

Connection SICAM PQ-devices to SIMATIC Energy Manager PRO

SICAM Q100, SICAM Q200, SICAM P855,
WinCC V7.4 SP1,
WinCC Runtime Professional V15,
Energy Manager PRO V7.0

https://support.industry.siemens.com/cs/ww/en/view/109748899

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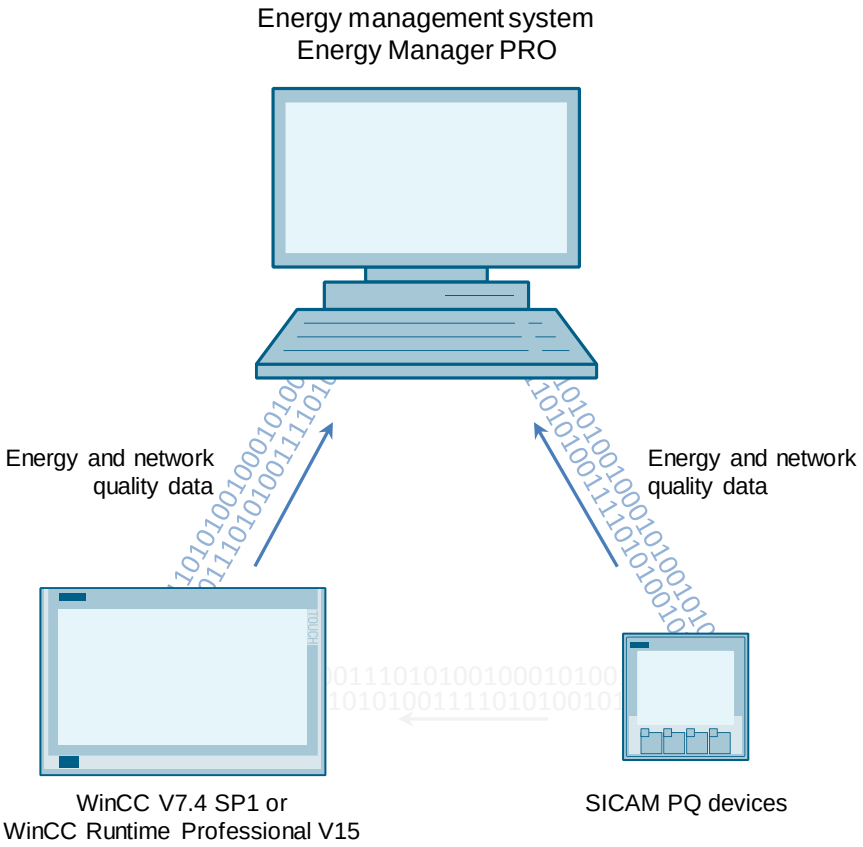
1 Introduction

1.1 Overview

It is recommended to evaluate the data in detail with an energy management system in order to have a group-wide transparency about the energy data and thus the costs incurred.

SIMATIC Energy Manager PRO (EnMPRO) forms this basis for cost-effective energy management to reduce energy costs and increase energy efficiency.

Figure 1-1



1.2 Principle of operation

It is possible to import the data through various protocols so that the data can be imported into EnMPRO.

You can use the recording component and the Energy Manager PRO client to select the corresponding interface via a wizard. Among others, the drivers for SIAMTIC WinCC and Modbus are already pre-installed. With these, you can:

- Import SICAM energy data from the WinCC archives or
- Read energy data directly from the SICAM PQ-devices.

1.3 Components used

The following hardware and software components were used to create this application example:

Table 1-1

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Component	Quantity	Item number	Note
SICAM Q100	1	7KG9501-0AA31-2AA1	
SICAM Q200	1	7KG9711-0JJ10-0BB0	
SICAM P855	1	7KG8550-0AA00-0AA0	
CPU 1513-1PN	1	6ES7513-1AL00-0AB0	
SIMATIC WinCC V7.4 SP1	1	6AV6381-....7-4...	
SIMATIC STEP 7 Professional V15		6ES7822-1..05-..	
SIMATIC WinCC Professional V15 (Engineering)	1	6AV210.-....5-0	
SIMATIC WinCC Runtime Professional V15	1	6AV2105-....5-0	
SIMATIC Energy Manager PRO V7.0 UPD 3	1	6AV6372-2DF.7-0	

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2 Engineering

In this chapter, you are shown which parameterizations you must make in the Energy Manager PRO to import data from WinCC archives or directly from the SICAM PQ-devices.

2.1 Hardware configurations

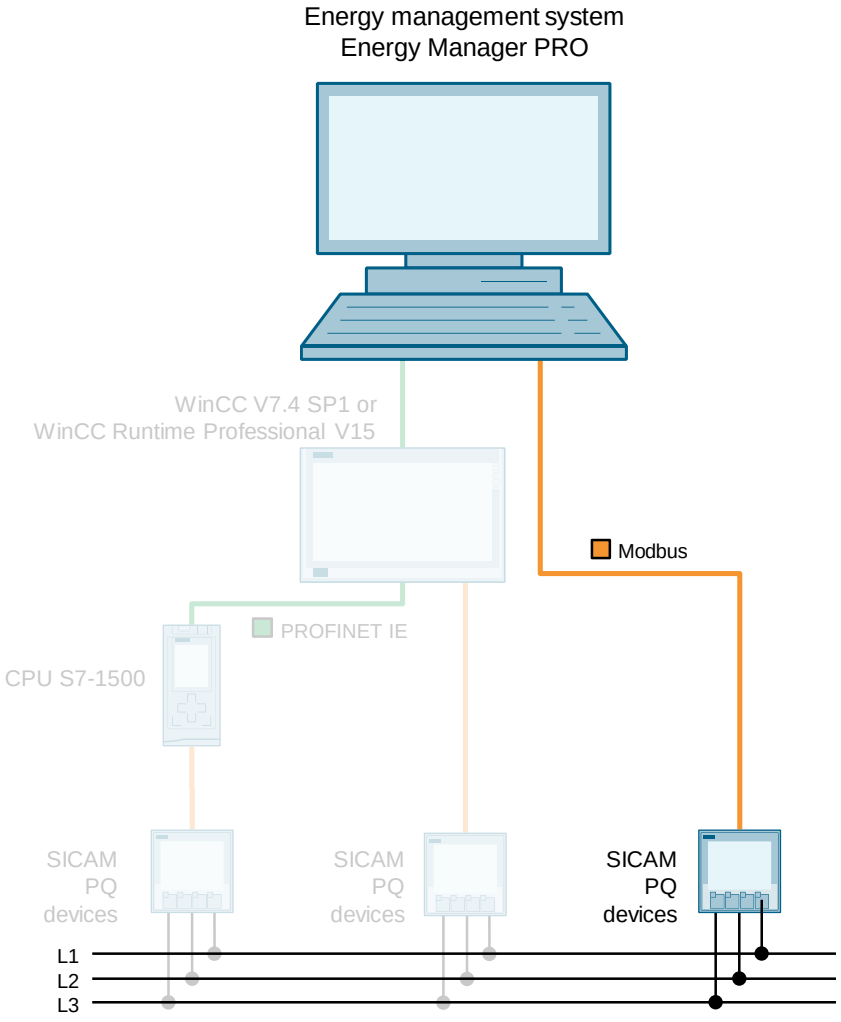
When connecting to the Energy Manager PRO, a distinction is made in the following between two configurations:

1. Direct connection of SICAM PQ-devices to Energy Manager PRO (configuration EnMPRO 1)
2. Connection of WinCC (V7.4 or WinCC RT Professional V15) to Energy Manger PRO (Configuration EnMPRO 2)

2.1.1 Direct connection to EnMPRO (configuration EnMPRO 1)

If you are not using a WinCC system or the application requires it, you can connect the SICAM PQ devices directly to the Energy Manager PRO.

