



easYgen®-3000 Series

‘Interconnection via Netbiter® easy connect‘

Optional Supplementary Information

General Information

The following alert boxes can be used in this publication:



“DANGER” indicates a hazardous situation which, if not avoided, will result in death or serious injury.



“WARNING” indicates a hazardous situation which, if not avoided, could result in death or serious injury.



“CAUTION”, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

“NOTICE” is used to address practices not related to personal injury.

IMPORTANT

“IMPORTANT” is used to address practices not related to personal injury.

Personnel



WARNING!

Hazards due to insufficiently qualified personnel!

If unqualified personnel perform work on or with the control unit hazards may arise which can cause serious injury and substantial damage to property.

- Therefore, all work must only be carried out by appropriately qualified personnel.

For further Product Support Options, Product Service Options, Returning Equipment for Repair, and/or Engineering Services please [download application note #37573](#).

Requirements

This application note describes how to use HMS Netbiter for internet connection of easYgen-3000 genset controllers.



Please take care for the general risk of internet connection.

Documentation



Read this entire application note and all other publications pertaining to the work to be performed before installing, operating, or servicing this equipment.

Practice all plant and safety instructions and precautions.

Failure to follow instructions can cause personal injury and/or property damage!

Any unauthorized modifications to or use of this equipment outside its specified mechanical, electrical, or other operating limits may cause personal injury and/or property damage, including damage to the equipment.

Any such unauthorized modifications: constitute "misuse" and/or "negligence" within the meaning of the product warranty thereby excluding warranty coverage for any resulting damage, and invalidate product certifications or listings.



This publication may have been revised or updated since this copy was produced. If the cover of the publication states "Translation of the Original Instructions", the original source may have been updated since this translation was made.

Be sure to check manual 26311, *Revision Status & Distribution Restrictions of Woodward Technical Publications*, to verify whether this translation is up to date. Always compare with the original for technical specifications and for proper and safe installation and operation procedures. To verify that you have the latest revision, check manual 26311, *Revision Status & Distribution Restrictions of Woodward Technical Publications*, on the publications page of the Woodward website:

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Introduction

The HMS Netbiter easy connect product is a ...

About Netbiter



The Netbiter company is the preferred partner for this type of communication with easYgen.

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Additional Information

<http://www.netbiter.com/support/file-doc-downloads/easyconnect-300-series>

MANUALS/DESIGN GUIDES				
File	Type	Size	Uploaded	Download
EC310 & EC350 Installation Guide	PDF	971.44 KB	27 Aug, 2014	 Download
Netbiter EasyConnect User Manual	PDF	2.23 MB	17 Apr, 2014	 Download

Connect the Netbiter device with the Internet

NOTICE

To check that you have the correct ToolKit configuration files available and functioning well is beneficial.
So connect ToolKit first directly with your PC via the RS232 port with the easYgen.

- The device is to set up according to the EasyConnect Installation guide. Therefore the “WAN” port is connected with the internet network.
- After powering up the device please check whether the LEDs
 - “Power”,
 - “Gateway” and
 - “Uplink/WAN” are enabled.

If this works the Netbiter is now able to be connected via ARGOS, which is the Netbiter provider platform in the Internet.

- Establish Internet connection of your computer
- Go to “www.netbiter.com”
 - Without Netbiter account: create an own account
 - Enter your Name and password in the upcoming prompt
- Your Argos page is opened
- Create a new project within your account
- Follow the instructions of the EasyConnect Installation guide

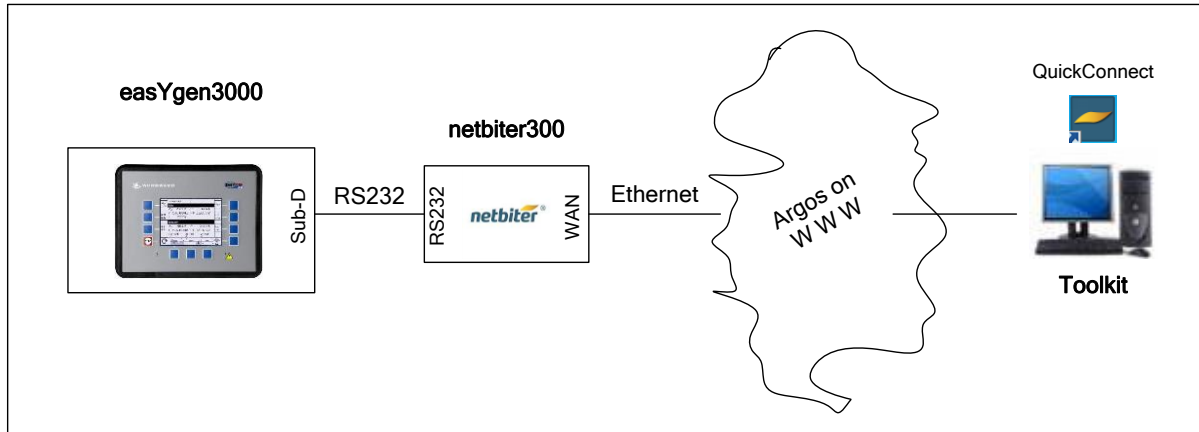
At the end of this process you should have established a new system where you can access to.

