Manuals+ — User Manuals Simplified.

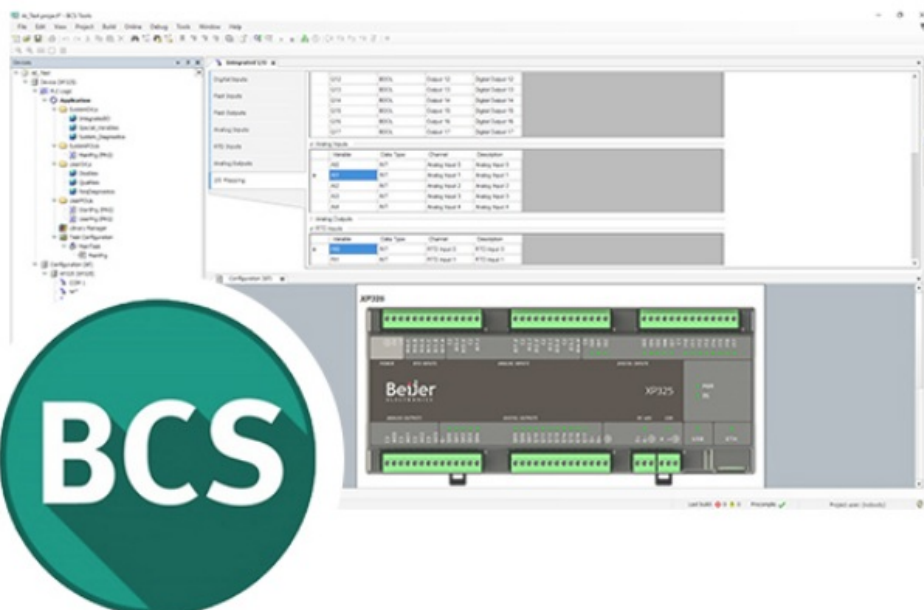# Beijer ELECTRONICS SER0033 BCS Tools and iX Developer User Guide

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Beijer ELECTRONICS SER0033 BCS Tools and iX Developer

Product Information

- **Product Name:** Energy Meter
- **Model Number:** SER0033_V. 1. 0. 0
- **Release Date:** 2022-12

Function and area of use

- The purpose of this SER object is to save you a lot of time when setting up BCS Tools for Modbus communication with the WAGO energy meter.
- You will also find an iX Developer example to display these data.

About this document

This quick start document should not be considered as a complete manual. It is an aid to be able to startup a normal application quickly and easily.

Use the following hardware, software, drivers and utilities in order to obtain a stable application:

In this document we have used following software and hardware

- iX Developer 2.40 SP7
- BCS Tools 3.34 or later
- Nexto Xpress 325 (Firmware version 1.11.10.0)
- WAGO Energy Meter 879-3000

**For further information refer to**

- iX Developer Reference Manual (MAxx831)
- iX Developer User's Guide (MAxx832)
- WAGO Energy Meters User Guide (Documentation/ m087930x0-00000000-0en)
- Beijer Electronics knowledge database, HelpOnline

This document and other quick-start documents can be obtained from our homepage. Please use the address support.europe@beijerelectronics.com for feedback.

Wiring RS485

Nexto Xpress XP325 — RS-485: D+, D−
Wago energy meter — 7 Modbus A (+), 8 Modbus B (−)
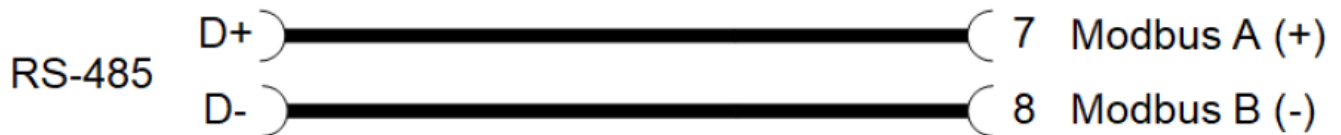
Create and configure your BCS Tools project

The following chapter describes two ways to configure your project to use the WAGO energy meter. In the first method, we will use a project archive which is a ready-to-use project for the Nexto Xpress XP325. In the second method, you will have to import everything manually.

Project archive for Nexto Xpress XP325
This file contains a BCS Tools project that is configured and ready to be used for a Nexto controller. Inside the project you will find a library that contains structures to organize all the data of the energy meter, a GVL_IO file where all the variables are declared and a Modbus Symbol RTU master already configured and mapped.

