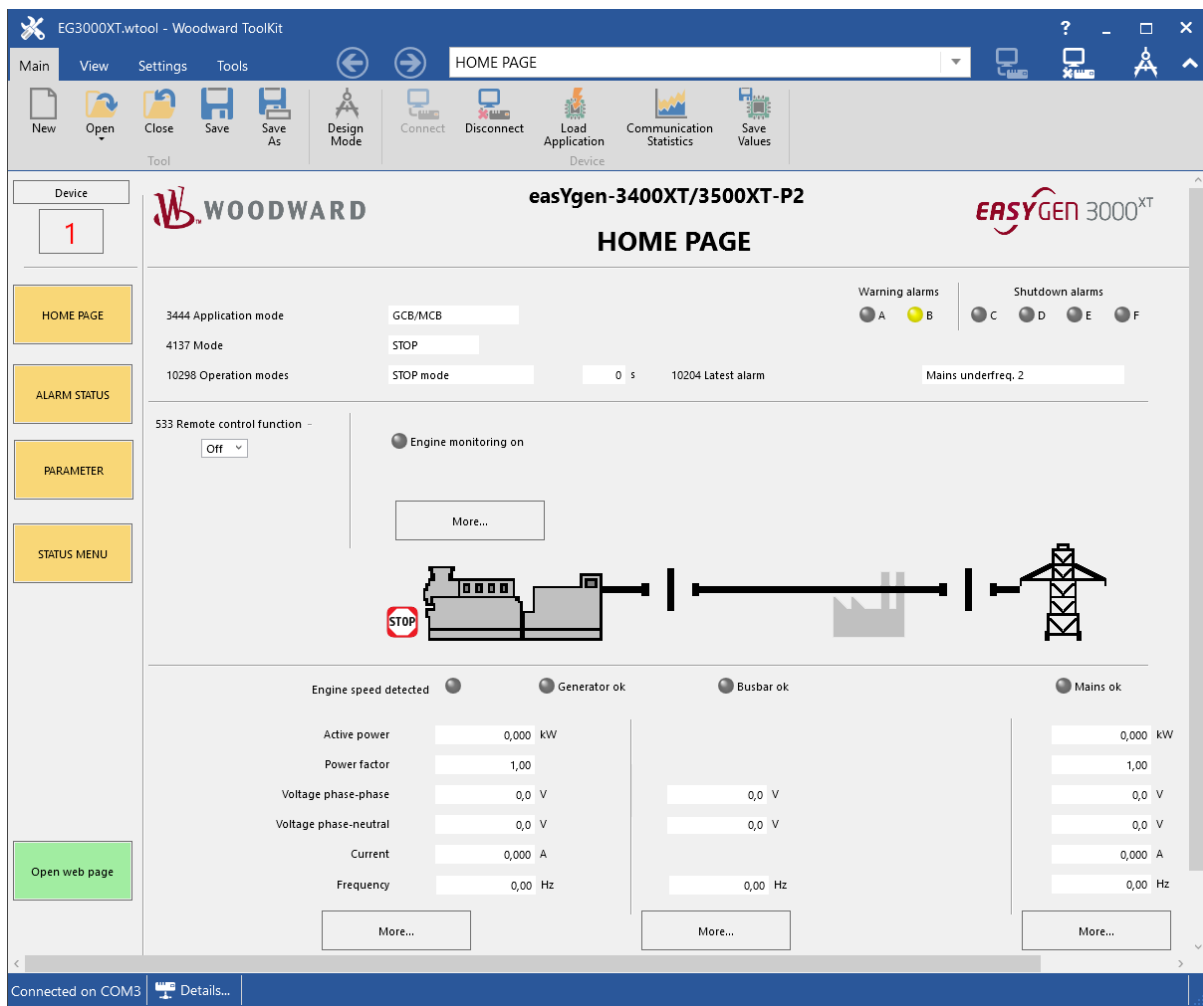**WOODWARD**

ToolKit

Manual │ PC software

ToolKit

Release 6.1.x or higher

Document ID: B37917, Revision: A   47344

This is no translation but the original Technical Manual in English.

Designed in Germany and the US.

Brief Overview

ToolKit is a PC software to configure and visualize device data for commissioning. It is used to create and run administration tools for many Woodward electronic products. The resulting tools can be used to configure, calibrate, monitor and troubleshoot your device over a serial, CAN or TCP/IP connection.

> ### *Content of this Manual*
>
> This manual describes the handling of ToolKit for the easYgen-XT family devices.
>
> For general information please refer to the ToolKit Help.

QR Code

To get the installer file, scan this QR code or use the following link: ⟹ https://wss.woodward.com/manuals/PGC/SW_Tools/ToolKit. You may navigate from here to browse through product documentation of several controls compatible with ToolKit service tool.

Table of Contents

1 Install ToolKit

	This manual is using the device easYgen-3000XT as sample.

	Configuration files and Technical Manual are available on the target server of the QR Code and additionally on device internal memory. Opening USB connection to the easYgen-XT series device offers read access to the files listed below but with status "delivery" -- please be aware that these files are not updated. The latest versions are available as download on the Woodward web site.

Files stored at easYgen-XT series device:

Configuration:

- msi-file (installing application files and ToolKit)
- eds-file (zipped)

Documentation:

- Technical Manual of the device (PDF)
- Manual ToolKit (PDF)

	Microsoft .NET Framework must be installed on your computer to be able to install ToolKit.

Load from the website woodward.com

| | The latest version of the ToolKit software (6.1.x or higher) can be obtained from our website.

The latest version of Microsoft .NET Framework (4.5.1 or higher) can be obtained from Microsoft website. |
|---|---|

To get the software from the website:

- Go to ⟹ https://www.woodward.com

- Fill the empty search field with "toolkit" and click on the »SEARCH« button

  In the RESOURCES column click on SOFTWARE

  → The (software) products are listed

- Select ToolKit in the list and click on it

  → see a description of ToolKit, System Requirements and Installation Instructions

- Click »DOWNLOAD« on the bottom of the window

- Login with your e-mail address or register first

  → The download will start immediately

- Run the self-extracting installation package and follow the on-screen steps to install

  → ToolKit software and all relevant additional folders and files are installed

Load from target of QR code

> The latest version of the ToolKit software (6.1.x or higher) can be obtained from the target of the QR code website.
>
> The latest version of Microsoft .NET Framework (4.5.1 or higher) can be obtained from Microsoft website.