NOTICE

To have the chance to watch the LEDs of the Netbiter or to double-check any wirings or settings on site we propose to do the commissioning steps described above at the location where you have installed the Netbiter device.

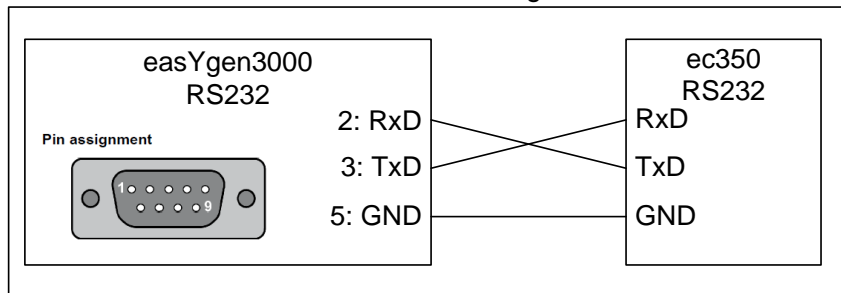
Remote Access Connection via ToolKit, Quick Connect, and RS232

After a new system is created as described above the connection between ToolKit and easYgen can be commissioned via the RS232 virtual com port:



Example

STEP 1 Connect the Netbiter device with the easYgen device via RS232 connection



STEP 2 Set up the easYgen with the following parameters (easYgen3000 default setting)

3163 Baudrate	19.2 kBd
3161 Parity	No
3162 Stop bits	One
7900 Enable Modbus protocol	Yes

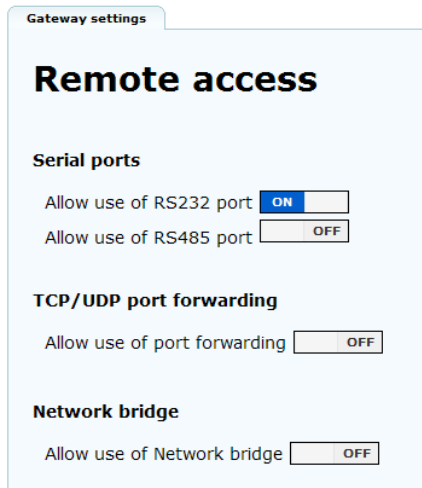
STEP 3 Go into Argos and navigate to your already established project and select: "Management" (upper blue bar) / "Configuration"

STEP 4 In "Configuration" enable the Remote Access:

Use this system for remote access

ON

STEP 5 Enable the RS232 connection; disable Network bridge:



Gateway settings

Remote access

Serial ports

Allow use of RS232 port ON

Allow use of RS485 port OFF

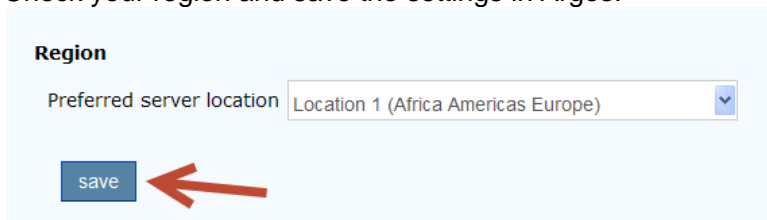
TCP/UDP port forwarding

Allow use of port forwarding OFF

Network bridge

Allow use of Network bridge OFF

STEP 6 Check your region and save the settings in Argos:



Region

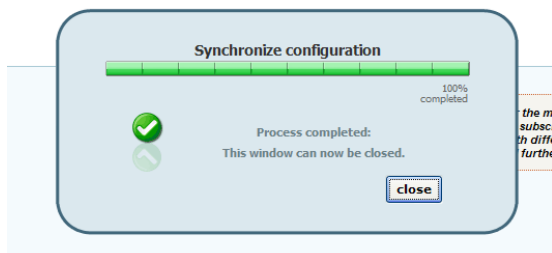
Preferred server location Location 1 (Africa Americas Europe) ▼

save ←

STEP 7 Click the synchronize button to transfer the Argos settings into the Netbiter device.

Synchronize configuration

STEP 8 Close the window, after successful setting synchronization:



Synchronize configuration

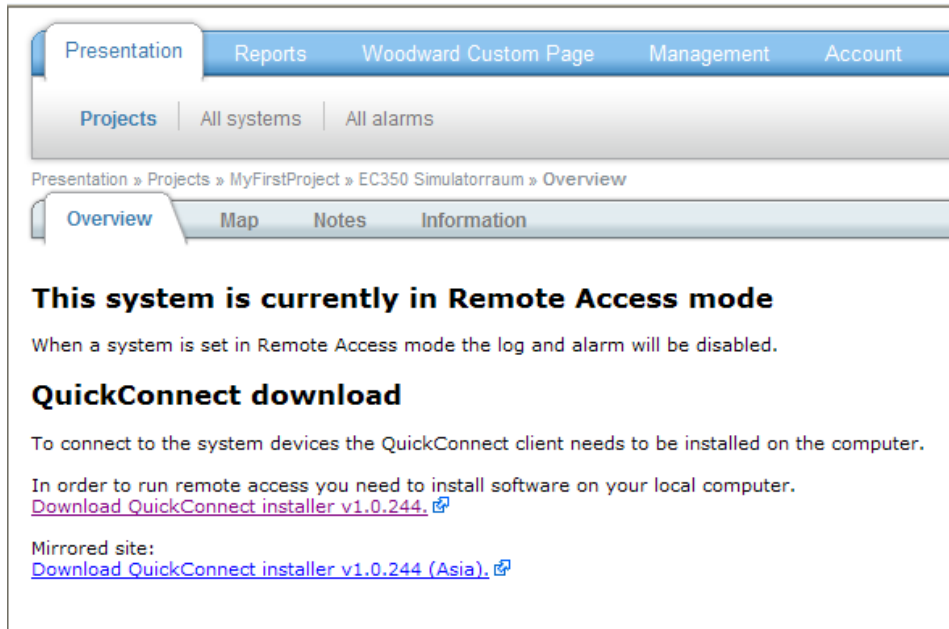
100% completed

Process completed:
This window can now be closed.

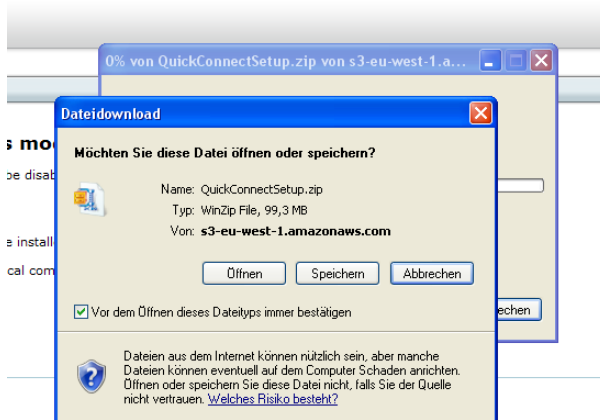
close

- At next you have to install the software “QuickConnect” which will establish the VPN tunneled connection through the internet onto the Netbiter.

STEP 1 Find the links to download this software from the Argos server by navigating to “Presentation”:



STEP 2 Install “QuickConnect” on your computer



- Be aware that after installation of the QuickConnect software a new start of your computer could be required

STEP 3 Start the QuickConnect software.

Open your Argos account and type in your password, if you are asked for.

STEP 4 Follow the instructions to realize a virtual com driver for ToolKit.

You can choose any free com port of your computer and define it as virtual RS232 port.

STEP 5 Add a new device, then a serial channel:

[+ Add new device](#)

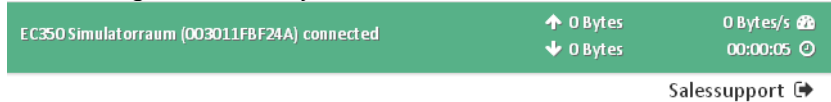
Enter your com port and allocate RS232:



STEP 6 Click on the Connect button on the upper right corner. Now QuickConnect will try to build up a connection from your PC to the Netbiter over internet.



STEP 7 Do not forget to enable your serial connection and click connect:




011FBF24A)

System is online Disconnect

Channel opened
Channel with id '1' was successfully opened.

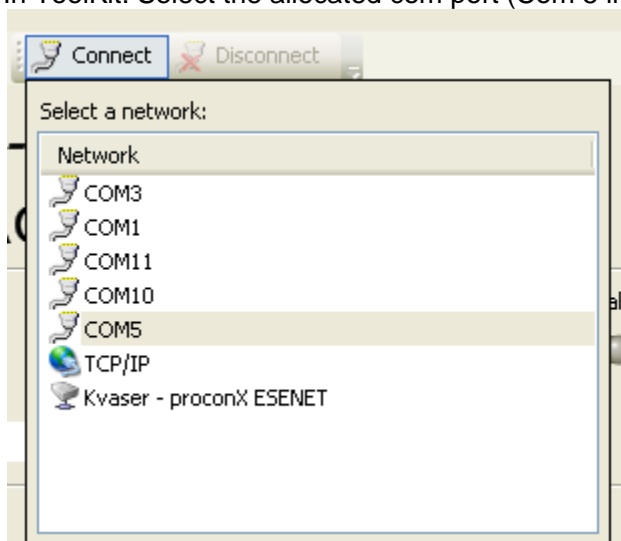
STEP 8 The successful connection is shown by a green bar.

STEP 9 If connection doesn't work:

Click the  -icon to log OUT and IN again.

→ If the connection is established, you can proceed with starting the according ToolKit project:

STEP 1 In ToolKit: Select the allocated com port (Com 5 in this example)



- STEP 2** Click the connect button
- STEP 3** ToolKit will build up the connection
- STEP 4** If not, please check all items again carefully:

→ The connection runs. All features of ToolKit are usable.