1. In BCS Tools, go to File Project Archive and click on Extract Archive.
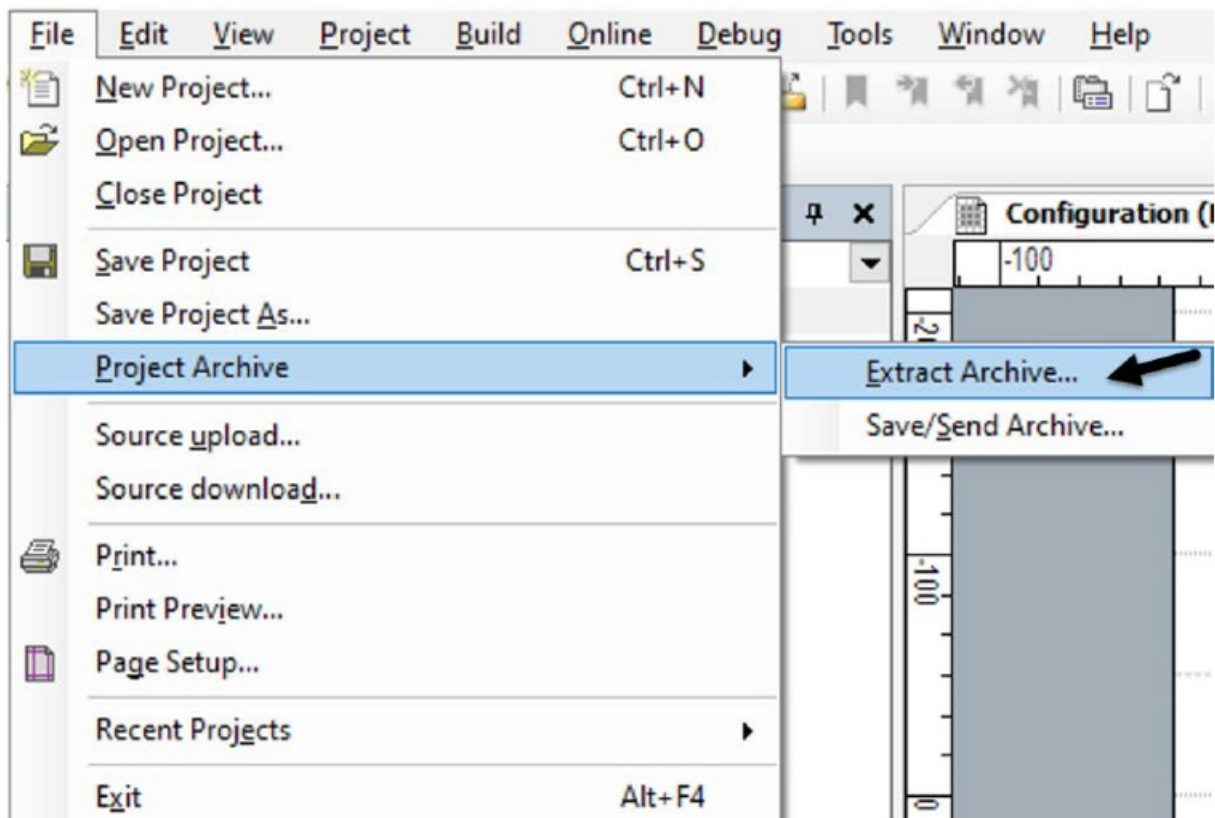
2. Open SER0033_BCS-Nexto_EnergyMeter_V1.0.0.0.projectarchive.
3. Set the path to the folder of your project and select : Extract.
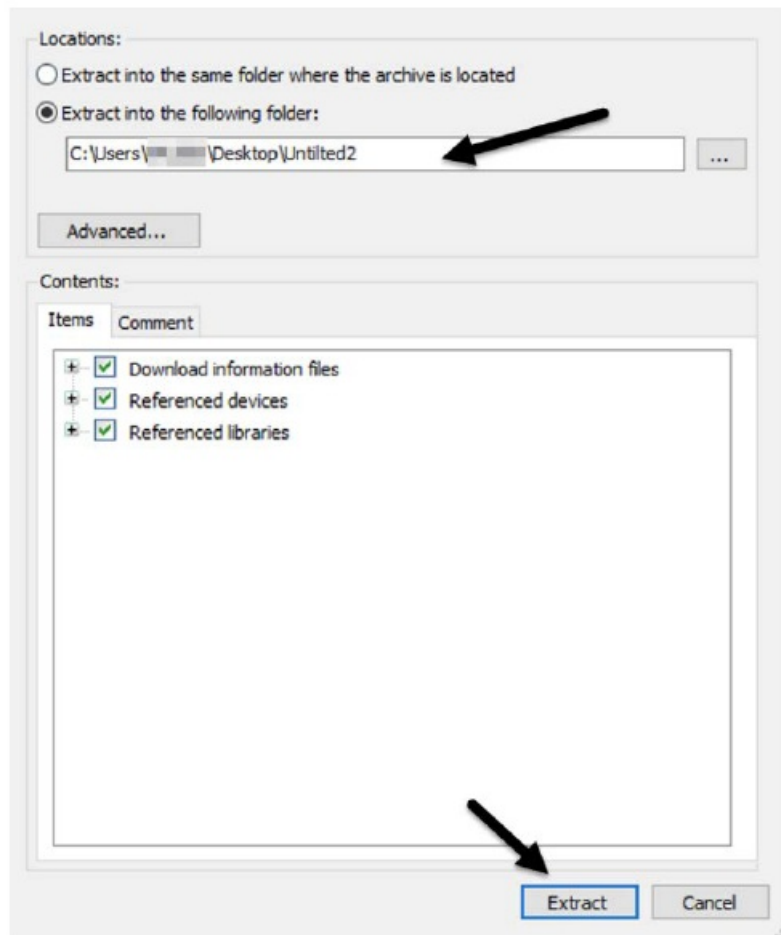
4. Modbus communication is configured on COM1 of the controller. Please refer to the documentation of the PLC and the WAGO energy meter for the wiring. In our case, we use a serial link of type RS-485.