Figure 2-1



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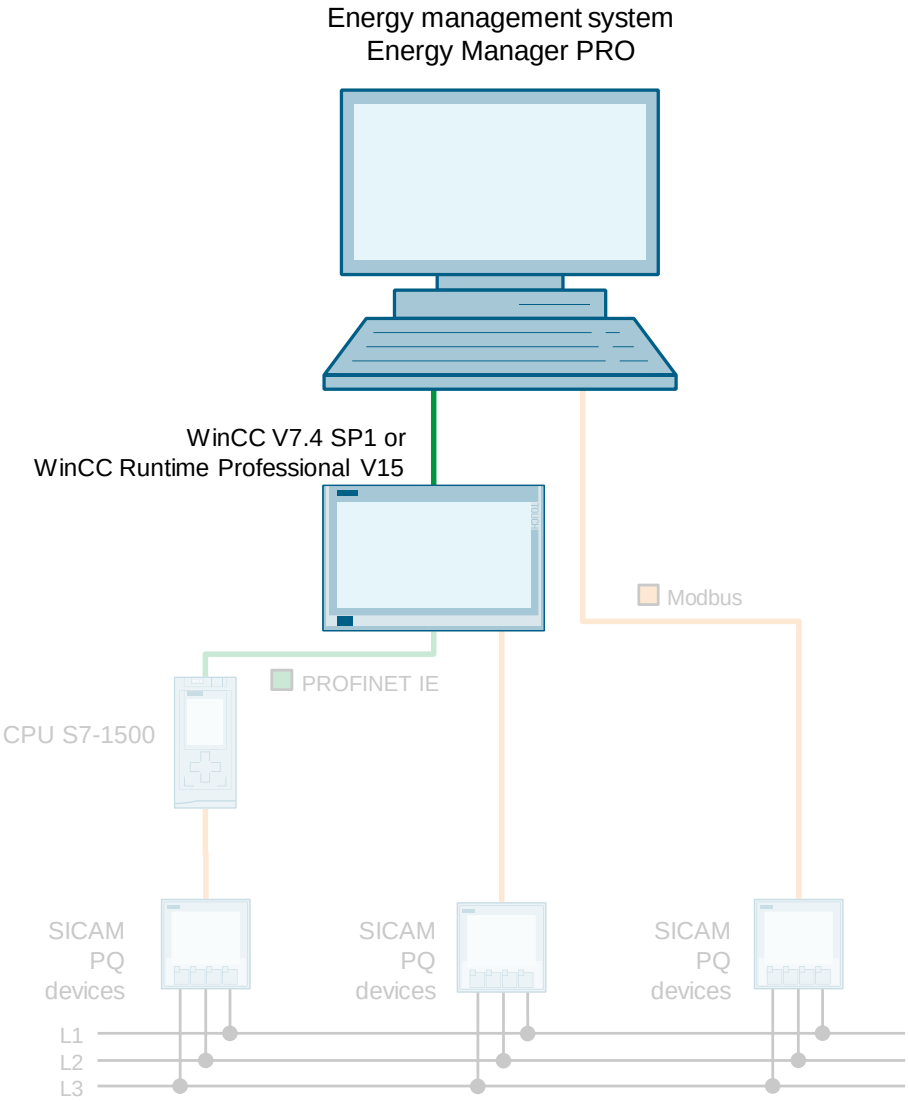
2.1.2 Connection to EnMPRO via WinCC (configuration EnMPRO 2)

If you are using a WinCC V7.4 SP1 or WinCC Professional V15, you can determine and archive the energy and power quality data at the SCADA level. You can then import this archived data into the EnMPRO and process it further.

Figure 2-2



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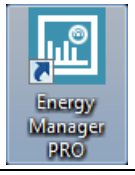
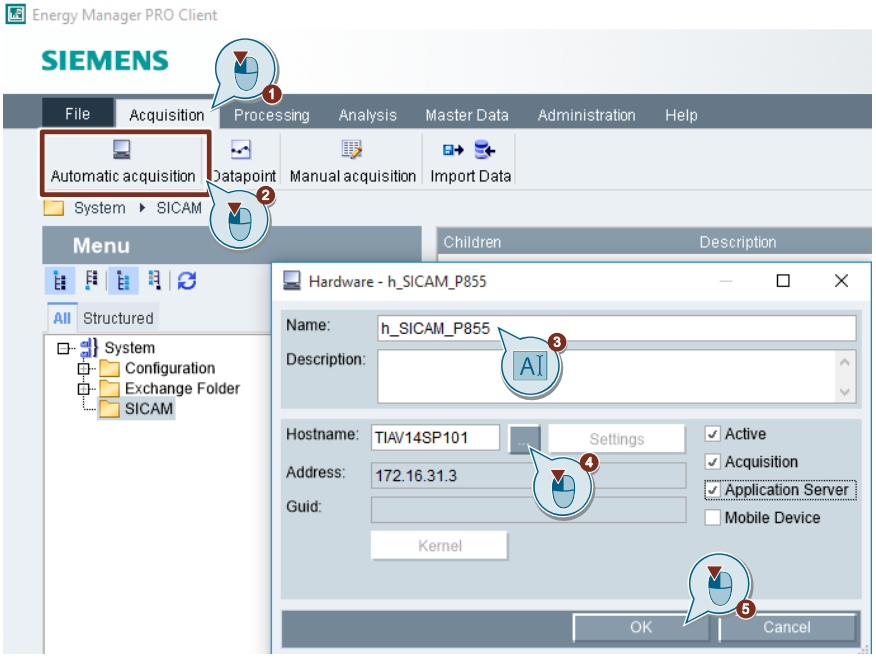
2.2 Parameterization

Requirement

You must have installed the Energy Manager PRO so that you can make the following parameterizations.

2.2.1 Creating acquisition components

Table 2-1

No.	Description
1.	Open Energy Manager PRO client and log in with a valid user 
2.	**Creating acquisition components** 1. Click in the menu bar on “Acquisition". 2. Select the “Automatic acquisition”. 3. Assign a name for the component to be acquired. 4. Select the host name. 5. Confirm your entries with "OK". 
3.	Open the Internet browser on the computer on which the acquisition component of the Energy Manager is installed. In this case, it is installed on the same computer as the Energy Manager server Enter the following address in the Internet browser: "http://[RECHNERNAME]/EnMPROAcquisition/Login.aspx".