- Scan the QR code

  → The page Power Generation Controls opens

- Click on »SW_Tools«

- Click on »ToolKit«

- Click on the file »ToolKitSetup_6.1.x«

  → Run the installation and follow the on-screen steps to install

  → ToolKit software and all relevant additional folders and files are installed

> ### *Hidden folder?*
>
> Depending on the (version of your) operating system, the preferred folder for installation "C:/ProgramData" can be hidden by default WINDOWS settings. Installation will work properly but installed sub-folders might not be visible.
>
> Two possible solutions:
>
> - Change WINDOWS settings to see hidden files (e.g. in Windows explorer tab »File«, »Folder Options«, tab »View«, check box "Show hidden files, folders and drives" below »Hidden files and folders«)
> - Select another (not hidden) directory/folder for installation when asked for during installation.

Minimum system requirements

- Microsoft Windows® 10, 8.1, 7, Vista (32- & 64-bit)

- Microsoft .NET Framework 4.5.1 or higher

- 1 GHz or faster x86 or x64 processor

- 1 GB of RAM

- Screen

  ○ Resolution: 800 by 600 pixels

- ◦ Colors: 256

- If using USB service port of the easYgen for ToolKit communication:

  - ◦ USB port

  - ◦ USB 2.0 cable (with type A and type B connector)

- If using Ethernet port of the easYgen for ToolKit communication:

  - ◦ Appropriate Ethernet cable

Training videos

> Further support videos are available on Woodward trainings and products YouTube channel. Take a moment to browse through ⟹ https://www.youtube.com/channel/ UC0Ogv5ntWU2OXxshcYYt6Mg

2 Install ToolKit Configuration Files

> ℹ️ This manual is using the device easYgen-3000XT as sample.

> ℹ️ Configuration files and Technical Manual are available on the target server of the QR Code and additionally on device internal memory. Opening USB connection to the easYgen-XT series device offers read access to the files listed below but with status "delivery" -- please be aware that these files are not updated. The latest versions are available as download on the Woodward web site.
>
> Files stored at easYgen-XT series device:
>
> Configuration:
>
> - msi-file (installing application files and ToolKit)
> - eds-file (zipped)
>
> Documentation:
>
> - Technical Manual of the device (PDF)
> - Technical Manual ToolKit (PDF)

Load from the target of QR code

- Scan the QR code

  → The page Power Generation Controls opens

- Click on the device family you are working with

- Click on the type of the device you are working with

- Click on the folder 02_Config_Files_

- Click on the toplevel number of your device

- Run the self-extracting installation package by clicking on the file

  [P/N1][1]-[Revision]_Multilingual_ToolKit

  → follow the on-screen steps to install

ToolKit files

*.WTOOL	
File name composition:	[P/N1][1]-[Revision]_[product name short form]_[# of Release]-[# hotfix]_[# of build].WTOOL
Example file name:	8440-*2088*-C_EG3500XTP2_1.16-0_*42785*.wtool
File content:	Display screens and pages for online configuration, which are associated with the respective *.SID file.

*.SID	
File name composition:	[Product name short form]_[# of Release]-[# hotfix]_[# of build].SID
File name composition for *.SID if device is connected via CAN:	[Product name short form]_[# of Release]-[# hotfix]_[# of build].CAN.SID
Example file name:	EG3500XTP2_1.16-0_*42785*.sid EG3500XTP2_1.16-0_*42785*.CAN.sid
File content:	All display and configuration parameters available in ToolKit.

*.WSET	
File name composition:	[user defined].WSET
Example file name:	device_settings.WSET
File content:	Default settings of the ToolKit configuration parameters provided by the SID file or user-defined settings read from the unit.
	Notes **New settings DON'T override Ethernet address!** • The local Ethernet address of a device is intentionally NOT overwritten by loading WSET files. It is possible to handle the complete set of Settings or even a part of it (selected settings). This can be done by using "Partial .WSET files". For more details please read Application Note 37572 *'How to create new complete/partial settings files offline'* at woodward.com (search for "37572").

- [1] P/N1 = Part number of the unit

3 Configure ToolKit
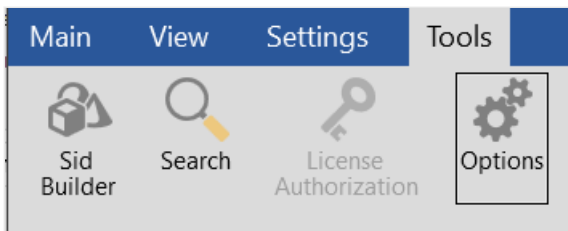
To change ToolKit settings:

Fig. 1: *Tools menu*

- Select [Tools / Options].

  → The »Options« window is displayed with the following default file locations
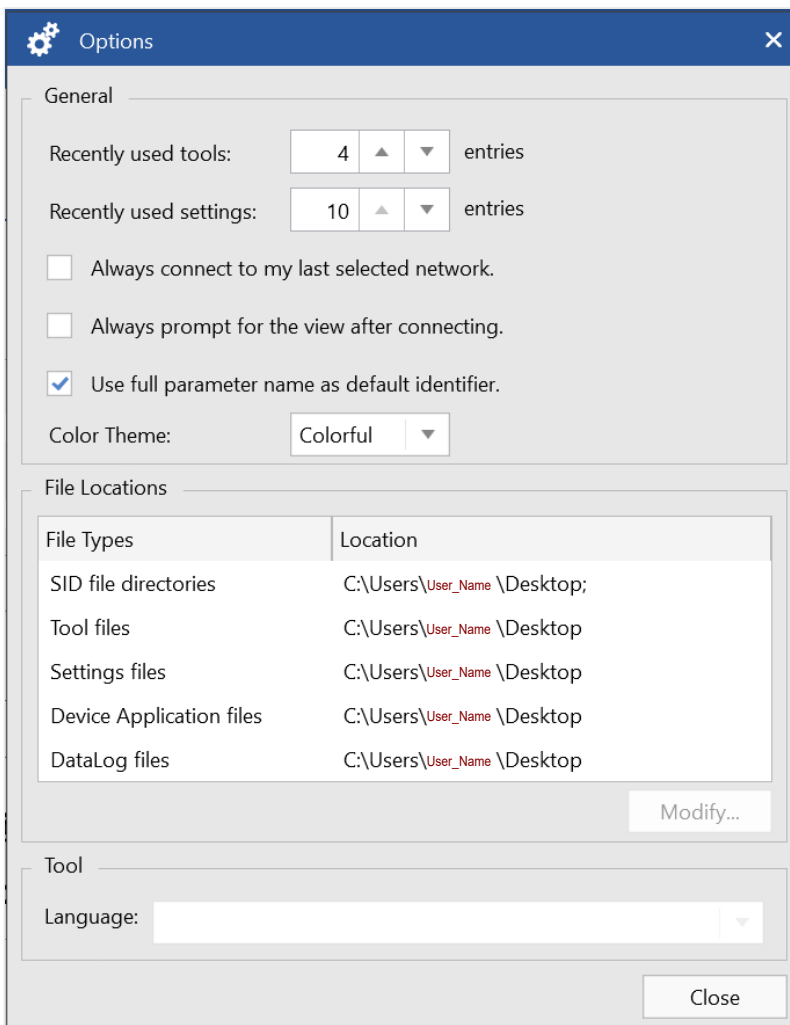

Fig. 2: *ToolKit Options window*

File locations:

Recommended path for "Tool files" is C:\Users\[users's name]\Documents\Woodward
\ToolKit\Applications

Language:

language (selection) setting for tools

- Adjust settings as required.