5. In the COM1 serial port settings, you must ensure that the serial type is correct. The baud rate and parity should be similar to the energy meter (see documentation).
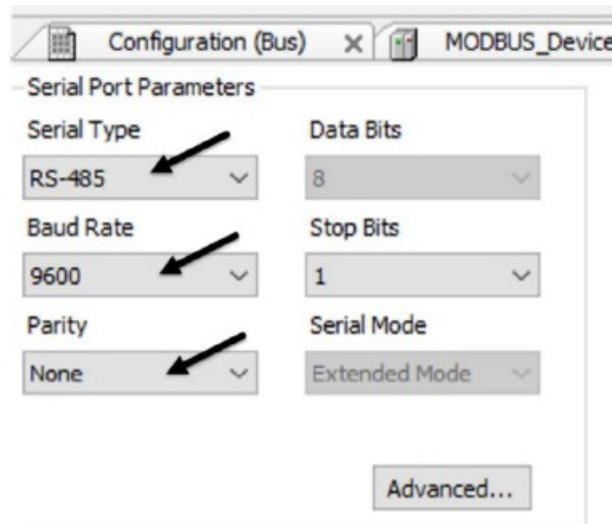
Select Advnaced settings, and enable RS-485 Termination.
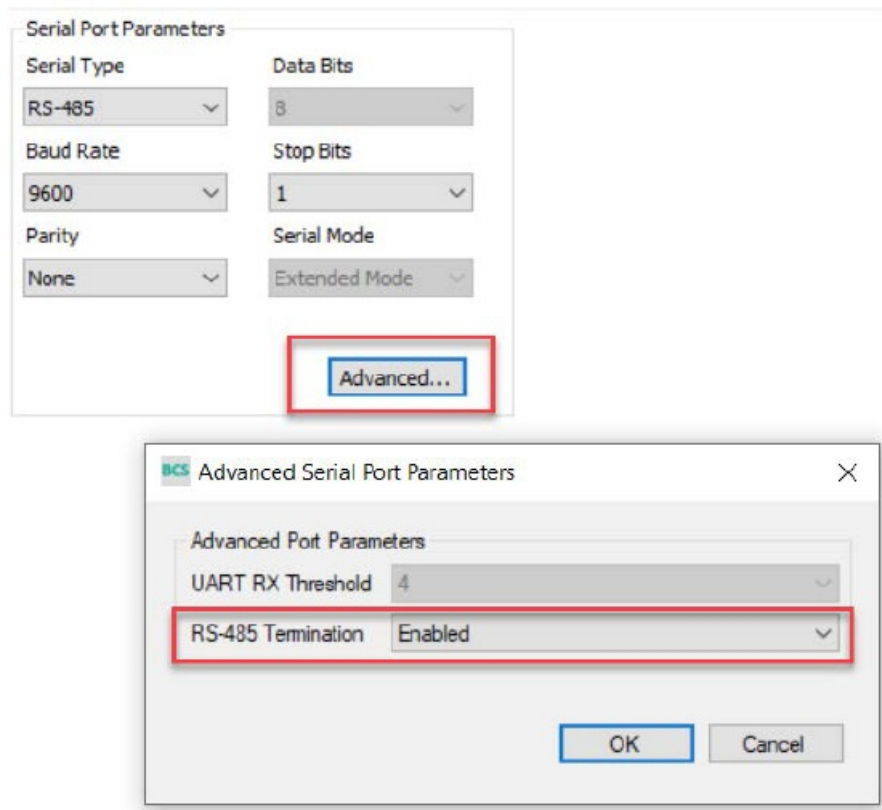
6. In the Modbus Device Mapping section, you will find the WAGO energy meter variables mentioned in the user guide.

7. You are now ready to read the information from the energy meter with the modbus protocol !

**Import parts for other PLCs**
If you are not using a Nexto Xpress, you can always import parts manually into your project.
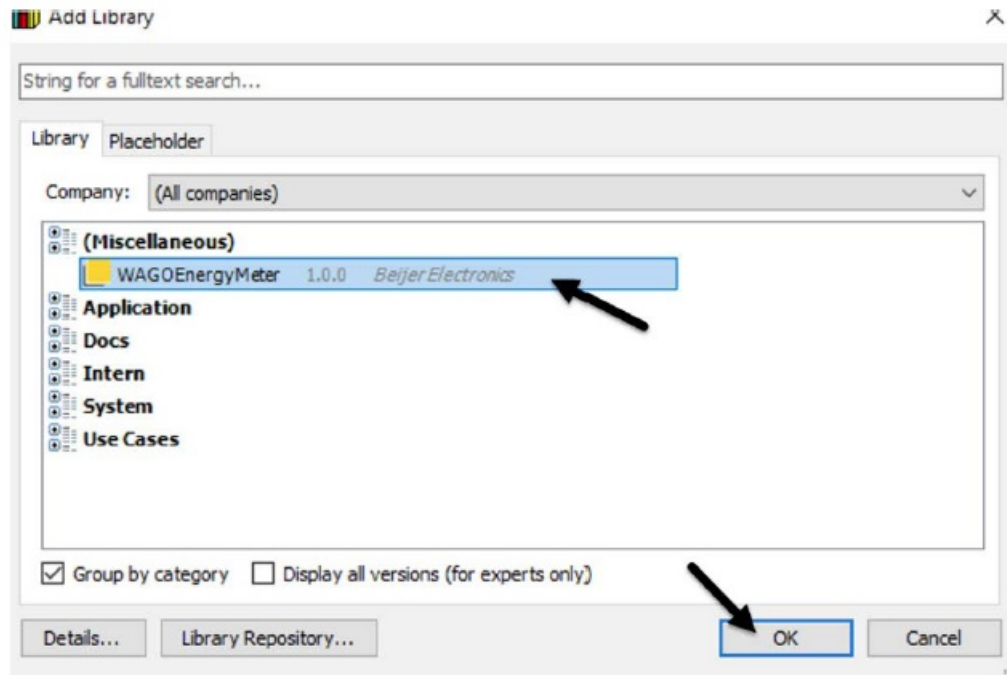
Import the library WAGOEnergyMeter