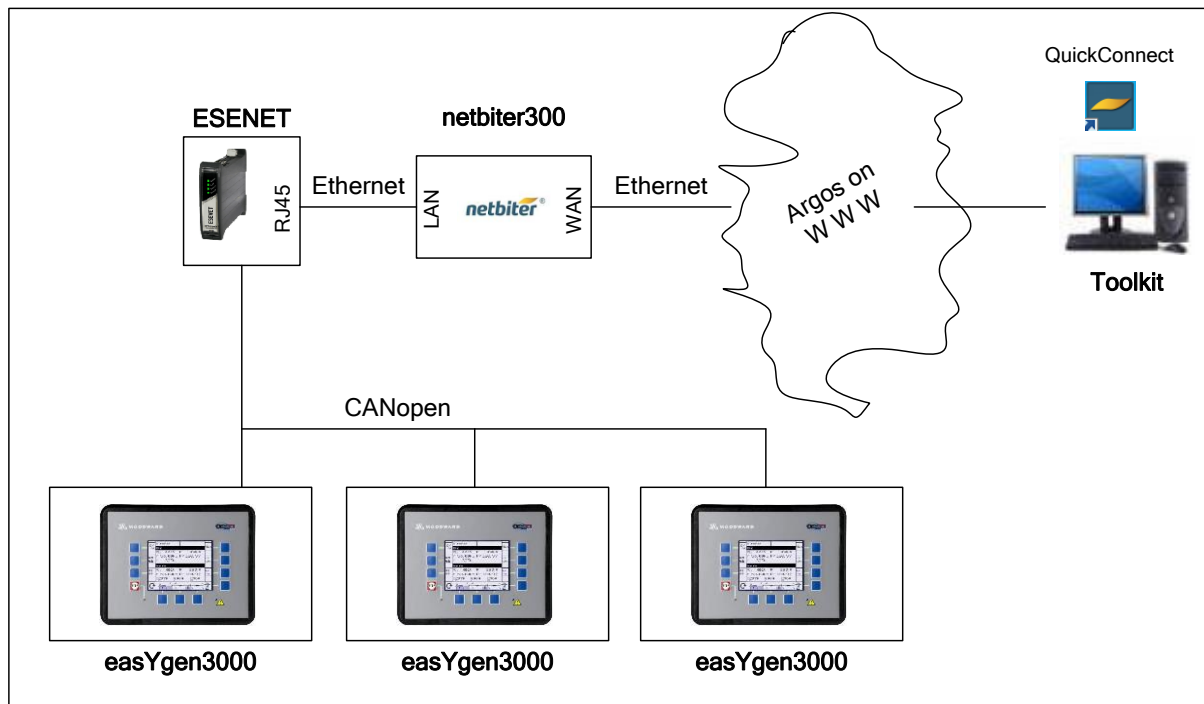
NOTICE

Due bandwidth issues the reaction time will be slower as for being connected directly.

Remote Access Connection via ToolKit and ESENET (multiple easYgen devices)

This chapter is written in assumption that you have already created a system in your Argos account. It describes the connection of ToolKit running on a PC, with an ESENET device connected over internet and Netbiter:

ToolKit communicates over Modbus /TCP protocol with the ESENET gateway, which communicates via CANopen to the easYgen(s). In this application the Netbiter system tunnels the TCP messages on the ESENET.



Example

When you do the commissioning, test all items at the location where you have installed the Netbiter device. So you have then the chance to watch the LEDs of the Netbiter and/or to double check any wirings or settings on site.

It is beneficial to connect ToolKit at first directly onto easYgen with the RS232 port to check that you have the correct ToolKit configuration files available and functioning well. Then you should run ESENET directly via your Ethernet port with one or several easYgens to go sure that you have the correct settings for easYgen and ESENET.

→ For further information please read the ESENET manual.

NOTICE

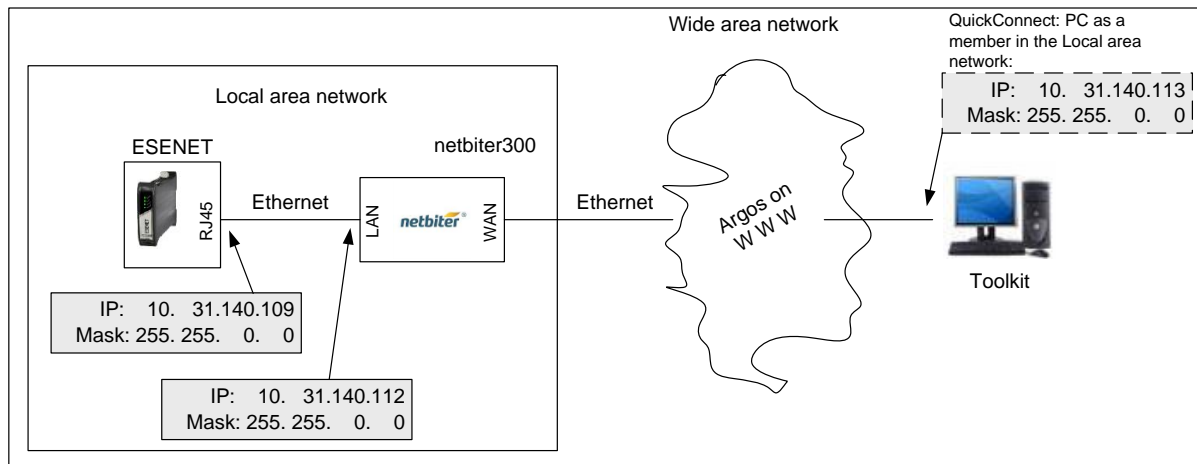
ToolKit is only working with ESENET, if you have installed the “Kvaser – proconX ESENET” driver on your computer. This driver communicates via Modbus /TCP and uses the port 502.

Please check your computer firewall, if this application is supported. For tests you can temporary disable your firewall but you should create a long term solution with your IT staff, if needed!