> For more information on the individual settings refer to the ToolKit help.

Graphical element	Caption	Description
?	Upper right corner	Woodward ToolKit help

> Please do not change the default installation folder! Otherwise the language selection will not work properly.

4   Connect ToolKit via USB Service Port

> ⓘ A USB cable with USB 2.0 Type A (PC/laptop side) and Type B (Woodward device side) connectors is necessary.
>
> USB cable length shall be limited up to 3 m. It is recommended to use professional (high quality) USB cable: 28AWG/1P+24AWG/2C with good shielding.
>
> The USB cable is not part of delivery.

> ⓘ ***Local ports***
>
> **The number of the COM port used for USB connection depends on your configuration.** This sample is using COM1.

Sample configuration procedure

- Should Windows not have installed the USB driver automatically, install the USB driver from the flash memory of the device or from ⟹▷ https://www.woodward.com.

- Check in the Windows Device Manager if there is a USB COM port

- Start easYgen and wait for "normal operation"

- Connect the Woodward device and the PC/laptop ToolKit is running on with the USB cable

  → USB drive will be automatically detected: WINDOWS offers pre-selected next step e.g., open in explorer what would display files on the easYgen-XT device but is not needed now

- Open ToolKit

  → wtool selection window opens

- Select the .wtool file for your device by double click

  → ToolKit Home Page opens

- Click on »Connect«

  → Network selection window opens
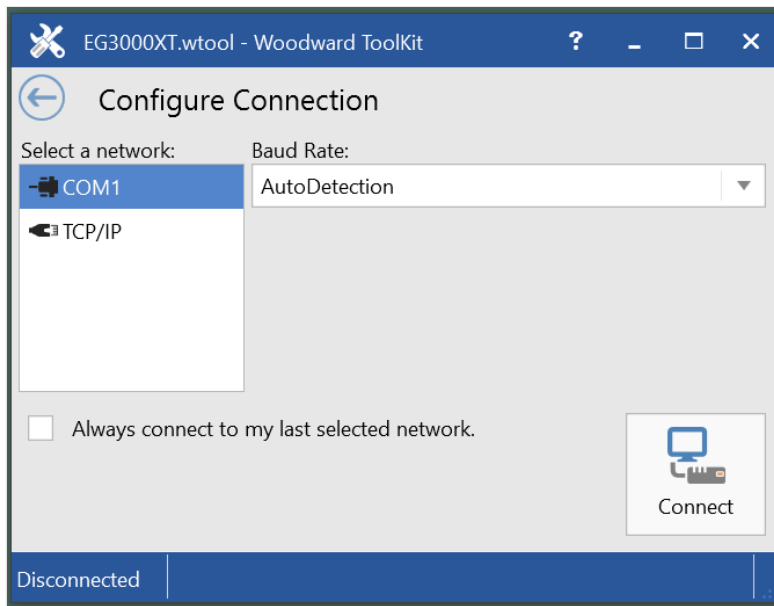
Fig. 3:   *Select COM1 for ToolKit USB connection*

- Select COM1 - the USB port

- Click on »Connect«

  → Connection will be established

  → Security Login window opens

ⓘ **USB connection fails?**

If USB connection fails please try the following methods before you contact your IT expert:

- disconnect and reconnect USB cable
- use another USB port
- use a proper USB cable (for reference see note at begin of this chapter)

- Log in with your »Username« and »Password«

  → ToolKit is opened and Home Page is displayed. Access (code) level depends on the password typed in.

ⓘ The Commissioning Level CL03 with default password CL0003 gives access to well defined parameters and configurations.

ⓘ Without entering username and password (correctly): Values are displayed (read) only.

Released

5 Connect ToolKit via Ethernet Port

Ethernet category 5 (STP CAT 5) shielded cable is required with shielded plug RJ45. It is not part of delivery.

Description below is done for Ethernet A as example.

Depending on the device, connection is also possible via Ethernet B or Ethernet C, please note the changed IP address.

During connecting ...

Don't work with event history or *.wset files while connecting to ToolKit.

- Connect the Woodward device with the Ethernet cable to the network.

- Find IP address of the device at the device with menu path [Next page / Diagnostic / Interfaces / Ethernet / Ethernet A]
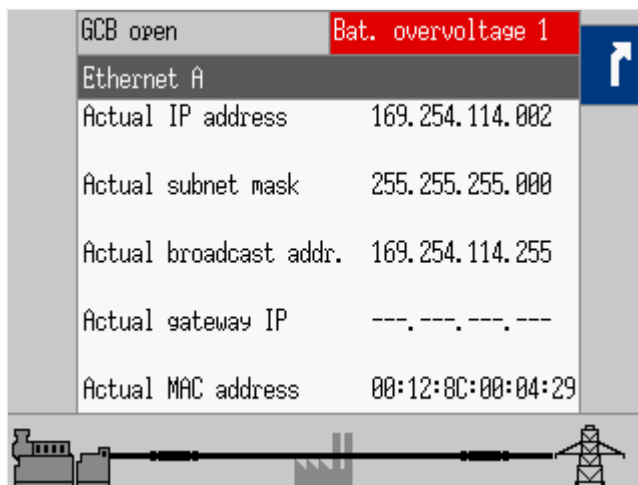
Fig. 4: IP-address: Ethernet A

IP address of the device

Find the factory IP address of the device of the back panel of the device.

Network restrictions

Both the easYgen control and your ToolKit running computer/laptop (PC) must be in the same IP address range. For example if the IP address of easYgen is 10.31.140.20, the IP address of the PC must be 10.31.140.xxx.

It is as well recommended to use an isolated/dedicated network for ToolKit communication (Anti-virus software sometimes may interfere with the Ethernet network). Please consult your IT team for adjustment help.