1. In BCS Tools, go to the Devices section and double-click on Library Manager (1).
2. Inside Library Manager, click on Add Library(2). A new window appears.
3. Select Advance (3), Library Repository (4), and click on Install… (5).
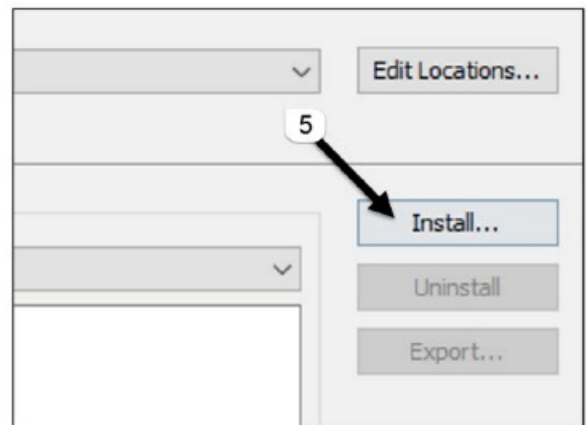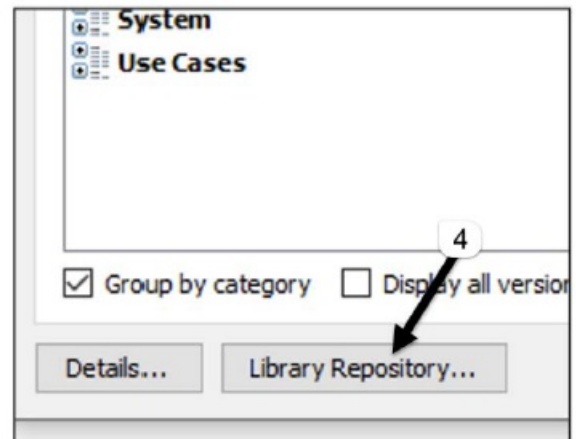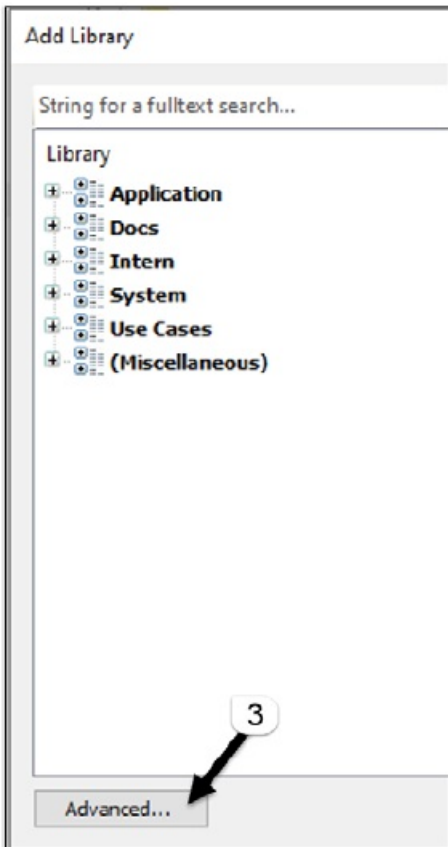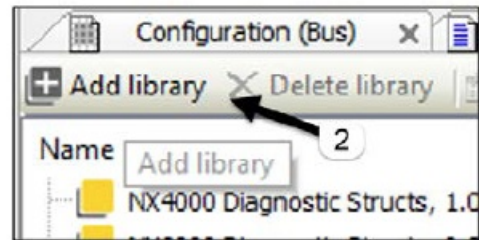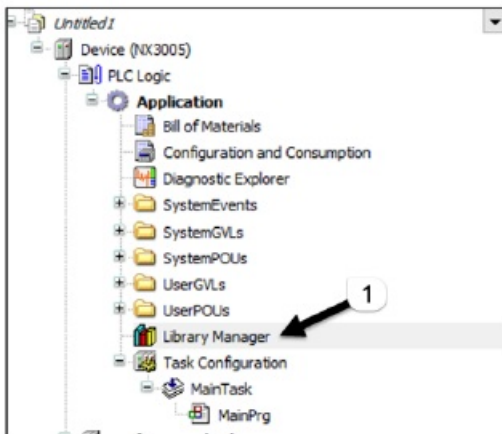
4. Open the file SER0033_BCS-Nexto_EnergyMeter.compiled-library.

