User manual

HxGN Universal Converter

Version: 2024.2

09 October 2024

HEXAGON

Contents

1. Information about this document

This document applies to version 2024.2 of the HxGN Universal Converter.

1.1. Document history

Version	Date	Author(s)	Modifications / Remarks
1.1	19.04.2024	SR	Initial release
1.2	09.10.2024	SR	Update to version 2024.2

2. General

2.1. Introduction

The purpose of this manual is to assist you in using the HxGN Universal Converter (hereinafter referred to as the "Universal Converter").

We have tried to describe all options of this software as best as possible and in a way that is understandable. However, we ask for your understanding that all features may possibly not be described. This may be due among other things to technical innovations, new options or similar influences.

As a precaution, we would like to point out that this user manual cannot replace training. Should you be interested in a course in this respect, we look forward to hearing from you.

Even after careful checking, errors in this user manual cannot be ruled out.

Therefore, we reserve the right to make typographical errors and mistakes.

Regardless of this, we are grateful for any suggestions, tips and proposals for improvement that arise from daily use of the Universal Converter.

If you need assistance, please contact your local Hexagon support.

2.2. Notes on the use of this user manual

- ### Find terms or functions that are not listed in the table of contents

  The terms used in this user manual for functions, etc. are identical to those used in the software. If certain functions cannot be found via the table of contents, use the search function in the PDF. To do this, enter the desired term in the notation in which it is used in the user interface.

- ### Using links

  If text passages are related to other chapters, they are linked to each other. These links can be recognized by the underlined and blue colored text. Clicking on this text will jump to the corresponding passage.

  In order to be able to find these passages in a printed user manual, the complete outline is preferably given.

  Example:

  Chapter: Configuration of the software, section: Button: Settings, Option: Area: General.

  or (corresponds to the navigation in the software):

  Button: Settings → Area: General.

  In principle, the last term will lead to the desired information (in the example above: Option Area: General).

  The complete structure is not indicated if the linked passage is located in the immediate vicinity of the text (example: see Example above).

  If the text passage to which you jumped does not contain a link to the original text, you can use the shortcut keys "Alt" + "←" (left arrow) to jump back to the source text.

- ### Symbols used

This symbol serves reminds you to read the corresponding text particularly carefully.

2.3. Meaning of mouse click, click or similar.

This term is used for the left mouse button. If the right mouse button has to be clicked, this is explicitly mentioned.

2.4. Recommended qualification

- ### Installation of the software

  The installation of the software should be performed by personnel who have the following knowledge and permissions:

  - PC skills
  - Windows skills
  - Installation of Windows programs
  - Extraction of compressed files
  - Changing access permissions in the file system and registry

  → Typical: Network Administrators

- ### Use of the software

  The use of the software should be performed by personnel who have the following knowledge and permissions:

  - PC – basic knowledge
  - Windows skills
  - If the chargeable option "PC-DMIS" is used:
    - Use of PC-DMIS
      - PC-DMIS knowledge
  - If the chargeable option "QUINDOS" is used:
    - Use of QUINDOS
      - QUINDOS Knowledge
  - Detailed training by Hexagon's application engineering department

  → Typical: Employees in quality assurance

3. Software License Agreement

It is a condition of use of the Software that all terms contained in the Software License Agreement are accepted. For details, please refer to the document "EN_EULA.pdf", which is located in the same folder as the user manual.

4. Scope of delivery

4.1. Standard

The standard scope of delivery of the software includes the following functions:

- Importing one or more Q-DAS files
- Export to ASCII
- Export to Excel

4.2. Options

The following options can be ordered for a fee:

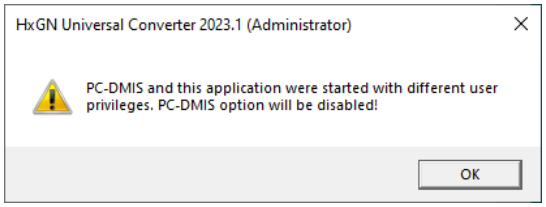
- Import from a PC-DMIS measurement routine
- Import Q-DAS file(s)

5. Starting the Universal Converter

Double-click the shortcut on the desktop to start the Universal Converter.

If the Universal Converter is to be used to import data from a PC-DMIS measurement routine, PC-DMIS must first be started. It must be ensured that PC-DMIS and the Universal Converter are used with identical user privileges.

If PC-DMIS is started with different privileges than the Universal Converter, the following message appears:



If you start the Universal Converter without having started PC-DMIS first, the buttons "PC-DMIS Online" and "Import from PC-DMIS" (see chapter: Operation, section: Importing the data, option: Button: PC-DMIS Online and Button: Import from PC-DMIS) are not available.

Alternatively, the Universal Converter can be started with a batch file or parameters (see chapter: Start variants of the Universal Converter).

6. User interface

1: Buttons

2: Characteristics in column ( ) or in row ( )

3: Information about the data source and the part

4: Information about the configuration file / header data / filter options

5: Display of characteristics

6: Status bar and / or progress bar (if activated)

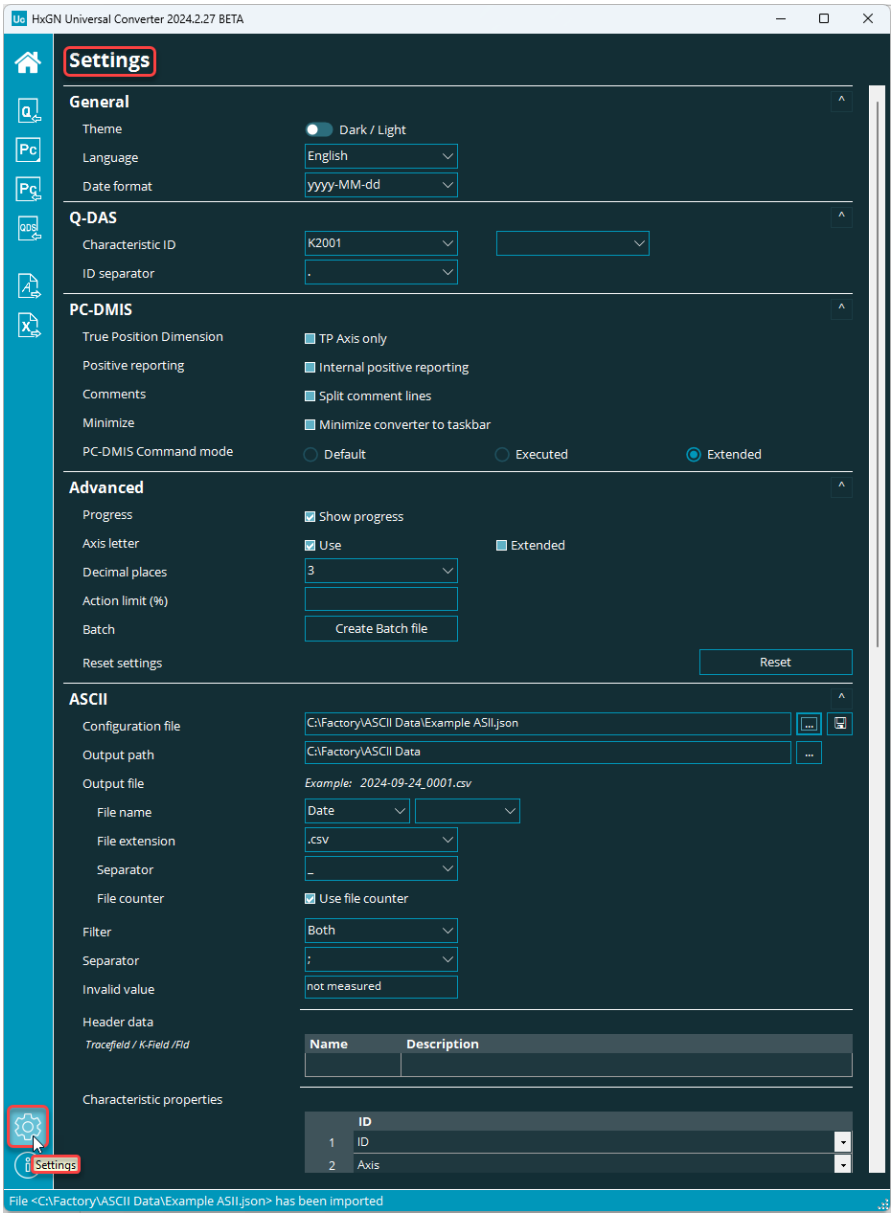
7. Configuration of the software

For the configuration of the software, the instructions given in the chapter: General, section: Recommended qualification, Option: Use of the software recommended knowledge and permissions are to be considered.

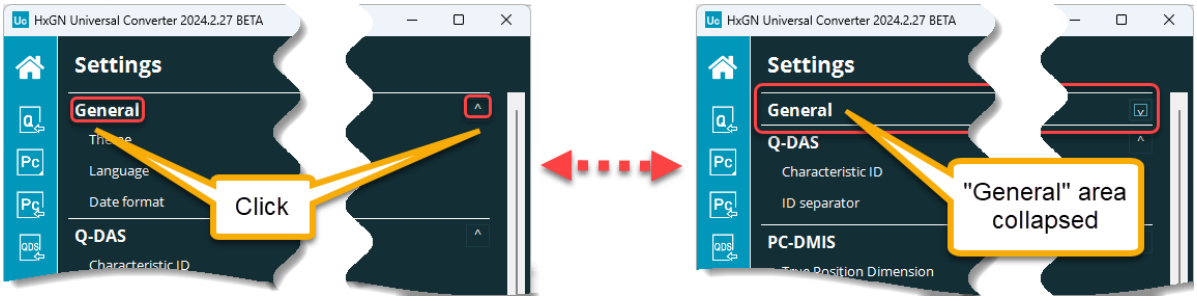
7.1. Button: Settings

By clicking on the button „ “ at the bottom left, you can switch to the "Settings" view. Here you can make settings for the user interface, reading in the data and exporting the data.

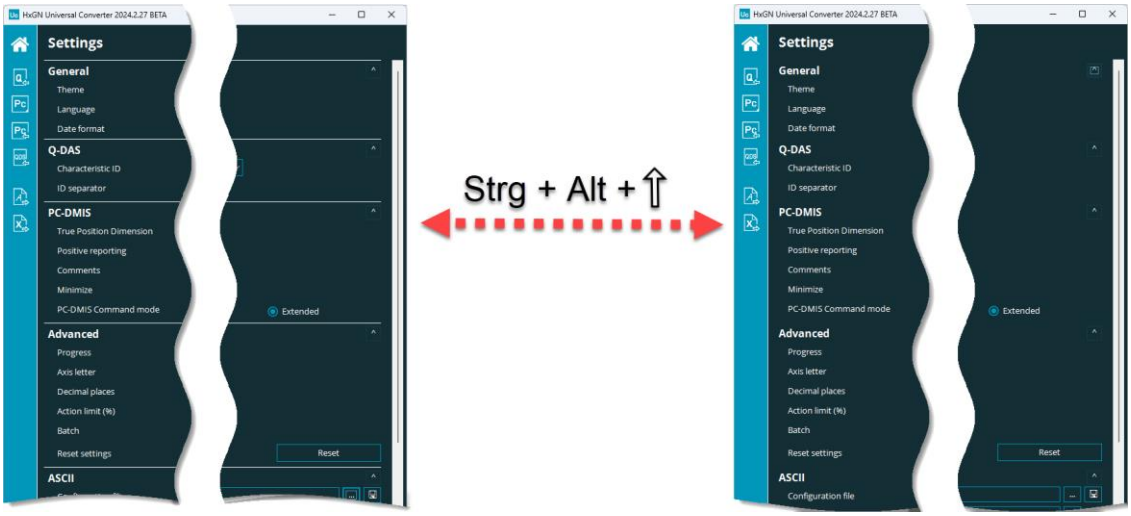
If you hover your mouse pointer over the button, a tooltip with the note "Settings" appears.



Individual areas can be reduced by clicking on the heading (bold print) or the "^" symbol on the left. To expand the area again, repeat the process.

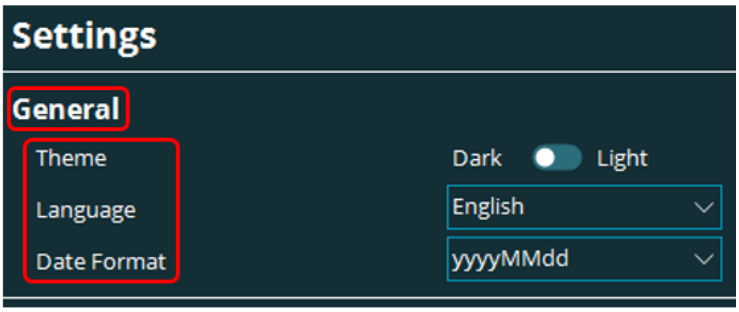


You can use the shortcut key "Ctrl"+"Alt "+"⇧" (Shift) to show or hide the horizontal lines between the "General", “Q-DAS”, “PC-DMIS”, "Advanced", ASCII" and "Excel" areas.



- ## Area: General

  You can make various settings for the user interface in the "General" area.



  - ### Theme

    You can set the user interface display to "Dark" or "Light". To do this, click on the slider and select the desired design.

  - ### Language

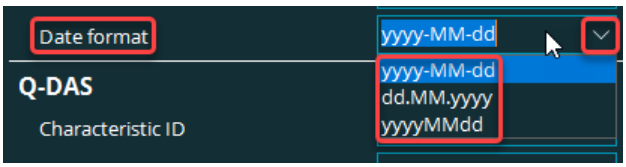
    If you click in the blue framed selection box to the right of the "Language" option a drop-down list opens from which you can select the desired language.

    After selecting another language, a dialog window opens asking if you want to change the language. If you answer with "Yes", the software is restarted.

    If your desired language is not selectable, please contact us. Please see chapter: General, section: Introduction for the contact details.

- Date format

  If you click the “ ” icon in the blue framed selection box to the right of the "Date format" option a drop-down list opens from which you can select the date format.



  A date format can also be freely defined. To do this, click in the selection box and enter the desired format (e.g.: yyyy.MM.dd). The format defined here is not entered in the drop-down list, but is available even after a restart. If the date format is changed using the drop-down list, the freely defined format must be entered again.

  If the date is selected for the file name in Area: ASCII, the format defined here will be used and displayed in Example.

- Area: Q-DAS
  - Characteristic ID

    This function is only supported when importing data from a Q-DAS file (see chapter: Operation, section: Importing the data, option: Button: Importing one or more Q-DAS files). If you hover the mouse pointer over the "⌄" symbol in the first blue-framed selection box to the right of "Characteristic ID", a tooltip appears with the note: "Only for Q-DAS import".

    If you click on the "⌄" icon in the selection box a drop-down list opens where you can specify from which K-field the name of the characteristic is to be read. You can select the Key fields (K-field) "K2001", K2002" or "K2003". After selecting a K-field, a new (empty) selection box is created. Once a K-field is selected, it is no longer available in the next selection box (in the screenshot below: K2001 and K2002 have been selected, only K2003 is available in the last K-field.

    A K-field can also be freely defined. To do this, click in the selection field and enter the desired K-field (in the screenshot below: K2004) The K-field defined here is not entered in the drop-down list, but is available even after a restart. If the K-field is changed using the drop-down list, the freely defined K-field must be entered again.

    You can define a maximum of 3 K-fields. These are separated with the separator selected under "ID Separator" (see below).

    In the user interface, this value is used in the "Characteristics" area for the "Name" column (see chapter: Operation, section: Displaying the imported characteristics and their values, option: Characteristics table).

  - ID Separator

    If you click on the "⌄" icon in the blue framed selection box to the right of "ID Separator" a drop-down list opens from which you can select the desired separator.

    If you want to use a separator that is not available in the drop-down list, you can enter it by clicking in the selection box. The separator defined here is not entered in the drop-down list but is available even after a restart. If the separator is changed using the drop-down list, the freely defined separator must be entered again. The separator is used for separating the individual K-fields (see "Characteristic ID" above).

- ## Area: PC-DMIS

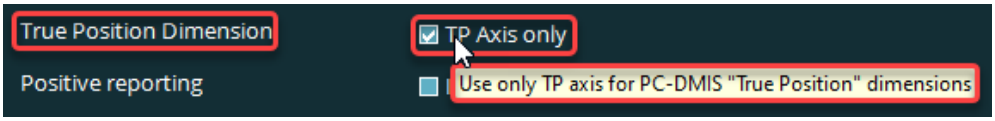
  This area is only available if PC-DMIS has been installed and the "PC-DMIS" option has been enabled.

  - ### True Position Dimension

    This function is only supported if data from a PC-DMIS measurement routine is used (see chapter: Operation, section: Importing the data, point: Button: PC-DMIS Online as well as Button: Import from PC-DMIS). The "PC-DMIS" option must be enabled for this and PC-DMIS must have been installed.

    By activating and deactivating the checkbox, you can specify whether all values or only the TP axes are to be displayed for position dimensions.

    When the mouse pointer is moved over the text, a tooltip appears with a corresponding hint.

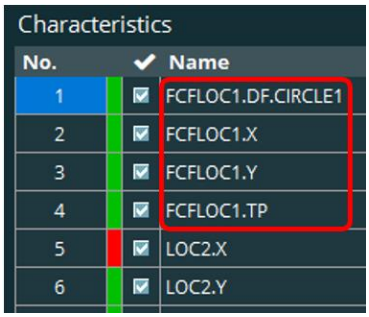


The settings for "Axis letter" (see below) influence the display and output. In the examples below, "Use" and "Extended" are active for "Axis designation".

- "TP axis only" checkbox deactivated

  All axes belonging to the position dimension are displayed and output.

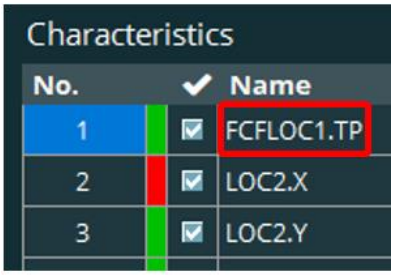
  Example:



- "TP axis only" checkbox activated

  Only the "TP axis" of the position dimension is displayed and output.

  Example:



- Internal positive reporting

  This function is only supported if data from a PC-DMIS measurement routine is used (see chapter: Operation, section: Importing the data, point: Button: PC-DMIS Online as well as Button: Import from PC-DMIS). The "PC-DMIS" option must be enabled for this and PC-DMIS must have been installed.

  By activating and deactivating the checkbox, you can specify whether positive reporting is to be used for the display and output of the values. This function is almost identical to the “Positive reporting” function in PC-DMIS, but is carried out regardless of whether this function is activated in PC-DMIS or not. In contrast to PC-DMIS, *all* axes are taken into account.

  - Checkbox active

    With negative nominal values, the nominal value, measured value and deviation are displayed and output as positive values for all axes. The tolerances are swapped and the signs are changed. This happens regardless of whether the “Positive reporting” function is active in PC-DMIS or not (function key “F5” ➞ “Dimension” tab ➞ Area: Positive logging).

    Example:

    Feature in PC-DMIS (all values in mm):

Nominal	Lower tolerance	Upper tolerance	Measurement value	Deviation
-2.000	-0.020	0.010	-2.015	-0.015

    Display and output in the universal converter (all values in mm):

Nominal	Lower tolerance	Upper tolerance	Measurement value	Deviation
2.000	-0.010	0.020	2.015	0.015

    Characteristics with positive nominal values remain unaffected by this function.

  - Checkbox active

    The values are displayed and output as they are in PC-DMIS.

- Comments

This function is only supported if data from a PC-DMIS measurement routine is used (see chapter: Operation, section. Importing the data, option: Button: PC-DMIS Online and Button: Import from PC-DMIS). The "PC-DMIS" option must be enabled for this and PC-DMIS must have been installed.

You can use comments as additional explanation of the individual characteristics. The respective comment is firmly linked to a characteristic.

Whether a comment is used or not depends on the type of the comment and the position in the measurement routine.

- The comment must be a comment of the "**Report**" type.
- The comment must **directly** precede the characteristic. It is irrelevant whether there is a command (or several commands) between the comment and the characteristic or not.

Example 1:

```
              COMMENT/REPT,
              Pos X-Axis
              Pos Y-Axis
              Pos Z-Axis
              Diameter
              Form
              MOVE/CLEARPLANE
DIM LOC1= LOCATION OF CIRCLE KREIS1  UNITS=MM ,$
```

This comment is not used because the "MOVE/CLEARPLANE" command is located between the comment and the characteristic.

Example 2:

```
              COMMENT/REPT,
              Pos X-Axis
              Pos Y-Axis
              Pos Z-Axis
              Diameter
              Form
DIM LOC1= LOCATION OF CIRCLE KREIS1  UNITS=MM ,$
```

This comment is used because there is no command between the comment and the characteristic.

The output result depends on the status of the checkbox at "Split comment lines".

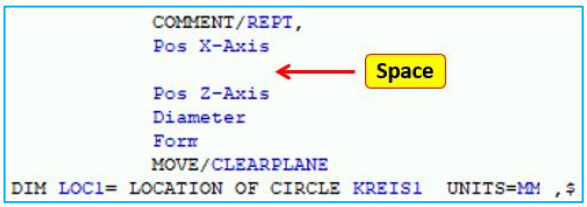
- checkbox "Split comment lines" activated

  The assignment is carried out in the order of the comment lines. The first comment line is assigned to the first axis of the characteristic, the second comment line to the second axis and so on. This means:

Characteristic (axis)	Comment
LOC1.X	Pos X-Axis
LOC1.Y	Pos Y-Axis
LOC1.Z	Pos Z-Axis
LOC1.D	Diameter
LOC1.RN	Form

  If you do not want to assign a comment to an axis, you must insert a space between the comments.

  Example:



  In the example above, no comment is assigned to the Y-axis.

Characteristic (axis)	Comment
LOC1.X	Pos X-Axis
LOC1.Y	
LOC1.Z	Pos Z-Axis
LOC1.D	Diameter
LOC1.RN	Form

- checkbox "Split comment lines" deactivated

  If you activate the checkbox, all comments are assigned to each axis. This means:

Characteristic (axis)	Comment
LOC1.X	Pos X-AxisPos Y-AxisPos Z-AxisDiameterForm
LOC1.Y	Pos X- AxisPos Y- AxisPos Z-AxisDiameterForm
LOC1.Z	Pos X- AxisPos Y- AxisPos Z-AxisDiameterForm
LOC1.D	Pos X- AxisPos Y- AxisPos Z-AxisDiameterForm
LOC1.RN	Pos X- AxisPos Y- AxisPos Z-AxisDiameterForm

  This does not seem to make sense in the above example but may be helpful with a different comment structure.

- ## Minimize

  By activating or deactivating the checkbox, you can decide whether the user interface should be minimized or not. This affects the "PC-DMIS Online" function (see below).

  If the mouse pointer is moved over the checkbox or the text, a tooltip appears with a corresponding message.

  - Checkbox "Minimize" activated

    If the "PC-DMIS Online“ button (see below) is clicked, the universal converter is minimized.

  - Checkbox "Minimize" deactivated

    If the "PC-DMIS Online" button (see below) is clicked, the universal converter is not minimized.