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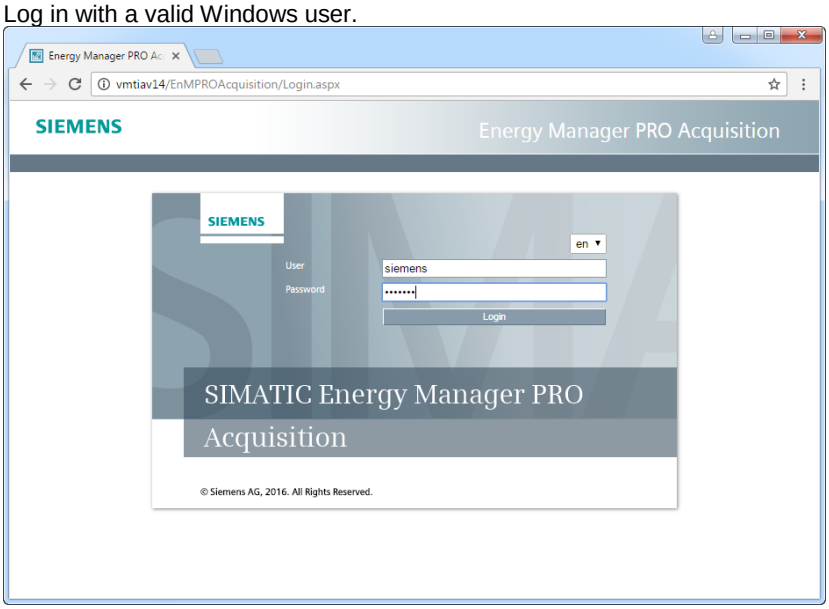
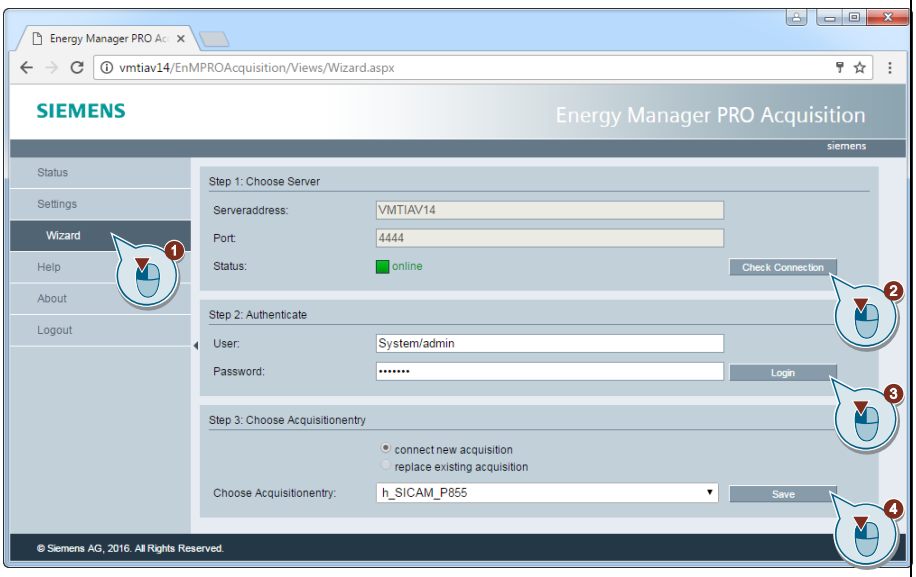
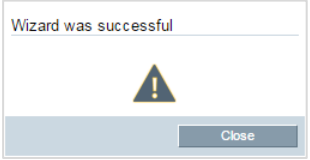
No.	Description
4.	Log in with a valid Windows user. 
5.	**Connecting acquisition components to server** 1. Start the wizard and follow the instructions. 2. Select the server and click on “Check connection”. A message appears that the connection was successful. 3. Enter a valid EnMPRO authentication and click on “Login”. 4. Select the acquisition component created in point 2 and confirm your input with “Save”.  You will receive a confirmation that the wizard was successful. 

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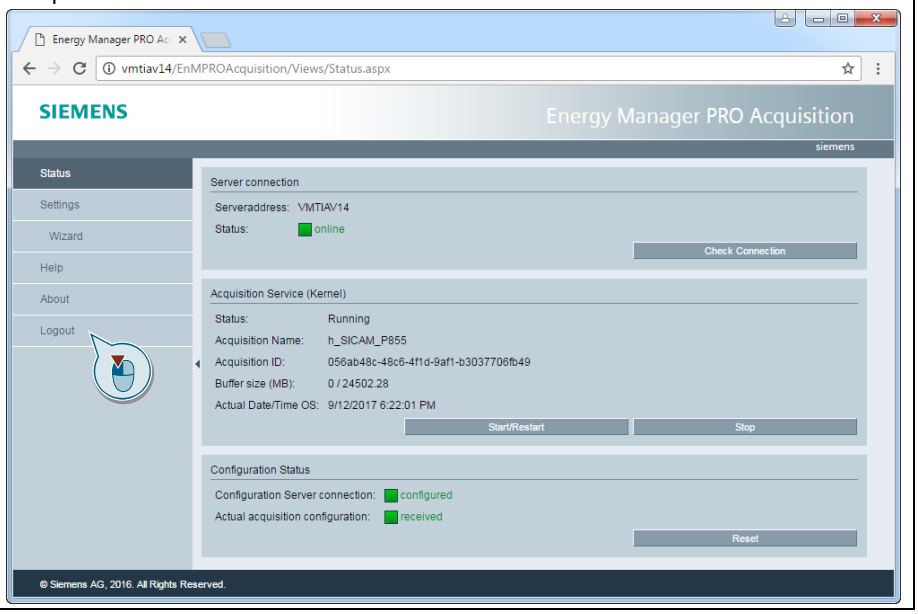
No.	Description
6.	In the navigation area, click on “Logout” to close the configuration of the acquisition component. 

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2.2.2 Configure direct connection to EnMPRO (configuration EnMPRO 1)

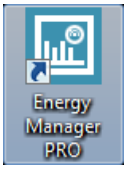
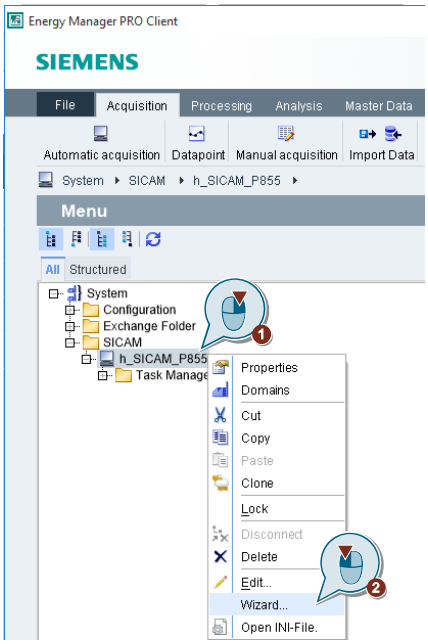
In the following table, you are shown how you can import data from the SICAM PQ devices directly into the Energy Manager PRO. You are supported by a wizard here, which guides you through the configuration.

Note

You will find a detailed description of the individual steps in the manual “SIMATIC Energy Manager PRO V7.0 - Operation” in the chapter “Data acquisition via the Modbus interface”:

https://support.industry.siemens.com/cs/ww/de/view/109742442/92102447499

Table 2-2

No.	Description
1.	Open Energy Manager PRO client and log in with a valid user 
2.	**Start acquisition wizard** 1. Right click on the acquisition component "h:SICAM_P855". 2. Select "Wizard…" in the context menu. 

