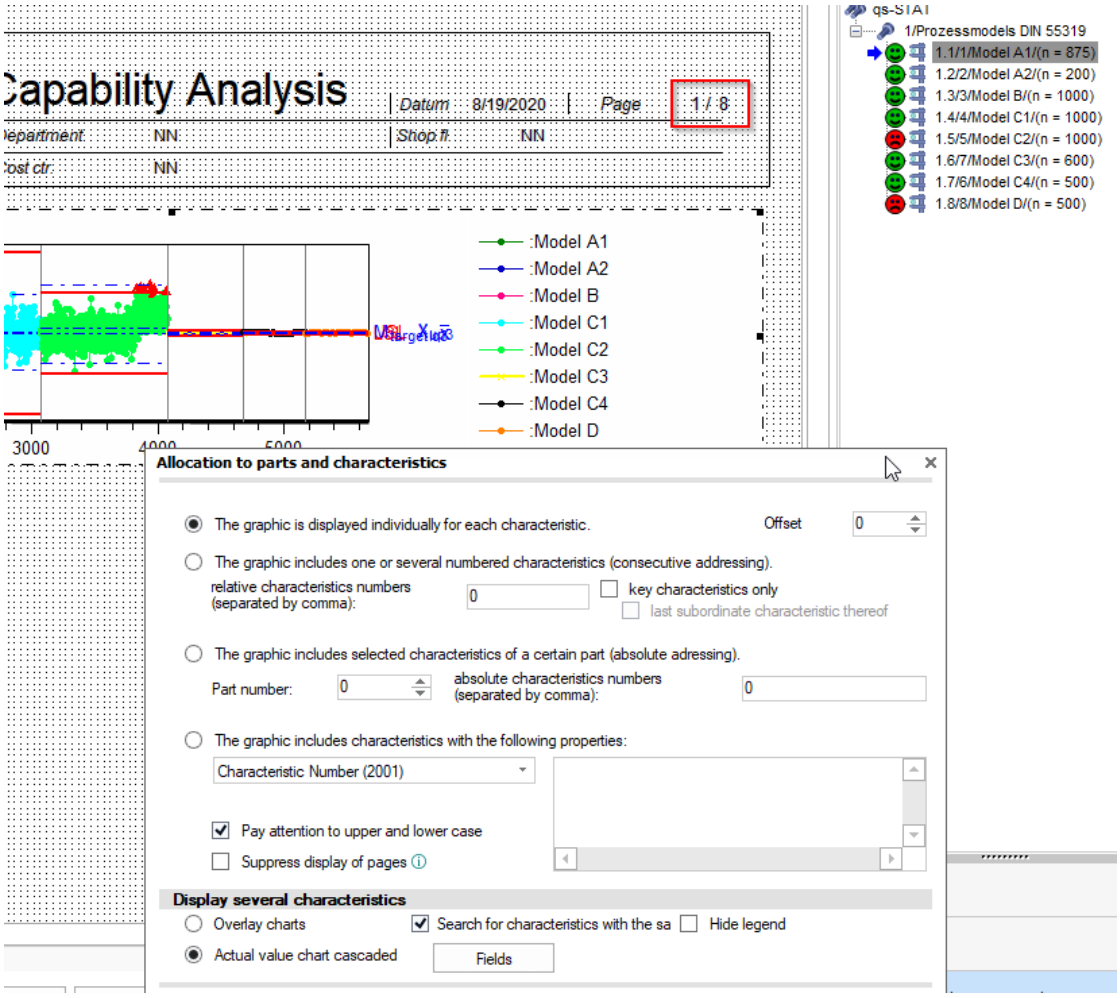
6.2.1.5 Display several characteristics



In addition to the options previously described, a sequential or cascaded display can also be selected here directly. To do this, select the option "Display several characteristics" and at the same time select "Search for characteristics with the same name".

The button "Fields" opens the field selection, the where K fields to be searched for with the same name are to be entered.

However, this search option still creates one page per characteristic, as the search command cannot be sent directly to page creation.

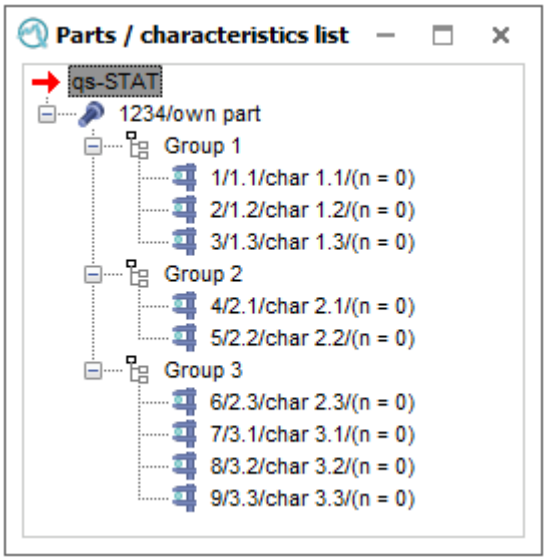


In this case, page creation for characteristics must be defined in Section properties.

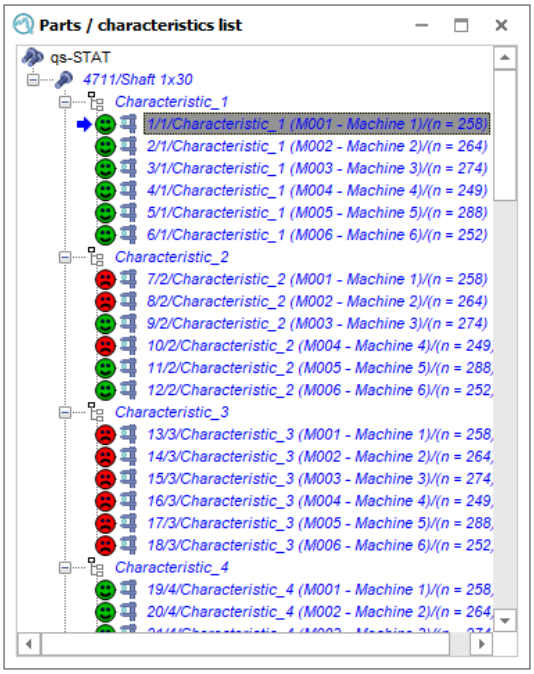
6.2.1.6 Individual characteristic graphics with assigned characteristic groups

The basis for assigning characteristic groups to an individual characteristic graphic is datasets with grouped characteristics. These include datasets with individually grouped characteristics and datasets corresponding to an automatic selection.

Data set with individually grouped characteristics



Delivery data set "4711" after automatic selection by machine number and designation.