- ## PC-DMIS Command mode

  This function is only supported if data from a PC-DMIS measurement routine is used (see chapter: Operation, section: Importing the data, point: Button: PC-DMIS Online as well as Button: Import from PC-DMIS). The "PC-DMIS" option must be enabled for this and PC-DMIS must have been installed.

  This function is used to define which characteristics are read from the measurement routine.

Among other things, this is important when using characteristics from a loop. Supported are simple loops of the types: "Loop / Loop End", "While / EndWhile" and "Do / Until". Multiple nested loops are not supported.

- Radio button: "Default" selected

  Only the "visible" characteristics are read in. That means, if characteristics are evaluated in a loop, only the characteristic from the last execution is used.

- Radio button: "Executed" selected

  All executed characteristics are read in. That means for example, skipped characteristics in a loop are not used. If you hover the mouse pointer over the radio button or the term, a tooltip appears with the note "Executed PC-DMIS commands".

- Radio button: Extended

  This setting is recommended if the measurement routine contains more complex processes (e.g. loops, skipped features or characteristics).

  All characteristics are read in. That means, skipped characteristics in a loop are also used. If you hover the mouse pointer over the radio button or the term, a tooltip appears with the note "Recommended for loops".

If this setting is changed, the values of the characteristics in the user interface are not updated. In this case, the data must be read in again from the measurement routine.

- Area: Advanced
  - Progress

By activating or deactivating the checkbox, you can decide whether the progress bar is displayed or not.

- “Show progress" checkbox deactivated

  The progress bar in the user interface is not displayed in the status bar. This may reduce the time required for the data import and export.

- “Show progress" checkbox activated

  The progress bar in the user interface is displayed in the status bar. Importing and exporting data may take more time.

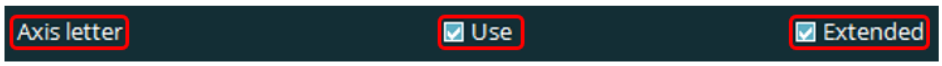
- Axis letter

This function is only supported if data from a PC-DMIS measurement routine or a QUINDOS file is used (see chapter: Operation, section. Importing the data, option: Button: PC-DMIS Online as well as Button: Import from PC-DMIS and Button: Import QUINDOS file(s). The options for "PC-DMIS" and / or „QUINDOS“ must be enabled for this.

By activating or deactivating the checkbox, you can decide whether axis letters are displayed or not.

- “Use" checkbox deactivated

  Only the name of the characteristic is used. The display and output are in the form: "{ characteristic name }". The Axis letter checkbox "Extended" (see below) cannot be activated.



- “Use" checkbox activated

  In addition to the characteristic’s name, the axis is used. The display and output are in the form: "{characteristic name}.{axis}". The Axis letter checkbox "Extended" can be activated.

  - “Extended" checkbox deactivated

    The display and output depend on the selected setting of the "Use" checkbox (see above). If you disable the checkbox there, you cannot enable it here.

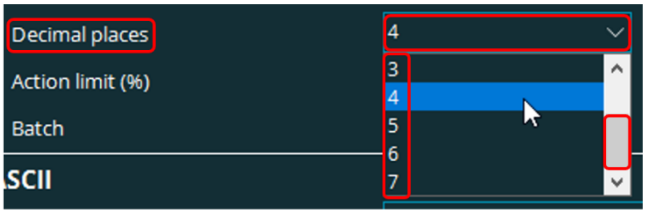
  - “Extended" checkbox activated

    You can only activate the checkbox if the "Use" checkbox (see above) is active.

    For geometric tolerances, the associated feature is used in addition to the name of the characteristic and axis. The display and output are in the form: "{characteristic name}.{axis}.{feature}".

- Decimal places

If you click in the blue framed selection box to the right of the "Decimal places" option a drop-down list opens from which you can select the number of decimal places. If the desired number is not available in the drop-down list, you can scroll from a minimum of "0" to a maximum of "7" using the scroll bar (or mouse wheel) located on the right.



- Action limit

  If you click in the blue-framed input box to the right of "Action limit (%), you can define a percentage for the action limit.

  The action limit allows you to narrow the tolerance limit in percentage terms. For example, if you define a tolerance of ±0.1 mm and an action limit of 80%, characteristics which have deviations of more than +0.08 mm and less than 0.08 mm are considered critical. These can be marked for output by using the filter (see chapter: Operation, section: Button: Home, options: "Always list all" checkbox).

  All characteristics with deviations smaller than +0.1 mm and larger than -0.1 mm are within tolerance, characteristics with deviations larger than +0.1 mm and smaller than -0.1 mm are out of tolerance. You can also select these characteristics for output using the filter (link: see above).

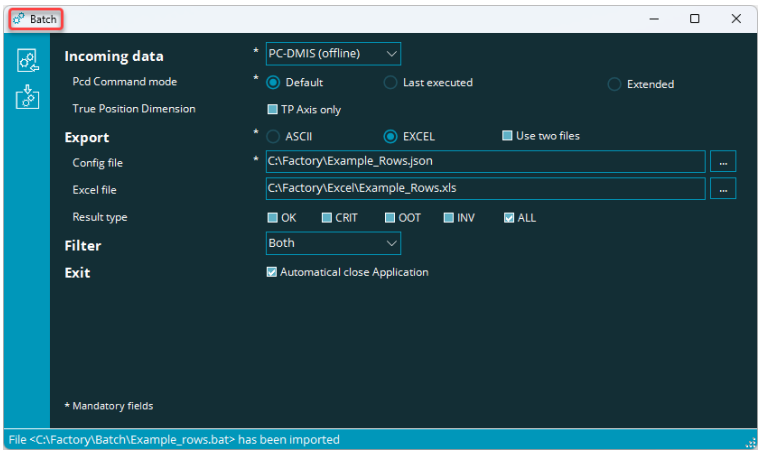
  

  If you don't want to take into account the action limit, enter 0% or 100%. Alternatively, the field can be left blank.

- Batch

  You can generate a batch file for starting the Universal Converter from a measurement routine.

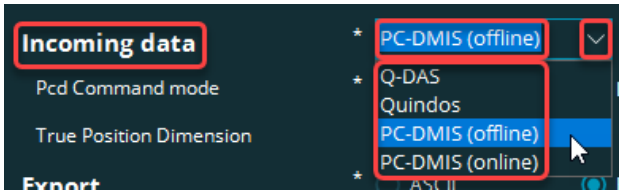
  If you click on the "Create batch file" button the "Batch" dialog box opens, in which you can make various settings for importing and exporting the data.



  All settings marked with an "*" must be made.

  - Area: Incoming data

    If you click on the "⌄" icon in the blue-framed selection box to the right of "Incoming data" a drop-down list opens that you can decide from which source the data should be read.



    - Q-DAS

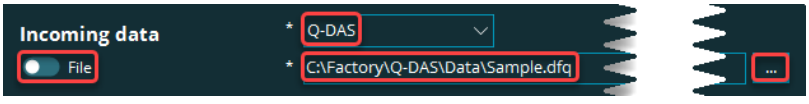
      The data is read from a Q-DAS file. It is irrelevant whether the file is in "dfq" or "dfd" format. The batch file can be called at the beginning or end of the measurement routine (see chapter: Start variants of the Universal Converter, section: Start with batch file).

      If this option is selected, a slider is available to determine whether the files are received from a file or a folder.

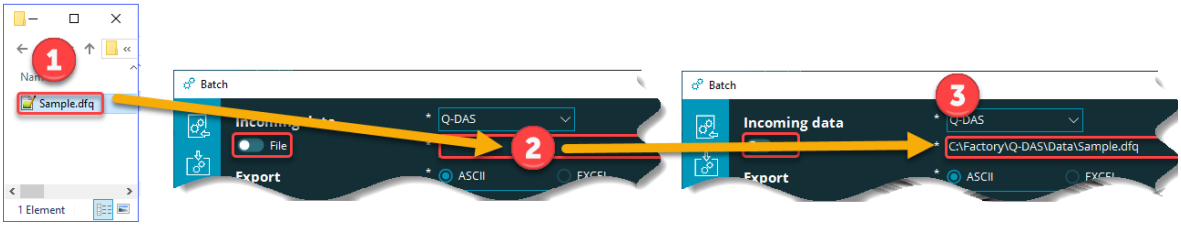
      In the "Export" area, the "Measurement number(s)" input field (see below) is also available.

      - "File" selected

        The path and name of the Q-DAS file is set. To do this, click on the "..." button and select the file in the file manager.



Alternatively, the path and name of the file can be selected by "drag & drop" as usual in Windows. To do this, select the file in the file manager and drag it into the input field with the mouse. After releasing the mouse button, the path and name are adopted.

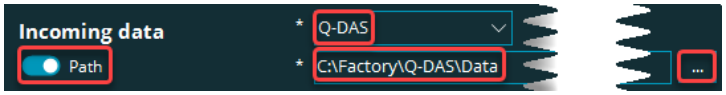


Another option is to specify the path and folder by clicking in the input field and then entering it.

For import and export, the file with this name must be present in the directory. The export of the data is described in detail at the buttons "Export to ASCII" and "Export to Excel".

- “Path” selcted

  The folder where the Q-DAS file or files are located is set. To do this, click on the "..." button and select the file in the file manager. All Q-DAS files present in the folder will be used for import and export. The export of the data is described in detail at the buttons "Export to ASCII" and "Export to Excel".



Alternatively, the path and folder can be specified using "Drag & Drop" or by entering them. The procedure for this is identical to "File" selected" (see above - [the folder is selected instead of the file]).

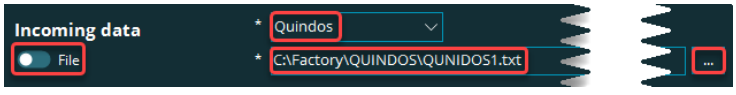
- Quindos

  The data is read from a QUINDOS file. The batch file can be called at the beginning or end of the measurement routine (see chapter: Start variants of the Universal Converter, section: Start with batch file).

  If this option is selected, a slider is available to determine whether the files are received from a file or a folder.

  - “File” selected

    The path and name of the QUINDOS file is set. To do this, click on the "..." button and select the file in the file manager.

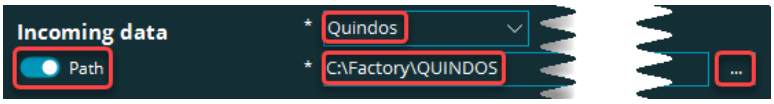


Alternatively, the path and folder of the file can be specified using "Drag & Drop" or by entering it. The procedure for this is identical to “Q-DAS” → "File" selected" (see above).

For import and export, the file with this name must be present in the directory. The export of the data is described in detail at the buttons "Export to ASCII" and "Export to Excel".

- “Path” selcted

  The folder where the QUINDOS file or files are located is set. To do this, click on the "..." button and select the file in the file manager. All QUINDOS files present in the folder will be used for import and export. The export of the data is described in detail at the buttons "Export to ASCII" and "Export to Excel".

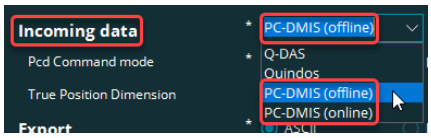
  Alternatively, the path and folder can be specified using "Drag & Drop" or by entering them. The procedure for this is identical to "File" selected" (see above - [the folder is selected instead of the file]).

- PC-DMIS (offline)

  This function is only supported if data from a PC-DMIS measurement routine shall be used. The "PC-DMIS" option must be enabled for this.

  The data is read from a PC-DMIS measurement routine.

  The batch file must be called at the *end* of the measurement routine or after the characteristics (see chapter: Start variants of the Universal Converter, section: Start with batch file).

  With "PC-DMIS command mode" and "True Position Dimension" (see below) additional parameters for the output of the characteristics are defined.

- PC-DMIS (online)

  This function is only supported if data from a PC-DMIS measurement routine shall be used. The "PC-DMIS" option must be enabled for this.

  The data is read online from a PC-DMIS measurement routine.

  The *.batch file must be called at the *beginning* of the measurement routine or after the characteristics (see chapter: Start variants of the Universal Converter, section: Start with batch file).

  "PC-DMIS command mode" (see below) defines which characteristics are output.

  - PC-DMIS Command mode

    This function is only available if you selected "PC-DMIS (offline)" or "PC-DMIS (online)" (see above).

    - Radio button: "Default" selected

      Only the "visible" features are read in. That means, if characteristics are evaluated in a loop, only the characteristic from the last execution is used.

    - Radio button: "Executed" selected

      All executed features are read in. That means for example, skipped characteristics in a loop are not used. If the mouse pointer is moved over the radio button or the text, a tooltip appears with the message "Executed PC-DMIS commands".

- Radio button: Extended

  This setting is recommended if the measurement routine contains more complex processes (e.g. loops, skipped features or characteristics).

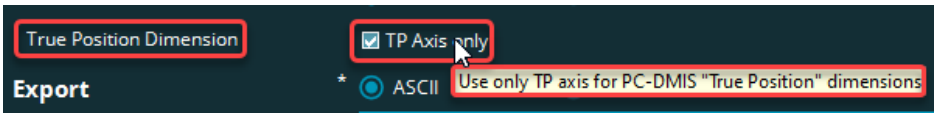
  All characteristics are read in. That means, skipped characteristics in a loop are also used. If the mouse pointer is moved over the radio button or the text, a tooltip appears with the message "Recommended for loops".

- True Position Dimension

  This function is only available if you selected "PC-DMIS (offline)" or "PC-DMIS (online)" (see above).

  By activating and deactivating the checkbox, you can specify whether all values or only the TP axes are to be displayed for position dimensions.

  When the mouse pointer is moved over the text, a tooltip appears with a corresponding hint.



The settings for "Axis letter" (see below) influence the display and output. In the examples below, "Use" and "Extended" are active for "Axis designation".

- "TP axis only" checkbox deactivated

  All axes belonging to the position dimension are displayed and output.

  Example (Excel):

Symbol	ID	Einh
∅	FCFLOC1.DF.CIRCLE2	MM
⌖	FCFLOC1.X	MM
⌖	FCFLOC1.Y	MM
⌖	FCFLOC1.TP	MM
⌖	LOCE2.X	MM
⌖	LOCE2.Y	MM

- "TP axis only" checkbox activated

  Only the "TP axis" of the position dimension is displayed and output.

  Example:

Lfd.Nr.	Symbol	ID	Einhe
1	⌖	FCFLOC1.TP	MM
2	⌖	LOCE2.X	MM
3	⌖	LOCE2.Y	MM
4	∅	LOCE2.D	MM

- Area: Export

  The checkboxes define in which format the data output is carried out.

  - Radio button "ASCII" active

    An ASCII file is output. The settings in the "ASCII" area (see below) must be taken into account. The input fields "Path" and "Config file" (see below) can be filled.

    - Mesurement number(s)

      This input field is only available if "Q-DAS" has been selected in the "Incoming data" area (see above). If a "Q-DAS" file contains several measurements, you can specify which measurement(s) are to be output. If several Q-DAS files are used, the corresponding measurements are output in each file.

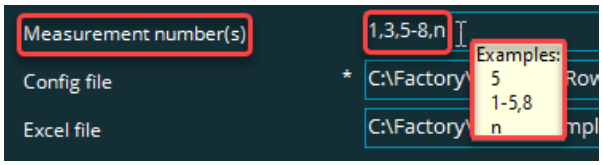
      Regardless of whether one file or several files are output, measurements that are not available are ignored.

      Example:

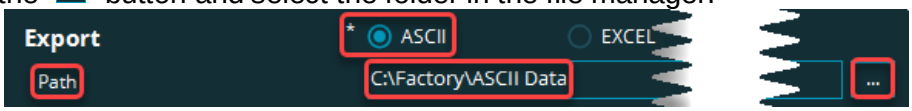
      In the screenshot above, measurements 1, 3 and 5 should be output. If the file only contains 4 measurements, only measurements 1 and 3 are output. Measurement 5 is ignored.

      The possible combinations of the input are identical to the parameter "QdasMeasNum" (see chapter: Start variants of the Universal Converter, section: Start with parameters). If the mouse pointer is moved over the input field, a tooltip appears with examples of possible combinations.

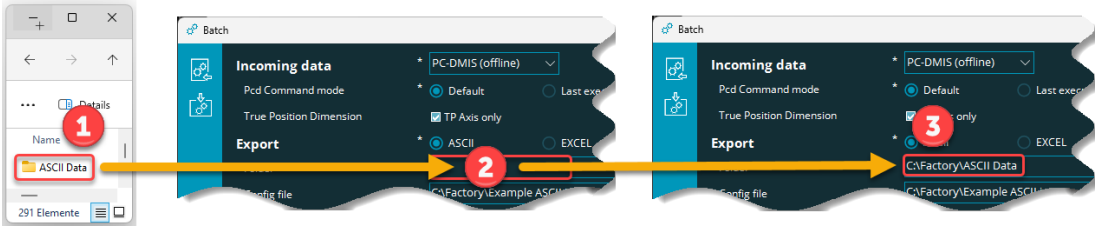
      

    - Path:

      The folder for the output of the ASCII file is defined. To do this, click on the "..." button and select the folder in the file manager.

      Alternatively, the path and folder for the file can be selected by "drag & drop" as usual in Windows. To do this, select the file in the file manager and drag it into the input field with the mouse. After releasing the mouse

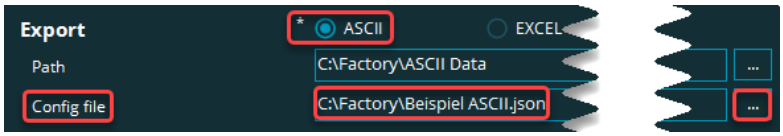
      button, the path and name are adopted.

Another option is to specify the path and folder by clicking in the input field and then entering it.

If no path is specified (input field remains empty), the current settings from the "ASCII" area are used when the batch file is executed (see: "Area: ASCII" below).

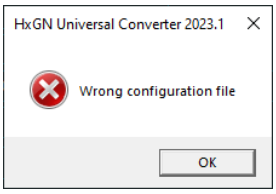
- Config file

  The configuration file can be selected. To do this, click on the "..." button and select the configuration file in the file manager.



  Alternatively, the configuration file can be selected by "drag & drop" as usual in Windows. The procedure for this is identical to "Path" (see above - [the file is selected instead of the folder])..

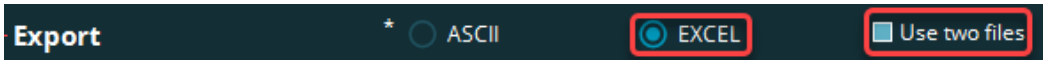
  It must be ensured that the configuration file was created in the "ASCII" area at "Config file" (see below). If a file is loaded in the wrong format (for example, created in the "Excel" area), the following message appears when saving the batch file:



  If no configuration file is used (input field remains empty), the current settings from the "ASCII" area are used when the batch file is executed (see: "Area: ASCII" below).

- Radio button "Excel" active - output to one table

  The output is to an Excel workbook. To do this, a configuration file must be selected in the "Config file" input field (see below). The "Use two files" checkbox can be used to decide whether output should be made to another table (see below).

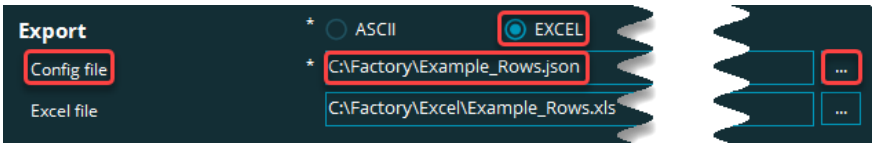


  - Mesurement number(s)

    This input field is only available if "Q-DAS" has been selected in the "Incoming data" area (see above) and is described in detail above under "Radio button "ASCII"" → "Measurement number(s)".

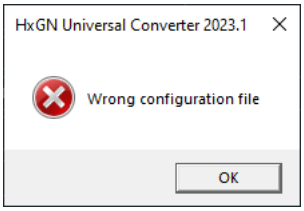
- Config file

  You have to select the configuration file for the Excel workbook. To do this, click on the "..." button and select the configuration file in the file manager.



  The filter in the file manager allows you to choose between the file formats "*.cfg" and "*.json". If a "*.cfg" file is selected, it is converted to the "*.json" format when it is saved and saved in addition to the "*.CFG" (in the folder of the *.CFG file).

  Alternatively, the configuration file can be defined using "Drag & Drop" or by entering it. The procedure for this is identical to "Radio button "ASCII" active" ➔ "Path" (see above - [the Path is selected instead of the file]).



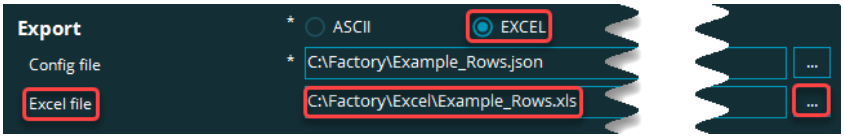
  You must ensure that the configuration file was created in the "Excel" area at "Config file" (see below). If a file is loaded in the wrong format (for example, created in the "ASCII" area), the following message appears when saving the batch file:

  If no configuration file is selected, the batch file cannot be saved (see: Button: Save the batch file below).

- Excel file

  This input field is only available if the radio button "Excel" (see above) is active.

  The Excel file for the output can be selected. To do this, click on the "..." button and select the Excel file in the file manager.



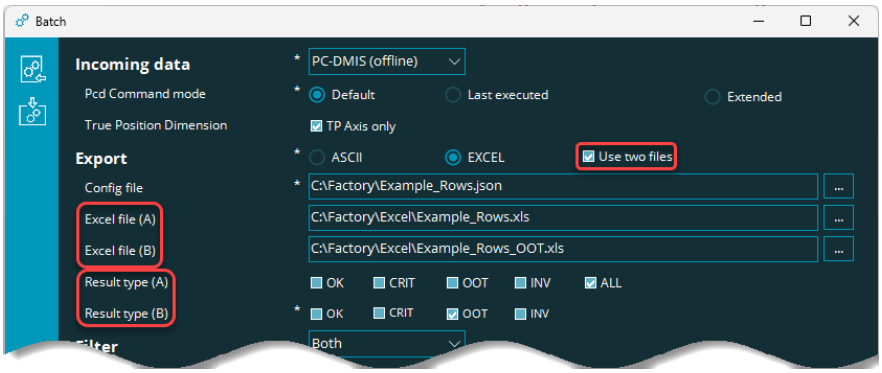
  Alternatively, the configuration file can be defined using "Drag & Drop" or by entering it. The procedure for this is identical to "Radio button "ASCII" active" ➔ "Path" (see above – [the file is selected instead of the folder]).

  Another option is to specify a path and name of a non-existent Excel file. The file must have the extension "XLX" or "XLS". After executing the batch file, the Excel file is created again.

  If no Excel file is specified (input field remains empty), the table selected in the "Excel" area is used when the batch file is executed (see: "Area: Excel" below).