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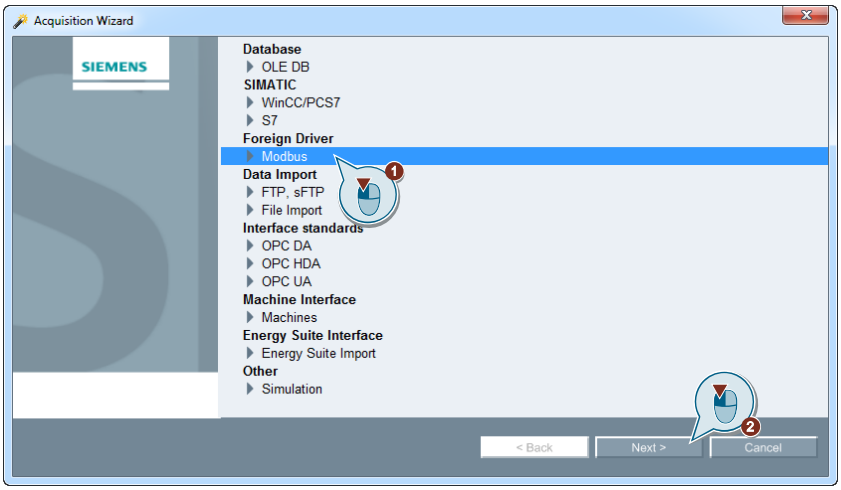
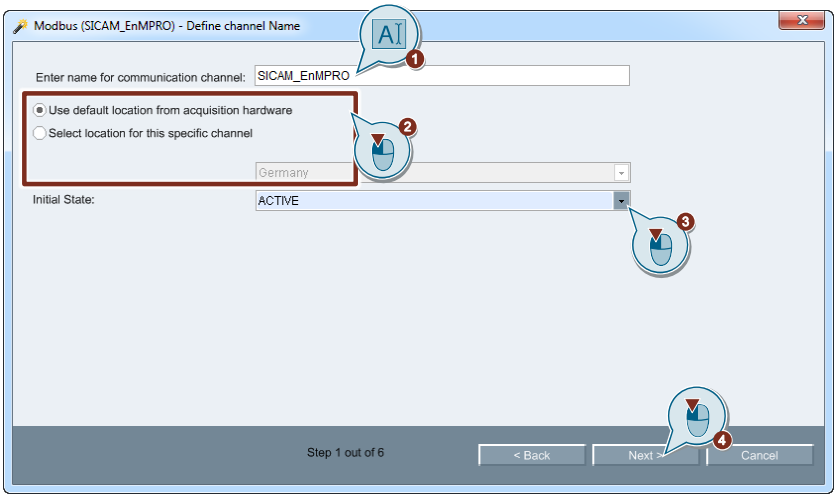
No.	Description
3.	Select “Modbus” in the acquisition wizard and then click on “Next”. 
4.	**Defining channel** 1. Enter a name for the communication channel. 2. If necessary, change the country for the acquisition hardware. 3. Select the starting condition “Active” when data is collected. 4. Click "Next". 

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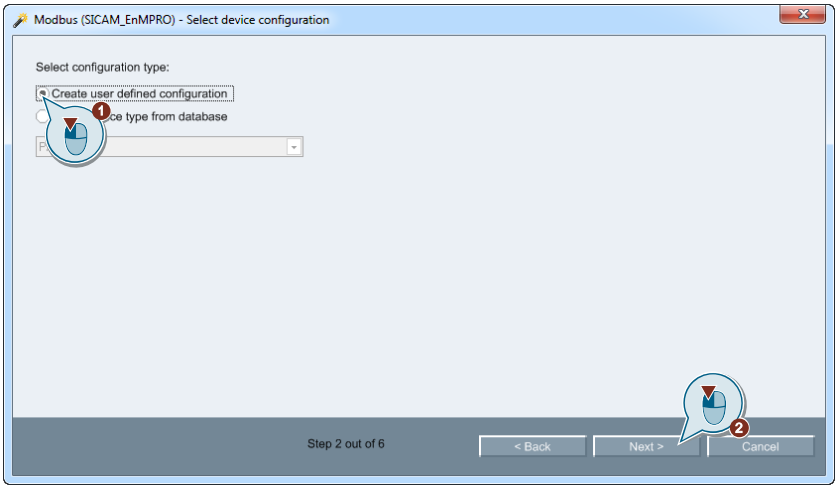
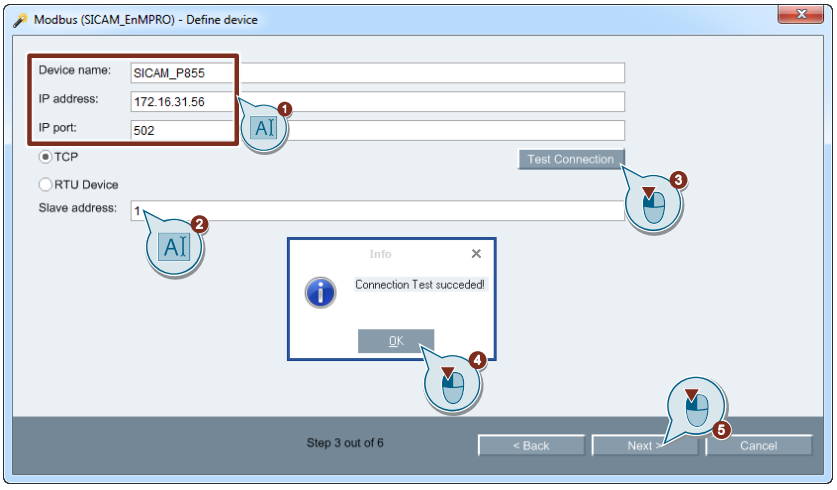
No.	Description
5.	**Select the device configuration** 1. Select "Create user-defined configuration". 2. Click "Next". 
6.	**Define devices** 1. Enter a “Device name”, “IP address” and “IP Port” of the SICAM P or Q device. 2. Enter a unique “Slave address”. 3. Then click on “Test connection". 4. Confirm the successful connection test with "OK". 5. Click "Next". 

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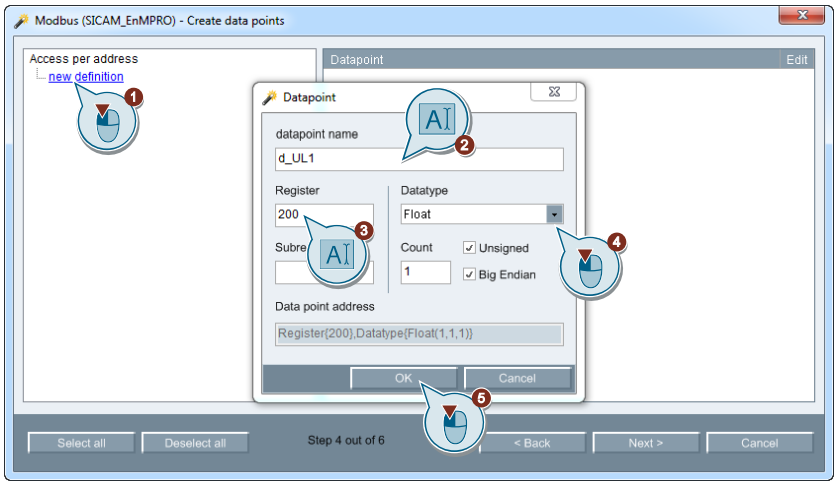
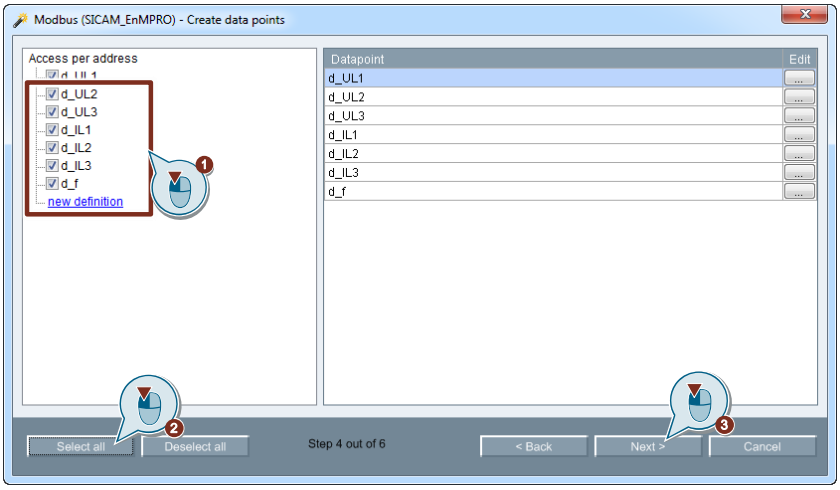
No.	Description
7.	**Define the datapoints (register)** 1. Click on “New definition”. 2. Enter a a “Datapoint name”. 3. Enter the corresponding register number of the respective datapoint. 4. Select the "Data type". 5. Click "OK" to confirm your entry.  **Note** The register number and data type can be found in the respective system manual of the SICAM PQ device. SICAM P855: https://support.industry.siemens.com/cs/ww/de/view/109752152 SICAM Q100: https://support.industry.siemens.com/cs/ww/de/view/109744883 SICAM Q200: https://support.industry.siemens.com/cs/ww/en/view/109744901
8.	1. Repeat step 7 for any other datapoints that you want to import. 2. Then click on “Select all”. 3. Click "Next". 