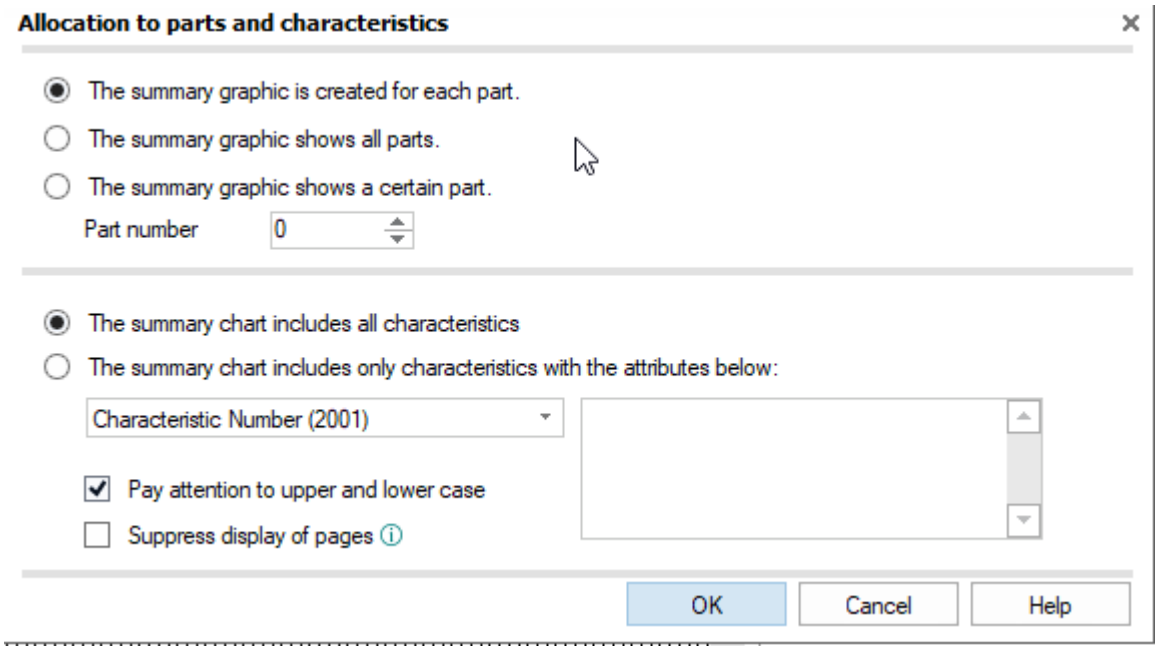


Assigning characteristic groups to an individual characteristic graphic works in a similar way to assigning characteristics. In principle, there are two options, which are handled differently when assigning features or feature groups. These are

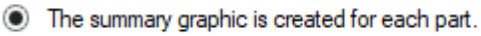
- Option "The graphic contains the characteristics of a group with the following characteristics"
  This filters a specific group of characteristics.

- Option "Search for characteristics with the same name".
  This option is not active when assigning characteristics groups. When assigning characteristics groups to an individual characteristic graphic, all characteristics of a characteristics group are used. Therefore, a search for characteristic descriptions is not necessary.

6.2.2 Summary graphics → e.g. Characteristics Statistics

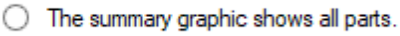


6.2.2.1 The summary graphic is created for each part



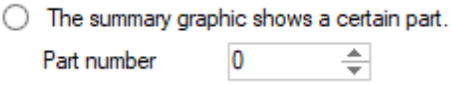
This is the default setting. With a part graphic in the section, one page is created per characteristic.

6.2.2.2 The summary graphic shows all parts



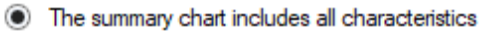
All part graphics are displayed continuously, for all parts.

6.2.2.3 The summary graphic shows a certain part



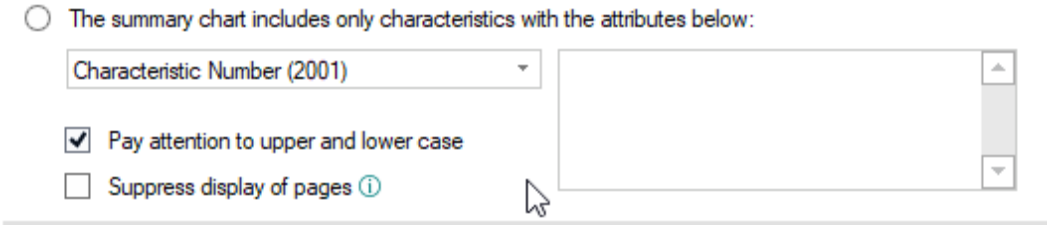
Absolute addressing is usually only used when a separate report template is created for a specific part or part type. In this case, the exact sequential part number from which the graphic is to be displayed can be specified. Continuation pages are not created.

6.2.2.4 The summary chart includes all characteristics



This is the default setting. All characteristics of the part / parts are shown.

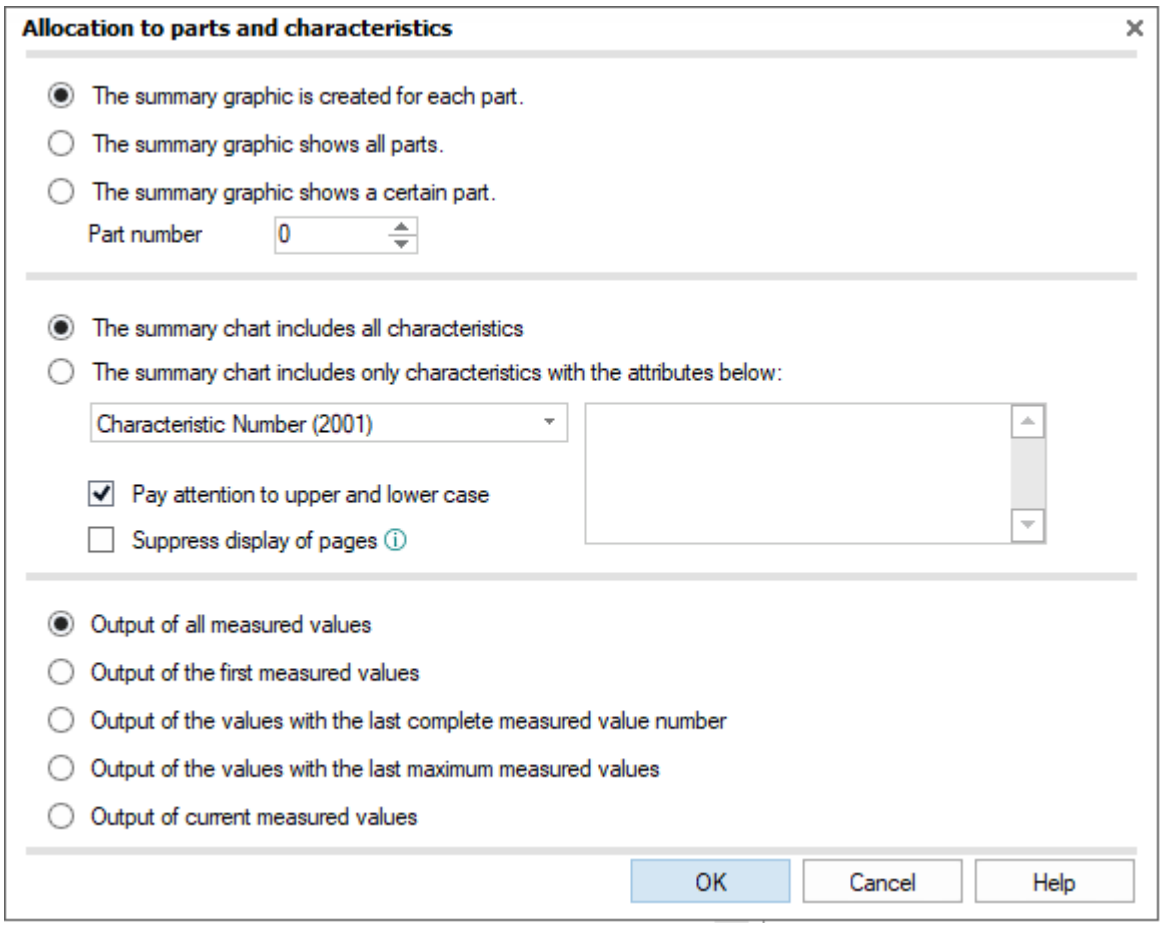
6.2.2.5 The summary chart includes only characteristics with the attributes below



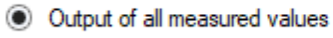
With this dialogue, it is possible to filter part graphics. However, this option is outdated, as filtering can be done in the graphics themselves. Therefore, this option is no longer recommended in standard reports.