- Radio button "Excel" active - output in two tables

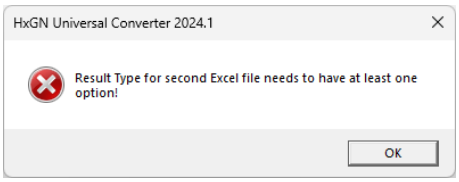
  If the "Use two files" checkbox is activated, a second table is created in addition to the Excel table defined above. This can be seen from the additions "(A)" and "(B)" to "Excel file" and "Result type".



  A new file with the name: "selected name_{date_time}" is created for the output.

  A configuration file must be selected in the "Config file" input field (see above).

  The Result type (B) (see below) determines which characteristics are output in the second table. If no checkbox is activated there, it is not possible to save the batch file. The following message appears:



  The procedure for selecting Excel files is identical to "Excel file" above.

- Result type

  You can use the checkboxes to decide which measuring values of the characteristics shall be output.

  - Checkbox "OK" active

    All characteristics within the tolerance are output.
  - Checkbox "CRIT" active

    All critical characteristics are output (see also "Action limit" above).
  - Checkbox "OOT" active

    All characteristics outside the tolerance are output.
  - Checkbox "INV" active

    All invalid characteristics are output (e.g.: an element and or reference for the characteristic and / or the characteristic itself not measured).
  - Checkbox "ALL" active

    All characteristics are output.

    All the other checkboxes will be disabled.

  If no checkbox is activated, the filter is automatically set to “All” after saving the file (see Button: Save batch file below).

A combination of checkboxes is possible. However, the simultaneous selection of the checkboxes “OK”, “CRIT”, "OOT" and "INV" is not allowed (corresponds to: "All"). In this case, one of the checkboxes will be disabled.

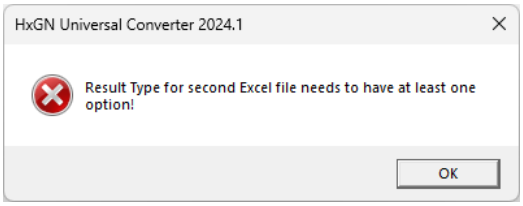
If "ALL" is selected, all other checkboxes will be deactivated.

The settings for "Filter" (see below) must be taken into account, as they also affect the output.

If the "Use two files" checkbox (see above) is active, "Result type (A)" is available for the first file and "Result type (B)" for the second file. The output options for the first file (Excel file (A)) are described in detail above.

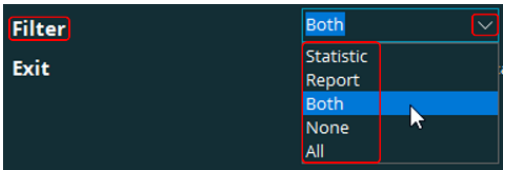
The "All" checkbox is not available for "Result type (B)". All other result types are identical to those described above. At least one checkbox must be activated. If this is not the case, the batch file cannot be saved.

The following message appears:



- Filter

If you click on the "⌄" icon in the blue-framed selection box to the right of "Filter" a drop-down list opens that you can use to specify which characteristics from the PC-DMIS measurement routine are to be output.



The parameter selected in each case affects the output as follows:

- “Statistic" selected:

  All characteristics are output for which "BOTH" or "STAT" was selected as output in the measurement routine.
- "Report" selected:

  All characteristics are output for which "BOTH" or "REPORT" was selected as output in the measurement routine.
- "Both" selected:

  All characteristics are output for which "BOTH", “Report” or "STAT" was selected as the output in the measurement routine.
- "None" selected:

  All characteristics are output for which "NONE" was selected as the output in the measurement routine.
- "All" selected

  All characteristics are output regardless of the selected output option in the measurement routine.

If a batch file is saved (for example, deleted from the field) without specifying a filter with "Save batch file" (see below), the filter is used as follows:

- Radio button "ASCII" active

  The filter selected in the global settings at "ASCII" (see Area: ASCII"➝ "Filter" below) will be used.
- Radio button "Excel" active

  The filter that is saved in the .json file using "Save configuration" (see Area: Excel“ ➝ Filter und Konfigurationsdatei below) is used.

The settings for "Result type" (see above) must be taken into account, as they also affect the output.

- Area: Exit

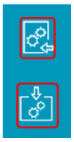
  This defines how the user interface should behave after the data transfer.
  - checkbox “Automatically close application" deactivated

    The user interface remains open after the data transfer.
  - Checkbox "Close application automatically" activated

    After transferring the data, the user interface is closed.

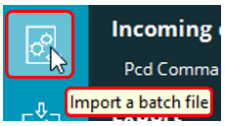
To prevent the Universal Converter from being opened multiple times, we recommend activating this checkbox.

Once all settings have been made, the batch file can be saved and reloaded using the buttons on the left.

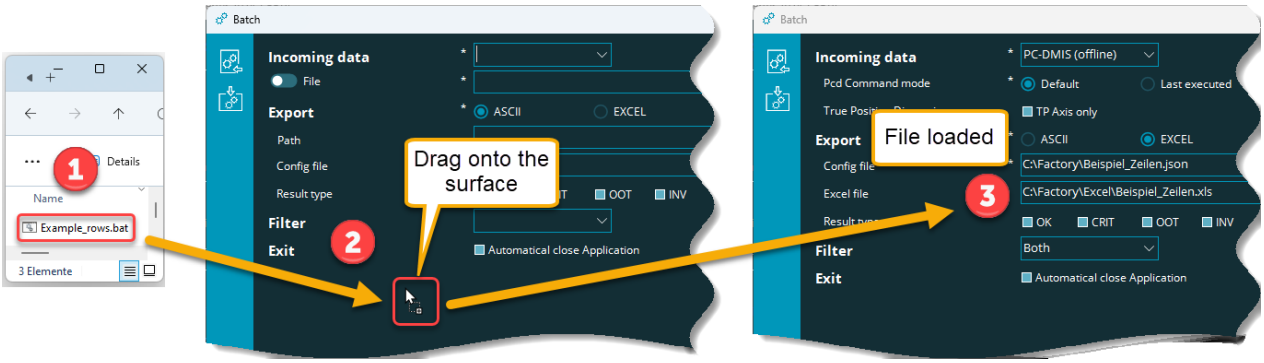


- Button: Import a batch file

  By clicking on the button "Import a batch file" the file manager is opened and a previously saved batch file is loaded and can be edited, as described above. If you hover the mouse pointer over the button icon, a tooltip appears.



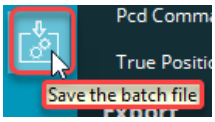
Alternatively, a batch file can be loaded by "drag & drop" as usual under Windows. To do this, select the file in the file manager and drag it with the mouse onto the surface (not into the input fields). After releasing the mouse button, the file is loaded.



The footer displays the path and name of the imported file.

- Button: Save the batch file

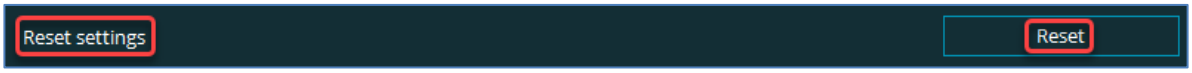
  If you click on the button "Save batch file" the file manager opens and the batch file can be saved. If you hover the mouse pointer over the button icon, a tooltip appears.

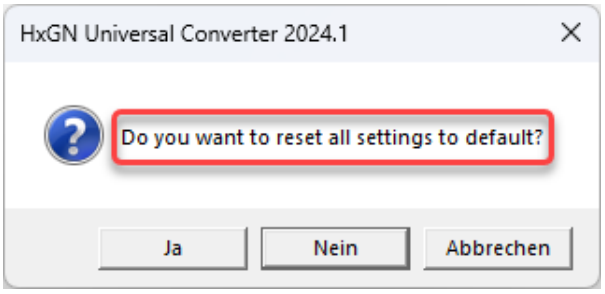
  The footer displays the path and name of the saved file.

  If not all required parameters are available, the red highlighted message appears in the footer: "Batch file cannot be created".

- “Reset" button

  Click on the button to open the following dialog box:

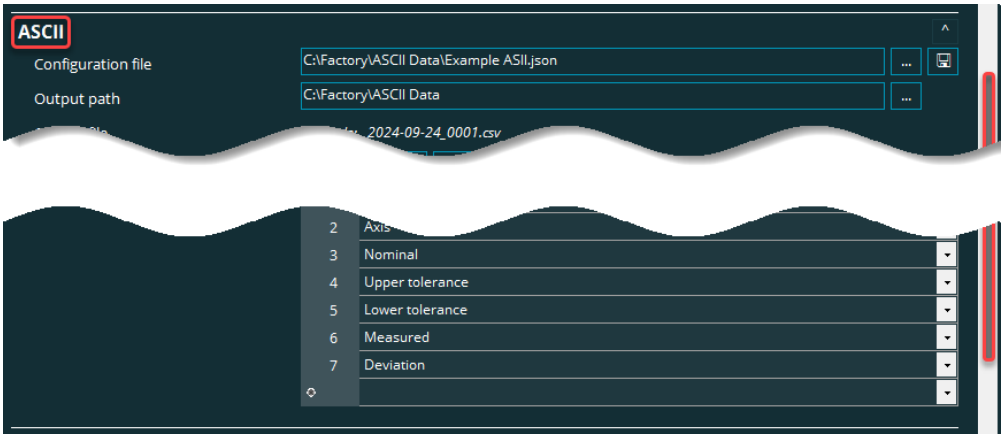
  If "Yes" is selected, all changes made are discarded and default values are loaded.

  The default values are applied permanently and are also active after a restart.

  "No" or "Cancel" closes the dialog window without loading default values.

- ## Area: ASCII

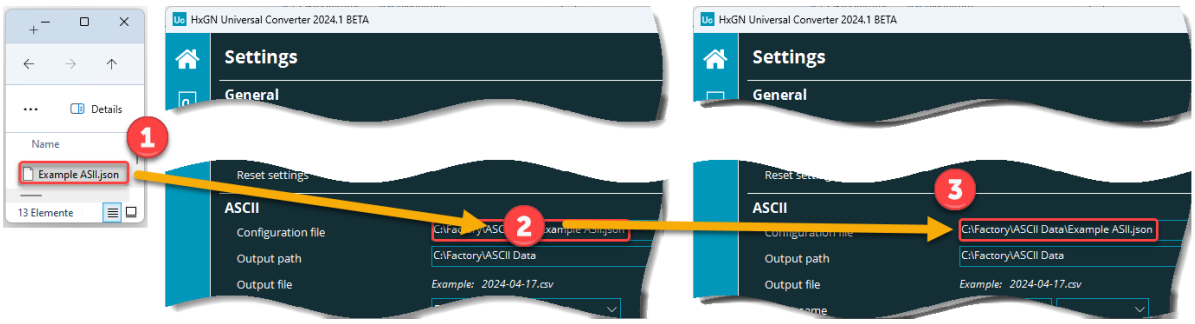
  You can make various settings for the ASCII file output in the "ASCII" area. You can use the scroll bar on the right or the mouse wheel to scroll through the area.



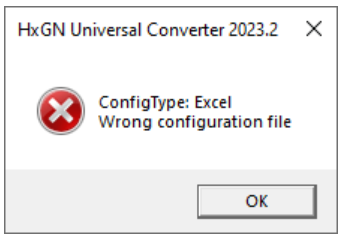
  - ### Configuration file

    The configuration file can be selected. To do this, click on the "..." button and select the configuration file in the file manager.

    Alternatively, the configuration file can be selected by "drag & drop" as usual in Windows. To do this, select the file in the file manager and drag it into the input field with the mouse. After releasing the mouse button, the file is loaded.



    If an incorrect configuration file is loaded using the "..." (Load configuration) button (e.g.: created in the "Excel" area), the following message appears when the batch file is saving:



If changes are made, they can be saved using the "" (Save current config) button.

When starting the Universal Converter, the settings from this file are used. Changes made before starting the Universal Converter and not saved in this file will be discarded.

- Output path

  By clicking the "..." button to the right of the input field, the file manager is opened and the path for the file output can be specified. The selected path appears in the input field.

  Alternatively, you can define the file path manually. To do this, click in the input field and enter the path.

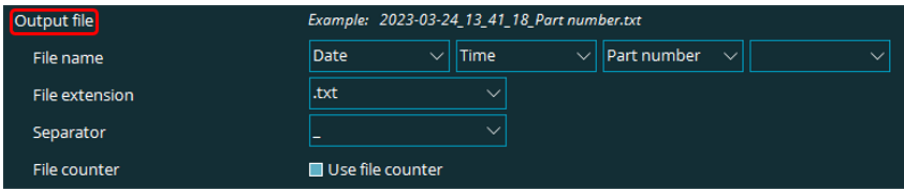
  If you do not enter a path, the output is to the directory from which the data was read (file, measurement routine).

  - Example

    This is an example of the file name based on the parameters selected above:

- Area: Output file

  In this area you define how the name of the ASCII file is to be formed and which characteristics are to be output to this file (see chapter: Operation, section: Exporting the data, option: Button: Export to ASCII



  - File name

    If you click on the blue framed selection box a dropdown list opens, from which a maximum of 5 parameters for the file name can be selected. After selecting a parameter, a new (empty) selection box is created. Once a parameter is selected, it is no longer available in the next selection box.

    Depending on the source from which the data was imported (see "Operation" → "Button: Home" and "Importing the data"), the parameters for the file name are determined as follows:

    - Import from measurement routine

      The values for "Part description", "Part number" and “Part amendment status" are read from the measurement routine.

If these values are not present in the measurement routine, they will not be used for the file name.

The values for "Date" and "Time" are determined from the system time during import (first imported element). If these are not selected, the checkbox at "Use file counter" (see below) should be activated, otherwise the already created file will be overwritten with the new file.

- Import from file

  The values for "Part description", "Part number" and “Part amendment status" are read from the file.

  If these values are not present in the file, they will not be used for the file name.

  The values for "Date" and "Time" are determined from the system time during import (first imported element). If these are not selected, you should enable the checkbox at "Use file counter" (see "File counter" below), otherwise the already created file will be overwritten with the new file.

If no parameter is selected (empty field in the drop-down list), the name "NameLess.{fileextension}" is assigned.

- File extension

  If you click on the "⌄" icon in the blue-framed selection box to the right of "File extension" a drop-down list opens from which ".csv" and "txt". can be selected as the extension for the file name.

  If you want to use a file extension that is not available in the drop-down list, you can enter it by clicking in the selection box. The file extension defined here is not entered in the drop-down list but is available even after a restart. If the file extension is changed using the drop-down list, the freely defined file extension must be entered again.

  The example (below) shows the selected file extension.

- Separator

  If you click on the blue framed selection box a dropdown list opens, from which the separator can be selected. This separator is inserted between the individually selected parameters (see "File name" above).

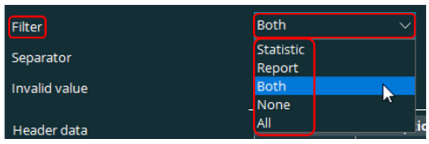
- File counter

  If the parameters "Date" and/or "Time" (see above) are not selected, an already created file may be overwritten with the new file. To prevent this, you must enable the checkbox at "Use file counter". For each output file with identical name, this four-digit file counter is incremented by the amount "1" and added to the name.

  If you deactivate the checkbox, the file counter will not be used.

- Filter

  If you click in the blue-framed selection box to the right of "Filter" a drop-down list opens that you can use to specify which characteristics from the PC-DMIS measurement routine are to be output.

  The parameter selected in each case affects the output as follows:

  - “Statistic" selected:

    All characteristics are output for which "BOTH" or "STAT" was selected as output in the measurement routine.

  - "Report" selected:

    All characteristics are output for which "BOTH" or "REPORT" was selected as output in the measurement routine.

  - “Both“ selected:

    All characteristics are output for which "BOTH", “Report” or "STAT" was selected as the output in the measurement routine.

  - "None" selected:

    All characteristics are output for which "NONE" was selected as the output in the measurement routine.

  - "All" selected

    All characteristics are output regardless of the selected output option in the measurement routine.

  If the selection box is left empty (e.g.: Entry deleted), "Both" (see above) is used.

- Separator

  If you click on the "⌄" icon in the blue framed selection box to the right of "Separator" a drop-down list opens from which you can select the separator.

  If you want to use a separator that is not available in the drop-down list, you can enter it by clicking in the selection box. The separator defined here is not entered in the drop-down list but is available even after a restart. If the separator is changed using the drop-down list, the freely defined separator must be entered again.

  The ASCII file uses the separator for separating the individual values (see "Header data" and "Characteristic properties" below).

- Invalid value

  This function is only valid for data import from a measurement routine or a Q-DAS file (see chapter: Operation, section: Importing the data, option: Button: PC-DMIS Online as well as Button: Import from PC-DMIS and Button: Importing one or more Q-DAS files and chapter Start variants of the Universal Converter).

  If data are imported from a measurement routine, characteristics are considered invalid under the following conditions:

  - At least one element for the characteristic not measured

    and / or

  - At least one reference for this characteristic not measured

    and / or

  - The characteristic was not measured

  If data is imported from a Q-DAS file, characteristics are considered invalid under the following conditions:

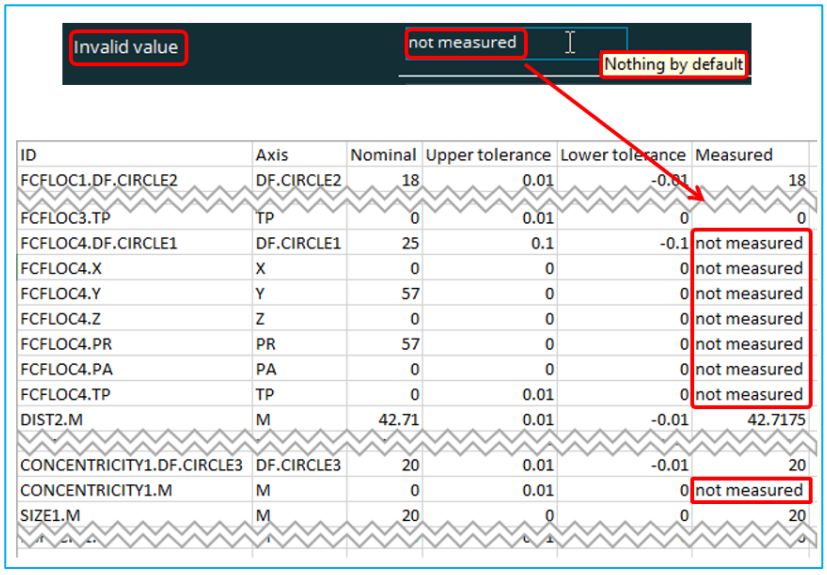
  - Characteristics with attribute 255

    and

  - Characteristics with attribute 256

  The text entered here will be written into the target file for these invalid characteristics and associated non-plausible values (e.g.: measurement value or deviation). The text must not begin with mathematical operators (e.g.: "+" or "-"), as Excel may interpret this as a formula (when output as *.csv file). If the text should begin with such a character, an apostrophe (') must be inserted at the beginning.

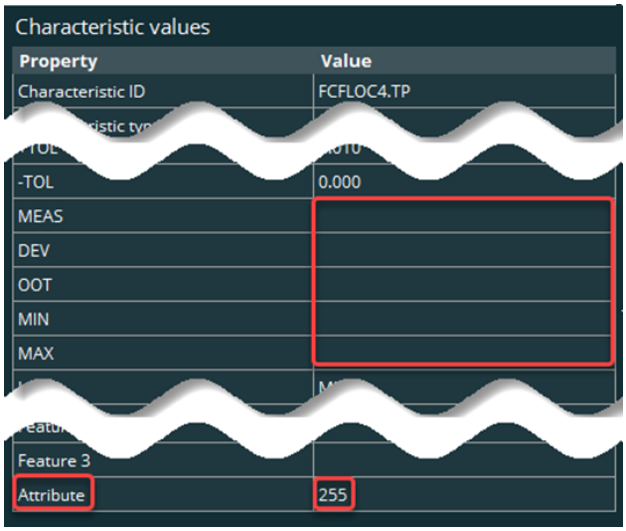
  By default, the input field is empty. If the mouse pointer is moved over the input field, a tooltip appears with the corresponding note.



ID	Axis	Nominal	Upper tolerance	Lower tolerance	Measured
FCFLOC1.DF.CIRCLE2	DF.CIRCLE2	18	0.01	-0.01	18
FCFLOC3.TP	TP	0	0.01	0	0
FCFLOC4.DF.CIRCLE1	DF.CIRCLE1	25	0.1	-0.1	not measured
FCFLOC4.X	X	0	0	0	not measured
FCFLOC4.Y	Y	57	0	0	not measured
FCFLOC4.Z	Z	0	0	0	not measured
FCFLOC4.PR	PR	57	0	0	not measured
FCFLOC4.PA	PA	0	0	0	not measured
FCFLOC4.TP	TP	0	0.01	0	not measured
DIST2.M	M	42.71	0.01	-0.01	42.7175
CONCENTRICITY1.DF.CIRCLE3	DF.CIRCLE3	20	0.01	-0.01	20
CONCENTRICITY1.M	M	0	0.01	0	not measured
SIZE1.M	M	20	0	0	20

When importing data from a measurement routine, the user interface in the Button: Home in the "Characteristic values" table shows at "Skipped" whether a measurement value is invalid (True) or not (False). For the invalid characteristics, the elements and datums that were not measured are displayed in gray in the "Value" column (in the example below: "Feature 1" ➝ "CIRCLE1" and "Datum 3" ➝ "C"). The cells for non-plausible values (e.g.: measured value or deviation etc.) remain empty.

When importing data from a Q-DAS file, the value is displayed at "Attribute" (255 or 256, see above). The cells for non-plausible values (e.g.: measured value or deviation etc.) remain empty.



- Header data *(Tracefield / K-Field / Fld)*

  You can enter the header date by clicking in the input field. If you enter a value, a new line is automatically created.

  Depending on the source, the data is determined as follows:

  - Header data from a PC-DMIS measurement routine

    The data is read from a Trace field. To do this, enter the name in the "Name" column. The name must correspond to the trace field name (upper and lower case can be ignored).

    You can enter additional information in the "Description" column.

    Regardless of whether the trace field is marked or unmarked in the measurement routine, the data is read.

    If the measurement routine doesn't contain a trace field, this value is ignored.

  - Header data from a QUINDOS file

    The header data is selected according to the pattern "${value}". To read it in, the value from the field identifier (Fld) must be entered into the "Name" column in the form "${Value}". The spelling must correspond exactly to the spelling in the QUINDOS file.

    You can enter additional information in the "Description" column. If the QUINDOS file contains a description, it will be ignored and the value entered here will be used. If nothing is entered for "Description", the data from the file will be used.

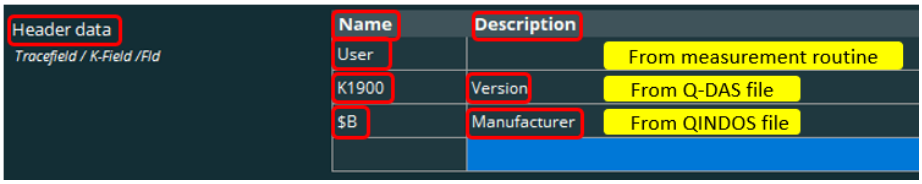
    If the file doesn't contain any header data, they will be ignored.