You should only proceed with the commissioning, if you have a well running direct connection of Toolkit -> Ethernet port -> ESENET -> CANopen -> easYgen.

→ Create your local LAN Ethernet network.

In the following example the ESENET and the Netbiter device are getting the same local area network. Afterwards this local area network is considered in the QuickConnect settings.

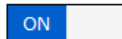


Example of IP Addresses

STEP 1 Go into Argos and navigate to your already established project and chose "Management" upper blue bar) / "Configuration".

STEP 2 In "Configuration" enable the Remote Access:

Use this system for remote access



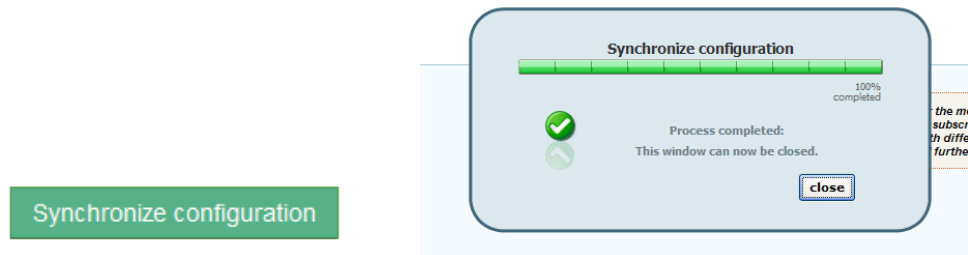
STEP 3 Enable the Network bridge

STEP 4 Enter the LAN configuration

STEP 5 Do not forget to save first before synchronizing:

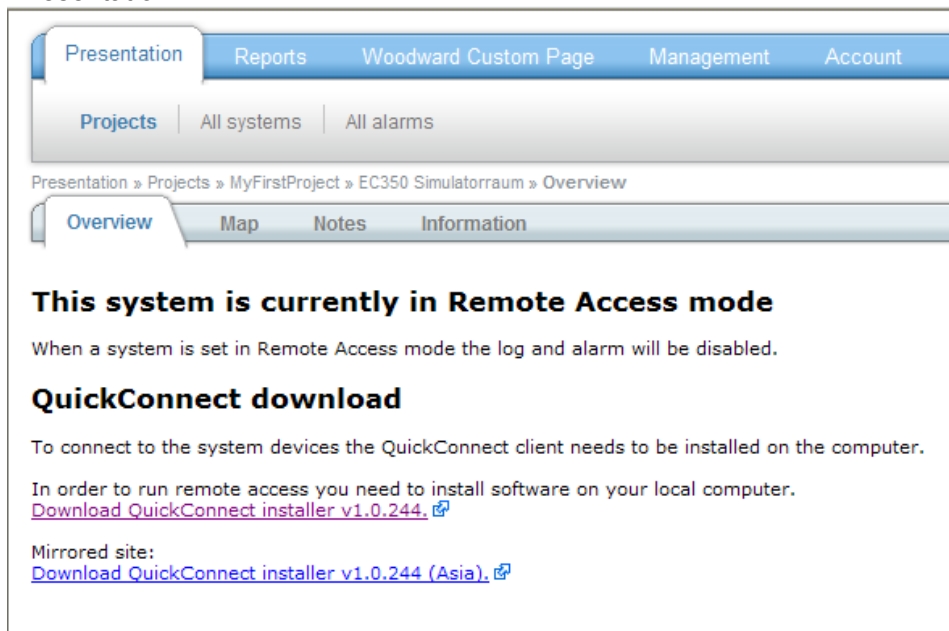
STEP 6 Important: **Save all settings!**

STEP 7 Click the synchronize button to transfer the Argos settings into the Netbiter device. Close the window, when the setting synchronization was successful:

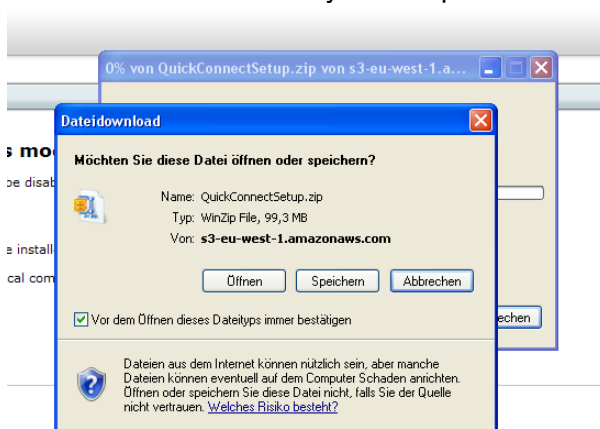


→ At next you have to install the software “QuickConnect” which will establish the VPN tunneled connection through the internet onto the Netbiter.