6.2.3 Summary graphics with measured values → e.g. parts protocol

Summary graphics with measured values, such as the parts protocol, refer to measured values as well as to parts identification.

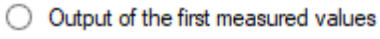


6.2.3.1 Output of all measured values



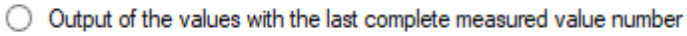
All measured values are displayed. Each measurement shown as a separate table.

6.2.3.2 Output of the first measured values



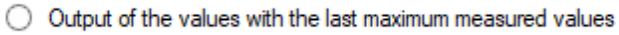
This is a rarely used option. Only the first measured value of each characteristic is displayed.

6.2.3.3 Output of the values with the last complete measured value number



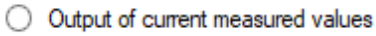
This option refers to the measurement reference. The program checks which characteristic has the smallest number of measured values. This measurement series is displayed.

6.2.3.4 Output of the values with the last maximum measured values



The last measured value of each characteristic, regardless of how many measured values each individual characteristic has, is displayed.

6.2.3.5 Output of current measured values



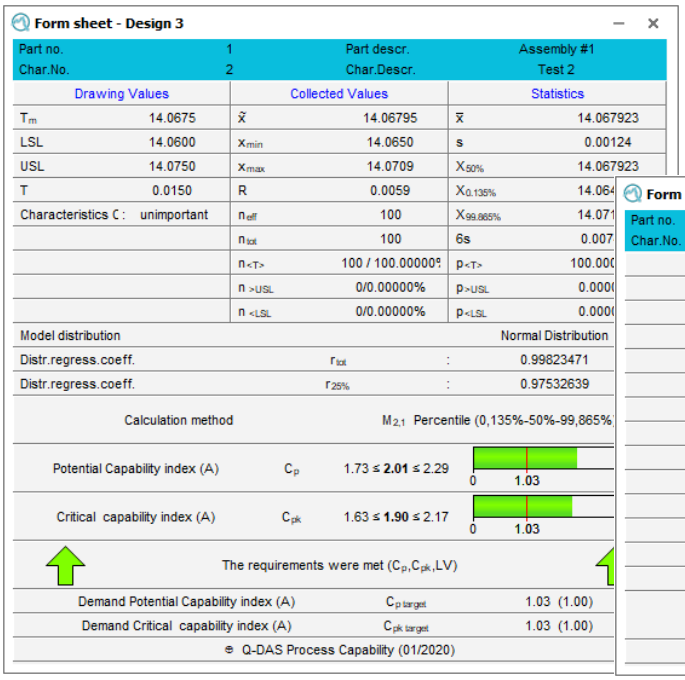
This option does not feature in products like qs-STAT or solara.MP. However, in the CMM Reporting module, for instance, this would be a vital measurement, the current measurement in the display.

6.3 Notes on graphics

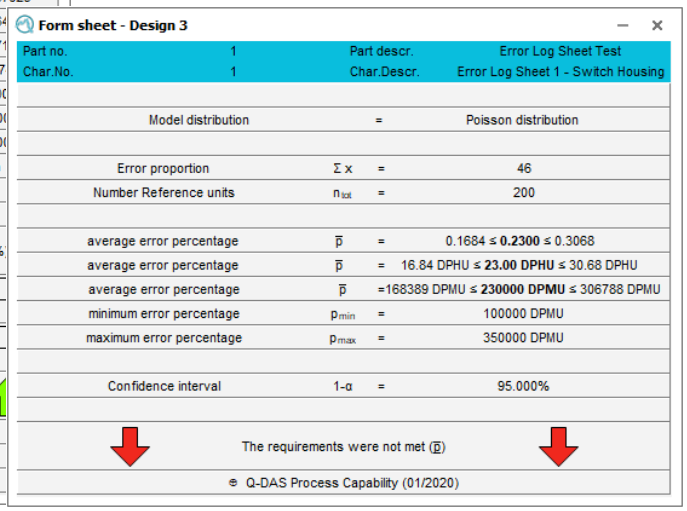
As described in chapter Configuring and fixing graphics, user settings for a graphic can be saved for a report. The report then has the same design for different users. When creating a report template, please make sure that the graphics included in the report are not only user-specific but also characteristics-specific. In module solara.MP graphics additionally depend on evaluation type and evaluation strategy.

Below the "Form sheet 3" chart for different types of characteristics:

Form sheet 3 - variable characteristics



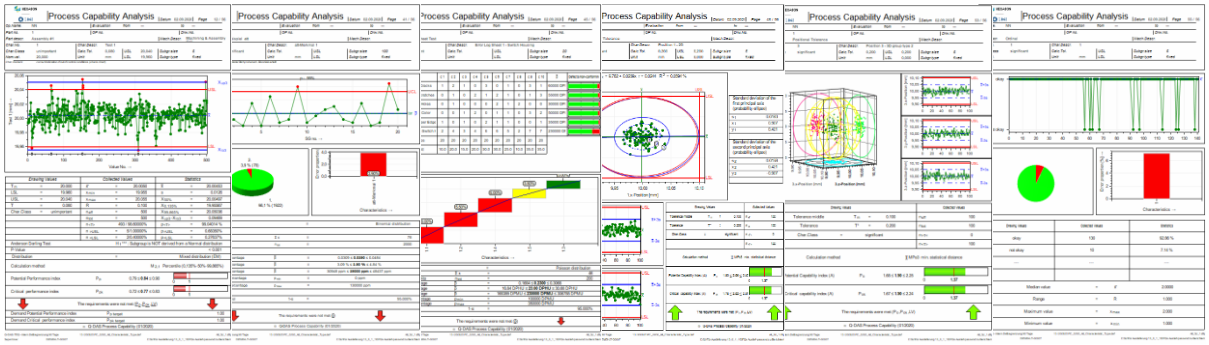
Form sheet 3 - error log sheet



If reports are generated for data sets with mixed characteristic types, the graphics used in the report must be configured for each characteristic type.

In solara.MP the graphics used in the report also depend on evaluation type and evaluation strategy.

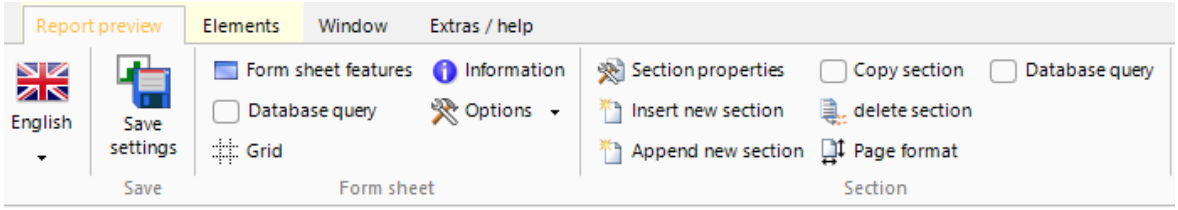
A possible solution would be to create a report with different sections for different characteristic types, such as the report "PC_0200_All_Characteristic_Type.def" in the standard version.