Released

5 Connect ToolKit via Ethernet Port

- Check that the "ToolKit device" is in the same network but with a different device address

- Click on the .wtool file for your device

  → ToolKit Home Page for easYgen-XT (empty) opens

- Click on »Connect«
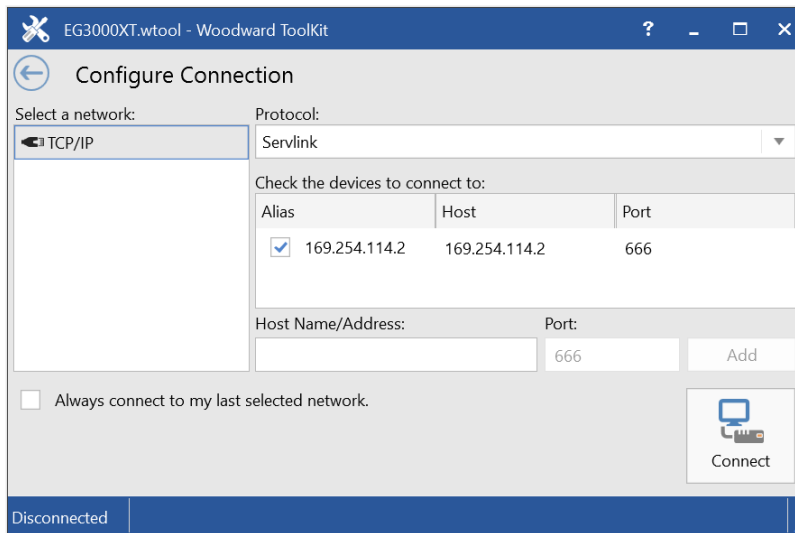
  → Network selection window opens

Fig. 5:   Select TCP/IP for ToolKit connection

- Select Ethernet port "TCP/IP"

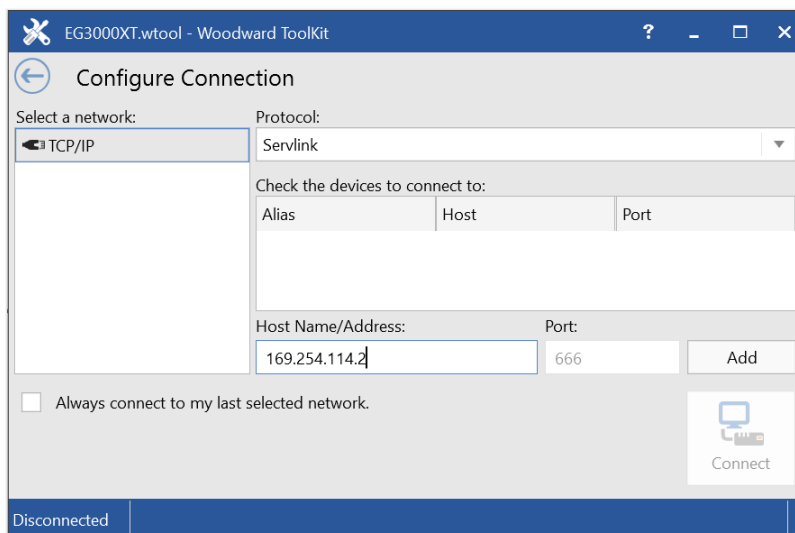- Check that device address is the host name address otherwise add the host address

Fig. 6:   Add new host address

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Don't use leading "0" zero in address! This would lead to no connection.

Sample: If displayed »Actual IP address« is 169.254.114.002 type 169.254.114.2 (instead of "... . **00**2").

Second sample - valid for every three-numbers-block: Type 169.54.14.2 if displayed »Actual IP address« is 169.054.014.002.

- Select dedicated host for (preferred) use

- Click on »Connect«

    → Connection will be established

    → Security Login window opens

- Log in with your »Username« and »Password«

    → ToolKit is opened and Home Page is displaying current states and values

The Commissioning Level CL03 with default password CL0003 gives access to well defined parameters and configurations.

CAUTION!

Avoid using the same IP address twice!

By mistake it is possible to assign the same IP address twice to two different devices e.g. for Remote Panel RP-3000XT as in the system is configured for the easYgen-3000XT so far.

In this case the last configured device (RP-3000XT) will work properly but the so far configured device (easYgen-XT) will be invisible on the Ethernet: **Load Share and ToolKit do not work on this device!** ... and cannot be found for remote connection.
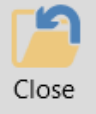
Solution:

- Apply again properly IP addresses for the devices. Be aware that a new IP address has to be written to the device by the parameter 7412 / 7414 / 7416 »Set IP address«.

Network mismatch using the same IP address twice with other devices can be handled similarly.
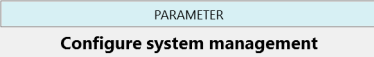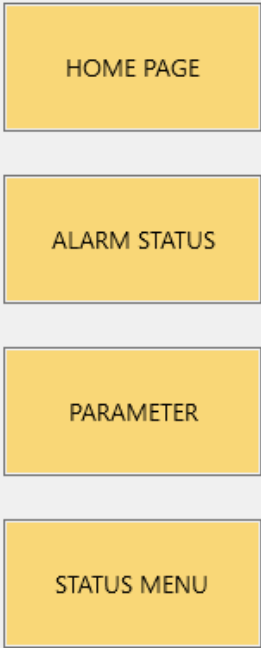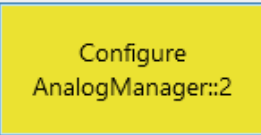
6 View And Set Values In ToolKit

*Handling *.wtool*

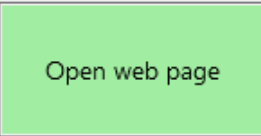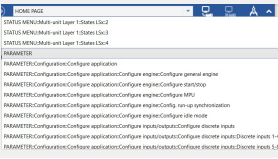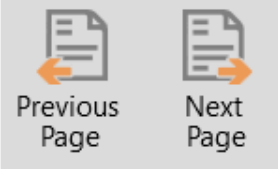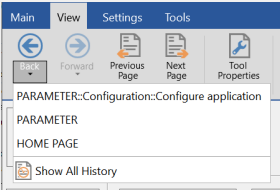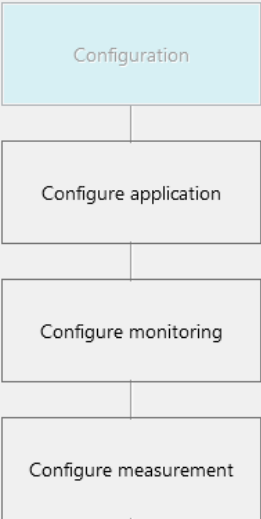| Graphical element	Description
New	A new *.wtool can be started by» New«
Open	A *.wtool can be opened by» Open:« A new *.wtool can be opened Open A recently used *.wtool can be opened
Close	A *.wtool can be closed by» Close«