5. Select the library and close the window:
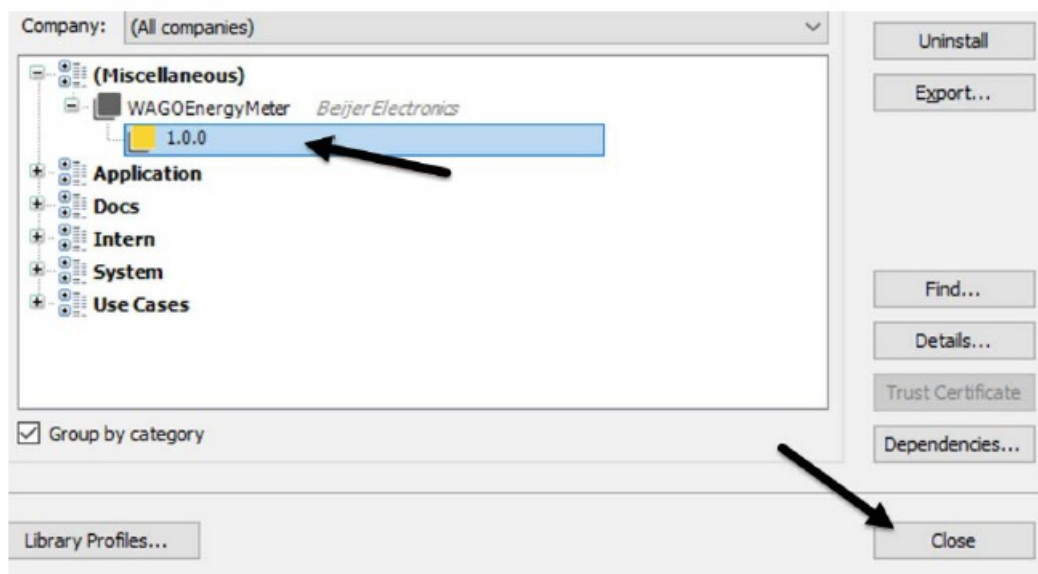
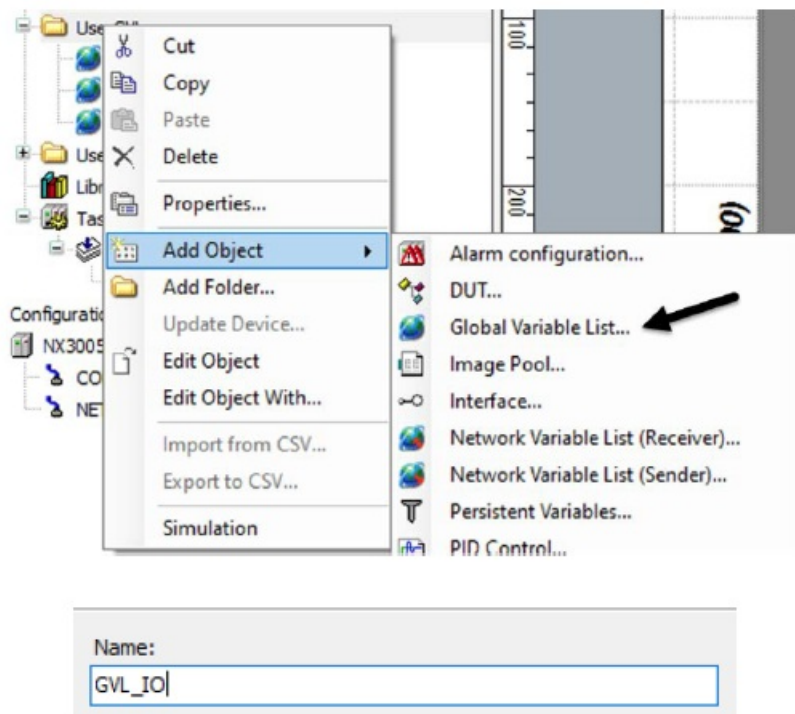6. Go to section Miscellaneous, select the library and click on OK.

7. You have now imported a library that contains all the structures that will organize the energy meter data.
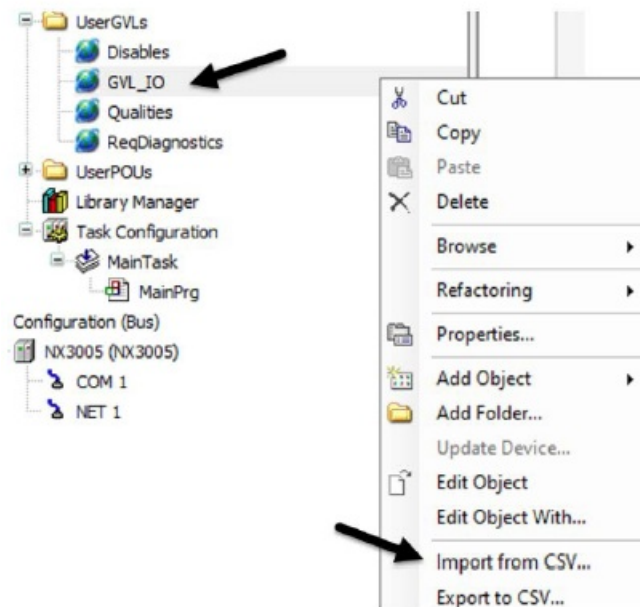
Import the variables file

1. In BCS Tools, go to the Devices section, right-click on the folder UserGVLs and select Add Object Global Variable List…
   You want to give it the name GVL_IO.