  - Header data from a Q-DAS file

    The header data is selected using the K-fields. The K-field number must be entered in the "Name" column. The K-field number must correspond to the K-field number in the file (upper and lower case can be ignored).

    You can enter additional information in the "Description" column.

    If the file doesn't contain any header data, they will be ignored.

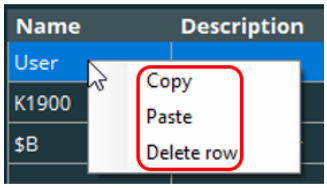


After reading the data in it is displayed in the Button "Home" in the "Header data" area (see chapter: Operation, section: Button: Home, option area: Header data). The checkbox "ASCII" must be activated for this. If data has already been imported and is being changed here, it will be updated directly when you click on the "Start" button.

In the ASCII file, the header data is output as the first rows.

An entry can be deleted by highlighting it (as usual in Windows) and pressing "Del" on the keyboard. The row is not automatically deleted. If you click on the Button "Start" and then change to "Settings", a refresh is performed and the row is deleted.

If you right-click in a marked input field populated with values, a context menu opens, in which you can select the following options:



- Copy

  The complete row is loaded into the buffer. With "Paste" (see below) the content of the clipboard is inserted into the selected row.

- Insert

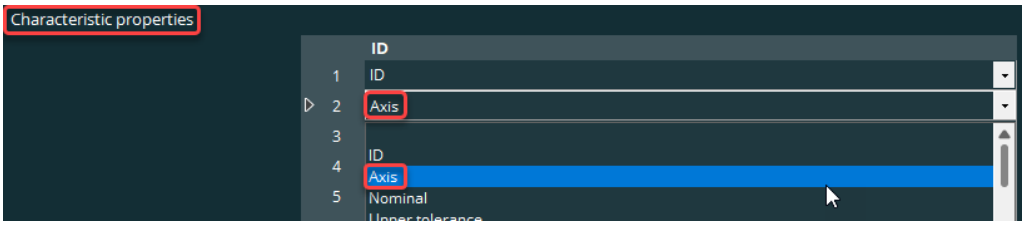
  The entry selected with "Copy" (see above) is inserted.

- Delete row

  The selected row is deleted. This function is not available in the last (empty) row.

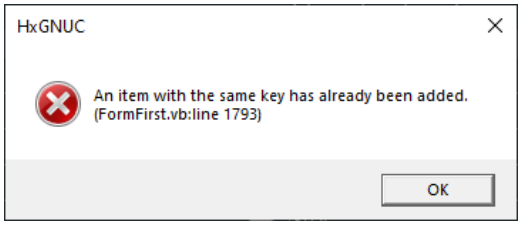
- Characteristic properties

  You can define which values are to be output to the ASCII file. To do this, click on the "▾" icon and select the desired entry from the drop-down list. If the desired value is not available, you can use the mouse wheel to scroll through the list. To change a value, repeat these steps.



After your selection, a new row is automatically created.

If a value is selected twice, a corresponding message appears during output to the ASCII file. The ASCII file is not created.

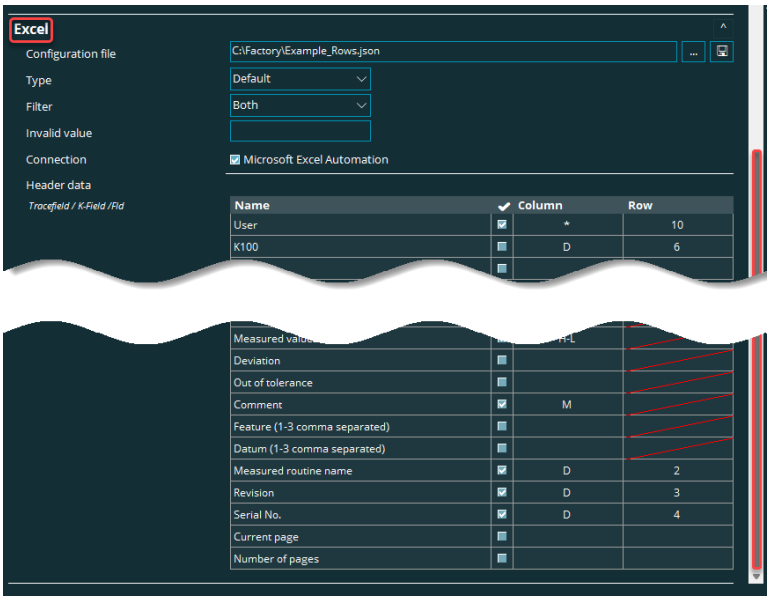


To delete a value, "empty" is selected in the drop-down list. The row is not automatically deleted. If you click on the Button "Start" and then change to "Settings", a refresh is performed and the row is deleted.

Once all settings are made, the current configuration can be saved with the "Save configuration" button (see Configuration file above). When the Universal Converter is started, it uses the settings from the configuration file. Settings made before saving the configuration are discarded.

- ## Area: Excel

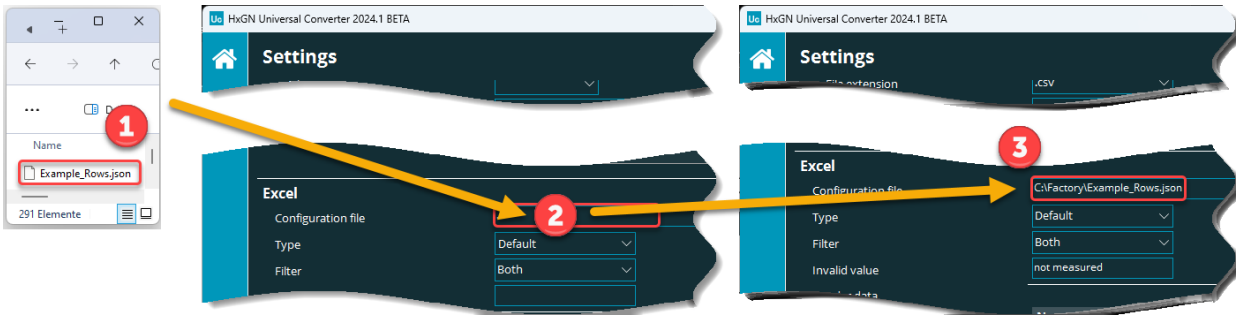
In the “Excel” area, various settings can be made for the Excel file output. You can use the scroll bar on the right or the mouse wheel to scroll through the area.



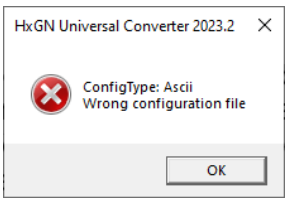
- ## Configuration file

The configuration file can be selected. To do this, click on the "..." button and select the configuration file in the file manager.

Alternatively, the configuration file can be selected using "drag & drop", as is usual in Windows. To do this, select the file in the file manager and drag it into the input field with the mouse. After releasing the mouse button, the path and name are adopted.



If an incorrect configuration file is loaded with the “...“ (Load config) button (for example, created in the "ASCII" area), the following message appears when saving the batch file:



If changes are made, they can be saved using the "" (Save current config) button.

If a “*.cfg” file is loaded with the “" button (load configuration) (filter in the file manager on "Config files” (*.cfg)), it is converted into the format “*.json”. The original "*.cfg" file is retained.

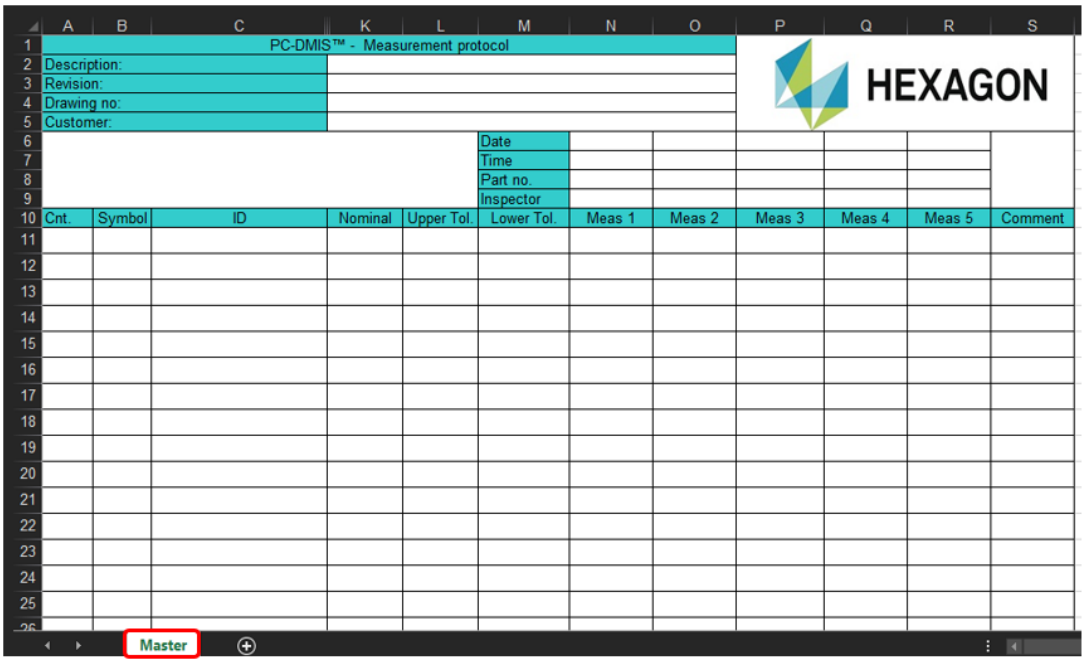
When the Universal Converter is started, it uses the settings from this file. Changes made before starting the Universal Converter and not saved in this file will be discarded.

- Type

  If you click on the blue framed selection box a dropdown list opens, from which you can select type "Default" or "XlDesign1".

  - "Default" selected

    The output is to a pre-defined Excel file (see chapter: Operation, section: Exporting the data, option: Button: Export to Excel). This workbook must contain a sheet called "Master". The settings for "Header data (Trade field / K-field / Fld)"and "Characteristics in row" or "Characteristics in column" (see below) must be taken into account.



- "XlDesign1" selected

It only supports the data import from a measurement routine.

You can use additional trace fields in the measurement routine to specify into which Excel workbook, sheet, and position ("Measurement number") the output should be made. The settings for "Header data (Trace field / K-field / Fld)" and "Characteristics in row" or "Characteristics in column" (see below) must be taken into account.

- Excel workbook name:

  The name of the Excel workbook is set.

  The name of the trace field in the measurement routine is defined in the Universal Converter at "Tracefields" → "Excel file name" (see below). This name must be used in the measurement routine for the name of the trace field. For the value of the trace field, the path and name of the Excel workbook is entered in the measurement routine. The Excel workbook must be available.

  The output is to an Excel workbook you defined here. The path and name of the Excel workbook in the batch file are ignored (see Area: Advanced → Batch → Area: Export → Excel file above). If this trace field is not available in the measurement routine, the data is output to the Excel workbook defined in the batch file.

  Example (reduced screenshot):

```
TRACEFIELD DISPLAY MESSAGE=Excel spreadsheet name ; book : C:\Factory\Example_rows.xls
```

  In the example above, the data is output to the Excel workbook "Example_rows.xls". The prerequisite is that the names for the trace field in the Universal Converter (see below) and the measurement routine are identical (in the example above: "book").

- Excel spreadsheet name:

  The name of the Excel sheet is set in the Excel workbook.

  To be able to use this function, a value must be defined for "Measurement number" (see "Measurement number" below). The name of the trace field in the measurement routine is defined in the Universal Converter at "Tracefields" → "Excel sheet name" (see below). This name must be used in the measurement routine for the name of the trace field. For the value of the trace field, the Excel sheet name of the Excel workbook is entered in the measurement routine. The sheet must exist in the Excel workbook.

  Example (reduced screenshot):

```
TRACEFIELD DISPLAY MESSAGE=Tab name ; ExcelTable : Part2
```

  In the example above, the data is output to the Excel sheet "Part2". The prerequisite is that the names for the trace field in the Universal Converter (see below) and the measurement routine are identical (in the example above: "ExcelTable").

- Measurement number:

  The number of the measurement is set in the Excel workbook.

  To be able to use this function, a name must be defined for the Excel sheet (see “Excel sheet name“ above).

  The name of the trace field in the measurement routine is defined in the Universal Converter at "Tracefields" ➙ "Measurement number" (see below). This name must be used in the measurement routine for the name of the trace field. The value of the trace field in the measurement routine defines the number of the measurement.

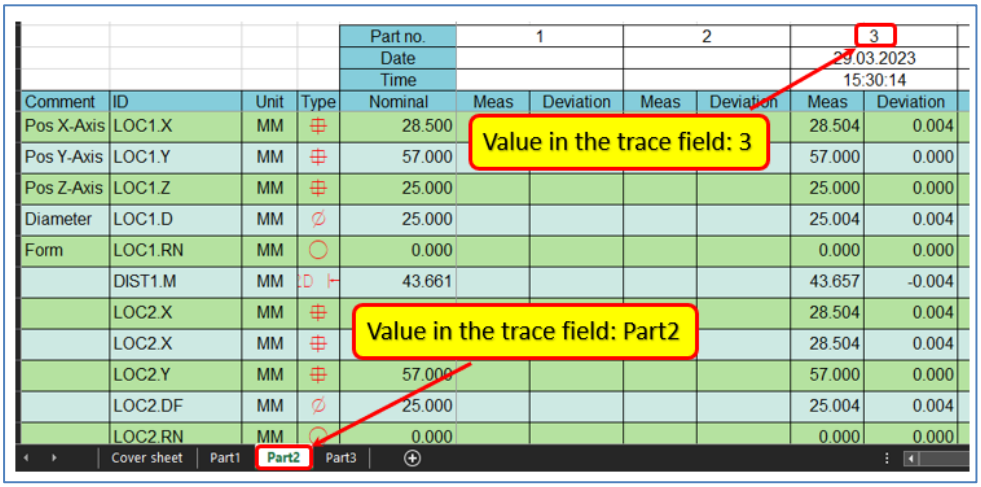
  (Reduced screenshot):

```
TRACEFIELD DISPLAY MESSAGE=Measurement number ; Num : 3
```

  In the example above, the output is a third measurement because the value of the trace field is "3". The prerequisite is that the names for the trace field in the Universal Converter (see below) and the measurement routine are identical (in the example above: "Num").

  If "0" is entered for the value of the trace field in the measurement routine, the measured values are transferred to the next free position (e.g.: in the workbook, measurements 1, 2, 3 and 5 are filled with measured values ➙ measured values are output as 4th measurement).

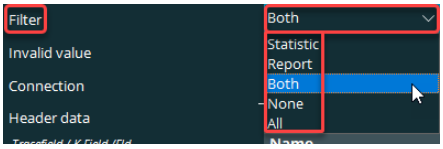
  Example output (with the values shown in the examples above):



				Part no.	1		2		3	
				Date					29.03.2023	
				Time					15:30:14	
Comment	ID	Unit	Type	Nominal	Meas	Deviation	Meas	Deviation	Meas	Deviation
Pos X-Axis	LOC1.X	MM		28.500					28.504	0.004
Pos Y-Axis	LOC1.Y	MM		57.000					57.000	0.000
Pos Z-Axis	LOC1.Z	MM		25.000					25.000	0.000
Diameter	LOC1.D	MM		25.000					25.004	0.004
Form	LOC1.RN	MM		0.000					0.000	0.000
	DIST1.M	MM		43.661					43.657	-0.004
	LOC2.X	MM							28.504	0.004
	LOC2.X	MM							28.504	0.004
	LOC2.Y	MM		57.000					57.000	0.000
	LOC2.DF	MM		25.000					25.004	0.004
	LOC2.RN	MM		0.000					0.000	0.000

- Filter

  If you click in the blue-framed selection box to the right of "Filter" a drop-down list opens that you can use to specify which characteristics from the PC-DMIS measurement routine are to be output.

  The parameter selected in each case affects the output as follows:

  - “Statistic" selected:

    All characteristics are output for which "BOTH" or "STAT" was selected as output in the measurement routine.

  - "Report" selected:

    All characteristics are output for which "BOTH" or "REPORT" was selected as output in the measurement routine.

  - "Both" selected:

    All characteristics are output for which "BOTH", “Report” or "STAT" was selected as the output in the measurement routine.

  - "None" selected:

    All characteristics are output for which "NONE" was selected as the output in the measurement routine.

  - "All" selected

    All characteristics are output regardless of the selected output option in the measurement routine.

- Invalid value

  This function is only valid for data import from a measurement routine or a Q-DAS file (see chapter: Operation, section: Importing the data, option: Button: PC-DMIS Online as well as Button: Import from PC-DMIS and Button: Importing one or more Q-DAS files and chapter Start variants of the Universal Converter).

  - At least one element for the characteristic not measured

    and / or

  - At least one reference for this characteristic not measured

    and / or

  - The characteristic was not measured

  If data is imported from a Q-DAS file, characteristics are considered invalid under the following conditions:

  - Characteristics with attribute 255

    and

  - Characteristics with attribute 256

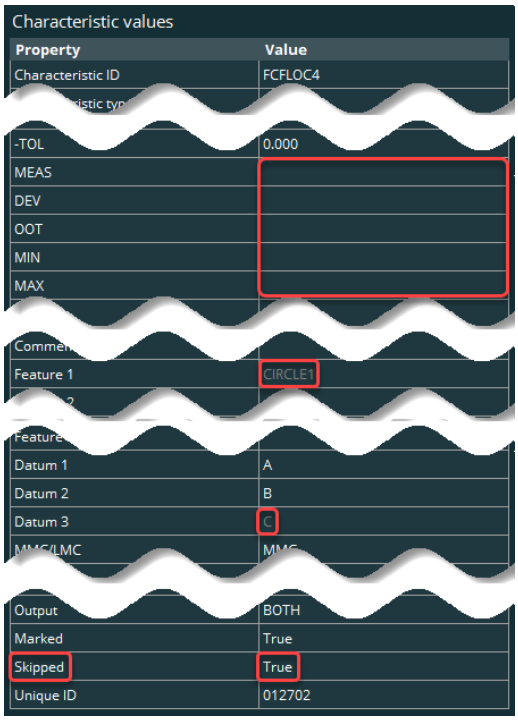
  The text entered here will be written into the target file for these invalid characteristics and associated non-plausible values (e.g.: measurement value or deviation). The text must not begin with mathematical operators (e.g.: "+" or "-"), as Excel may interpret this as a formula. If the text should begin with such a character, an apostrophe (') must be inserted at the beginning.

  By default, the input field is empty. If the mouse pointer is moved over the input field, a tooltip appears with the corresponding note.

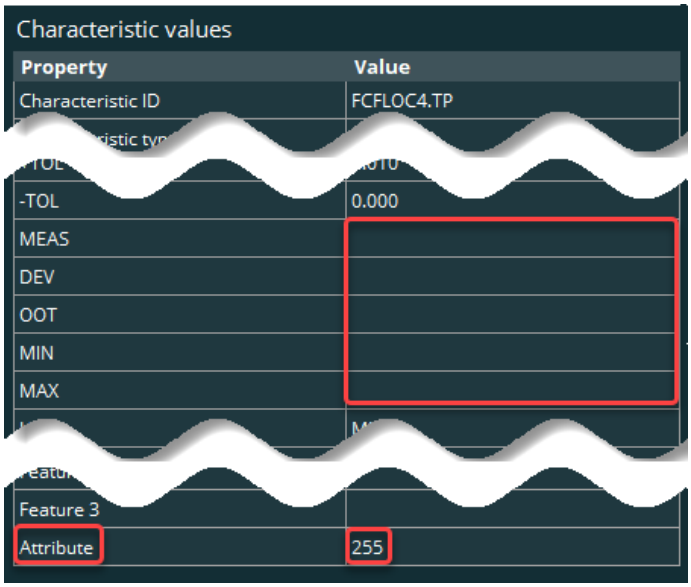
Cnt.	Symbol	ID	Unit	Nominal	Upper Tol.	Lower Tol.	Meas 1
1	⌖	LOC1.X	MM	28.5000	0.0500	-0.0500	not measured
2	⌖	LOC1.Y	MM	57.0000	0.0500	-0.0500	not measured
3	⌖	LOC1.Z	MM	25.0000	0.0500	-0.0500	not measured
4	⌀	LOC1.D	MM	25.0000	0.0500	-0.0500	not measured
5	○	LOC1.RN	MM	0.0000	0.0500	0.0000	not measured
6	2D ⊢	DIST1.M	MM	43.6610	0.0500	-0.0300	43.6568

When importing data from a measurement routine, the user interface in the Button: Home in the "Characteristic values" table shows at "Skipped" whether a measurement value is valid (True) or not (False). For the invalid

characteristics, the elements and references that were not measured are displayed in gray in the "Value" column (in the example below: "Feature 1" ➞ "CIRCLE1" and "Datum 3" ➞ "C"). The cells for non-plausible values (e.g.: measured value or deviation etc.) remain empty.



When importing data from a Q-DAS file, the value is displayed at "Attribute" (255 or 256, see above). The cells for non-plausible values (e.g.: measured value or deviation etc.) remain empty.



- ## Connection

  By activating or deactivating the checkbox for “Microsoft Excel Automation”, you can determine whether Microsoft Excel should be used for the Excel export or not.

  If the mouse pointer is moved over the text, a tooltip appears with the message “Use Microsoft Excel Automation for output”.

  - Checkbox activated (default)

    If the checkbox is activated, the Universal Converter communicates with Microsoft Excel during output. This requires an installed Microsoft Excel package. Exporting large amounts of data can take more time.

  - Checkbox deactivated (*recommended*)

    The output does not take place via Microsoft Excel and its installation is not mandatory. Exporting large amounts of data takes considerably less time.

  This setting can be saved in the configuration file (button “ ”). Without saving, the change is discarded after the restart and the setting from the configuration file is adopted.

- ## Header data *(Tracefield / K-Field / Fld)*

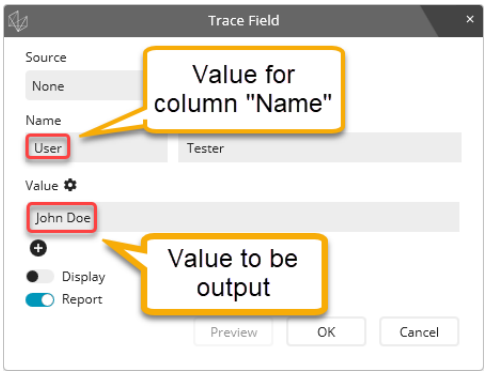
  You can enter the header date by clicking in the input field. If you enter a value, a new line is automatically created.

  Depending on the source, the data is determined as follows:

  - Header data from a PC-DMIS measurement routine

    The data is read from a trace field. To do this, enter the value from the trace field (for „Name“) in the measurement routine in the „Name“ column. The name must correspond to the trace field name (upper and lower case can be ignored).