STEP 8 Find the links to download this software from the Argos server by navigating to “Presentation”:



STEP 9 Install “QuickConnect” on your computer:



Be aware that after installing the QuickConnect software could require a new PC start

STEP 10 Start the QuickConnect software

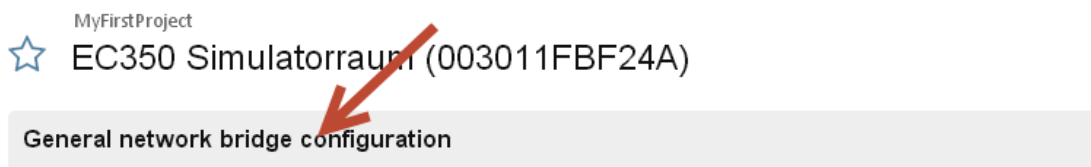
STEP 11 Go to your Argos your account and enter password, if you are asked for

STEP 12 Follow the instructions to realize a virtual Ethernet driver for ToolKit. You will install an additional Ethernet adapter, which can be taken to realize the connection to the local area network of ESENET and Netbiter. So Add a new device:



STEP 13 Enter the IP address of the ESENET in your local area network

STEP 14 Configure the general network bridge by clicking on the according bar:



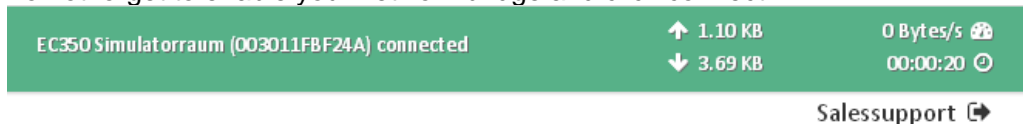
STEP 15 Enter the virtual address of your computer in the local area network and its subnet mask:



STEP 16 Click on the Connect button on the upper right corner. Now the QuickConnect software will build up a connection from your PC to the Netbiter over internet.



STEP 17 Do not forget to enable your network bridge and click connect:



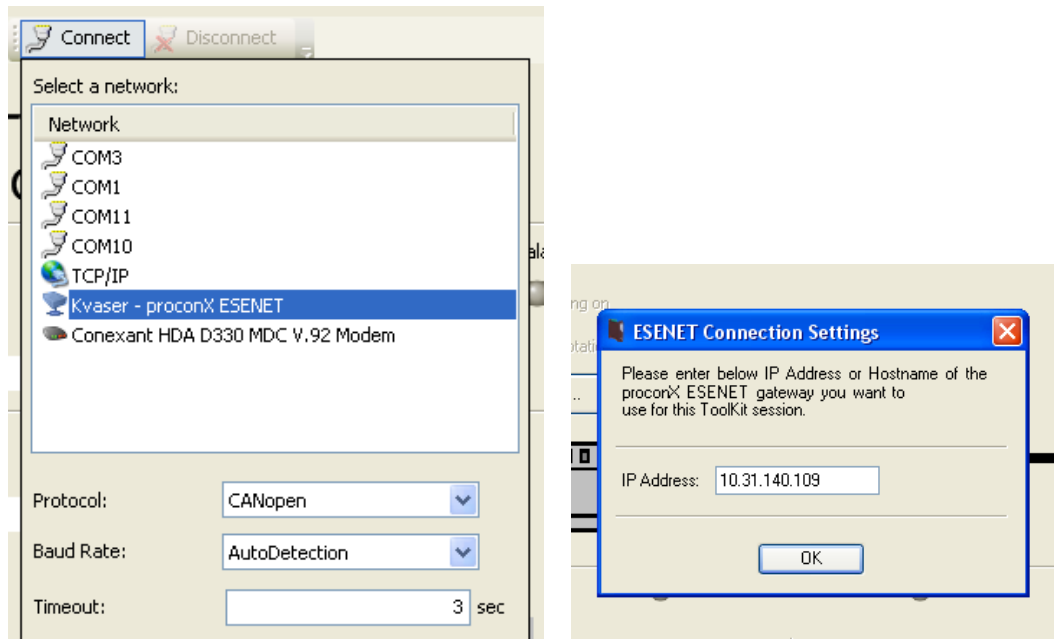
STEP 18 The successful connection is shown by a green bar.

→ In case of trouble please:

STEP 1 Connect, click the  -icon to log OUT and IN again.

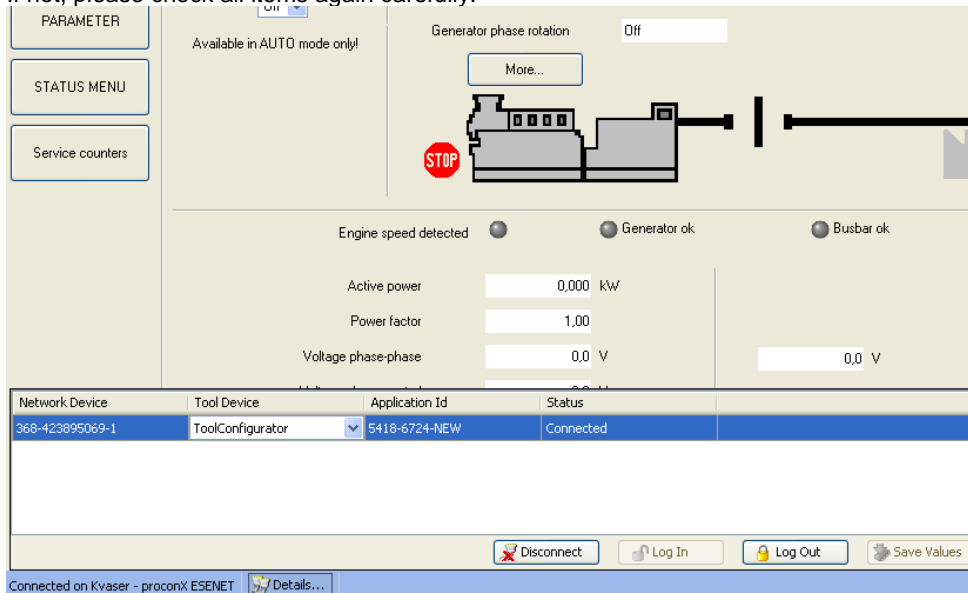
→ If the connection is established. You can proceed with starting the according ToolKit project:

STEP 1 In ToolKit: Click on the “Kvaser – proconX ESENET” connection



STEP 2 Click the connect button and enter the local area network address of ESENET. ToolKit is building up the connection.