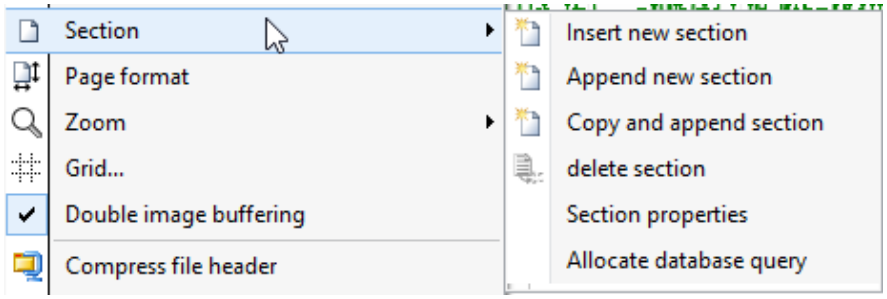
7 Creating sections

Every report initially consists of one section. There are various procedures for creating further sections (which can be configured and displayed independently of each other).

The dialogue for creating or deleting sections is either in the report preview,



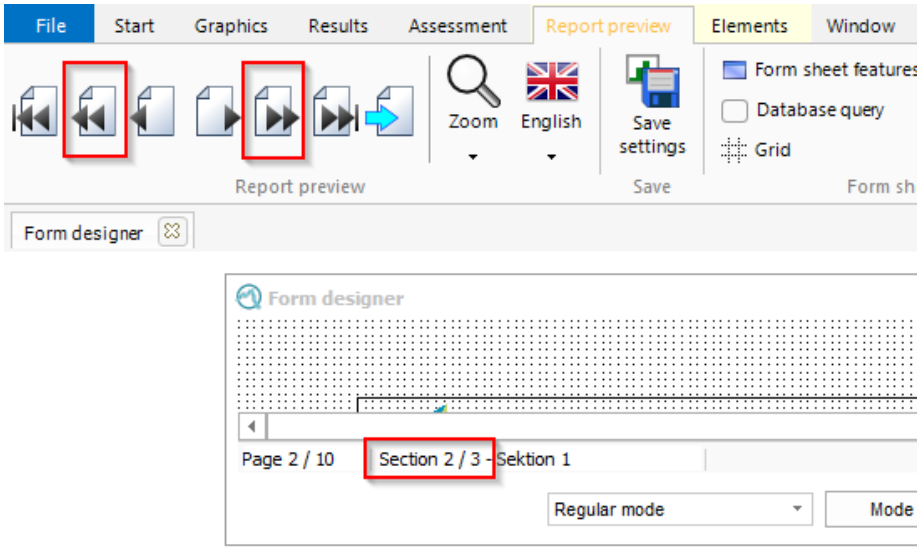
or there is the option of right-clicking on Report and Section:



7.1 Selecting a section

Each of the actions described below interacts with the section currently in view.

If a report already has several sections, the button for switching between the sections appears in the "Report preview" tab:



7.2 Insert new section

Counting from the currently selected section, a section is created BEFORE the currently selected section. The section itself has no content. The page format of the initial section is adopted.

7.3 Append new section

Counting from the currently selected section, a section is created AFTER the currently selected section. The section itself has no content. The page format of the initial section is adopted.

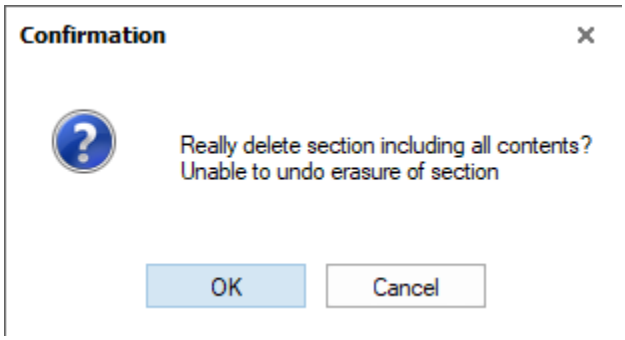
7.4 Copy and append section

With this option, a new section is created AFTER the currently selected section, and its entire content is copied. This means that header and footer are available in the new section, and the content can be adjusted.

7.5 Delete section

This option is only available if there is more than one section in the report.

You will be asked if you really want to delete the section.



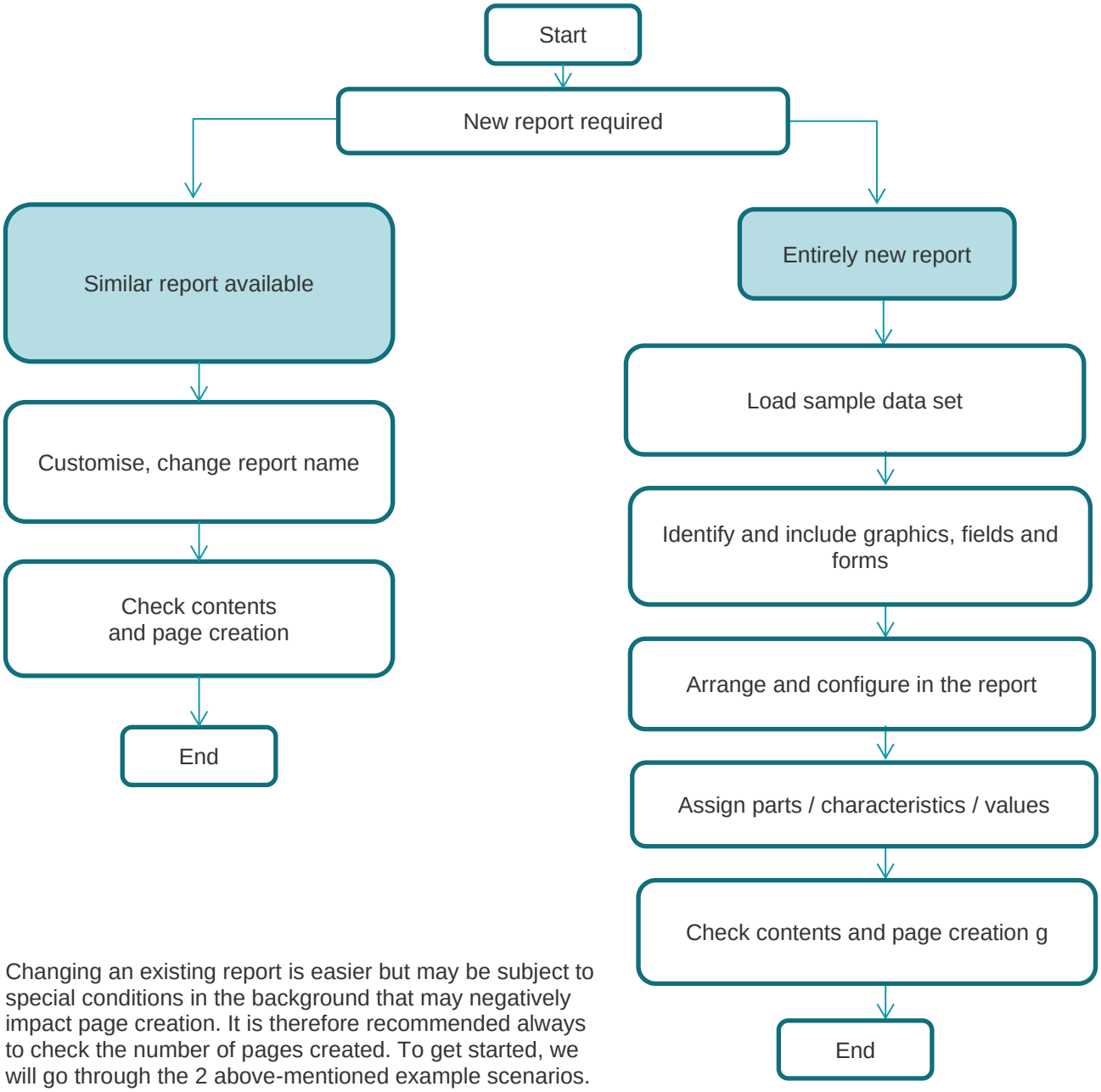
8 Example applications

There are 2 scenarios for using the Form Designer:

1. To adapt an existing report

2. To generate a new report

The procedure is different for each scenario:

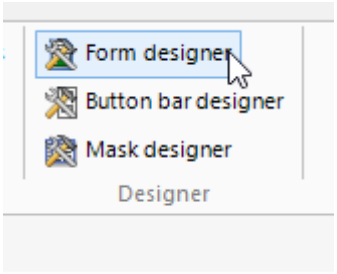


Changing an existing report is easier but may be subject to special conditions in the background that may negatively impact page creation. It is therefore recommended always to check the number of pages created. To get started, we will go through the 2 above-mentioned example scenarios.

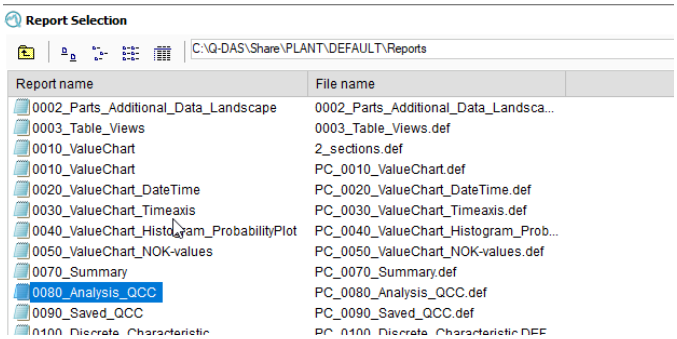
8.1 Case study: Modifying an existing report

By way of example, we will add a value chart of individual values to the report. Load a file with reduced scope, such as the file Test_ALL.DFQ, not a file with many characteristics (>1000) or measured values (>100000).

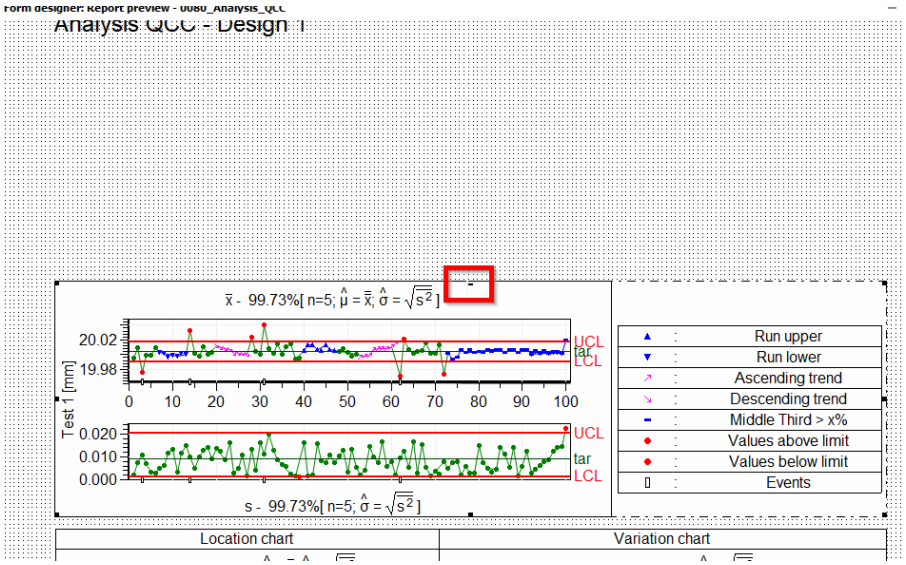
Open the Form Designer in the Process Capability Analysis module via the tab "Start/Designer/Form Designer".



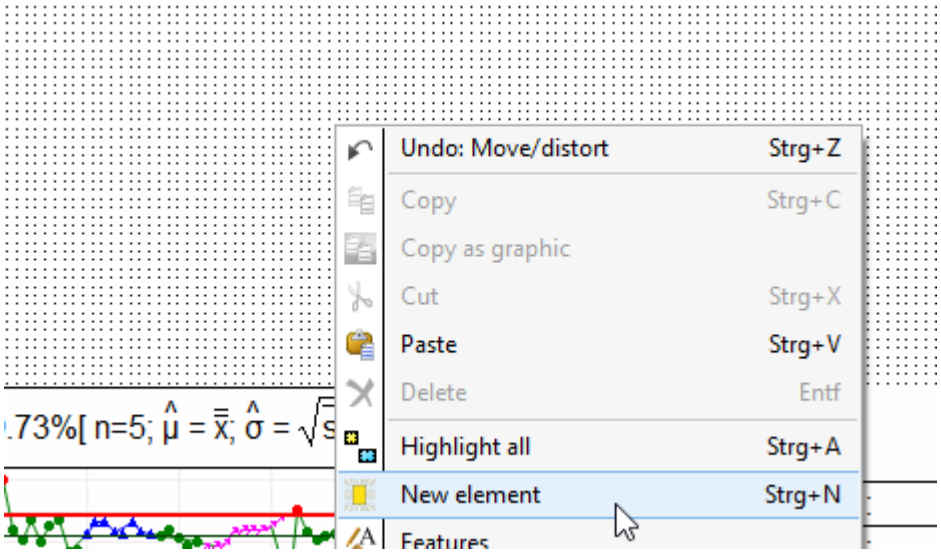
In the report selection, open the report "0080_Analysis_QCC".



The individual elements are displayed in the Form Designer window. If you click on the quality control chart with the left mouse button, you will see 8 square markers for resizing. Reduce the size of the QCC.



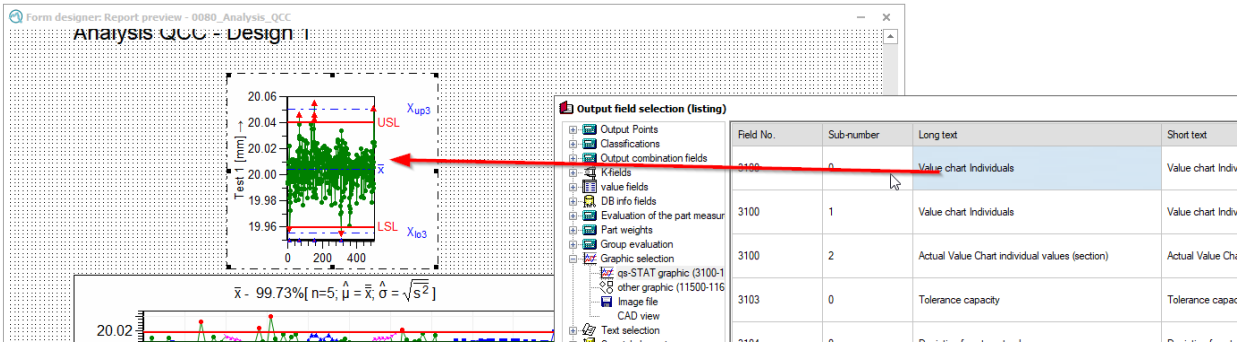
Then right-click in the empty area and select "New element".