    In the measurement routine, the trace field is defined as follows (see also example below):



    If the data is to be displayed in the Button "Start" and output to the Excel workbook, the checkbox in the column "✓ " must be activated.

The columns "Column" (letter or number) and "Row" (number) define the cell for the output. A "*" is used to write to the next free cell.

Regardless of whether the trace field is marked or unmarked in the measurement routine, the data is read.

If the measurement routine doesn't contain a trace field, this value is ignored.

- Header data from a QUINDOS file

  The header data is selected according to the pattern "${value}". To read it in, the value from the field identifier (Fld) must be entered into the "Name" column in the form "${Value}". The spelling must correspond exactly to the spelling in the QUINDOS file.

  If the data is to be displayed in the Button "Start" and output to the Excel workbook, the checkbox in the column "✓ " must be activated.

  The columns "Column" (letter or number) and "Row" (number) define the cell for the output. A "*" is used to write to the next free cell.

  If the file does not contain any header data, they will be ignored.

- Header data from a Q-DAS file

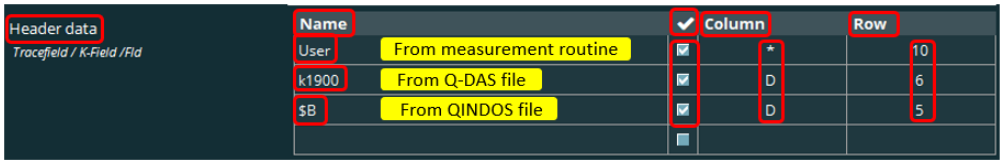
  The header data is selected using the K-fields. The K-field number must be entered in the "Name" column. The K-field number must correspond to the K-field number in the file (upper and lower case can be ignored).

  If the data is to be displayed in the Button "Start" and output to the Excel workbook, the checkbox in the column "✓ " must be activated.

  The columns "Column" (letter or number) and "Row" (number) define the cell for the output. A "*" is used to write to the next free cell.

  If the file does not contain any header data, they will be ignored.

  Example:

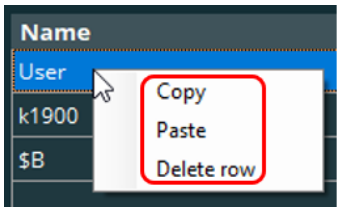


After reading in, the data is displayed in the Button "Start" in the "Header data" area (see chapter: Operation, section: Button: Home, options: Area: Header data). The "Excel" checkbox must be activated for this purpose. If data has already been imported and is being changed here, it will be updated directly when you click on the "Home" button.

An entry can be deleted by highlighting it (as usual in Windows) and pressing "Del" on the keyboard. The row is not automatically deleted. If you click on

the Button "Start" and then change to "Settings", a refresh is performed and the row is deleted.

If you right-click in a marked input field populated with values, a context menu opens. Here, you can select the following options:



- Copy

  The complete row is loaded into the buffer. With "Paste" (see below) the content of the clipboard is inserted into the selected row.

- Insert

  The entry selected with "Copy" (see above) is inserted.

- Delete row

  The selected row is deleted. This function is not available in the last (empty) row.

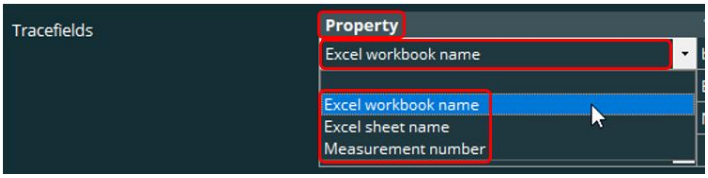
- Trace fields

If "XlDesign1" (see above) is selected under "Type", you can use these trace fields to specify into which Excel workbook, sheet and position ("Measurement number") the output is to be made. The prerequisite is that the descriptions defined here in the "Tracefield name" column (see below) correspond to the name of the trace field in the measurement routine.

For further details and examples of the settings made below see Type ➜ XlDesign1 ➜ "Excel workbook name", "Excel sheet name" as well as "Measurement number".

- Column: Property

  If you click in the selection box a drop-down list opens from which you can select a maximum of three descriptions.



- Empty field:

  The row is deleted after a refresh (e.g., by clicking on the Button: Home [see below] and then selecting the "Settings" button).
- Excel file name

  The name of the Excel workbook is set. To do this, enter the value from the trace field (for "Name") in the measurement routine in the "Tracefield name" column (see below). In the measurement routine, the path and name of the Excel file name is entered under "Value".

  The path and name of the Excel workbook in the batch file are ignored (see Area: Advanced → Batch → Area: Export → Excel file above). If this trace field is not available in the measurement routine, the data is output to the Excel workbook defined in the batch file.
- Excel workbook name

  The name of the Excel sheet is set in the Excel workbook. To do this, enter the value from the trace field (for "Name") in the measurement routine in the "Tracefield name" column (see below). In the measurement routine, the name of the Excel sheet is entered at "Value".

  If this trace field is used in the measurement routine, a value must be defined for "Measurement number" (see below) and the trace field must be available in the measurement routine.
- Measurement number

  The number of the measurement is set in the Excel workbook. To do this, enter the value from the trace field (for "Name") in the measurement routine in the "Tracefield name" column (see below). In the measurement routine, the number of the measurement is entered under "Value".

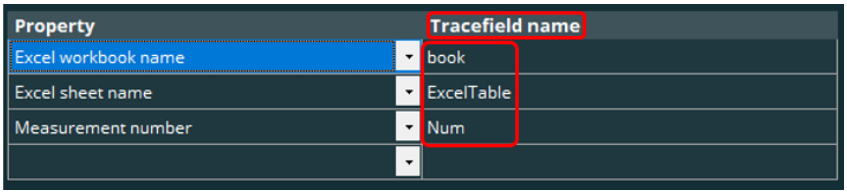
  If this trace field is used in the measurement routine, a value must be defined for "Excel workbook name" (see above) and the trace field must be available in the measurement routine.

- Column: Tracefield name

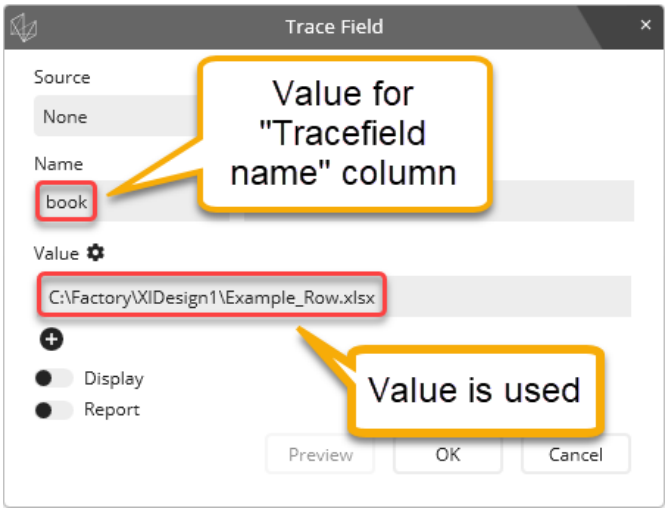
  The trace field names of the values selected under the "Property" column (see above) are defined. To do this, click in the respective row and enter the description.

  The names defined here must correspond to the names of the trace fields in the measurement routine (upper and lower case can be ignored).

  Example:



In the measurement routine, the trace field is defined as follows (see also example above):



- ## Configuration of the Excel workbook

  To adjust the output of the values to the Excel workbook, you must make the following settings and entries:

  - Radio button "Characteristics in row"

    Each characteristic is written one below the other (in rows) into the Excel file. Cells that are not available for output are locked (crossed out in red) in the workbook in the Universal Converter.

Cnt.	Symbol	ID	Meas 1
1	⊕	LOC1.X	28.4947
2	⊕	LOC1.Y	56.9935
3	⊕	LOC1.Z	25.0000
4	⌀	LOC1.D	24.9987
5	○	LOC1.RN	0.0000
6	2D ⊢	DIST1.M	43.6643

  - Radio button "Characteristics in column"

    Each characteristic is written one below the other (in rows) into the Excel file. Cells that are not available for output are locked (crossed out in red) in the workbook in the Universal Converter.

	Dim. Counter	1	2	3	4	11
	Symbol	⊕	⊕	⊕	⌀	○
	ID	LOC1.X	LOC1.Y	LOC1.Z	LOC1.D	OC2.RN
	Nominal	28.500	57.000	25.000	25.00	0.000
	Upper tol.	0.050	0.050	0.050	0.05	0.010
	Lower tol.	-0.050	-0.050	-0.050	-0.05	0.000
	Feature 1	MM	MM	MM	MM	MM
	Feature 2	Pos X-Axis	Pos Y-Axis	Pos Z-Axis	Diameter	
	Time					
Meas 1	10:07:42	28.495	56.994	25.000	24.99	0.000

The following settings can be made in the table to the right of the radio buttons:

- “Description" column

  This column contains all values relevant for the output. To output the desired value, the checkbox in the "✓" column must be activated.

- Column “✓“

  By activating the checkbox, the selected value is output. If the checkbox is activated, the values for the cell in the Excel workbook must be entered in the "Column" and "Row" columns (see below in each case).

  If the checkbox is deactivated, this value is not output.

- The “Column” column

  Depending on the selection of the "Characteristics in row" or "Characteristics in column" radio buttons (see above), certain input fields are locked (crossed out in red).

  By clicking in the respective input field, the cells can be entered in which the respective value is to be entered in the Excel spreadsheet. Allowed are capital letters (capitalization is automatically converted) and numbers ("1" for first column, "2" for second column, etc.).

  If values are to be output in several columns, a hyphen is placed between the letter or numbers of the first and last column (e.g., F-P or 6-16). Alternatively, they can be separated by commas. You can use it to skip columns (e.g., F,G,J,L,M,P or 6,7,10,12,13,16).

  A combination of both procedures is permitted (e.g., F,H-M,P or 6,8-13,16).

  The start column must be defined for "Characteristics" and "Measured values". For the end column, either a fixed value can be assigned (e.g.: H-L) or an "*" can be entered (e.g.: H-*). If "*" is used, no end column is defined. The number of values to be output is only limited by Excel (max. permitted number of columns).

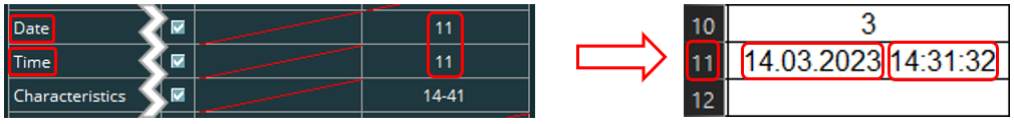
- “Row" column

  Depending on the selection of the "Characteristics in row" or "Characteristics in column" radio buttons, certain input fields are locked (crossed out in red).

  The procedure for configuring the output is the same as for the "Column" column (see above). However, the rows are pre-defined and therefore only numbers (instead of letters and numbers) are allowed.

If "XlDesign1" is selected under "Type", identical cells are allowed for two values (e.g., Date and time). In this case both values are written into one cell.

Example:



The system reads the values for "Date" and "Time" during the data transfer.

- Import from measurement routine

  The values for "Date" and "Time" are determined from the system time during import (first imported element).

- Import from QUINDOS file

  The date is determined from the row with the field identifier "$j" and the time from the row with the field identifier "$g".

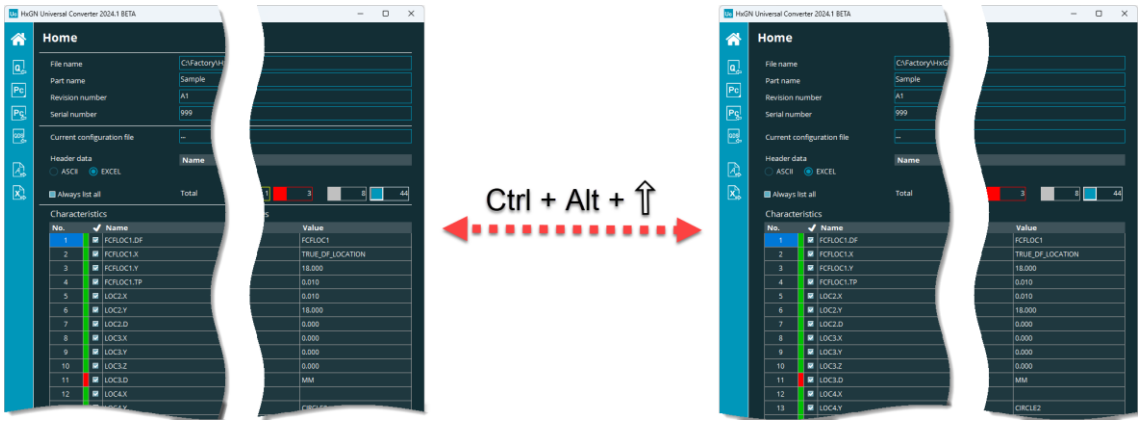
- Import from Q-DAS file

  The values for "Date" and "Time" are determined from the K field "K0004" and automatically split into date and time.

Once all settings are made, the current configuration can be saved with the "Save configuration" button (see Configuration file above). When the Universal Converter is started, it uses the settings from the configuration file. Settings made before saving the configuration are discarded.

8. Operation

You can use the shortcut key "Ctrl "+"Alt "+"⇧" (Shift) to show or hide the horizontal lines between each area.



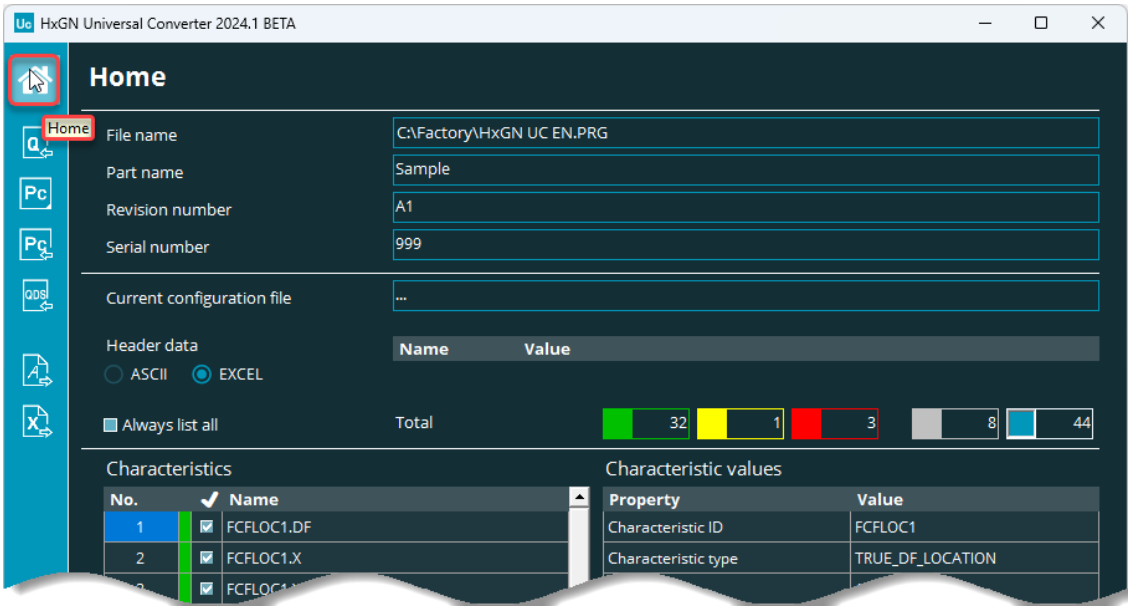
8.1. Button: Home

Clicking on the Button "  " switches to the "Home" view without any further action. This is helpful if the software was configured with the button "Settings" (see chapter "Configuration of the software") or if further information was displayed with "Info" (see chapter Button: Info).

If you hover your mouse pointer over the Button, a tooltip with the Text "Home" appears.

If you switch to the "Home" view, all information regarding the read-in or output data is retained.

After export or during import this view is also active.

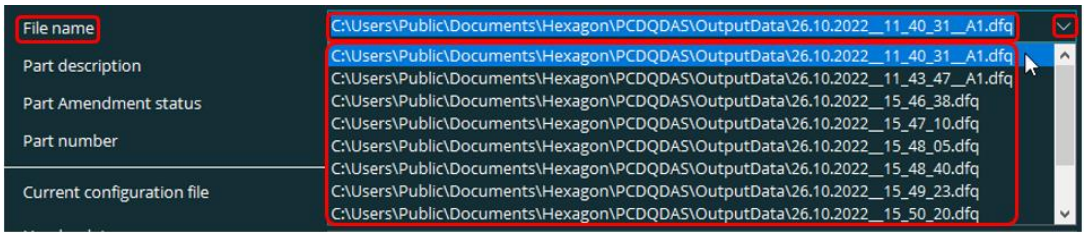


The following data are displayed:

- ## File name

  The path and name of the source from which the data was imported is displayed. It can be imported from a Q-DAS file (*.dfq or *.dfd) or, depending on the chargeable activated options, from a PC-DMIS measurement routine (*.prg) as well as from a QUINDOS file (*.txt).

  If several files are imported (QUINDOS or Q-DAS), you can open a drop-down list by clicking on the " ⌄ " icon, in which all imported files are available. Alternatively, you can move the mouse pointer into the selection box and scroll with the mouse wheel.

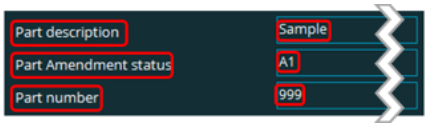


  If a file is selected, the imported data will be displayed in the lower area.

- ## Part description / Part Amendment status / Part number *or* Part name / Revision number / Serial number

  Depending on the chargeable activated options, the header data will be displayed from the source from which the data was imported. This can be a from a PC-DMIS measurement routine (*.prg), a QUINDOS file (*.txt) or a Q-DAS file (*.dfq or *.dfd).

  - From QUINDOS file (after the "$" character capital letters)
    - Part description: Fld=$D in the file
    - Part Amendment status: Fld=$A in the file
    - Part number: Fld=$C in the file
  - From Q-DAS file
    - Part description: K1001 in the file
    - Part Amendment status: K1002 in the file
    - Part number: K1004 in the file



  If the data are imported from a PC-DMIS measuring routine, the designations in the user interface change and the data are displayed as follows:

  - From PC-DMIS measurement routine
    - Part description: PART NAME in the measurement routine
    - Revision number: VERSION NO. in the measurement routine
    - Serial number: SERIAL NO.

- ## Current configuration file

  The configuration file selected for the Excel output is displayed. This is defined under Button: Settings in the Area: Excel (see above).

- ## Area: Header data

  - Radio button "ASCII" active

    After reading-in the data (see section: Importing the data below), the header data from the source (see "File name" above) will be displayed in the "Name" and "Value" columns. Use the Button " Settings" and → "Header data" in the "ASCII" area for their configuration.

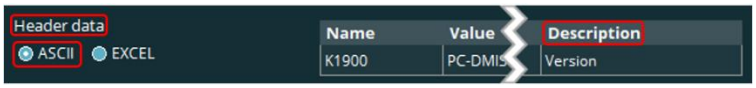
    - Q-DAS

      In the "Description" column, the description defined under "ASCII" → "Header data" is displayed when importing a file.

    - Quindos

      If the file contains data for the description, it will be displayed. If no data is available for the description, the value defined under "ASCII" → "Header data" is used.

    The data from the "Value" and "Description" columns are output to the ASCII file. If nothing is defined under "Description" and the data is imported from a Q-DAS file, the data is output from the "Name" and "Value" columns.

  - "EXCEL" radio button active

    After reading-in the data (see section: Importing the data below), the header data from the source (see "File name" above) will be displayed in the "Name" and "Value" columns. Use the Button Settings" in the "Excel" area at → "Header Data" for their configuration.

    This data is output to the Excel file.

- “Always list all" checkbox

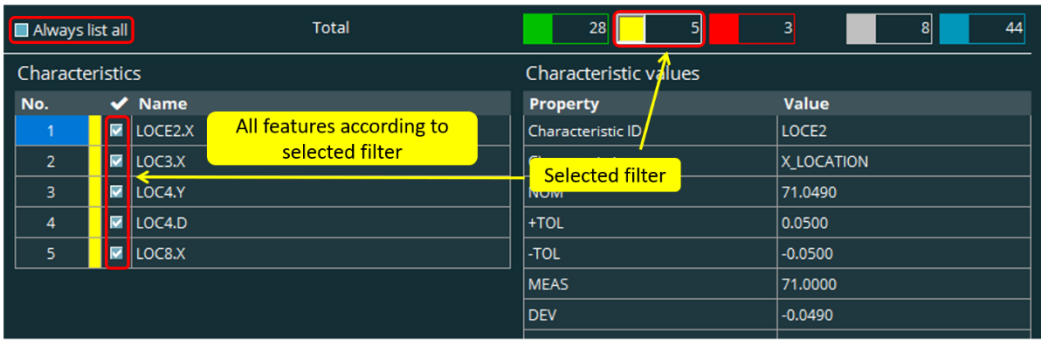
  The colored buttons to the right of "Total" can be used to decide which characteristics are to be displayed and output to the target file (filter). To do this, click on the respective button. If a button is activated, it can be deactivated by clicking it again. A combination of multiple buttons is allowed.

  The state of the "Always list all" checkbox has the following influence on this:

  - Checkbox deactivated

    Only the characteristics that match the criteria of the selected filter (see above) are displayed.

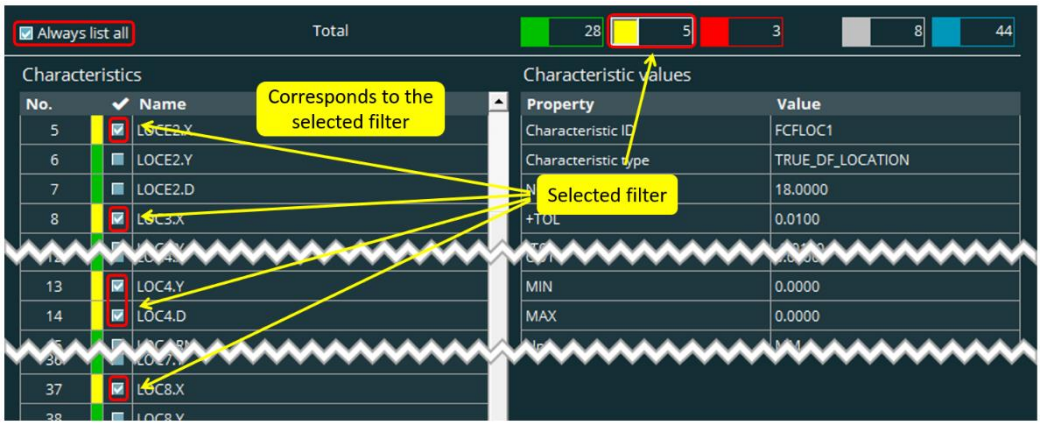
    All characteristics with the checkboxes enabled will be output to the target file (note the note below).