→ If not, please check all items again carefully:



→ The connection runs. All features of ToolKit can be used.

NOTICE

Due bandwidth issues the reaction time will be slower as if being connected directly.

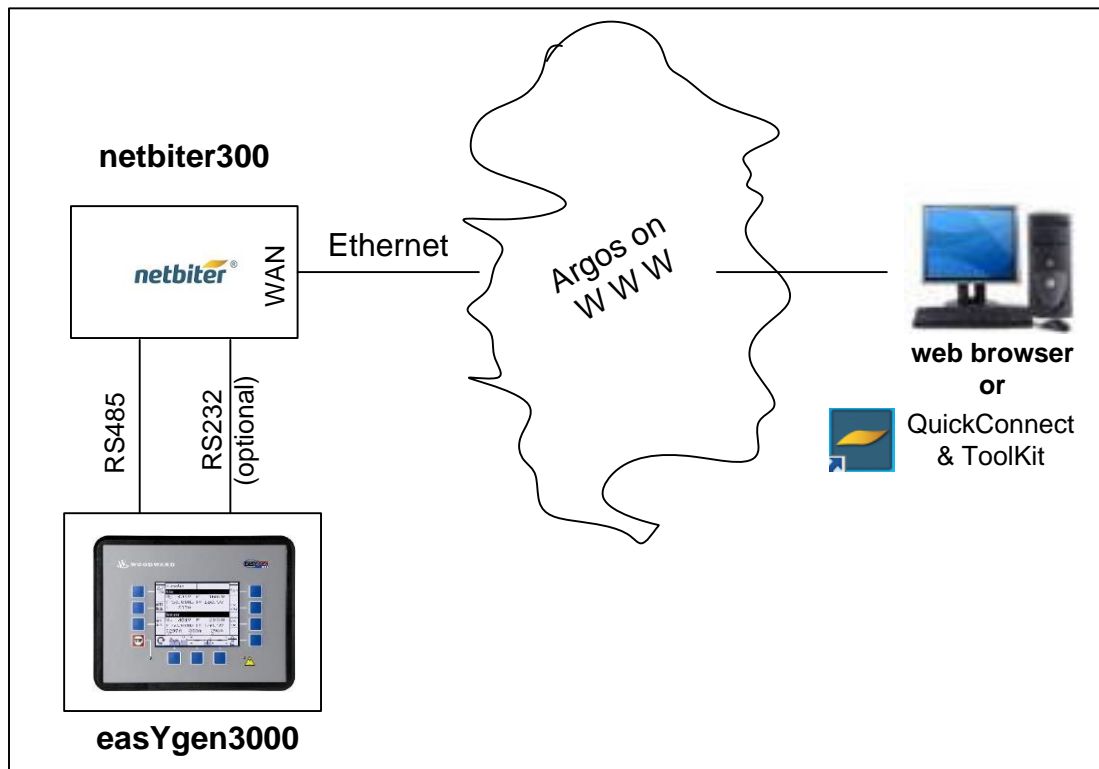
Establish a View and Control Connection via Argos

Netbiter Argos is a server which runs in the internet. The Argos platform is the connection hub for all Netbiter devices. The mechanism connects each single Netbiter device automatically to Argos by either a mobile phone data connection GPRS or by a wideband internet connection (depending on module and according configuration).

If the remote access is done by Argos directly, the Netbiter communicates via Modbus protocol with the easYgen. This can be executed by either RS232 or RS485 connection. WOODWARD recommends using the RS485 connection so the RS232 connection can be still used for the service Tool "ToolKit".

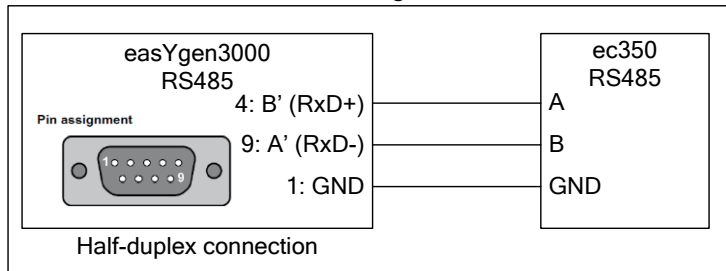
NOTICE

The picture below shows the capability to use alternatively a ToolKit connection via Quick Connect and RS232 which can be enabled via Argos as described above. This second step can be used e.g. for trouble shooting.