Use Drag & Drop to select the new element from the Output field selection (listing) and drag it into the form. The possible elements are:

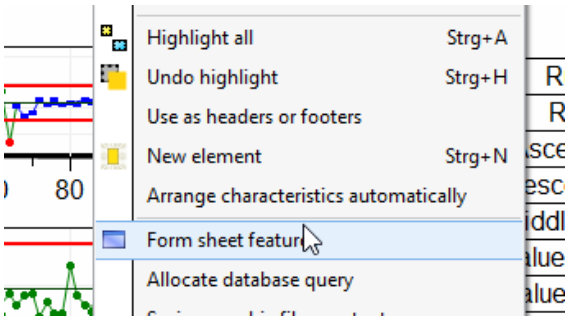
- Graphics
- Output points
- K fields, measured values and additional data
- Displays
- Special elements
- Your own texts
- …

For example, the graphic "Value chart" is dragged into the empty area on the form and resized:

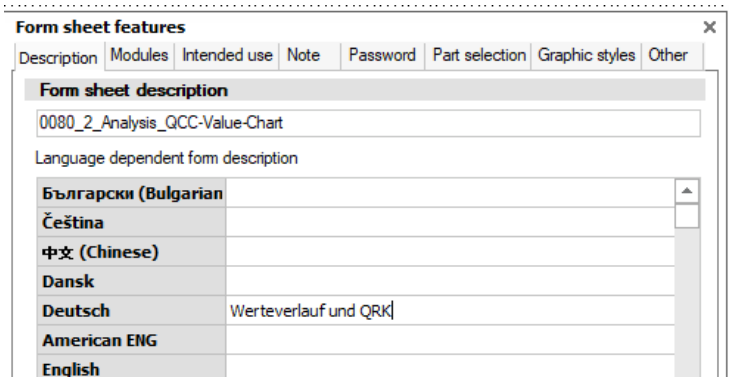


Now close "Output field selection (listing)".

Adapt the form sheet description (report name) so that the form sheet can be found again later. Select the Form sheet features (right-click in an empty area):



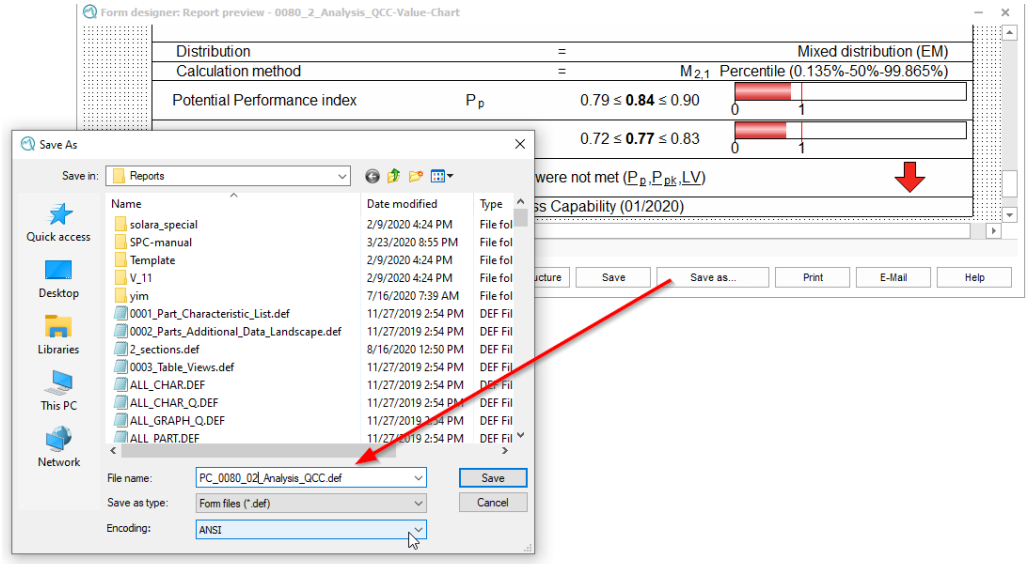
The entry in the Form sheet description is used as default. For each language without an entry, this form sheet description is used. If a deviating name was entered for a national language in use (e.g., German), this entry is used.



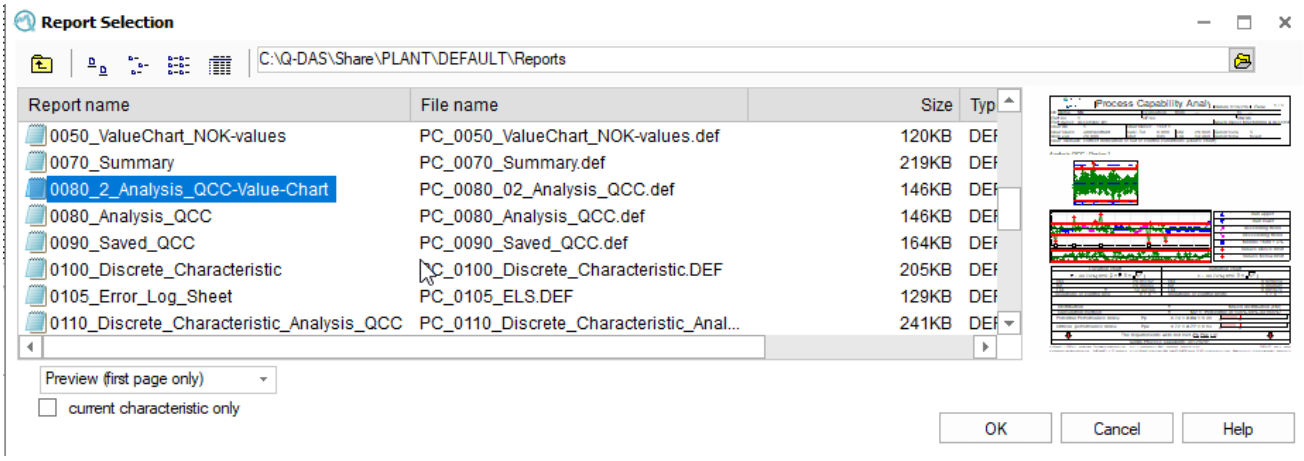
Change the global name to "0080_2_Analysis_QCC-Value-Chart".

Enter e.g., "Value Chart and QCC" in the entry "German".

Then save the form as "PC_01_WV.DEF" by clicking on "Save as..." in the Form window.



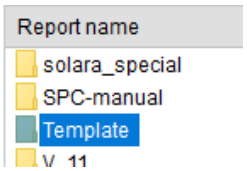
You can then close the Form Designer window and open the form via "START/Reports/Report View".



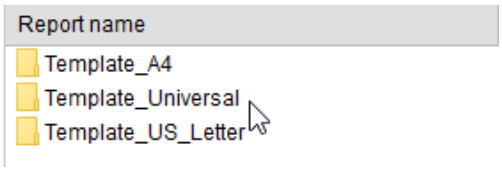
8.2 Case study: New report

When creating a new report, it is important to plan how many pages are expected and what graphics, forms and other content should be used. The aim of this case study is to create a report that automatically generates a page for each characteristic. The Form sheet 3 and the value chart are to be displayed. Therefore, a template is needed that generates one page per characteristic.