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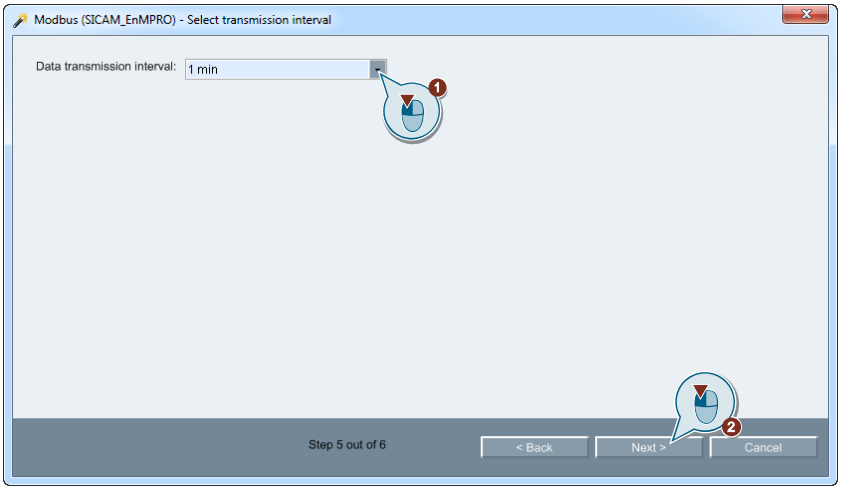
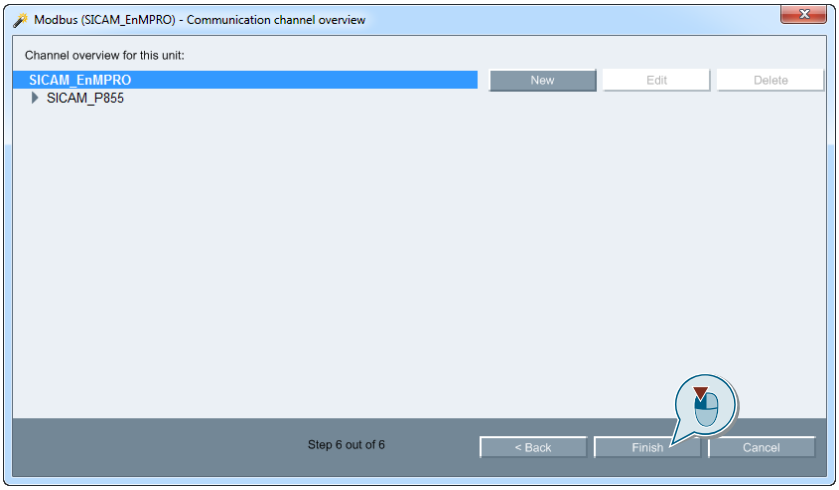
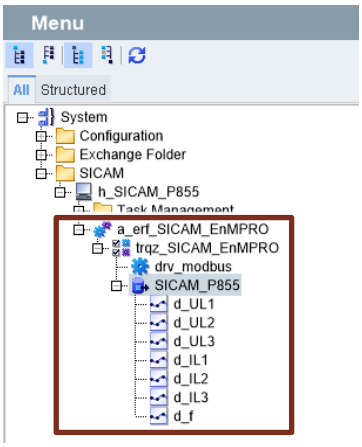
No.	Description
9.	**Define transmission interval** 1. Select the “Data transmission interval” at which the data is to be exchanged between the device and EnMPRO. 2. Click "Next". 
10.	Click “Finish" to exit the Wizard. 
11.	Once all datapoints have been created, you will find these in the tree structure under the acquisition component. 

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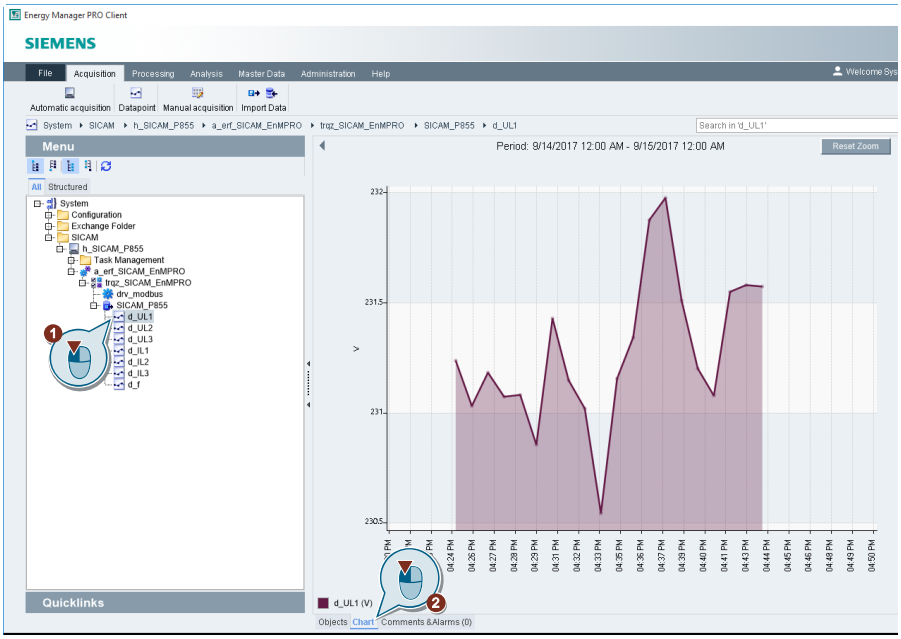
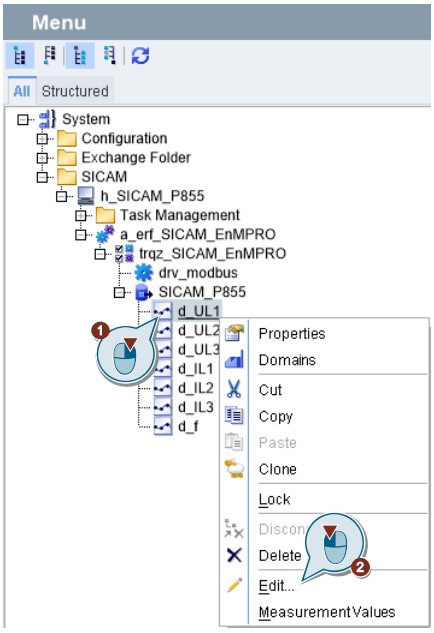
No.	Description
12.	**Visualizing the datapoints** If you want to graphically display the datapoints, proceed as follows. 1. Select a data point. 2. Click on “Chart” in the area navigation.  A chart will be shown with the time course of the datapoints. **Note** Once you have exited the wizard for acquiring datapoints, it may take some time (duration of the data transfer interval) before the datapoints appear in the chart.
13.	**Optional: Define the units of the datapoints** To define the units of the individual datapoints 1. Right-click the relevant datapoint. 2. Select “Edit" in the context menu. 