Basic navigation

ToolKit offers the following graphical elements for basic navigation:
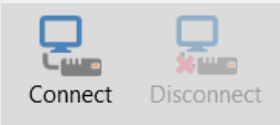
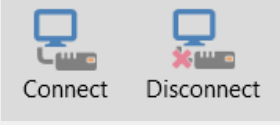| Graphical element	Caption	Description
PARAMETER **Configure system management**	On top of the page/screen	One level back in menu hierarchy (Visible at menu level 2 and higher)

Graphical element	Caption	Description
HOME PAGE ALARM STATUS PARAMETER STATUS MENU	Left sidebar navigation buttons	Main Buttons in orange. Permanently visible
Configure AnalogManager::2		Yellow buttons depend on current menu/page and guide to further pages "beside" the current page. This pages can be opened by» Previous page« / »Next page« and as result of a search »Ctrl« »F«
Open web page		Both »HOME PAGE« and page »PARAMETER« offer a green button »Open web page« to open product web page containing product information and links to additional information
HOME PAGE STATUS MENU:Multi-unit Layer 1:States LSc2 STATUS MENU:Multi-unit Layer 1:States LSc3 STATUS MENU:Multi-unit Layer 1:States LSc4 PARAMETER PARAMETER:Configuration:Configure application PARAMETER:Configuration:Configure application:Configure engine:Configure general engine PARAMETER:Configuration:Configure application:Configure engine:Configure start/stop PARAMETER:Configuration:Configure application:Configure engine:Configure MPU PARAMETER:Configuration:Configure application:Configure engine:Config. run-up synchronization PARAMETER:Configuration:Configure application:Configure engine:Configure idle mode PARAMETER:Configuration:Configure application:Configure inputs/outputs:Configure discrete inputs PARAMETER:Configuration:Configure application:Configure inputs/outputs:Configure discrete inputs:Discrete inputs 1-4 PARAMETER:Configuration:Configure application:Configure inputs/outputs:Configure discrete inputs:Discrete inputs 5-8	Navigation list	Directly select a configuration page based on its name
Previous Page Next Page	Buttons »Previous page« and »Next page«	Go to the previous/next configuration page (as ordered in the list)
Back Forward	Buttons »Previous visited page« and »Next (already) visited page«	Go to the previous/next visited page

Graphical element	Caption	Description
	Buttons »Previous visited page« and »Next (already) visited page«	Go a dedicated already visited page
	Navigation buttons to submenues.	Lighter grey buttons are not available in the current application mode.

Connecting

Graphical element	Caption	Description
	Buttons	Click 'Connect' to connect ToolKit and device
	Status field	Displays disconnection status
	Buttons	Click 'Disconnect' to dissolve connection between ToolKit and device
	Status field	Displays active port and unit connection status

Value and status fields

Graphical element	Caption	Description
400 V	Value field	To directly input (alpha)numeric values

Graphical element	Caption	Description
50,0 Hz		Display (read) only
No	Option field	To select from a preset list of options
400 V	Value field	To directly input (alpha)numeric values, code level no active

To change the value of a value or option field:

- Check if you have write access.

  Enter your Username and Password if you are not logged in.

- Enter the value or select an option from the drop-down list.

  See the value's range in the footer bar.

- Press »Enter « to confirm.

  → The new value is written to the unit.

> ℹ️ **Wait before rebooting**
>
> Changing configuration/parameters becomes effective immediately. **To be sure that the changes have been saved internally, wait about 20 seconds before rebooting or disconnecting the power.**

Visualization

> ℹ️ Values displayed by visualization graphical elements cannot be changed.

Graphical element	Caption	Description
	System setup visualization (Oneline/ single line diagram)	Displays engine/busbar/mains connection status

Search

> ℹ️ **»Ctrl« »F«**
>
> The short cut ctrl-F works to open ToolKit search window.

To find specific parameters, settings and monitoring values more easily, ToolKit includes a full-text search function.

Example: To find a parameter/setting/monitoring value:

- Select [Tools / Search] from the menu.
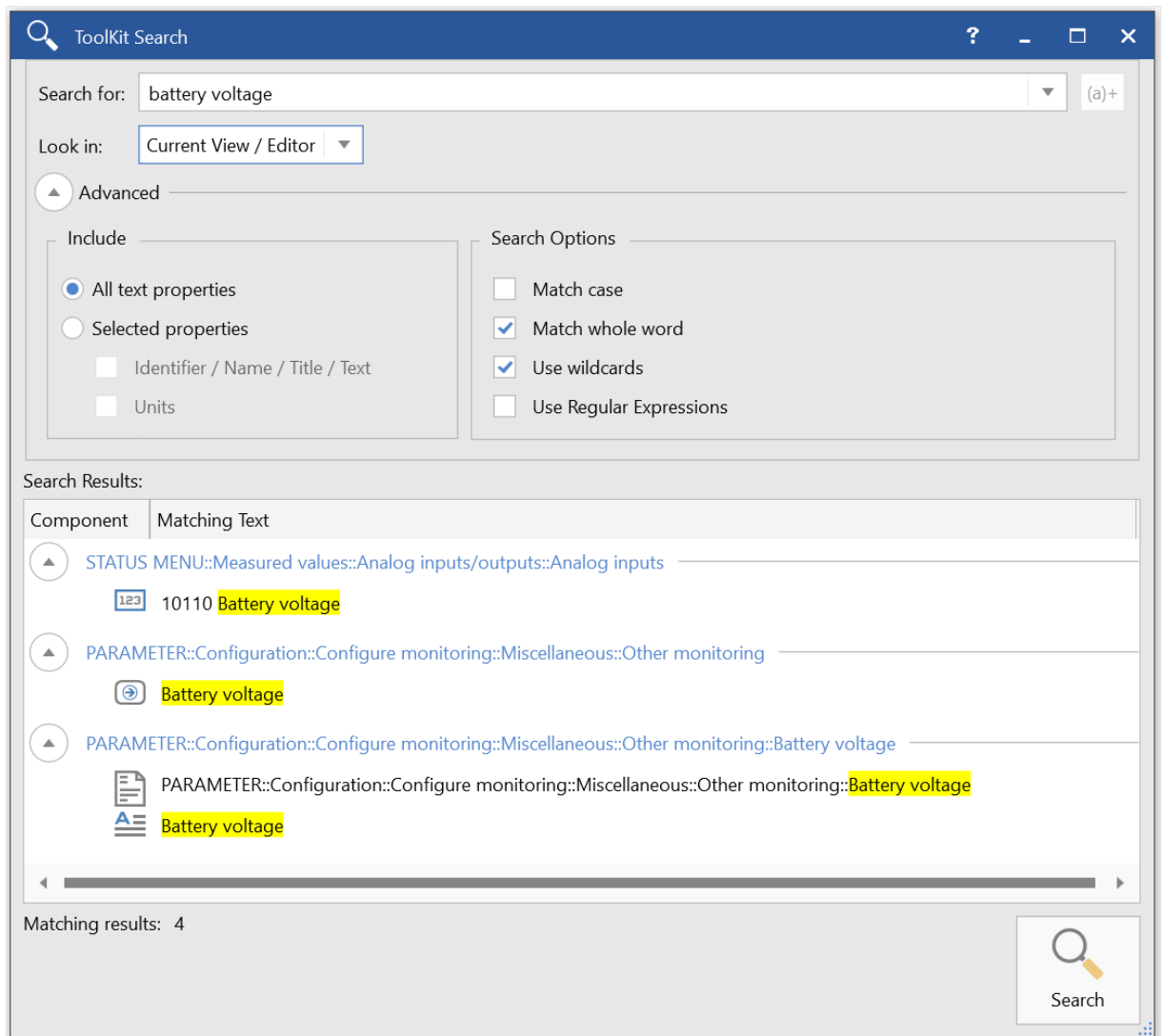
  → The »Search« dialog opens.