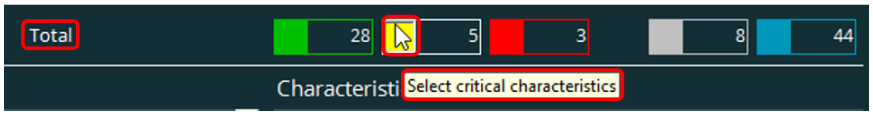
  - Checkbox activated

    Regardless of the selected filter (see above), all imported characteristics are displayed. If a filter is selected, the checkboxes are deactivated for the characteristics that do not match the criteria of the filter. Checkboxes that match the filter criteria remain active.

    All characteristics with the checkboxes enabled will be output to the target file (note the note below).



If the mouse pointer is moved over a button, a tooltip appears indicating the criteria used for filtering (green; within tolerance, yellow: critical [see Button: Settings➝ Area: Advanced ➝ Action limit above], red: out of tolerance, gray: invalid value [see below], blue: all characteristics).



In the "Characteristics" table, the corresponding color for "Within tolerance", "Critical", "Out of tolerance" and “Invalid” is displayed between the "No." and "✓ " columns for each characteristic.

Note: Depending on the filter defined in the Button: Settings ➝ "Area: ASCII" ➝ "Filter" and "Area: Excel" ➝ "Filter" (see above), the characteristics output may differ from those displayed or selected here.

Note: You can add or remove characteristics for the output. To do this, activate or deactivate the checkboxes in the "✓ " column by clicking on them. All characteristics with activated checkbox are output.

- ## Displaying the imported characteristics and their values

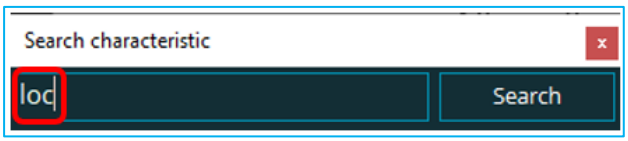
The imported characteristics are displayed in the "Characteristics" and "Characteristic values" tables.

- Table: Characteristics

  The imported characteristics are displayed. These can be filtered. Details about filtering are described in the point “"Always list all" checkbox“ (see above).

  If a table contains more characteristics than can be displayed, you can use the mouse wheel or the scroll bar on the right to scroll through the table.

  Alternatively, the key combination "Ctrl" + "F" can be used to open an input dialog that can be used to search for characteristics. To do this, enter the name of the characteristic or parts of it in the blue-framed input field. Click on the "Search" button to select the first feature that contains the entered text. Click the button again to jump to the next feature. This process is repeated until the desired feature is found.



  The screenshot searches for the features that contain the string "loc". It is not necessary to consider the upper or lower case.

- Column: No.

  The sequential number of the characteristics is displayed.
- Column: ✓

  You can use the checkboxes to decide what characteristics shall be output to the target file. Click with the mouse to activate or deactivate the checkboxes. Alternatively, the characteristics can be filtered (see "Always list all" above).

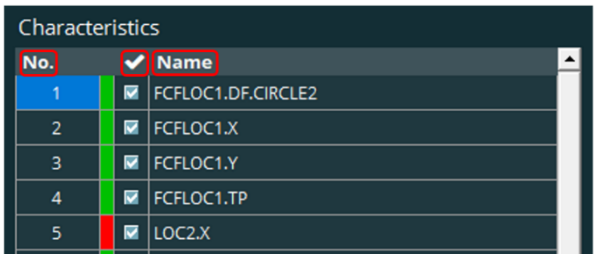
  Note: Depending on the filter defined in the Button: Settings ➔ "Area: ASCII" ➔ "Filter" and "Area: Excel" ➔ "Filter" (see above), the characteristics output may differ from those displayed or selected here.
- Column: Name

  The names of the characteristics are displayed. You can use the settings at Button: Settings ➔ Advanced area ➔ Axis name to control the display of the names (Characteristic name / characteristic name incl. axis / characteristic name incl. axis and feature).

  Between the columns "No." and "✓ ", a color with the following meaning is displayed for each characteristic:
  - Green: Within tolerance
  - Yellow: Critical (action limit violated, if defined)
  - Red: Out of tolerance
  - Grey: Invalid (see below)

  If a feature is selected by clicking in the row, the associated values are displayed in the "Characteristic values" table (see below). You can use arrow keys on the keyboard (↑,↓) to scroll up and down through the rows.

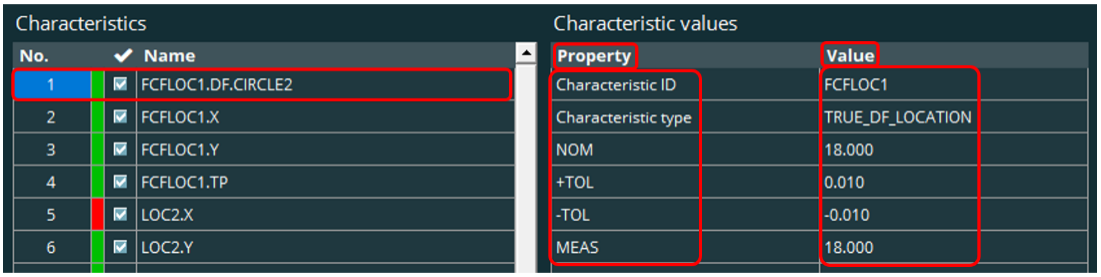
  The target file is output with the names shown here.

  For invalid characteristics (see below) the output is done with the name defined under in the Button: Settings ➔ "Area: ASCII" ➔ "Invalid value" and "Area: Excel" ➔ "Invalid value".

- Table: Characteristic values

  If a row is selected in the "Characteristics" table (see above), the associated data are displayed in this table in the "Property" and "Value" columns (reduced screenshot in the image below).



Depending on the imported source, the range of displayed values varies.

- Invalid value (see above)

  This function is only valid for data import from a measurement routine or a Q-DAS file (see chapter: Operation, section: Importing the data, option: Button: PC-DMIS Online as well as Button: Import from PC-DMIS and Button: Importing one or more Q-DAS files and chapter Start variants of the Universal Converter).

  If data are imported from a measurement routine, characteristics are considered invalid under the following conditions:

  - At least one element for the characteristic not measured

    and / or
  - At least one reference for this characteristic not measured

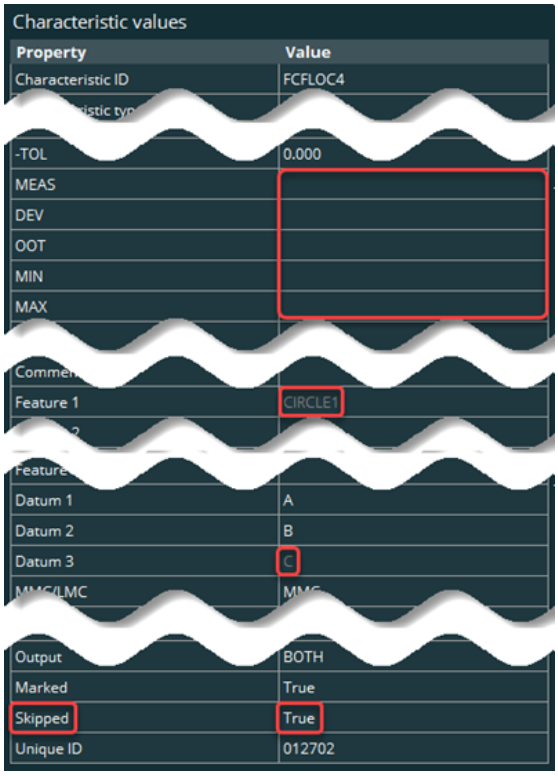
    and / or
  - The characteristic was not measured

  If data is imported from a Q-DAS file, characteristics are considered invalid under the following conditions:

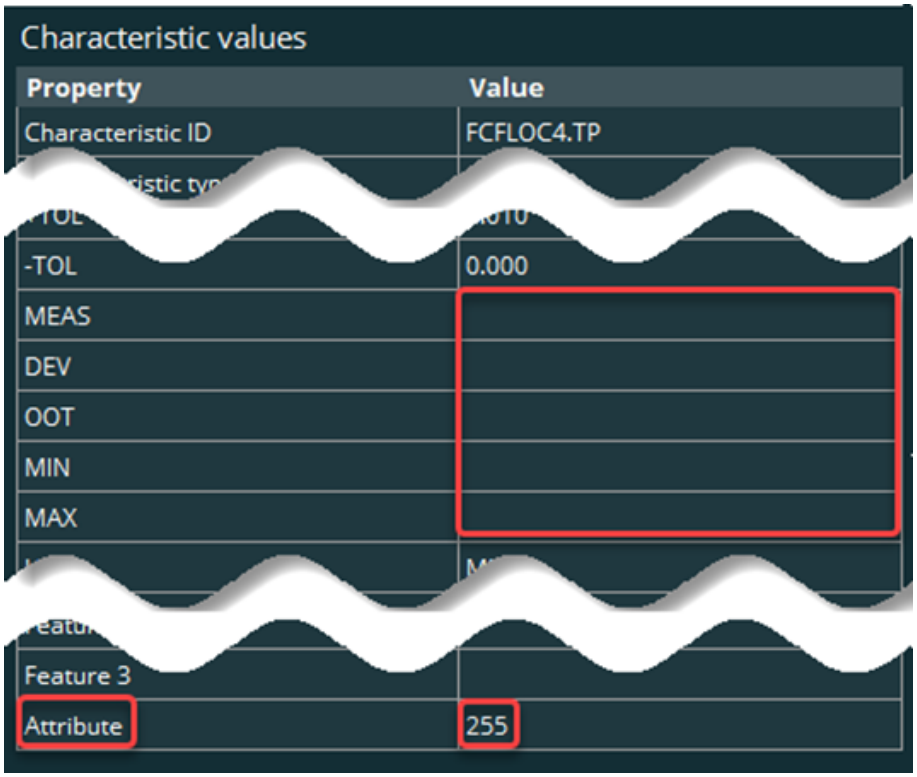
  - Characteristics with attribute 255

    and
  - Characteristics with attribute 256

  When importing data from a measurement routine, the user interface in the Button: Home in the "Characteristic values" table shows at "Skipped" whether a measurement value is valid (True) or not (False). For the invalid characteristics, the elements and references that were not measured are displayed in gray in the "Value" column (in the example below: "Feature 1" → "CIRCLE1" and "Reference 3" → "C"). The cells for non-plausible values (e.g.: measured value or deviation etc.) remain empty.



When importing data from a Q-DAS file, the value is displayed at "Attribute" (255 or 256, see above). The cells for non-plausible values (e.g.: measured value or deviation etc.) remain empty.



8.2. Importing the data

- ### Button: Import Q-DAS file(s)

  This Button is included free of charge in the software.

  - #### Importing a file

    By clicking on the button “ " the file manager is opened and the Q-DAS file (*.dfq or *.dfd) can be selected.

    After confirming with "Open" the data will be imported.

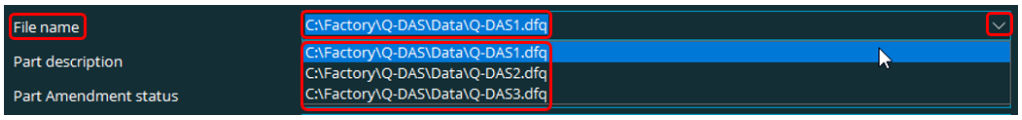
    During the data import, the tables for the characteristics (see above) are hidden. Subsequently, the data is displayed as described under Button: Home.

  - #### Importing multiple files

    To import multiple files, press and hold the "Ctrl" and the "⇑" keys on the keyboard after clicking the “ " Button. Afterwards the desired files (*.dfq or *.dfd) can be marked in the file manager. After confirming with "Open" all selected files will be imported.

    During the data import, the tables for the characteristics (see above) are hidden. Subsequently, the data is displayed as described under Button: Home.

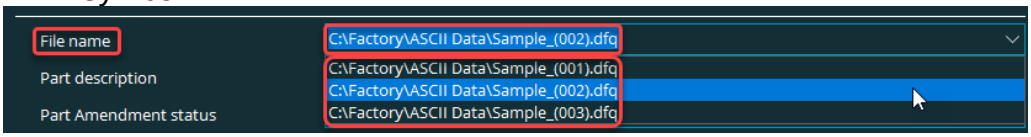
    The path and name of the currently selected file are displayed at "File name" (see above). After the import, the first imported file is displayed. If you want to select another file, click on the " ⌄ " icon (to the right of the file path and name) and a drop-down list opens from which you can select the desired file.



    If one (or more) Q-DAS file(s) contains several measurements, these are listed under "File name" in the format:

    {file name}_{measurement number}

    are displayed. The desired measurement can be selected by clicking on the " ⌄ " symbol.



    After selecting the file, the data is displayed as described under Button: Home.

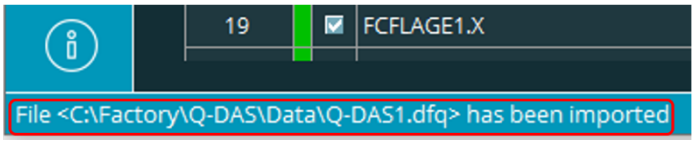
- General

If you hover your mouse pointer over the Button, a tooltip with the Text "Import Q-DAS file(s)" appears.

The settings under "Configuration of the software" ➞ "Button: Settings" (see above) must be taken into account.

If the progress bar is activated (see chapter: Configuration of the software, section: Button: Settings, Option: Area: Advanced ➞ Progress), it shows the current reading-in status of the data (for multiple files per file [see above]).

After the import, the following message appears in the status bar: "File <{path}\{name of file}> has been imported".



If multiple files were imported, the first imported file is displayed in the status line.

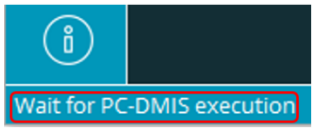
By filtering (see checkbox "Always list all" above) and by activating or deactivating the checkboxes in the "Characteristics table" ➞ column: ✓ (see above) the characteristics can be adjusted for the output.

Then the data can be output to the target file (see section: Exporting the data later in this chapter).

- ## Button: PC-DMIS Online

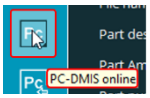
This Button is only available if the „PC-DMIS“ option has been enabled for a fee.

By clicking on the Button “ " the Universal Converter switches to the online mode. To show that this mode is active, the white frame around the letters "Pc" is displayed dark ( ). If the progress bar (see below) is not activated, the message "Wait for PC-DMIS execution" appears in the status bar. If it is active, nothing is displayed.



If the online mode is active, no other Buttons can be clicked and the tables for the characteristics (see above) are empty.

If you hover your mouse pointer over the Button, a tooltip with the Text "PC-DMIS online" appears.



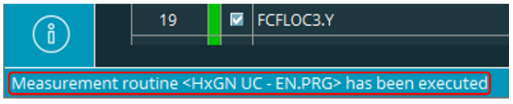
In online mode, the characteristics are imported directly during the measurement. For performance reasons, all data is displayed only after the measurement is completed (for details on the display, see section “Button: Home“ above).

The settings under "Configuration of the software" → "Button: Settings" (see above) must be taken into account.

If the progress bar is activated (see chapter: Configuration of the software, section: Button: Settings, Option: Area: Advanced → Progress), it shows the current processing status of the measurement routine.

If the progress bar is not active, the following message appears in the status bar: "PC-DMIS is executed ...".

After the measurement, the online mode is automatically terminated and the following message appears in the status bar: "Measurement routine <{name of measurement routine}> has been executed".



By filtering (see checkbox "Always list all" above) and by activating or deactivating the checkboxes in the “Characteristics table” → column: ✓ (see above) the characteristics can be adjusted for the output.

Then the data can be output to the target file (see section: Exporting the data later in this chapter).

For the next measurement, you must re-activate the online mode by clicking on the Button.

- ## Button: Import from PC-DMIS

This Button is only available if the „PC-DMIS“ option has been enabled for a fee.

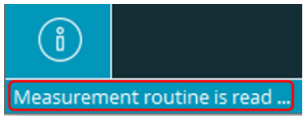
If you click on the Button “" all data from the measurement routine opened in PC-DMIS are read. During the data import, the tables for the characteristics (see above) are hidden. Subsequently, the data is displayed as described under Button: Home.

If you hover your mouse pointer over the Button, a tooltip with the Text "Import from PC-DMIS" appears.

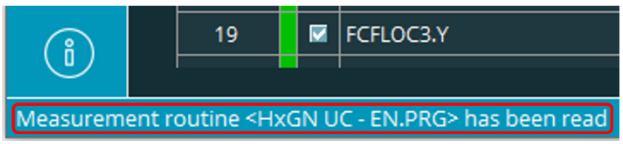
The settings under "Configuration of the software" ➞ "Button: Settings" (see above) must be taken into account.

If the progress bar is activated (see chapter: Configuration of the software, section: Button: Settings, Option: Area: Advanced ➞ Progress), it shows the current reading-in status of the data.

If the progress bar is not active, the following message appears in the status bar: "Measurement routine is read ..."



After the measurement, the following message appears in the status bar: "Measurement routine <{name of measurement routine}> has been read".



By filtering (see checkbox "Always list all" above) and by activating or deactivating the checkboxes in the “Characteristics table” ➞ column: ✓ (see above) the characteristics can be adjusted for the output.

Then the data can be output to the target file (see section: Exporting the data later in this chapter).

- ## Button: Import Quindos file(s)

  This Button is only available if the “QUINDOS“ option has been enabled for a fee.

  - ### Importing a file

    By clicking on the Button “ " the file manager is opened and the QUINDOS file (*.txt) can be selected.

    After confirming with "Open" the data will be imported.

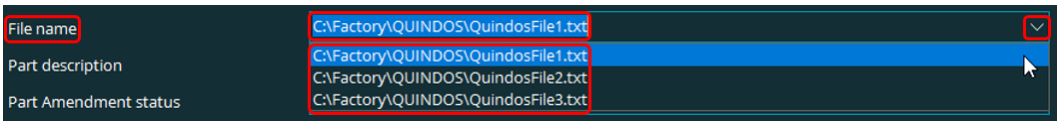
    During the data import, the tables for the characteristics (see above) are hidden. Subsequently, the data is displayed as described under Button: Home.

  - ### Importing multiple files

    To import multiple files, press and hold the "Ctrl" and the "⇑" keys on the keyboard after clicking the “ " Button. Afterwards the desired files (*.txt) can be marked in the file manager. After confirming with "Open" all selected files will be imported.

    During the data import, the tables for the characteristics (see above) are hidden. Subsequently, the data is displayed as described under Button: Home.

    The path and name of the currently selected file are displayed at "File name" (see above). After the import, the first imported file is displayed. If you want to select another file, click on the " ⌄ " icon (to the right of the file path and name) and a drop-down list opens from which you can select the desired file.

    After selecting the file, the data is displayed as described under Button: Homert.

  - ### General

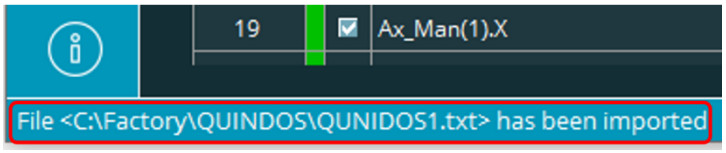
    If you hover your mouse pointer over the Button, a tooltip with the Text "Import Quindos file(s)" appears.

    The settings under "Configuration of the software" ➔ "Button: Settings" (see above) must be taken into account.

If the progress bar is activated (see chapter: Configuration of the software, section: Button: Settings, Option: Area: Advanced ➝ Progress), it shows the current reading-in status of the data (for multiple files per file [see above]).

After the import, the following message appears in the status bar: "File <{path}\{name of file}> has been imported".



If multiple files were imported, the first imported file is displayed in the status line.

By filtering (see checkbox "Always list all" above) and by activating or deactivating the checkboxes in the “Characteristics table” ➝ column: ✓ (see above) the characteristics can be adjusted for the output.

Then the data can be output to the target file (see section: Exporting the data later in this chapter).

8.3. Exporting the data

- ### Button: Export to ASCII

For the export of the data into an ASCII file the settings described in chapter: "Configuration of the software", section: "Button: Settings" for the "General", "Advanced " and "ASCII" areas are to be considered.

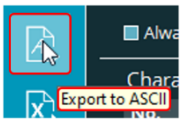
- #### Export of a single measurement

This function requires that the data has been imported from PC-DMIS or a *single* QUINDOS file or a *single* Q-DAS file. The Q-DAS file may only contain *one* measurement.

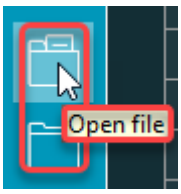
With the radio button "ASCII" in the "Header data" area (see above) the header data to be exported can be displayed.

The path and folder, the name and the exported values are set in the Button: Settings" in the "General", "Advanced" and "ASCII" areas. Additionally, by filtering (see checkbox "Always list all" above) and by activating or deactivating the checkboxes in the "Characteristics table" → column: ✓ (see above) the characteristics can be adjusted for the output.

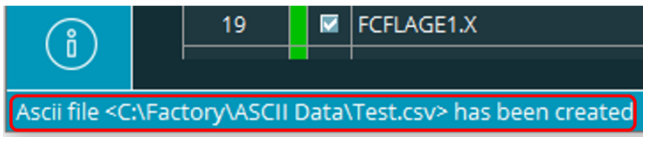
Then, you can export the data to the result file by clicking on the Button " ". If you hover your mouse pointer over the Button, a tooltip appears with the message: "Export to ASCII".



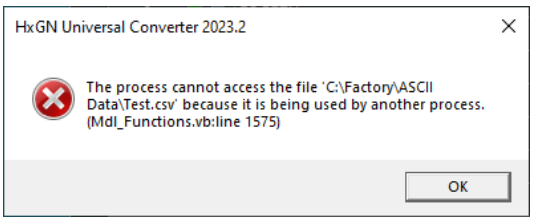
After the export, the " " and " " buttons are available in the user interface. The " " button opens the file and the " " button opens the file path. If the mouse pointer is moved over the buttons, a corresponding tooltip appears (in the screenshot: "Open file").



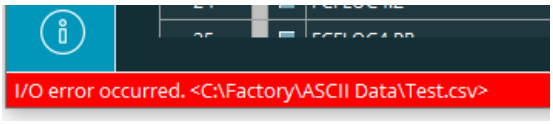
After the Export, the following message appears in the status bar: "ASCII file <{path}\{name of file}> has been created".



If the ".csv" format is selected for the file extension under "Button: Settings" in the "ASCII" area and the output file is opened, the following note appears:



After closing this message, the red status bar symbolizes that the export was not possible.



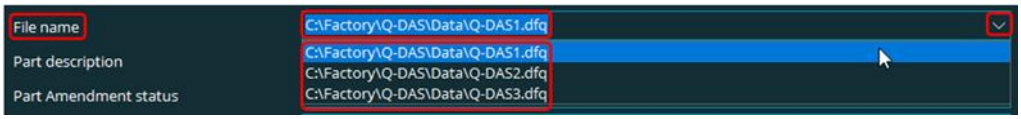
The output file must be closed and the export repeated.

- Export of multiple measurements

  This function is only available if the data has been imported from QINDOWS files or one (or more) Q-DAS file(s) (see "Button: Import Quindos file(s)" ➔ "Import multiple files" and "Button: Import Q-DAS file(s)" ➔ "Import multiple files"). If only one Q-DAS file is imported, it must contain several measurements.