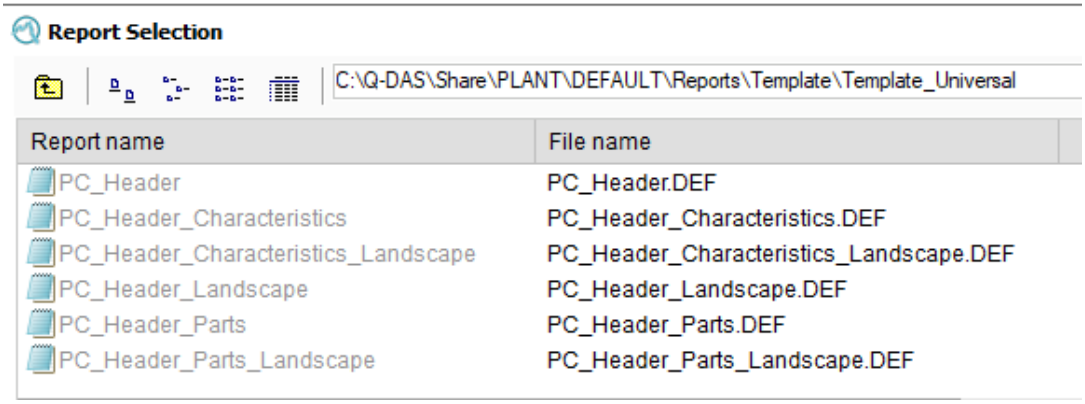
To speed up the setup, one of the provided templates is used. Go to the "Templates" folder after starting the Form Designer.



3 subfolders are available:

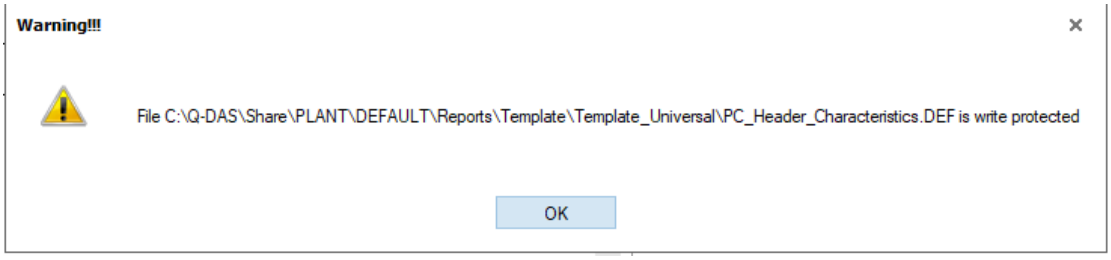


All report templates available from V12 onwards are defined in "Universal" format. This makes it possible to print in DIN A4 as well as in US letter. The template can be located in the subfolder:

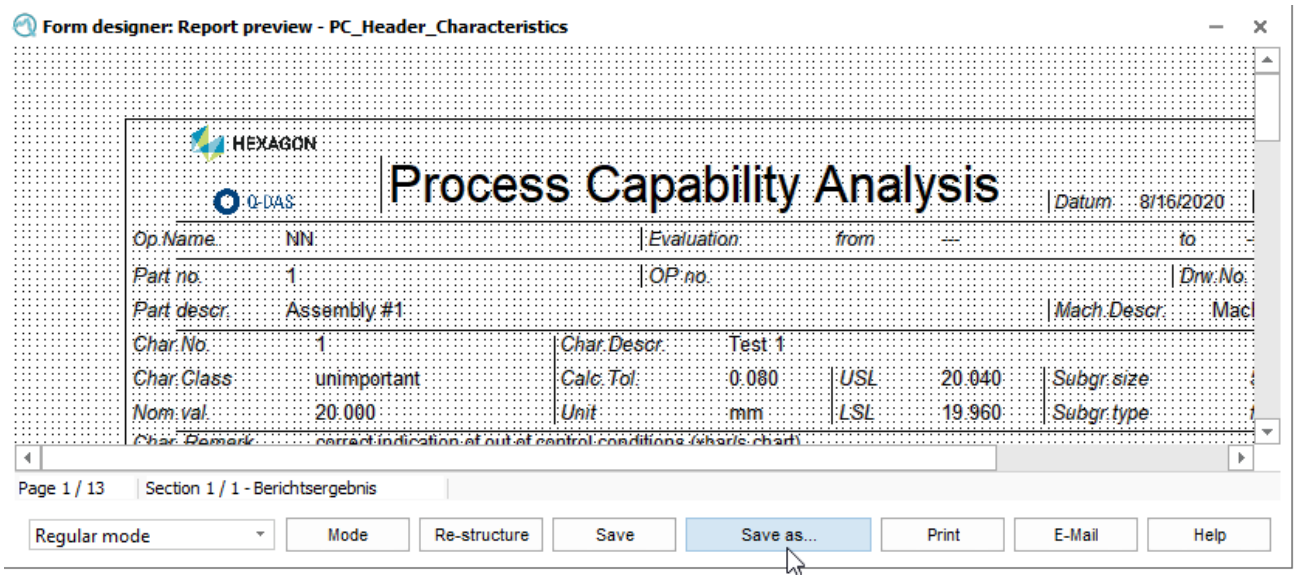


The grey view of templates shows that they are write-protected. Since the report is to be printed in portrait format and one page is to be created per characteristic, the format "PC_Header_Characteristics" is recommended.

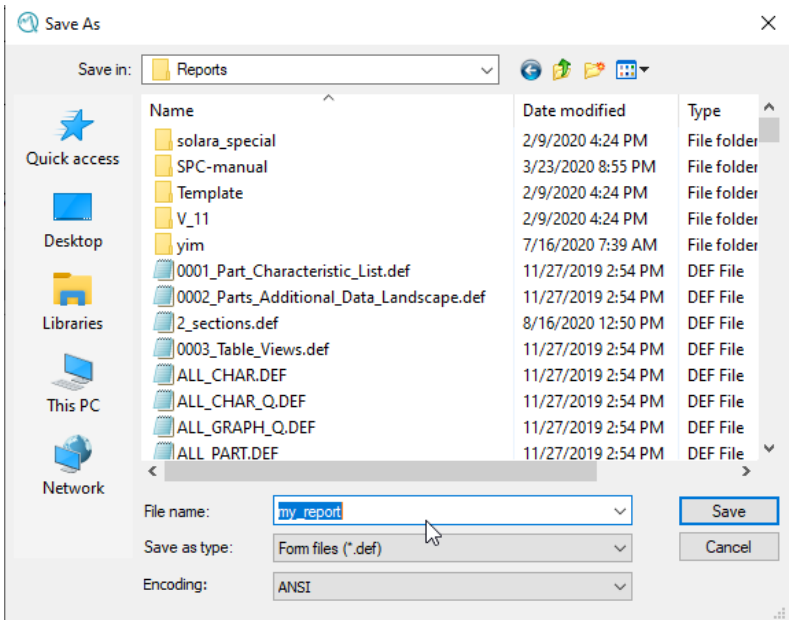
A message appears stating that the template is write-protected.