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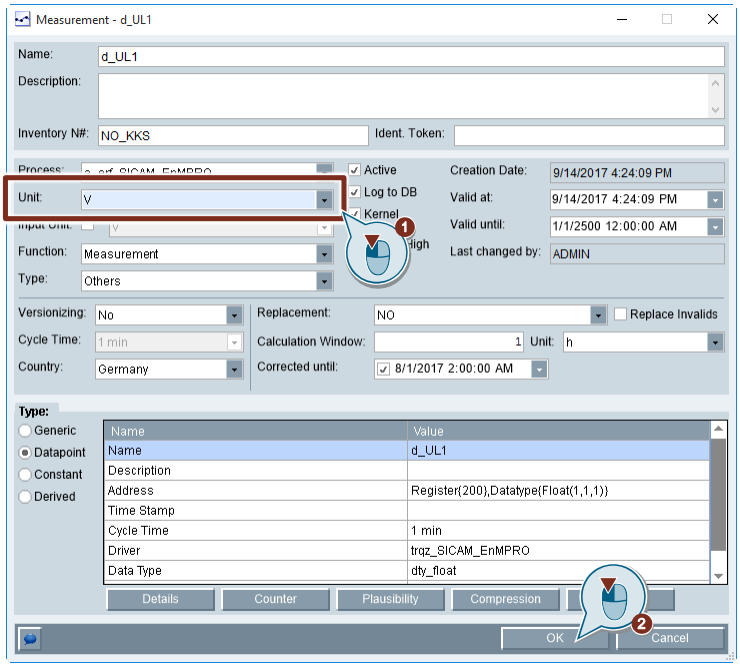
No.	Description
14.	**Optional: Define the units of the datapoints** 1. In the “Unit” selection field, select the corresponding unit of the measured variable. **2.** Click "OK" to confirm your selection. 

Result

The individual registers (measured variables) are now cyclically imported into the Energy Manager PRO and you can process or evaluate the data individually.

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2.2.3 Configuring the connection via WinCC to EnMPRO (configuration EnMPRO 2)

The following table describes which parameterization steps are required to import data from a WinCC V7.4 archive or WinCC Runtime Professional archive into Energy Manager PRO.

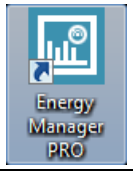
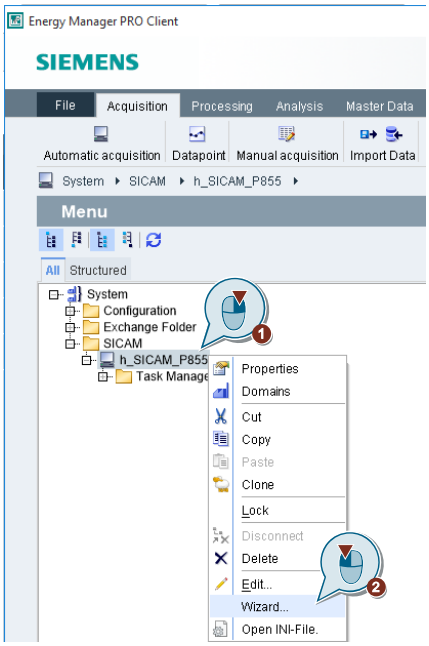
Note

The respective runtime must be started so that you can import data from a WinCC V7.4 archive or WinCC Runtime Professional archive.

You will find a detailed description of the individual steps in the manual “SIMATIC Energy Manager PRO V7.0 – Operation” in the chapter “Data acquisition via interface WinCC/PCS 7”:

https://support.industry.siemens.com/cs/ww/de/view/109742442/92102383755

Table 2-3

No.	Description
1.	Open Energy Manager PRO client and log in with a valid user 
2.	**Start acquisition wizard** 1. Right click on the acquisition component "h:SICAM_P855". 2. Select "Wizard…" in the context menu. 

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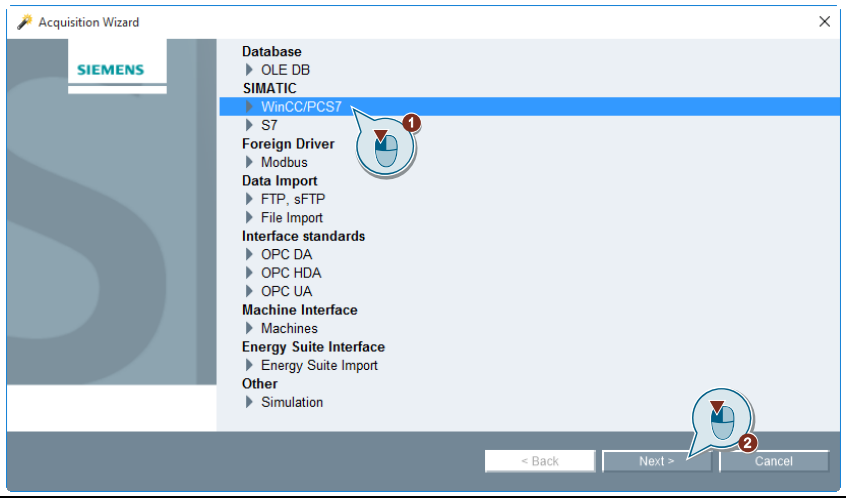
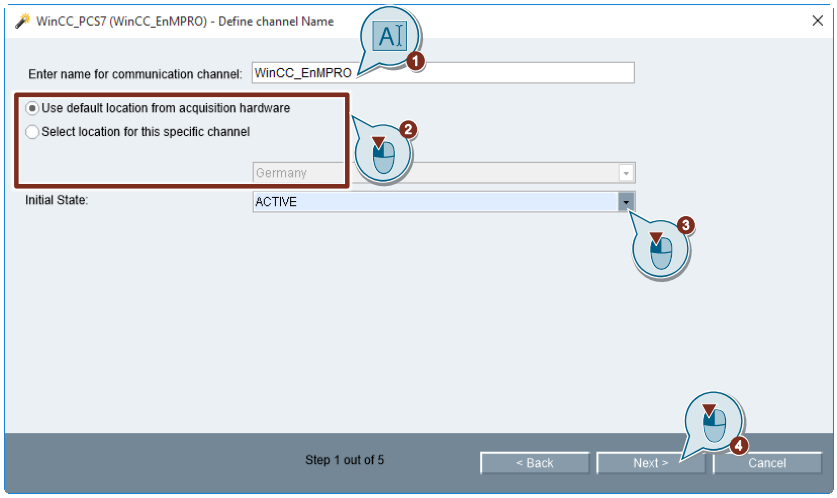
No.	Description
3.	Select “WinCC/PCS7” in the acquisition wizard and then click on “Next”. 
4.	**Defining channel** 1. Enter a name for the communication channel. 2. If necessary, change the country for the acquisition hardware. 3. Select the starting condition “Active” when data is collected. 4. Click "Next". 