  After the import, the first imported file is displayed under "File name".

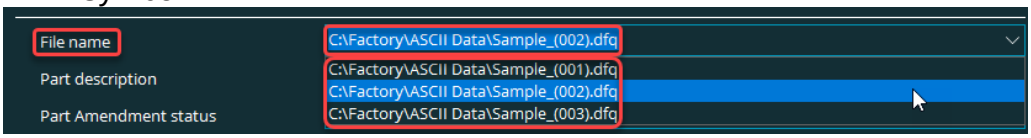
  If you want to select another file, click on the " ⌄ " icon (to the right of the file path and name) and a drop-down list opens from which you can select the desired file (screenshot: Imported Q-DAS files).



  If one (or more) Q-DAS file(s) contains several measurements, these are listed under "File name" in the format:

  {file name}_{measurement number}

  are displayed. The desired measurement can be selected by clicking on the " ⌄ " symbol.

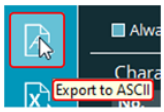


  With the radio button "ASCII" in the "Header data" area (see above) the header data to be exported of the currently selected file can be displayed.

  The path and folder, the name and the values to be exported per file are defined with the Button: Settings in the "Advanced", "ASCII" and (depending on the imported data) "Q-DAS" or "PC-DMIS" areas. Additionally, by filtering (see checkbox "Always list all" above) and by activating or deactivating the checkboxes in the "Characteristics table" ➔ column: ✓ (see above) the characteristics per file can be adjusted for the output.

  If the settings are chosen so that the files have identical names or no name is agreed, only *one* file is created. This file contains the values of the last imported file.

The measurements are exported using the "" button.



If the mouse pointer is moved over the button, a tooltip appears with the message: "Export to ASCII".

After clicking on the "" button, a context menu opens from which the following functions can be selected:

- All measurements

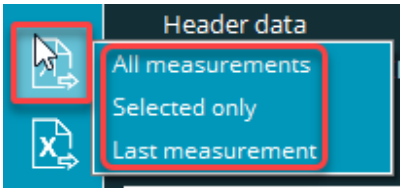
  All measurements in the drop-down list under "File name" are exported.

- Selected only

  The measurement selected under "File name" is exported.

- Last measurement

  Regardless of the measurement selected under "File name", only the last measurement is exported.

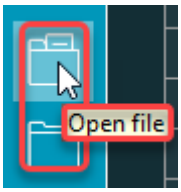


As an alternative to the "All measurements" function (see above), press and hold the "Ctrl" key on the keyboard.

The data is exported to the respective result file by clicking on the function selected in the context menu.

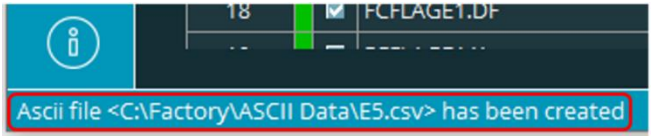
During the export, the current file to be exported is displayed under “File name”.

After the export, the "" and "" buttons are available in the user interface. The "" button opens the file and the "" button opens the file path. If the mouse pointer is moved over the buttons, a corresponding tooltip appears (in the screenshot: "Open file").



After the Export, the following message appears in the status bar:

“Ascii file <{path}\{name of the file of the last created file}> has been created".



If the output file is open (*.csv), export is not possible (see above).

Button: Export to Excel

For the export of the data into an the Excel workbook the settings described in chapter: "Configuration of the software", section: "Button: Settings" for the "General", "Advanced " and "Excel" areas are to be considered.

The data can be output to a file with the format "*.xls", "*.xlsx" or "*.xlsm".

Export of a single measurement

This function requires that the data has been imported from PC-DMIS or a *single* QUINDOS file or a *single* Q-DAS file. The Q-DAS file may only contain *one* measurement.

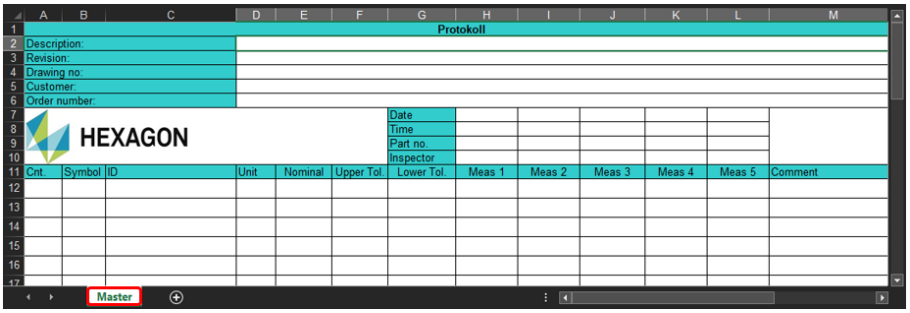
Depending on whether the type "Default" or "XLDesign1" was selected for the output, the data is output as follows:

- "Default" selected

  The data can be imported from a file (Q-DAS, QUINDOS) or a measurement routine and exported to an Excel file. The respective option must be activated for a fee.

  For the output of the data, a configuration file must have been imported (see chapter: Configuration of the software, Section: Button: Settings, Option: Area: Excel ➝ Configuration file). This contains the necessary information for the output of the data. The currently selected configuration file is displayed at "Current configuration file" (see above).

  The Excel file must contain a sheet with the name "Master" (in the example below: Characteristics in row active).



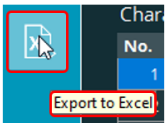
  You can us the "Excel" radio button in the "Header data" area (see above) to display the header data to be exported.

  By filtering (see checkbox "Always list all" above) and by activating or deactivating the checkboxes in the “Characteristics table” ➝ column: ✓ (see above) the characteristics can be adjusted for the output.

  Then click on the button “ ” to open the file manager and select the Excel file. The file must correspond to the format in the Configuration file (see above)(Characteristics in row or Characteristics in column).

Alternatively, output to a non-existent Excel spreadsheet. To do this, assign a name in the file manager. For the file format, "XLS" or "XLSX" must be selected.

If you hover your mouse pointer over the Button, a tooltip appears with the message: “Export to Excel“.



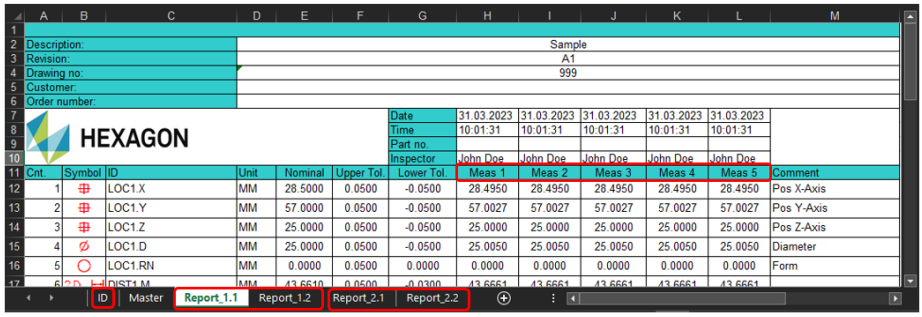
The data is written to the Excel file as defined in the Configuration file.

A sheet "ID" is created in the file. This sheet contains the IDs (Display IDs) the nominals and upper and lower tolerances of the characteristics. These values are used to decide whether to write to the selected file or to create a new file (see below in each case).

A sheet is created for the characteristics with the name: Report_{Report Number}.{sheet number for Report number}. If the number of permissible measured values per sheet is exceeded, a new sheet is created.

Example "Characteristics in row”

- In the Universal Converter, 5 columns for the measurement and 20 rows for the characteristics are defined for the Excel workbook.
- 25 characteristics are exported.
  - Up to the 5th measurement, the data are written to the sheets "Report_1.1" and "Report _1.2" (as more than 20 characteristics were exported).
  - Starting from the 6th measurement, new sheets are created with the names "Report_2.1" and "Report_2.2.



		Description:				Sample							
		Revision:				A1							
		Drawing no:				999							
		Customer:											
		Order number:											
		HEXAGON				Date	31.03.2023	31.03.2023	31.03.2023	31.03.2023	31.03.2023		
						Time	10:01:31	10:01:31	10:01:31	10:01:31	10:01:31		
						Part no.							
						Inspector	John Doe	John Doe	John Doe	John Doe	John Doe		
	Cnt.	Symbol	ID	Unit	Nominal	Upper Tol.	Lower Tol.	Meas 1	Meas 2	Meas 3	Meas 4	Meas 5	Comment
	1	⌖	LOC1.X	MM	28.5000	0.0500	-0.0500	28.4950	28.4950	28.4950	28.4950	28.4950	Pos X-Axis
	2	⌖	LOC1.Y	MM	57.0000	0.0500	-0.0500	57.0027	57.0027	57.0027	57.0027	57.0027	Pos Y-Axis
	3	⌖	LOC1.Z	MM	25.0000	0.0500	-0.0500	25.0000	25.0000	25.0000	25.0000	25.0000	Pos Z-Axis
	4	⌀	LOC1.D	MM	25.0000	0.0500	-0.0500	25.0050	25.0050	25.0050	25.0050	25.0050	Diameter
	5	○	LOC1.RN	MM	0.0000	0.0500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	Form

ID | Master | Report_1.1 | Report_1.2 | Report_2.1 | Report_2.2

If the display IDs, the nominal values and the upper and lower tolerances from the source and in the Excel workbook (see above) are identical, the data is written to the selected file. If measured values were skipped, the value from "Invalid value" is entered in the respective cell (see Chapter: Button: Settings, Section: Area: Excel, Option: Invalid value).

If at least one display ID or nominal value as well as an upper or lower tolerance (see above) are not identical, a new file is created. Universal Converter assigns the following name:

{name of selected file}_ID_{date}_{time}.xls. For the date, the format defined under Button: Settings in the General area ➝ Date format is used.

- "XLDesign1" selected

  The export of the data to the Excel workbook is controlled by trace fields in the measurement routine. Therefore, an import is only permitted from a PC-DMIS measurement routine. The "PC-DMIS" option must be enabled for a fee.

  For the output of the data, a configuration file must have been imported (see chapter: Configuration of the software, Section: Button: Settings, Option: Area: Excel ➔ Configuration file). This contains the necessary information for the output of the data. The currently selected configuration file is displayed at "Current configuration file" (see above).

  You can use the "Excel" radio button in the "Header data" area (see above) to display the header data to be exported.

  By filtering (see checkbox "Always list all" above) and by activating or deactivating the checkboxes in the "Characteristics table" ➔ column: ✓ (see above) the characteristics can be adjusted for the output.

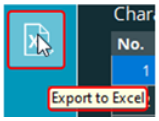
  For the output to the Excel file, a trace field must be available in the measurement routine. It is used to determine into which sheet the data are to be written. The value of the trace field corresponds to the sheet name. This sheet must exist in the Excel file.

  Furthermore, a trace field must be available in the measurement routine to define which number of the measurement is output. For the measurement, a corresponding area must be available in the Excel file.

  The configuration of the trace fields and examples for the output of the data are described in detail under "Configuration of the software" ➔ "Button: Settings" ➔ "Area: Excel" ➔ "Monitoring fields".

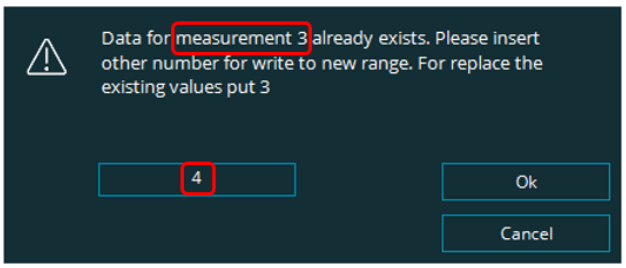
  Then click on the button "  " to open the file manager and select the Excel file. The file must correspond to the format in the Configuration file (see above)(Characteristics in row or Characteristics in column).

  If you hover your mouse pointer over the Button, a tooltip appears with the message: "Export to Excel".

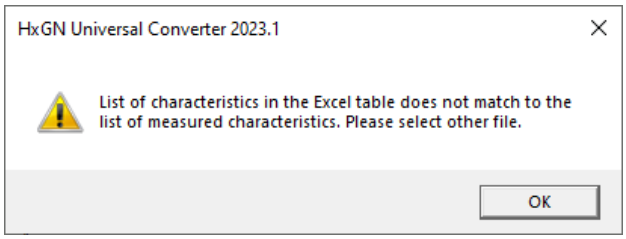
  The data is written to the workbook as defined in the Configuration file and in the trace fields (see above).

  If data has already been exported to the workbook and the number of the measurement from the trace field has already been filled with data, the following message appears:

In this case, a free area in the Excel workbook must be entered in the input field for the number of the measurement (in the example above, measurement 3 is occupied, the output is in measurement 4).

If characteristics were added or removed in the measurement routine, the following message appears:



In this case, you must select another file.

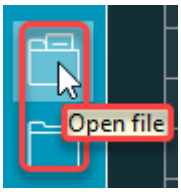
- General (export of a single measurement)

Depending on the filter defined in the Button: Settings → "Area: ASCII" → "Filter" and "Area: Excel" → "Filter" (see above), the characteristics output may differ from those displayed or selected in the Button: "Start".

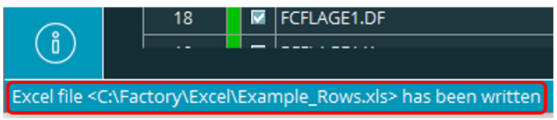
Regardless of whether you selected the "Default" or "XLDesign" type (see above), when the progress bar is activated (see chapter: Configuration of the software, Section: Startup element: Settings, Option: Advanced area → Progress), it shows the current status of the data export.

If the progress bar is not enabled, the following message appears in the status bar: "Data is exported to Excel ..."

After the export, the "" and "" buttons are available in the user interface. The "" button opens the file and the "" button opens the file path. If the mouse pointer is moved over the buttons, a corresponding tooltip appears (in the screenshot: "Open file").

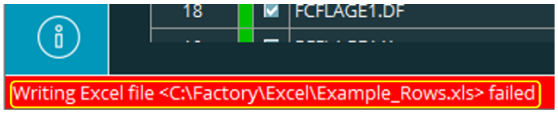


After the export, the following message appears in the status bar: “Excel file <{path}\{name of the file of the last created file}> has been written".



If the output file is open, *all* open Excel spreadsheets will be closed.

If the export has failed, the status bar will turn red and the message will appear: "Writing Excel file <{path}\{name of file}> failed”.



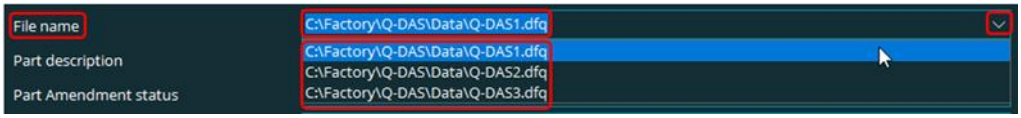
- Export of multiple measurements

The data can be imported from a file (Q-DAS, QUINDOS) and exported to an Excel file. The respective option must be activated for a fee.

"Default" must be selected in the Button: Settings, "Type" area. If "XLDesign1" is selected, import of multiple data sets is not possible.

After the import, the first imported file is displayed under "File name".

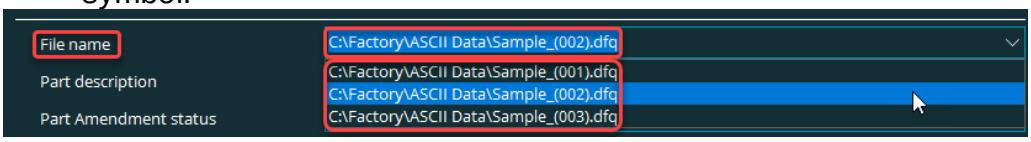
If you want to select another file, click on the " ⌄ " icon (to the right of the file path and name) and a drop-down list opens from which you can select the desired file (screenshot: Imported Q-DAS files).



If one (or more) Q-DAS file(s) contains several measurements, these are listed under "File name" in the format:

{file name}_{measurement number}

are displayed. The desired measurement can be selected by clicking on the " ⌄ " symbol.

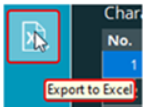


You can use the "Excel" radio button in the "Header data" area (see above) to display the header data you want to export from the currently selected file.

The path and folder, the name and the values to be exported per file are defined with the Button: Settings in the "Advanced", "ASCII" and (depending on the imported data) "Q-DAS" or "PC-DMIS" areas. Additionally, by filtering (see checkbox "Always list all" above) and by activating or deactivating the checkboxes in the "Characteristics table" → column: ✓ (see above) the characteristics per file can be adjusted for the output.

The measurements are exported using the " " button.

If the mouse pointer is moved over the button, a tooltip appears with the message: "Export to Excel".



After clicking on the "" button, a context menu opens from which the following functions can be selected:

- All measurements

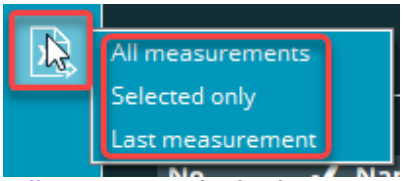
  All measurements in the drop-down list under "File name" are exported.

- Selected only

  The measurement selected under "File name" is exported.

- Last measurement

  Regardless of the measurement selected under "File name", only the last measurement is exported.



As an alternative to the "All measurements" function (see above), press and hold the "Ctrl" key on the keyboard.

Regardless of the export function selected (context menu or "CTRL" key), the file manager is opened and the Excel file can be selected. The file must correspond to the format in the Configuration file (see above) (Characteristics in row or Characteristics in column). If you write to a non-existent Excel file (assign a new name in the file manager), the format is irrelevant.

The data is written to the Excel file as defined in the Configuration file.

During the export, the current file to be exported is displayed under “File name”.

A sheet "ID" is created in the file. This sheet contains the IDs (Display IDs) the nominal values and upper and lower tolerances of the characteristics. These values are used to decide whether to write to the selected file or to create a new file (see below in each case).

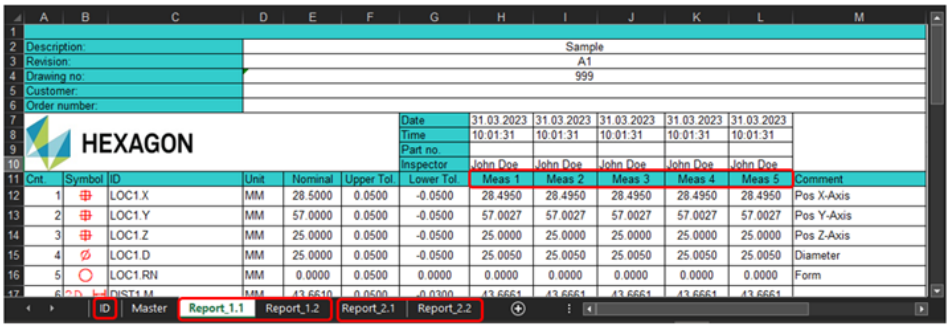
For the characteristics, a worksheet with the name:

Report_{Report Number}.{sheet number for Report number}

is created. If the number of permissible measured values per sheet is exceeded, a new sheet is created.

Example "Characteristics in row"

- In the Universal Converter, 5 columns for the measurement and 20 rows for the characteristics are defined for the Excel workbook.
- 25 characteristics are exported.
  - Up to the 5th measurement, the data are written to the sheets "Report_1.1" and "Report _1.2" (as more than 20 characteristics were exported) .
  - Starting from the 6th measurement, new sheets are created with the names "Report_2.1" and "Report_2.2".



Description:						Sample						
Revision:						A1						
Drawing no:						999						
Customer:												
Order number:												
						Date	31.03.2023	31.03.2023	31.03.2023	31.03.2023	31.03.2023	
HEXAGON						Time	10:01:31	10:01:31	10:01:31	10:01:31	10:01:31	
						Part no.						
						Inspector	John Doe	John Doe	John Doe	John Doe	John Doe	
Cnt.	Symbol	ID	Unit	Nominal	Upper Tol.	Lower Tol.	Meas 1	Meas 2	Meas 3	Meas 4	Meas 5	Comment
1		LOC1.X	MM	28.5000	0.0500	-0.0500	28.4950	28.4950	28.4950	28.4950	28.4950	Pos X-Axis
2		LOC1.Y	MM	57.0000	0.0500	-0.0500	57.0027	57.0027	57.0027	57.0027	57.0027	Pos Y-Axis
3		LOC1.Z	MM	25.0000	0.0500	-0.0500	25.0000	25.0000	25.0000	25.0000	25.0000	Pos Z-Axis
4		LOC1.D	MM	25.0000	0.0500	-0.0500	25.0050	25.0050	25.0050	25.0050	25.0050	Diameter
5		LOC1.RN	MM	0.0000	0.0500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	Form

ID | Master | Report_1.1 | Report_1.2 | Report_2.1 | Report_2.2

- General (export of multiple measurements)

Depending on the filter defined in the Button: Settings → "Area: ASCII" → "Filter" and "Area: Excel" → "Filter" (see above), the characteristics output may differ from those displayed or selected in the Button: "Start".

If the display IDs, the nominal values and the upper and lower tolerances from the source and in the Excel workbook (see above) are identical, the data is written to the selected file. If measured values were skipped, the value from "Invalid value" is entered in the respective cell (see chapter: Button: Settings, section: Area: Excel, Option: Invalid value).

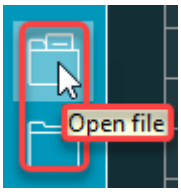
If at least one display ID or nominal value as well as an upper or lower tolerance (see above) are not identical a new file is created. Universal Converter assigns the following name:

{name of selected file}_UID_{date}_{time}.xls. For the date, the format defined under Button: Settings in the General area → Date format is used.

If the progress bar is activated (see chapter: Configuration of the software, section: Button: Settings, Option: Area: Advanced → Progress), it shows the current reading-in status of the data.

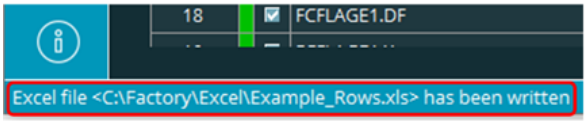
If the progress bar is not enabled, the following message appears in the status bar: "Data is exported to Excel ..."

After the export, the "" and "" buttons are available in the user interface. The "" button opens the file and the "" button opens the file path. If the mouse pointer is moved over the buttons, a corresponding tooltip appears (in the screenshot: "Open file").



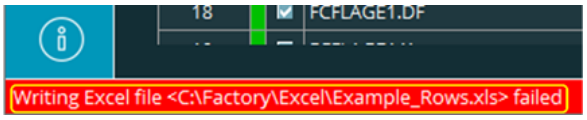
After the Export, the following message appears in the status bar:

“Excel file <{path}\{name of file}> has been written".



If the output file is open, *all* open Excel spreadsheets will be closed.

If the export has failed, the status bar will turn red and the message will appear: "Writing Excel file <{path}\{name of file}> failed”.