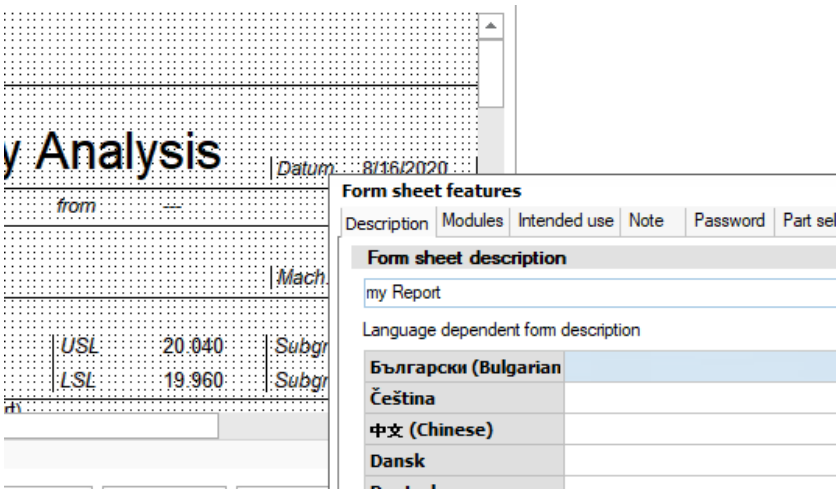
Because of the write protection, the new template is first saved under a new name, using "Save as...".



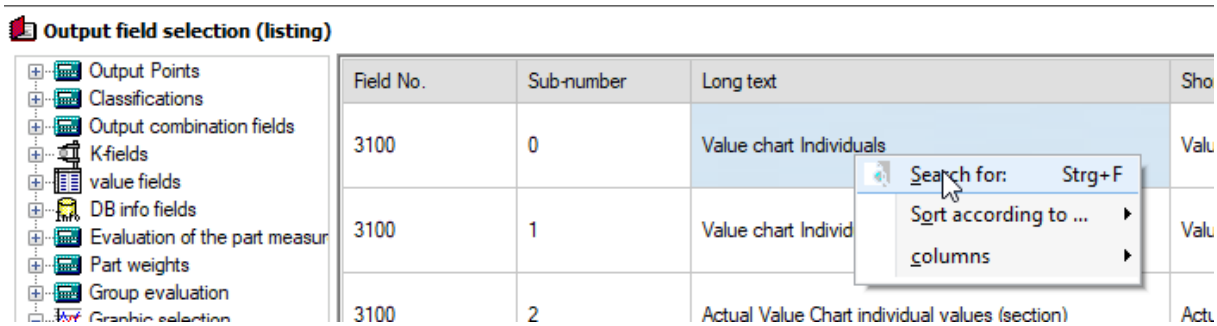
A separate name must be chosen and the main folder (or a desired subfolder) must be selected.



As described in the previous chapter, the internal report name must also be adjusted in Form sheet features.

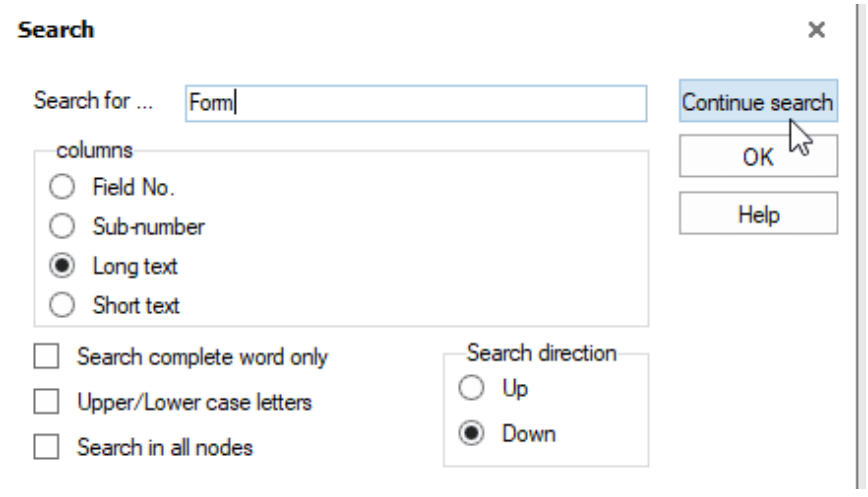


Next, insert the value chart as described in the previous chapter. To insert form sheet 3, right-click on "Search for" in the output field selection (listing).

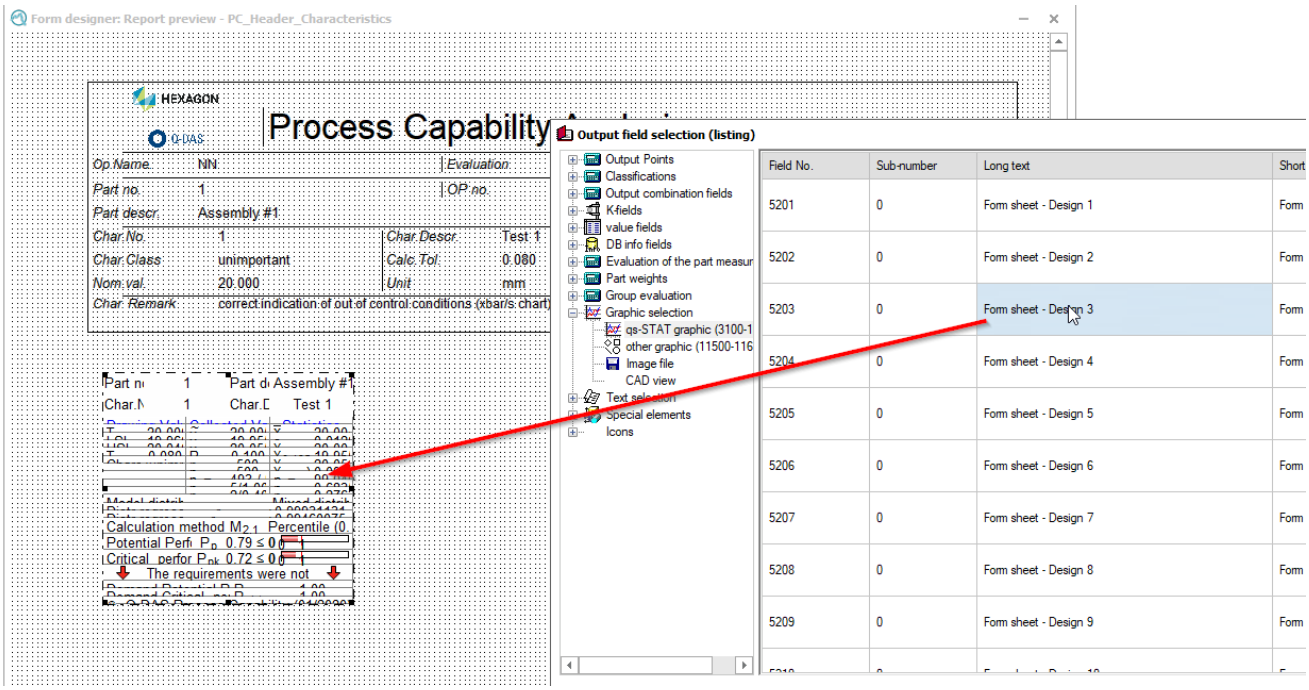


Search for "form sheet" in the area "qs-STAT graphic (3100-18999)".

NOTE: If you click in the field number and get the message "Form sheet: not found", simply select "Long text" in the search window.



"Form sheet - Design 3" is the form that is displayed with the "F10" key. Insert this using drag & drop as with value chart:



Adjust the size of the elements "value chart" and "Form sheet 3" and save again.