Fig. 7: Search dialog

- Enter a search term and press »Enter«.

  → The results are displayed in the table.

> Column width can be adjusted as usual (e.g. to read full path).
>
> »May not be visible«: display (or not) of this value depends on settings.

- Double-click a table entry to go to the visualization/configuration page that includes this parameter/setting/monitoring value.

Value trending

The value trending view can chart up to eight values over time.

To select values for trending screen:

- Right-click an analog value field on any configuration/visualization page and select »Add to trend« from the context-menu.

→ The trending screen opens.

Fig. 8:   Trending screen

- Click the »Start« button to initiate charting.

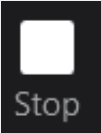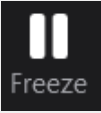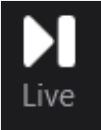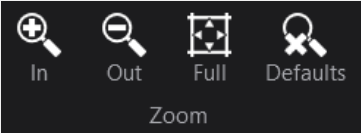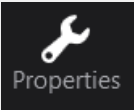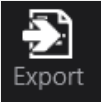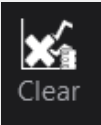- Click the »Stop« button to stop charting the values.
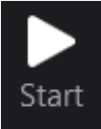
> **Viewed range!**
>
> The range to be exported depends on the view and the start position of the time bar but is always reported 'til the end of charting.
>
> To export all (complete report) time marker must be at start position or the complete graph must be viewed.

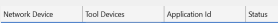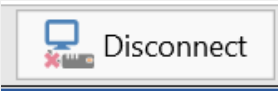- To store the tracked data select »Export«

  → The tracked data are exported as a time/value table to a `.htm` file. This file can be opened and viewed with a web browser. A copy of the web page content can be inserted and edited/analyzed in external applications (e.g. MS Excel/OpenOffice.org Calc).

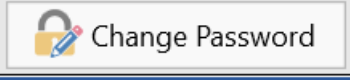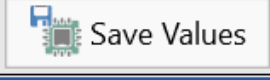| Graphical element	Caption	Description
Start	»Start«	Start value charting
Stop	»Stop«	Stop value charting
Freeze	»Freeze«	Freeze value charting
Live	»Live«	Continue value charting
In Out Full Defaults Zoom	Zoom controls	Adjust detail of value chart
Properties	»Properties«	Change scale limits, sample rate, time span, colors
Export	»Export«	Export to `.htm` file
Clear	»Clear«	Clear data log

Details ... of connection

The bottom of the ToolKit screen comes with information about connection and a button for more »Details ...«.

With a click on »Details ...« a list of all current connections will be displayed and further buttons appear:

Graphical element	Caption	Description
Network Device Tool Devices Application Id Status		Table/list of all connected devices
Disconnect	Disconnect	Dissolving connection between ToolKit and device (same function as at the top of ToolKit page/screen)
Log In	Log In	Opens »Security login« window

Graphical element	Caption	Description
Log Out	Log Out	Reset of security level to "0"
Change Password	Change Password	Change password for login
Save Values	Save Values	Opens »Save values« window to save values/settings (same function as on top of ToolKit page/screen)

7   How to use (and prepare/update) non-XT easYgen ... .wset files

> **WSET file conversion**
>
> Please take care for device compatibility.
>
> The .wset files of easYgen-XT are not compatible with the formerly used .wset files.

ToolKit can handle former non-XT .wset files. Loading a non-XT .wset file automatically guides into a supported conversion procedure.

Please read information of the step-by-step preparation and follow the instructions. The resulting settings implemented will use all 1:1 settings, resolve all changes like re-naming or re-numbering, ask for taking over matching settings, and list all settings that do not fit the XT restrictions but offering notes for manual implementation.

> **New settings DON'T override Ethernet A address!**
>
> The local Ethernet A address of a device is intentionally NOT overwritten by loading any WSET files.
>
> The save and re-load function for Ethernet address is implemented like for other settings (parameter 5330 »IP address«) but it still needs parameter 7412 to »Set IP address«.

Load a non-XT .wset file

- Open ToolKit version 6.1 or higher

- Go to TAB [Settings] and Click [Associate w/ Application]

  → Window appears

- Select the ... .wset file to be updated and Click »Next >«

- Select the XT- .sid file and Click »Next >«

- Define name and location/folder of new .wset file where settings will be saved to and Click »Next >«

  → Now it will take some seconds

- If settings conversion is installed between the original software version and the target version defined by the target *.sid file (which comes with installing the tool for this particular easYgen version), an automated settings conversion will be started

  ○ Settings differences will be detected and resolved

  ○ If resolving was not possible, a list with information and possible warnings is displayed

    This information is also available in \\ProgramData\Woodward\ToolKit \SettingsConversion\conversionlog.txt on the PC

- If settings conversion is not possible between the original software version and the target version defined by the target *.sid file, a manual conversion is initiated. For this, a dialog "Settings Differences" will be opened:

    ◦ Go through the left hand side list and select settings found

    → If possible, ToolKit offers you to »Map« the setting for easYgen-XT

    Every mapped setting is listed below

    ◦ Close mapping with a click on »OK« button and - back on »Settings Differences« screen - with »Next >« button

- Click »OK«

- The settings conversion information is stored in the file "conversionlog.txt" and in the files .txt at \\ProgramData\Woodward\ToolKit\SettingsConversion