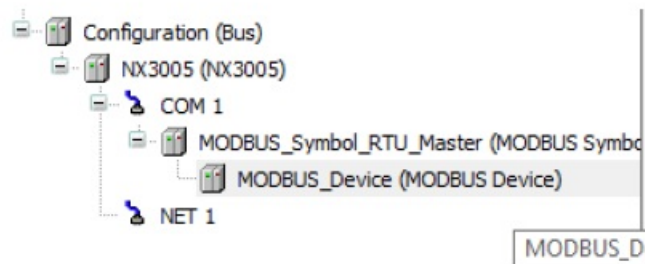2. Then right-click on the GVL_IO file and select "Import from CSV…"

3. Open the file SER0033_BCS_GVL_IO.csv

Modbus Mapping

1. In our case, we use MODBUS Symbol RTU Master with a Modbus device.

2. In SER folder, you'll find a CSV file that contains the mapping and the requests of the modbus protocol.
3. You can import this file by right clicking on MODBUS_Device, Import form CSV... then open SER0033_BCS_ModbusMapping.csv.
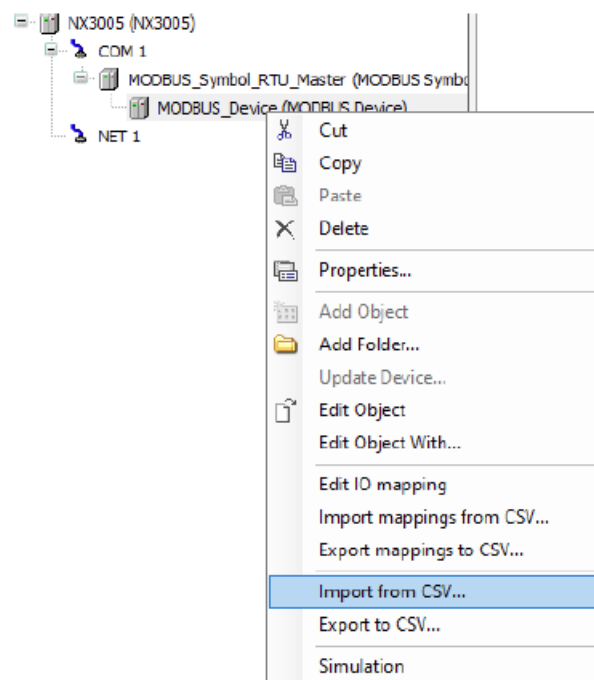
4. In the serial port settings, you must make sure that the serial type is correct. The baud rate and parity should

be similar to the energy meter (see documentation).

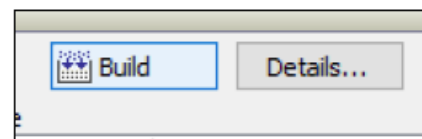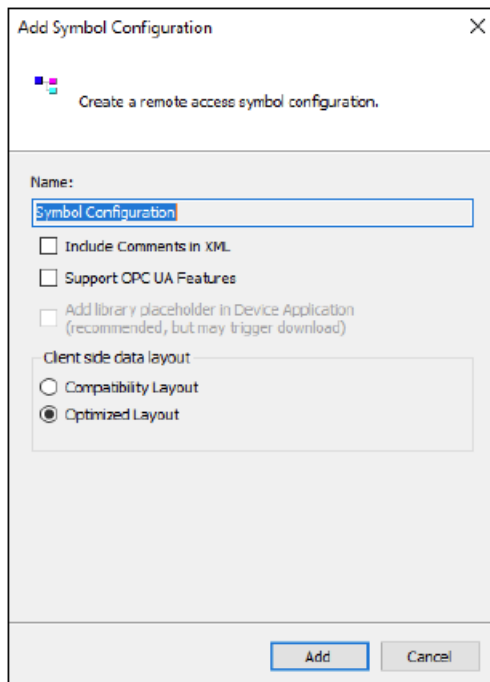**Import Symbol configuration**
In order to establish communication between your PLC and your HMI, you must configure the Symbol section.
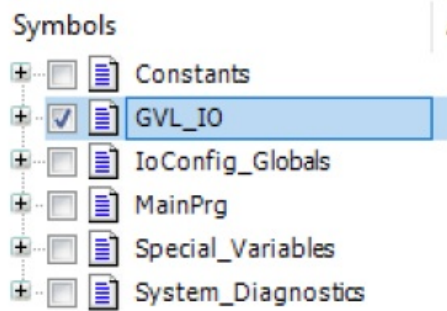
1. In BCS Tools, go to the Devices section and right-click on Application. Select Add Object and click on Symbol Configuration.
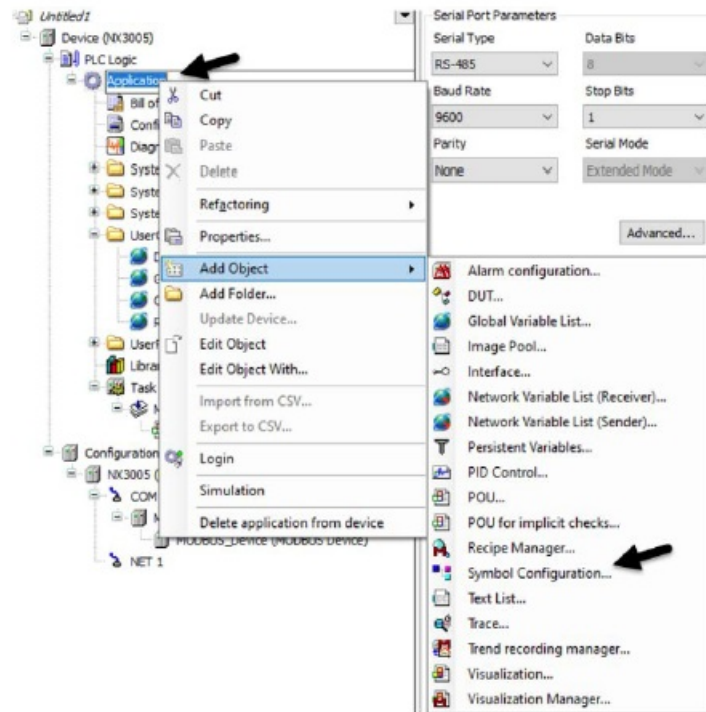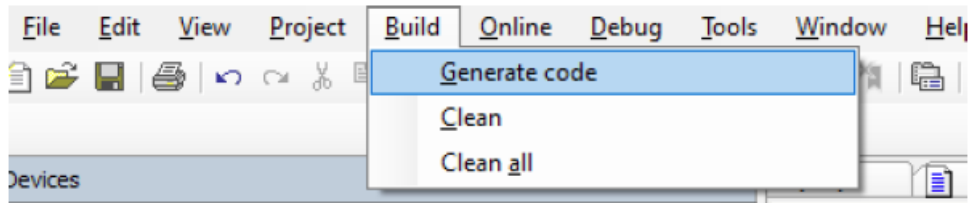