Example

STEP 1 Connect the Netbiter with easYgen over the RS485 connection:



STEP 2 Set up the easYgen with following parameters: (easYgen3000 default settings)

Modbus Interface	
3170 Baudrate	19.2 kBd
3171 Parity	No
3172 Stop bits	One
3173 Full-, halfduplex mode	Halfduplex
7908 Enable Modbus protocol	Yes
3188 Modbus slave ID	1
3189 Reply delay time	0.00 s

STEP 3 Go into Argos, navigate to your already established project ,and select “Management” (upper blue bar) / “Configuration.

STEP 4 In “Configuration” disable the Remote Access:

Use this system for remote access

OFF

STEP 5 Remain in the menu item “Configuration” and add the device template easYgen3000:

Last synchronization 2014-09-16 15:10:28 ✓

Synchronize configuration

Device configuration | Logging (0) | Visualization (0)

Device

Netbiter EasyConnect EC300 serie

GPS

add device

Server side alarm configuration

Add device cancel

1/3 Set device type

Use configuration from a template ✓

Use configuration from a profile ✓

Device type: Modbus ✓

Template: Woodward Easygen 3000 ✓

Back

STEP 6 Enter a special name and the Slave Number, follow the instructions:

5:10:28 ✓

Add device

[cancel](#)

2/3 Set device properties [Use device name from template](#)

Device name *

Modbus slave *

Modbus IP

Modbus port

[Back](#)

STEP 7 Go to “Gateway settings”:

Device configuration	Logging (0)	Visualization (0)	Alarms (0)	Connected device profile	Gateway settings
Device				Device type	Settings
Netbiter EasyConnect EC300 serie				Virtual EC300 series	Template
					Netbiter I

STEP 8 Adjust the RS485 connection. The fields “Extra delay” and “Slave timeout” should remain empty. **Do not forget to save and synchronize!**

Modbus

Physical

Baud rate

Parity

Stop bits

Extra delay

Slave timeout

Last configuration update 2014-09-16 15:17:43

Last synchronization 2014-09-16 15:10:28 ✘

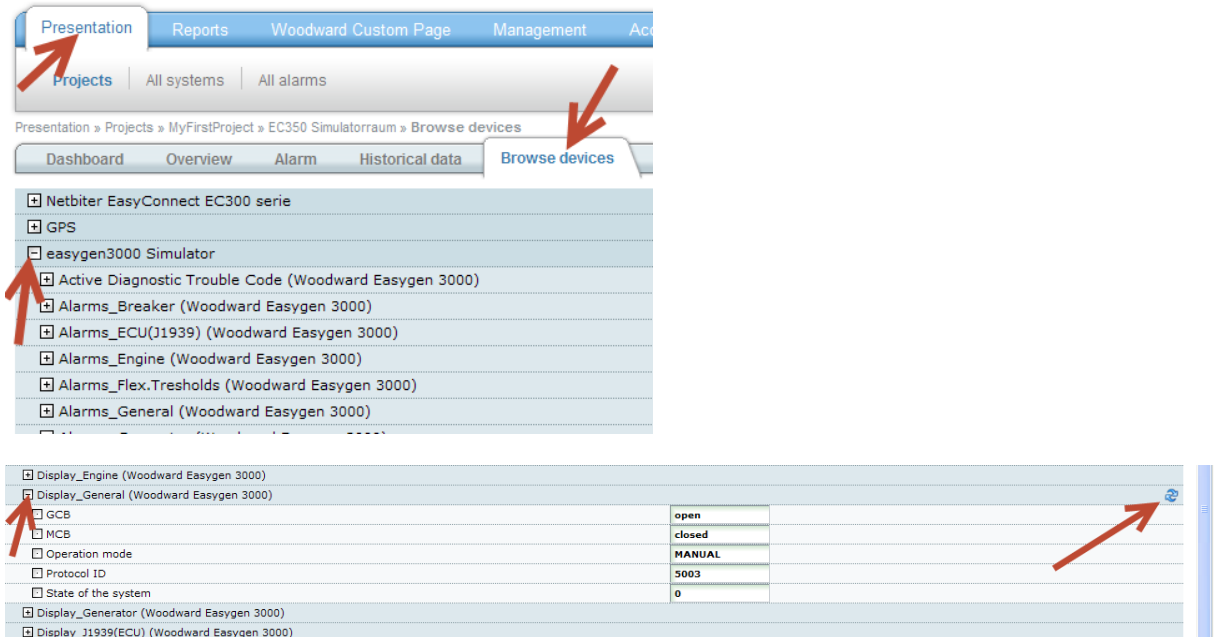
STEP 9 Wait a moment until the status is getting a green star:

Management » Projects » MyF

★ Status [Conf...](#)

Last configuration :

STEP 10 Go on the TAB “Presentation” in the blue bar to double check the Modbus communication:



Navigation to “Presentation” / “Browse devices” / “easYgen3000 Simulator” / “Display_General..” gives you proper information in whatever condition the easYgen stays.

STEP 11 To get the current values indicated: click on the refresh button.

The values are displayed in the small table.

→ In case of trouble, please check all items again carefully.

What you can do with Argos and the easYgen-3000 values is described in the Argos manual.

Netbiter® is a registered trade mark of

HMS Industrial Networks GmbH
 Emmy-Noether-Str. 17
 76131 Karlsruhe
 Deutschland

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Please send comments to: stgt-doc@woodward.com

Please reference publication 37611.

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