8   Toolkit Off-line Mode

The Toolkit Off-line mode offers the possibility to create and edit a new settings file or a partial settings file for an easYgen-3000XT family device without actually being connected to the device. The parameter settings can be edited and saved as a .wset-file. The .wset-files can be loaded to the device when it is connected to a computer. All settings made in offline mode can be applied to the device later.
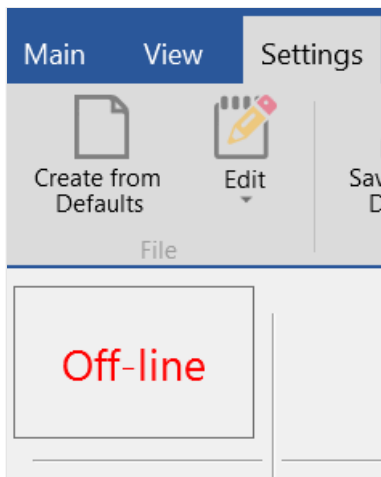
Entering Off-line Mode

Fig. 9:   Load file

- Open ToolKit and click on "Settings". Choose and load the preferred file, e.g. "Create from Defaults" to create a new complete settings file. Alternatively, choose "Edit" to edit a settings file.
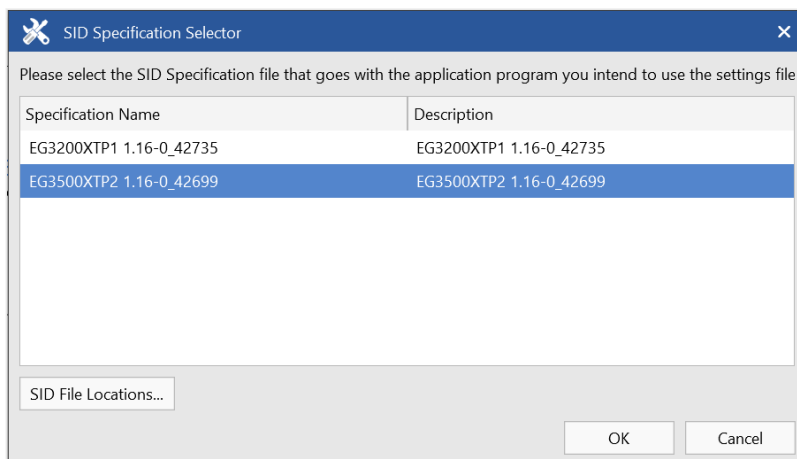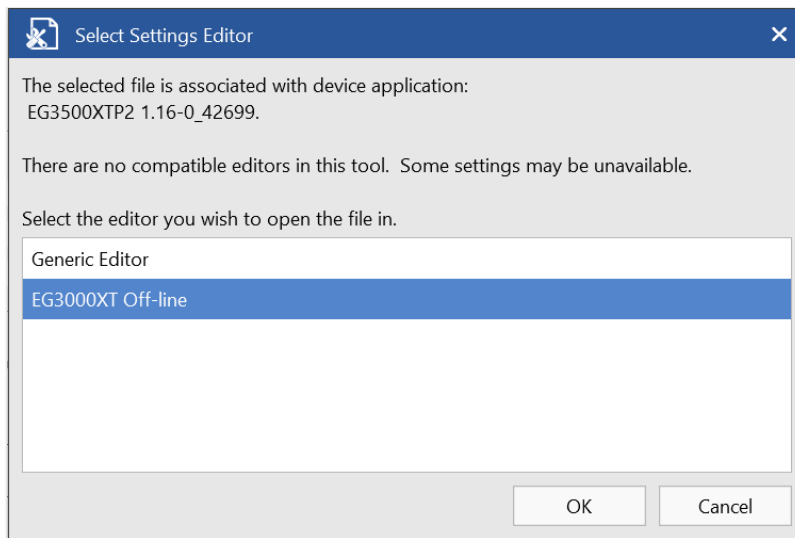

Fig. 10:   Select File

- Select the respective .sid-file and click "OK". If the Specification file to be used is not listed or is located in a different directory, click "SID File Locations…" to browse to the proper directory.

Off-line Editor

Fig. 11:   Select Off-line editor

- Choose the Off-line option to open the Off-line editor.

  → A new window opens up. The Off-line mode is now active.

> In the "Off-line mode" window now all parameters can be accessed and modified in the same way like being actually connected to the device.
>
> The status indicator in the left upper corner indicates the Off-line mode! If it only displays "Off-line", it indicates an offline easYgen3000-XT family device.
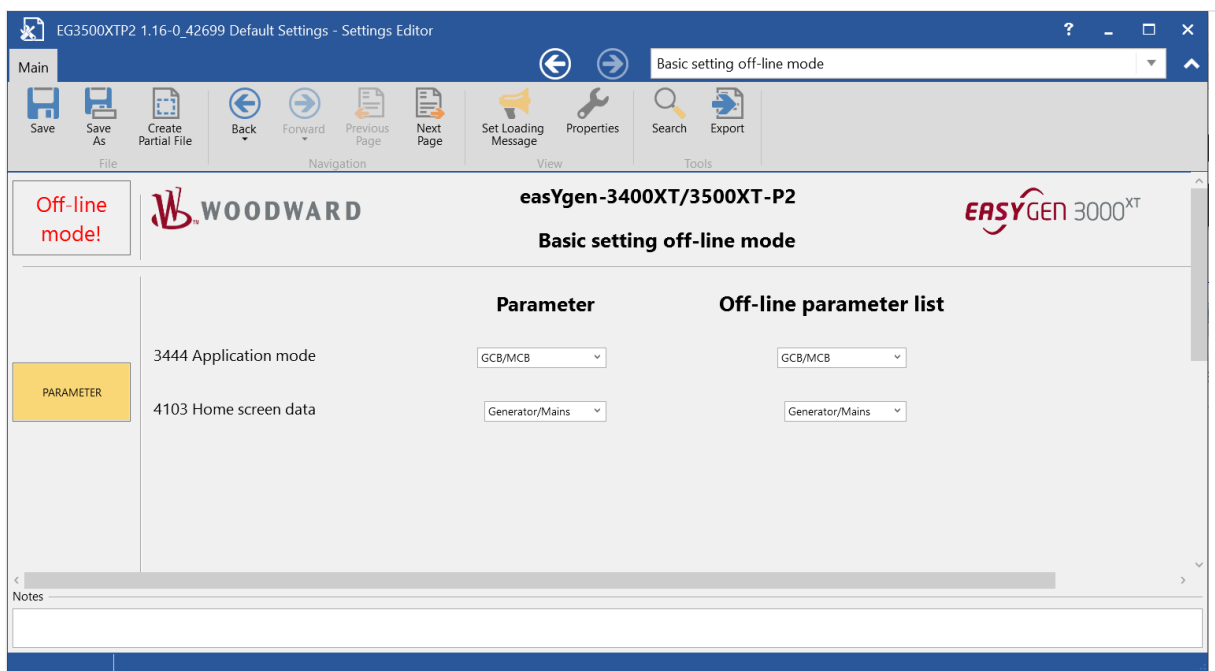
Fig. 12:   Basic setting off-line mode

- Make sure the setting of a parameter in "Parameter" and "Off-line parameter list" is equal.