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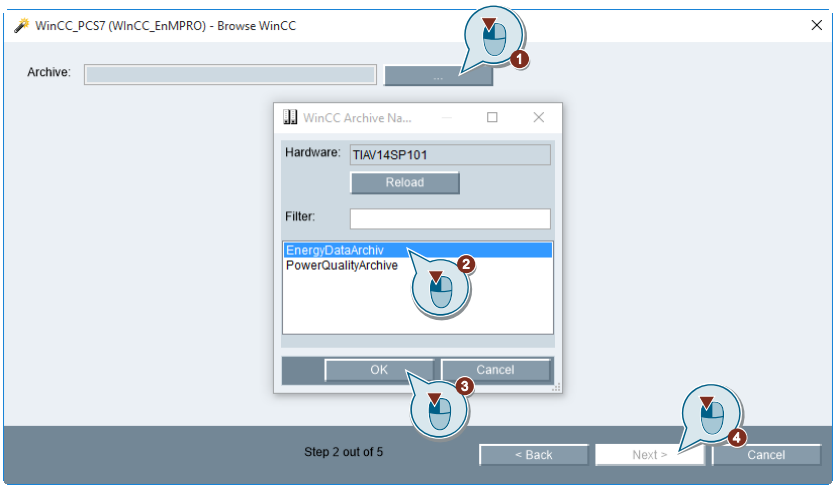
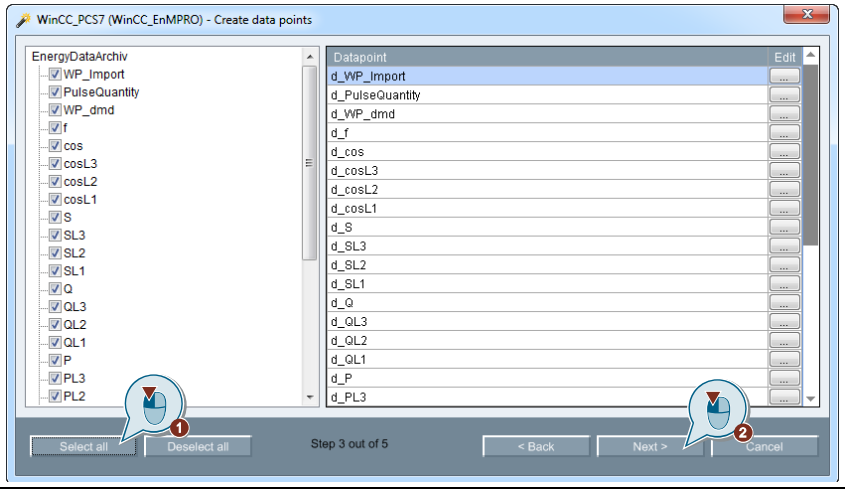
No.	Description
5.	**Selecting an archive** 1. Open the advanced view to search for available archives. 2. Select the archive you want to import. 3. Click "OK" to confirm your selection. 4. Click "Next". 
6.	**Adopting datapoints:** 1. Select the datapoints that you want to import or click on “Select all” to adopt all datapoints. 2. Then click on “Next”. 

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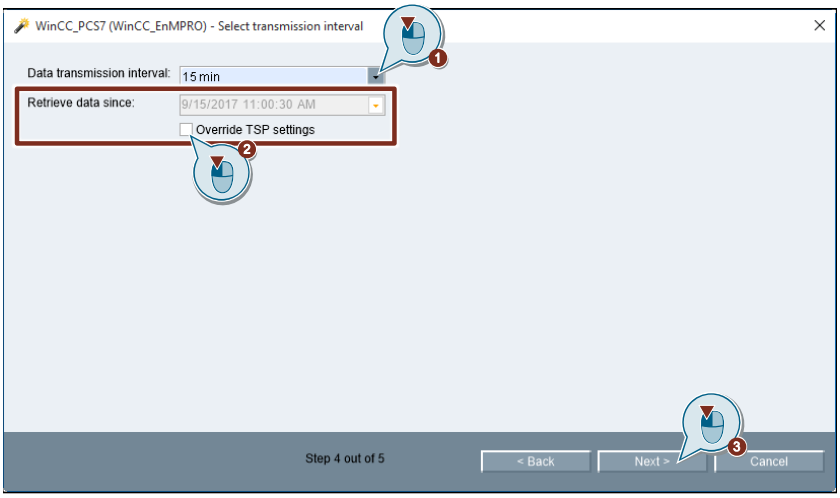
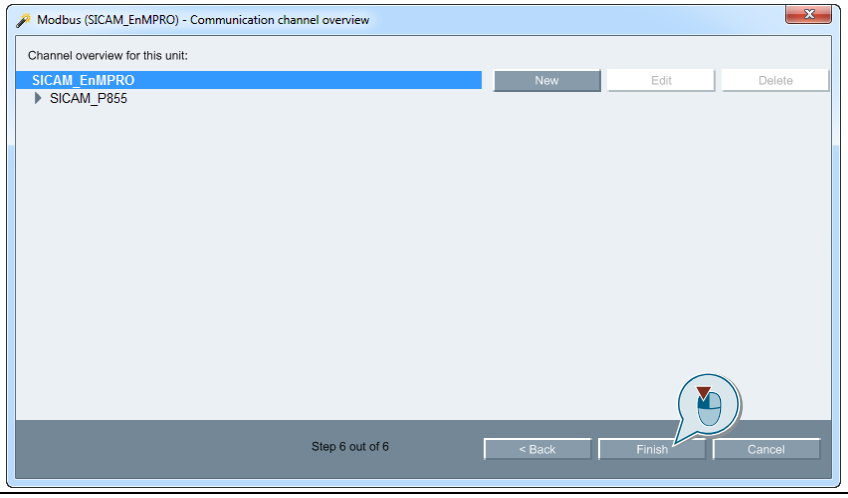
No.	Description
7.	**Defining the transmission interval** 1. Select the “Data transmission interval”. 2. If you want to change the acquisition period in order to read out the data from the past, for example, active “Override TSP settings”. 3. Click "Next". 
8.	Click “Finish" to exit the Wizard. 