9. Start variants of the Universal Converter

The prerequisite for using this function is that the chargeable "PC-DMIS" option is activated.

9.1. Start with batch file

The Universal Converter can be started from a measurement routine with a batch file. The procedure for creating this batch file is described in detail in the chapter: Configuring the software, section: Button: Settings ➝ Option: Advanced area ➝ Batch.

This batch file is started from the measurement routine using an external command. If necessary, further parameters can be added to the batch file (see below).

Depending on whether "PC-DMIS (offline)" or "PC-DMIS (online)" was selected in the batch file, the Universal Converter is called at the beginning or end (see below in each case) of the measurement routine (or before or after the characteristics).

If "Q-DAS" or "QUINDOS" was selected in the batch file for Incoming data, the Universal Converter can be started at the beginning or end (see below in each case) of the measurement routine. The file for receiving data must be available before the batch file is started. Preferably, the call is made at the end of the measurement routine. The syntax in the call examples (see below) must be taken into account.

Alternatively, you can start this batch file manually (e.g., via a shortcut on the desktop).

To consider all settings correctly, the Universal Converter must be closed before starting the batch file. If this is not the case, the software is started in parallel which may lead to implausible results. We recommend to activate the "Close application automatically" checkbox (see above) when creating the batch file.

9.2. Start with parameters

Alternatively, the Universal Converter can be started with parameters.

- ### Start from measurement routine

For starting the Universal Converter the "HxGNUC.exe" file is called with an external command in the measurement routine. If no other path was selected during installation, this file is located in: "C:\Program Files\Hexagon\HxGN Universal Converter".

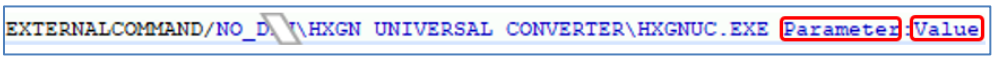
You must insert a space between the call to the Universal Converter and the first parameter.

The following parameters can be passed:

Parameter name	Parameter value	Description	Example
Import	**PCDMIS, QDAS, Quindos**	Import of data offline from PC-DMIS or Q-DAS/Quindos file(s)	Import:QDAS
PcdCmdMode	**0, 1, 2**	PC-DMIS Command mode. 0 = Default 1 = Executed 2 = Advanced	PcdCmdMode:2
ExcelFile	Path and name of the Excel file	Excel file for export	ExcelFile:D:\Test.xlsx
SecondExcelFile	Path and name of the Excel file	Second Excel file for output second parameter type (e.g. OOT) – see **SecondResultType**	ExcelFile:D:\Test_OOT.xlsx
ExcelConfig	Path and name of the configuration file	Configuration file for the Excel configuration	ExcelConfig:D:\Excel1.json
AsciiConfig	Path and name of the configuration file	Configuration file for the ASCII configuration	AsciiConfig:D:\ASCII1.json
QdasFile	Path and name of the Q-DAS file	Q-DAS file for import. If only one path is specified (without file name), all Q-DAS files will be imported from this path.	QdasFile:D:\First.dfq
QdasMeasNum	Any integer or combination of measurements. n=last measurement	If only a single (or several) measurement(s) is/are to be imported from a Q-DAS file with several measurements.	QdasMeasNum:7 QdasMeasNum:3,5,9 QdasMeasNum:3-8,9,11 QdasMeasNum:n
QuindosFile	Path and name of the Quindos file	QUINDOS file for import. If only one path is specified (without file name), all QUINDOS files are imported from this path.	QuindosFile:D:\Quindos.txt
ResultType	**OOT, CRIT, OK, INV**	Output of values out of tolerance, critical, invalid or in tolerance. If no parameter is transferred, all characteristics are output.	ResultType:CRIT,OK
SecondResultType	**OOT, CRIT, OK, INV**	Output of values out of tolerance, critical, in tolerance or invalid. A combination of several values (max. 3) is possible. This type is required if **SecondExcelFile** is to be written.	
Export	**ASCII, EXCEL**	Export type	Export:ASCII
OutputPath	Folder for the output file	Individual output path for ASCII file. If no path is passed, the path of the data source (import) is used.	OutputPath:D:\Output
Filter	**0, 1, 2, 3, 4**	Characteristic filter for ASCII / EXCEL 0 = Statistics, 1 = Report,	Filter:2

Parameter name	Parameter value	Description	Example
		2 = Both, 3 = None, 4 = All	
TPAxisOnly	**0 or 1**	Use TP-Axis only for True Position Dimensions (only PC-DMIS) 0 = no, 1 = yes	TpAxisOnly:1
Online	(without value)	Incoming data PC-DMIS online	Online
AutoExit	(without value)	Close application after data transfer	Autoexit
Settings	(without value)	Converter is started in "Settings" view	Settings

You must insert a space between the call to the Universal Converter with the external command and the first parameter. The individual parameters are separated by spaces. There must be a colon between the parameter and the value of the parameter (without a space).

Example: 

The order of the parameters is freely selectable.

Examples:

ExcelFile:D:\Excel\Columns.xlsx ExcelConfig:D:\Json\Columns.json Import:QDAS qdasfile:D:\qdas1\Dim_2022-03-25.dfq **autoexit**

ExcelFile:D:\Rows.xls ExcelConfig:D:\Qdas3\Rows.json Import:QDAS qdasfile:D:\flansh_123.dfq **autoexi**t

Autoexit Import:QDAS qdasfile:D:\flansh.dfq **export:ascii**

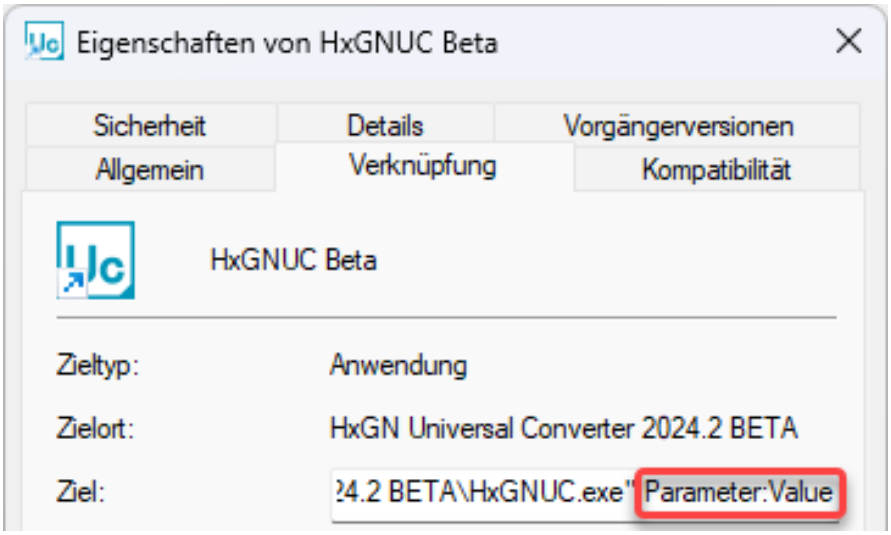
Depending on whether "Offline" or "Online" (see above) was selected for the start of the Universal Converter, the Universal Converter is called up at the beginning or end (see below in each case) of the measurement routine (or before or after the characteristics).

If "Q-DAS" or "QUINDOS" was selected, the Universal Converter can be started at the beginning or end (see below in each case) of the measurement routine. The file for receiving data must be available before starting the Universal Converter. Preferably, the call is made at the end of the measurement routine. The syntax in the call examples (see below) must be taken into account.

To consider all settings correctly, the Universal Converter must be closed before starting. If this is not the case, the software is started in parallel which may lead to implausible results. We recommend to use the "Autoexit" parameter (see above).

- ## Start with shortcut(s)

  Alternatively, you can use the parameters listed above with the shortcuts used in the "HxGNUC.exe" file (e.g., on the desktop).



  In the shortcut, in the "Target" area, after the call to "HxGNUC.EXE", the Parameters preceded by a space are entered (see above).

  If data shall be received from a PC-DMIS measurement routine "Offline" (see above), the Universal Converter must be started after the measurement. If the data shall be received "online" (see above), the Universal Converter must be started before the measurement.

  If "Q-DAS" or "QUINDOS" was selected, the file for the incoming data must be available before the Universal Converter is started.

  To consider all settings correctly, the Universal Converter must be closed before starting. If this is not the case, the software is started in parallel which may lead to implausible results. We recommend to use the "Autoexit" parameter (see above).

9.3. Start at the beginning of the measurement routine

The Universal Converter is called at the beginning of the measurement routine (or before the data to be transferred).

In the batch file, "PC-DMIS (online)" must be selected for the receipt of data (the data is received when the measurement routine is executed). If the Universal Converter is started with parameters, the "Online" parameter (see above) must be used.

The external command to start the Universal Converter must be set up with the parameters "NO DISPLAY" and " WAIT".

If the measurement routine contains more complex sequences (e.g.: loops, skipped features or characteristics), the PC-DMIS command mode "Extended" is recommended.

Example (start with a batch file):

```
START       =ALIGNMENT/START,RECALL:USE_PART_SETUP,LIST=YES
             ALIGNMENT/END
             MODE/DCC
             MOVESPEED/ 100
             FORMAT/TEXT,OPTIONS, ,HEADINGS,SYMBOLS, ;NOM,TOL,MEAS,DEV,OUTTOL, ,
             LOADPROBE/PRESET
             TIP/TIP1, SHANKIJK=0, 0, 1, ANGLE=0
$$ NO,
             ---------------------------------------------------------------
                     Start Universal Converter
             ---------------------------------------------------------------
             EXTERNALCOMMAND/NO_DISPLAY, WAIT ; C:\FACTORY\BATCH\START.BAT
$$ NO,
             ---------------------------------------------------------------
                     Start reciving the data
             ---------------------------------------------------------------
```

9.4. Start and end of the measurement routine

The Universal Converter is called at the end of the measurement routine (or after the data to be transferred).

In the batch file, "PC-DMIS (offline)" must be selected for the reception of data. If the Universal Converter is started with parameters, this must be done "Offline" (see above in each case).

The external command to start the Universal Converter must be set up with the parameters "NO DISPLAY" and "WAIT".

If the measurement routine contains more complex sequences (e.g.: loops, skipped features or characteristics), the PC-DMIS command mode "Extended" is recommended.

Example (start with a batch file):

```
$$ NO,
             ---------------------------------------------------------------
                     Start Universal Converter
             ---------------------------------------------------------------
             EXTERNALCOMMAND/NO_DISPLAY, WAIT ; C:\FACTORY\BATCH\END.BAT
                              END OF MEASUREMENT FOR
        PN=Sample             DWG=A1              SN=999
    TOTAL # OF MEAS =0     # OUT OF TOL =0     # OF HOURS =00:00:00
```

10. Using a loop

The prerequisite for use in a loop is that the “PC-DMIS” option is activated for a fee.

You can only use simple loops of the "Loop / Loop End", "While / EndWhile" and "Do / Until" type. Multiple nested loops are not supported.

When creating a batch file, the incoming data from "PC-DMIS (online)" must be selected (the data is received when the measurement routine is executed).

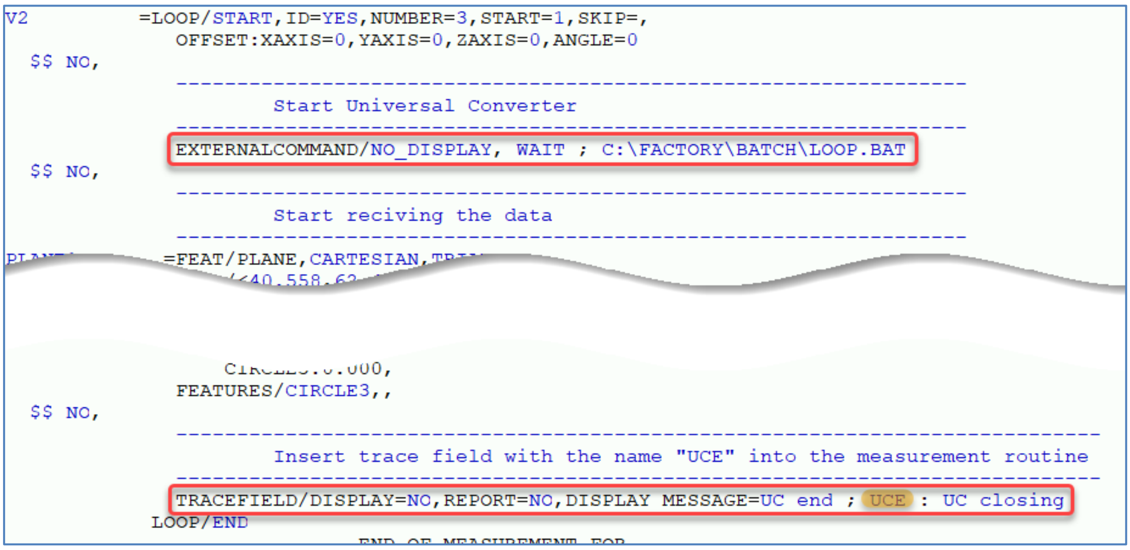
If the Universal Converter is started with parameters, the "Online" parameter (see above) must be used.

For complex measurement routines with features or dimensions in a condition (IF, SELECT), it is recommended to use the “PC-DMIS command mode” “Extended”.

The call must be placed at the start of the loop. The external command to start of the Universal Converter must be specified with the parameters “NO DISPLAY” and “WAIT”. The batch file generated by the converter automatically contains a break of 3 seconds and is triggered by the “WAIT” option.

A trace field command named “UCE” must be inserted before the end of the loop. This will cause the universal converter to be closed automatically after the data has been completed.

Example (with batch file):



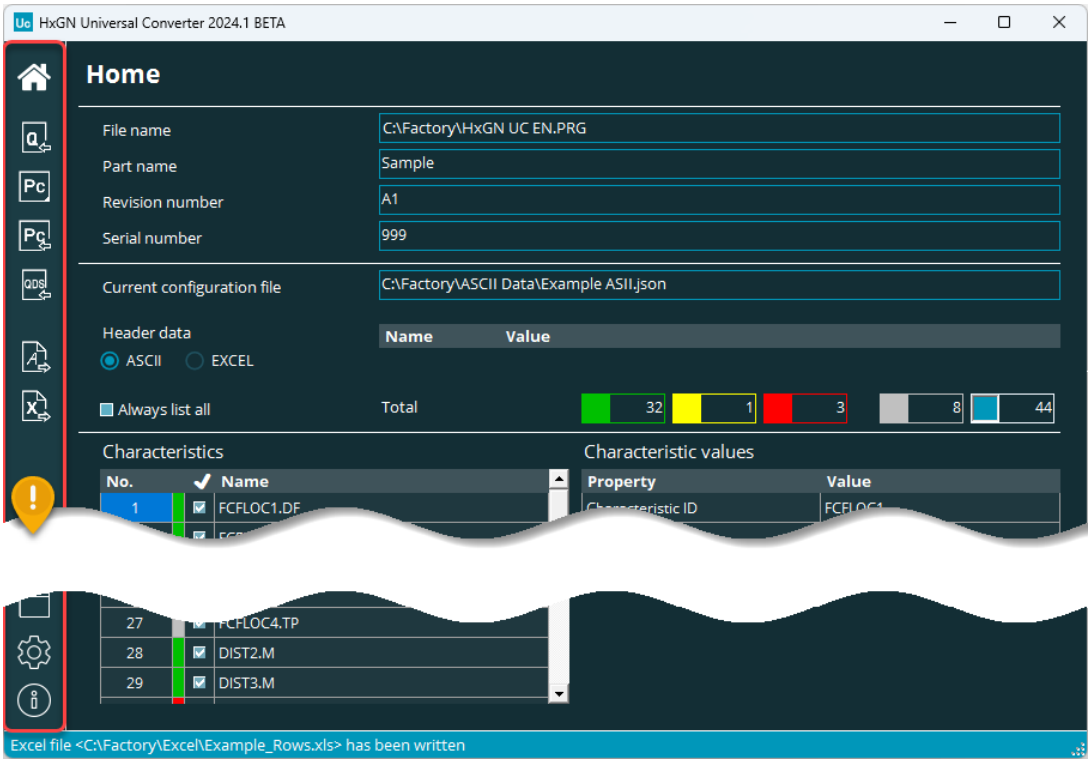
```
V2          =LOOP/START,ID=YES,NUMBER=3,START=1,SKIP=,
               OFFSET:XAXIS=0,YAXIS=0,ZAXIS=0,ANGLE=0
  $$ NO,
               ------------------------------------------------------------------
                       Start Universal Converter
               ------------------------------------------------------------------
               EXTERNALCOMMAND/NO_DISPLAY, WAIT ; C:\FACTORY\BATCH\LOOP.BAT
  $$ NO,
               ------------------------------------------------------------------
                       Start reciving the data
               ------------------------------------------------------------------
             =FEAT/PLANE,CARTESIAN,
...
               FEATURES/CIRCLE3,,
  $$ NO,
               ------------------------------------------------------------------
                       Insert trace field with the name "UCE" into the measurement routine
               ------------------------------------------------------------------
               TRACEFIELD/DISPLAY=NO,REPORT=NO,DISPLAY MESSAGE=UC end ; UCE : UC closing
            LOOP/END
```

When writing very large data to an Excel file, it is recommended to implement a break after the UCE trace field so that using the same file does not conflict with the next loop run. The break duration must be calculated individually.

11. Note: Starting with a batch file or with parameters

If the Universal Converter was started from a measurement routine or with parameters (see chapter: “Start variants of the Universal Converter“, section: "Start with batch file" and "Start with parameters"), the changes are only temporary. After closing and opening the software, any changes made are discarded.

This is indicated in the user interface by the fact that the left sidebar is displayed dark.



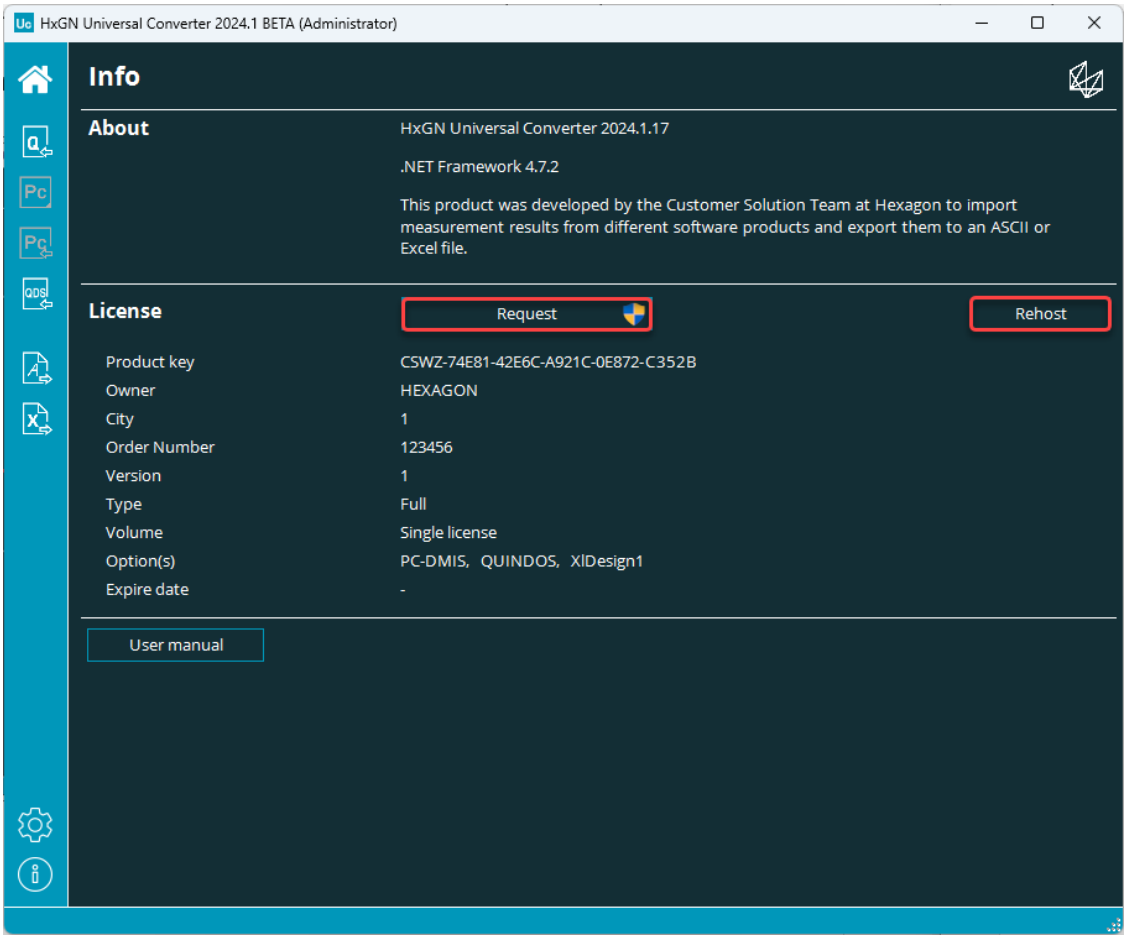
12. Button: Info

By clicking on the Button “ " information about the software can be called up (e.g., product key and unlocked options).

You can use the shortcut key "Ctrl "+"Alt "+"⇧" (Shift) to show or hide the horizontal lines between the "Info", "About" and "License" areas.

If you want to create a new license request or enable additional (paid) options, the Universal Converter must be started with administrator rights.

Afterwards, a new license request can be created with the "Request" button.



If you want to use the license on another PC, you must first deactivate it with the "Rehost" button. A file "RehostLicense.dat" is created and the location of the file is opened. This file must be sent to Hexagon together with the license request created on the new PC.

For details on how to create the license request, please refer to the document "EN HxGN UniversalConverter Installation.pdf". It is available at ["https://ftp.hexmet.de/CustomerSolutions/HxGN_UC/Docs/”](https://ftp.hexmet.de/CustomerSolutions/HxGN_UC/Docs/) for download.

13. Shortcuts

Shortcut	Function
F1	Opens the user manual
„Ctrl” + „E“	Opens the "Settings" button
„Ctrl“ + „F“	Opens the dialog to search for the characteristics
„Ctrl“ + „I“	Opens the "Info" button
„Ctrl“ + „S“	Saves the settings in the button "Settings" in the areas "General" and "Advanced". *Prerequisite*: Converter was not started with parameters
„Ctrl“ + „Alt“ + „⇧“ (Shift)	Show or hide the horizontal lines between individual areas

14. About Hexagon

Hexagon is a global leader in digital reality solutions, combining sensor, software, and autonomous technologies. We use data to increase the efficiency, productivity, and quality of applications in industry and manufacturing, as well as in infrastructure, security and mobility.

With our technologies, we are designing increasingly connected and autonomous ecosystems in urban environments as well as in manufacturing, ensuring scalability and sustainability in the future.

Hexagon's Manufacturing Intelligence division uses data from design and engineering, manufacturing, and metrology as the basis for solutions to optimize manufacturing processes. For more information, visit hexagonmi.com.

Learn more about Hexagon (Nasdaq Stockholm: HEXA B) at hexagon.com. Follow us also on @HexagonAB.