2. In the new window, click on Add and then on Build in the Symbol Configuration section.

3. Check the box next to GVL_IO.

4. Finally, go in Build and click on Generate Code.

5. Everything is now ready for BCS Tools!

iX project exemple

In the SER folder, you will find a sample project to display the most important data of the WAGO energy meter. In this chapter, we will explain the content of each screen To open the sample project, simply unzip SER0033_WAGOEnergyMeterIHM.zip, which you will find in the SER folder, and run WAGOEnergyMeterIHM.neoproj.

Configure controller section

In iX Developer, don't forget to configure your controller by going to Tags (1) Controllers(2). All energy meter variables are linked to "Controller1". Select "Controller1" and check the configuration with Controller…(3) and Settings… (4).
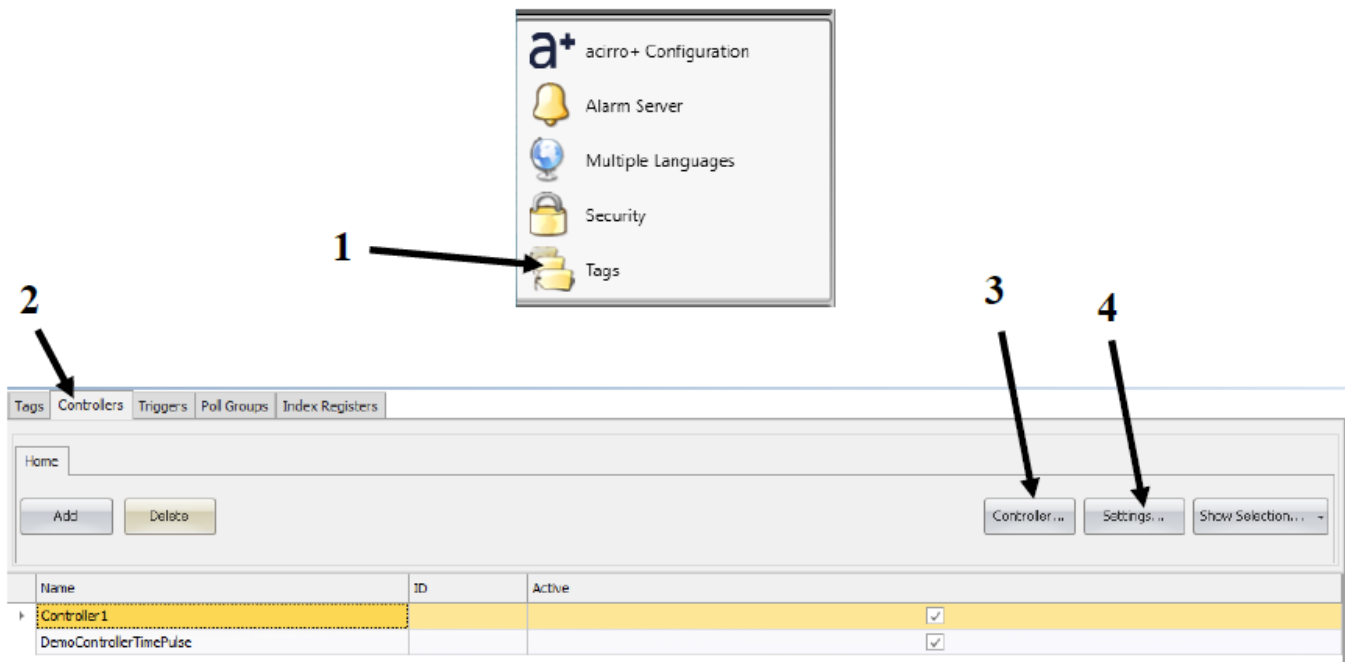

Note: The HMI tags for iX Developer and the energy meter is located in file: SER0033_WAGOEnergyMeterIHMTags.xls
In the list of project tags, you will find several tags that are not in the xls file. They are just used for the CurrentHistory screen. This file can be used as a base to create your own iX application.