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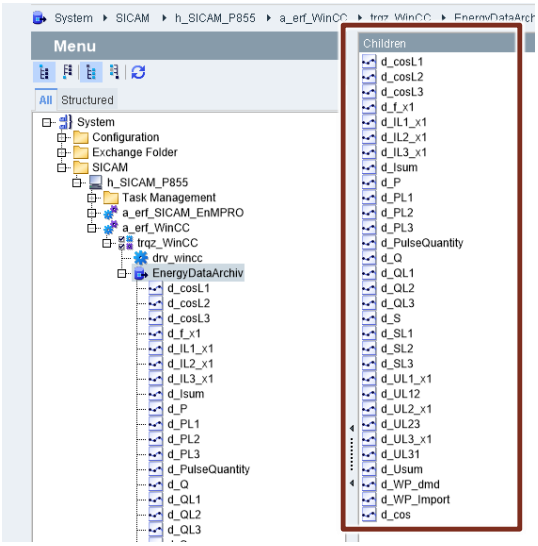
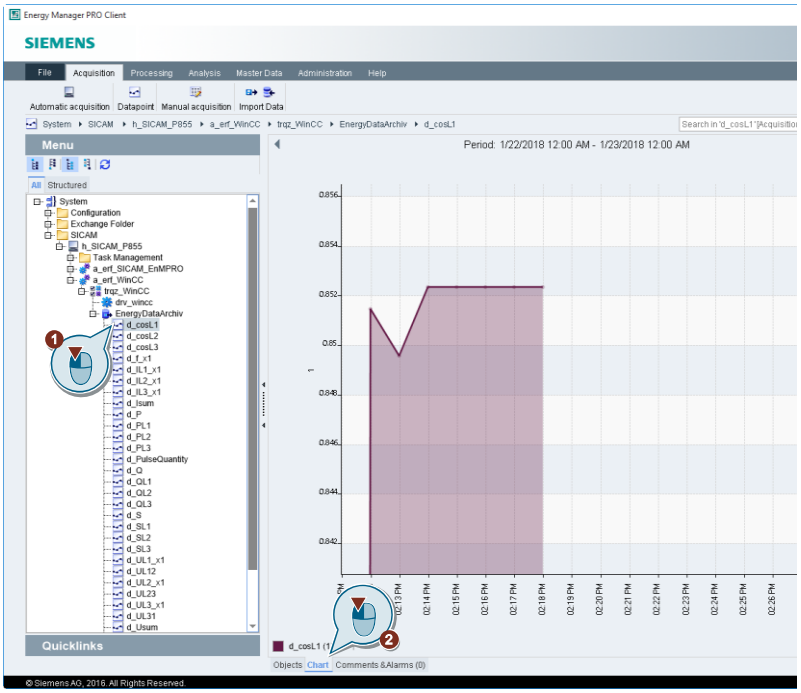
No.	Description
9.	Once all datapoints have been created, you will find these in the tree structure under the acquisition component.  **Note** If a datapoint already exists in another acquisition, such as “d_f”, the new datapoint will be expanded with the addition “_x1”.
10.	**Visualizing the datapoints** If you want to graphically display the datapoints, proceed as follows. 1. Select a data point. 2. Click on “Chart” in the area navigation.  A chart will be shown with the time course of the datapoints. **Note** Once you have exited the wizard for acquiring datapoints, the data will not be immediately visible. For this purpose, note the times for archiving in WinCC and the data transmission interval in EnMPRO.

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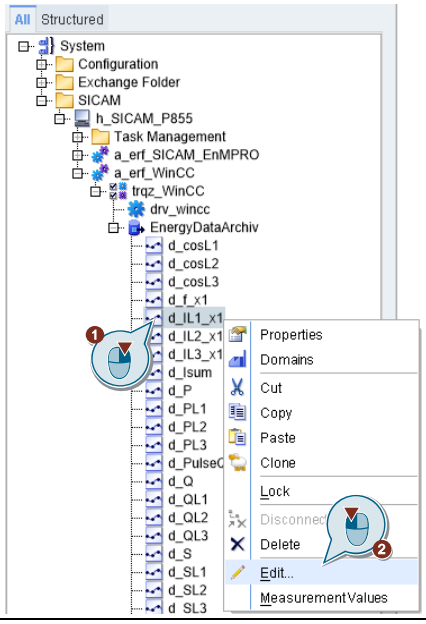
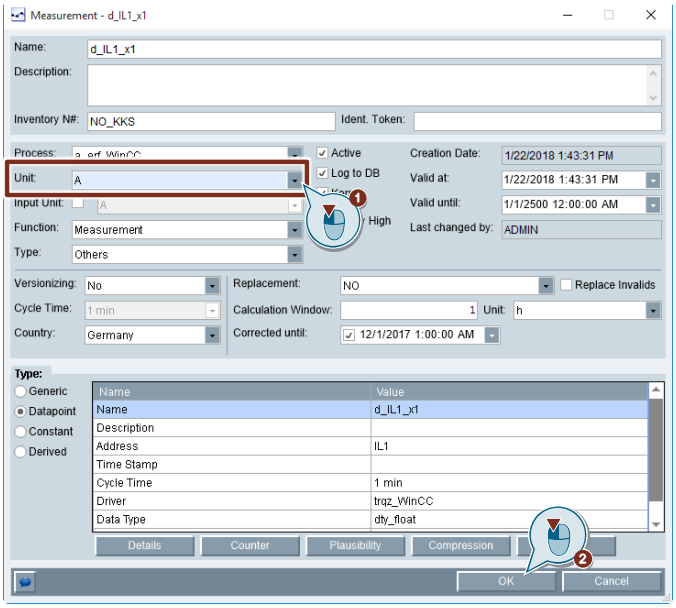
No.	Description
11.	**Optional: Define the units of the datapoints** To define the units of the individual datapoints 1. Right-click the relevant datapoint. 2. Select “Edit" in the context menu. 
12.	**Optional: Define the units of the datapoints** 1. In the “Unit” selection field, select the corresponding unit of the measured variable. **2.** Click "OK" to confirm your selection. 

Result

The data from the WinCC archives will now be cyclically imported into the Energy Manager PRO and you can process or evaluate the data individually.

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3 Appendix

3.1 Service and support

Industry Online Support

Do you have any questions or need assistance?

Siemens Industry Online Support offers round the clock access to our entire service and support know-how and portfolio.

The Industry Online Support is the central address for information about our products, solutions and services.

Product information, manuals, downloads, FAQs, application examples and videos – all information is accessible with just a few mouse clicks:
https://support.industry.siemens.com

Technical Support

The Technical Support of Siemens Industry provides you fast and competent support regarding all technical queries with numerous tailor-made offers – ranging from basic support to individual support contracts. Please send queries to Technical Support via Web form:
www.siemens.com/industry/supportrequest

SITRAIN – Training for Industry

We support you with our globally available training courses for industry with practical experience, innovative learning methods and a concept that’s tailored to the customer’s specific needs.

For more information on our offered trainings and courses, as well as their locations and dates, refer to our web page:
www.siemens.com/sitrain

Service offer

Our range of services includes the following:

- Plant data services
- Spare parts services
- Repair services
- On-site and maintenance services
- Retrofitting and modernization services
- Service programs and contracts

You can find detailed information on our range of services in the service catalog web page:
https://support.industry.siemens.com/cs/sc

Industry Online Support app

You will receive optimum support wherever you are with the "Siemens Industry Online Support" app. The app is available for Apple iOS, Android and Windows Phone:
https://support.industry.siemens.com/cs/ww/en/sc/2067

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3.2 Links and Literature

Table 3-1:

No.	Topic
\1\	Siemens Industry Online Support https://support.industry.siemens.com
\2\	Link to the entry page of the application example https://support.industry.siemens.com/cs/ww/en/view/109748899
\3\	SIMATIC Energy Manager PRO V7.0 – Acquisition https://support.industry.siemens.com/cs/ww/en/view/99086102
\4\	SIMATIC Energy Manager PRO V7.0 – Operation https://support.industry.siemens.com/cs/ww/en/view/109742442
\5\	SICAM P850/P855 - System manual https://support.industry.siemens.com/cs/ww/en/view/109752152
\6\	SICAM Q100 - System manual https://support.industry.siemens.com/cs/ww/en/view/109744883
\7\	SICAM Q200 – MODBUS/Mapping https://support.industry.siemens.com/cs/ww/en/view/109744901

3.3 Change documentation

Table 3-2

Version	Date	Change
V1.0	10/2019	First version

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