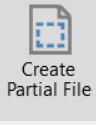> ℹ️ If the .wset-file has been created on-line the parameter 961 has to be set to "No" first.

Fig. 13:   Basic setting off-line mode with online parameter
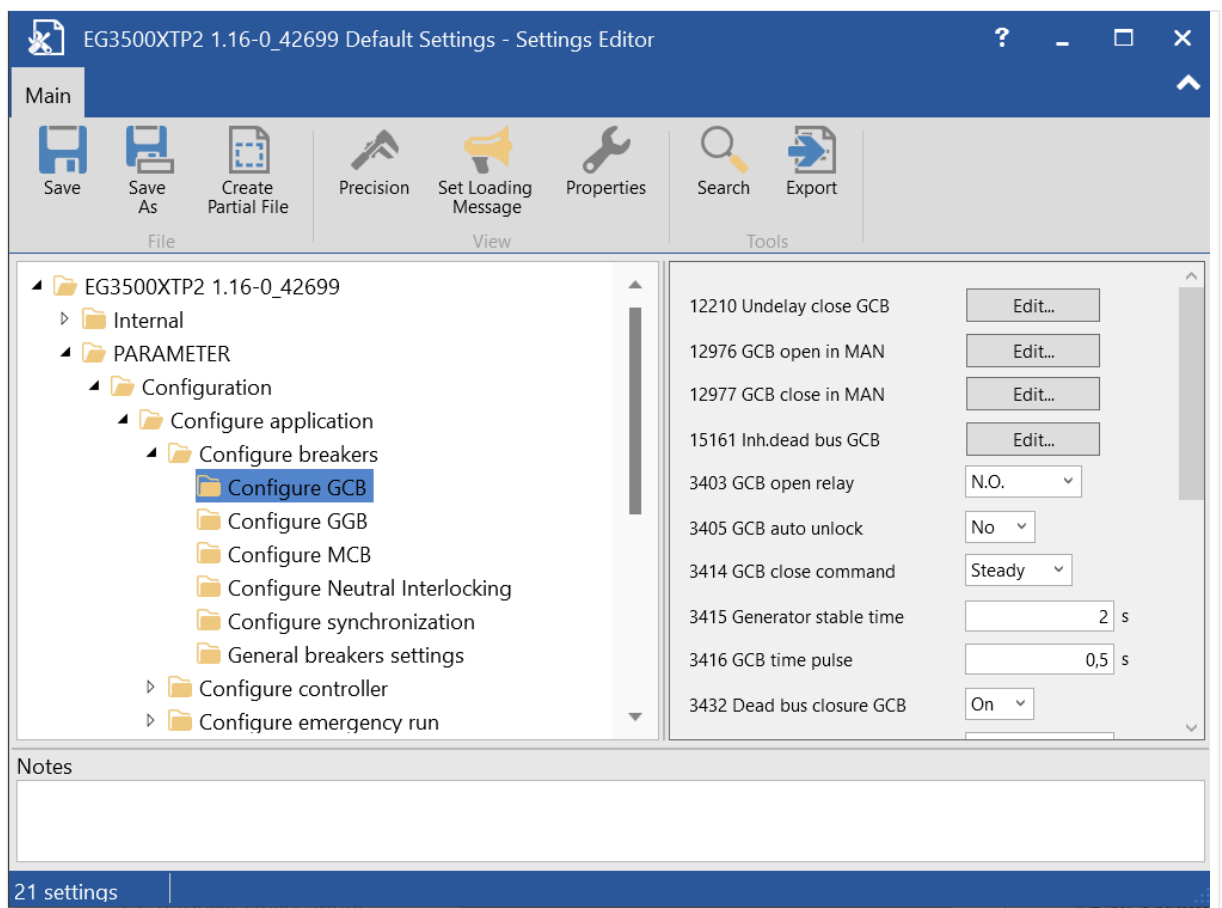
Modify parameters

Fig. 14:   ToolKit Off-line mode: Parameter

- After modifying the parameters, you can save the settings, and later load it into the controller e.g. when you are on-site. To save just click "File" and select "Save As..." or click the save button.

  The file can be named in a format like e.g. "CustomerName_Generator#_Date.wset")

Graphical element	Description
Create Partial File	**Partial settings** It is possible to handle the complete set of Settings or even a part of it (selected settings). This can be done by using "Partial .WSET files". For more details please read Application Note 37572 'How to create new complete/partial settings files offline' at woodward.com (search for "37572").

Generic Editor

In the Generic Editor the parameters are arranged in folders and can be modified on the right hand side.

They can be loaded into the controller like in Off-line mode.
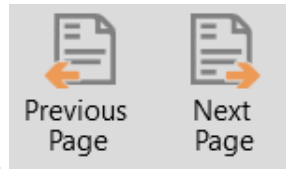
Released

> ### *ToolKit Off-line Mode*
>
> ToolKit Off-line mode offers almost all settings of the "Online mode". However, a few functions are not visible in off-line mode, e.g. live-screens, alarm-statuses, counters etc.

9 Valuable Tips and Tricks With ToolKit

ⓘ The ToolKit software help is worth to read: [Help / Help Contents...]

Just click ...

- buttons **Previous Page / Next Page** to go to previous/next **page**

- buttons ← → or **Back / Forward** to go one **step/click** back/forward

- [Tools / Search...] or (»Ctrl« »F«) to

  ○ find a parameter by number

  ○ find a parameter by name

  ○ find all pages/screen this parameter is found

  ○ find all pages/screen this name is found (e.g. occurrence of "engine")
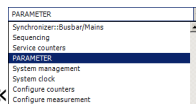
- »Navigation list« to see

  ○ menu path (breadcrumb) of the current page/screen

  ○ located in the sequence list of all pages/screens

- »Value field« `400 V` and see the value's range in the footer bar

- »Details ...« in the bottom line to

  ○ find a list of all connected devices and the connection states

  ○ get access to Log In / Log Out e.g. to change security level

WOODWARD

Woodward GmbH

Handwerkstraße 29 — 70565 Stuttgart — Germany

Phone +49 (0) 711 789 54-510

Fax   +49 (0) 711 789 54-101

stgt-info@woodward.com