Display of line values

Once you have opened the project, you will see several screens in the Screens section. You can find 4 similar screens like the one below. One for the three lines (L1, L2, L3) and one for the total of the values of the three lines (Σ).
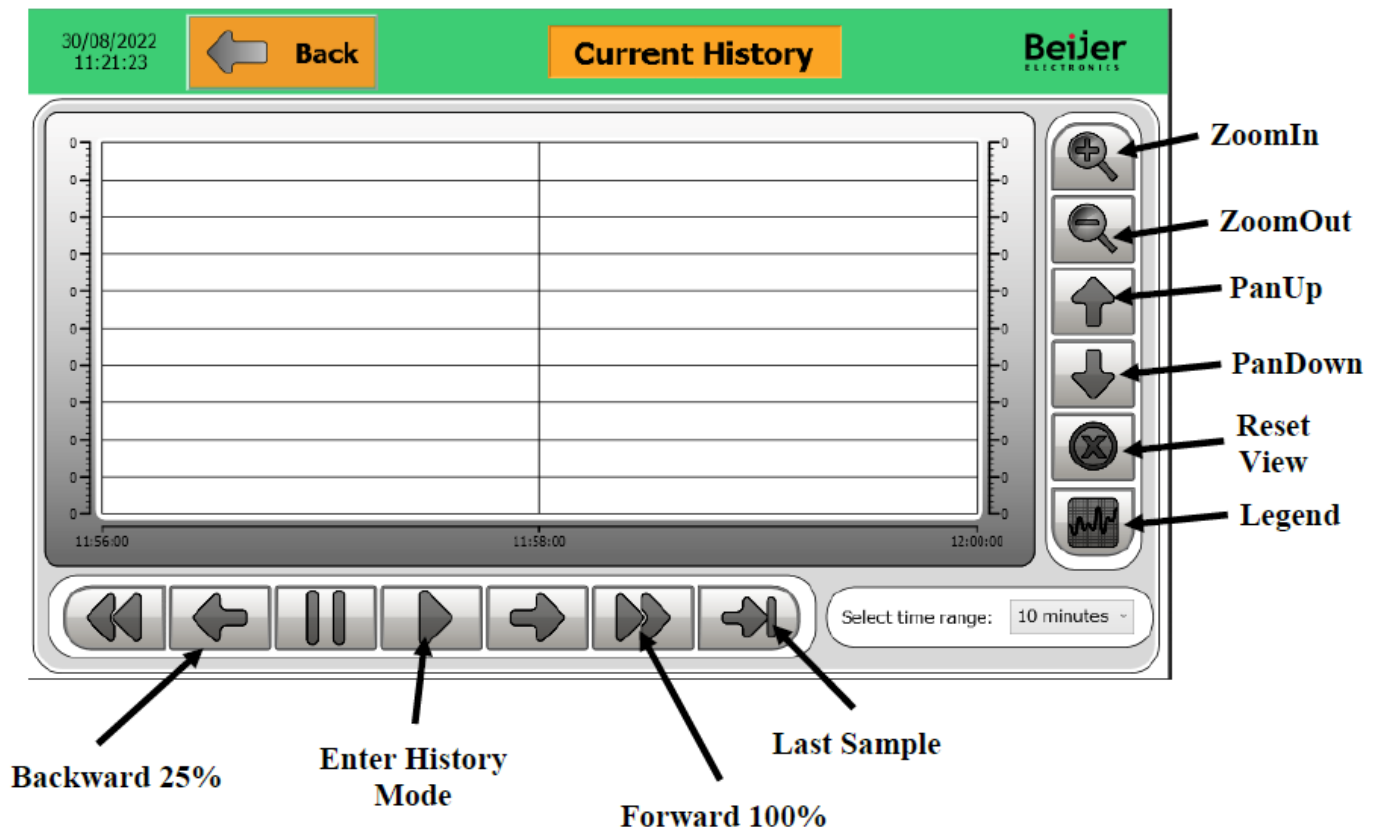
iX Developer: CurrentHistory Screen

Current Runtime/History Screen

The data logger collects the current values of the three lines every 10 seconds and stores them for 10 days. It is possible to modify these parameters in the data logger section. This screen displays the values of these currents in graph form. There are three curves for the three lines and one curve for the total current values.

iX Developer: L1 Screen

About Beijer Electronics

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Documents / Resources

	Beijer ELECTRONICS SER0033 BCS Tools and iX Developer [pdf] User Guide SER0033 BCS Tools and iX Developer, SER0033, BCS Tools and iX Developer, iX Developer, Developer

References

- [**Innovations in industrial digital technology | Ependion**](#)
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