

Platform MX6

Software option S115

CODESYS Profinet Controller

1 Identification

Identification	
Option ID	S115
Order number	S-05000306-0000
Short name	CODESYS Profinet Controller
Brief description	With this software option it is possible to operate the PLC as a Profinet Controller in a Profinet network.
Revision ID document	V1.0

2 System requirements and restrictions

System requirements and restrictions	
Supported platforms and devices	Berghof PLC devices of the MX6 platform (e.g.: MCs, CCs, DCs). Additional information regarding availability and compatibility can be found in options section of the product catalog.
Firmware	MX6-PLC from Version 1.22.4, CODESYS from 3.5 SP14 Patch 4
Additional requirements	<ul style="list-style-type: none">– IP Networkconnection to Profinet Devices– CODESYS IDE >= 3.5.14.40
Restrictions	–

3 Product description

With this expansion it is possible to run the PLC as a Profinet Controller in an IP-Network with Profinet devices according to Profinet specification V2.3 and Conformance Class A.

PROFINET (Process Field Network) is an open standard for realtime industrial Ethernet systems in automation technology. It is promoted by the user organization PI (PROFIBUS & PROFINET International as an umbrella group of the PROFIBUS user organization PNO) and is regarded as the successor of PROFIBUS. PROFINET uses IEEE 802.3 (Standard Ethernet) based Profinet RT protocol for realtime cyclic IO data exchange and UDP/IP for acyclic services.

The fully integrated CODESYS PROFINET Solution provides a uniform configurator for different variants of underlying PROFINET Controller communication stacks:

- CODESYS PROFINET Controller (IEC)
- Protocol stack in the form of a CODESYS library (in IEC 61131-3 code), operates on standard network interface cards.
- For CODESYS Control RTE high performance ethernet adapter drivers are available (see requirements).
- The ethernet adapter is not used exclusively, it's still available for all other applications using TCP/IP on this adapter (e.g. CODESYS Visualisation, Web Browser).

CODESYS PROFINET Configurator

- configurator for settings of PROFINET Controller
- configuration of as slaves (single AR to PROFINET field device) with communications settings
- configuration of device/module specific parameters, in- and output-mapping
- status page with detailed view of currently pending diagnostics and previously received alarms
- scan dialog with device-import function, online/offline compare, I&M data
- topology configurator (for device exchange, IRT-planning)

Without valid license the Profinet Controller runs for 30 minutes without restrictions in the demo mode.

After the installation of the software license it is possible to use the Profinet Controller on the PLC without temporal limitation. The licensing takes place per PLC.

For full documentation of the different Profinet-Controller and Device configuration menus please check the CODESYS Online help under:

[https://help.codesys.com/webapp/pnio_f_profinet_io_configuration;product=core ProfinetIO Configuration Editor;version=3.5.15.0](https://help.codesys.com/webapp/pnio_f_profinet_io_configuration;product=core%20ProfinetIO%20Configuration%20Editor;version=3.5.15.0)

4 Quick Start Guide

With this illustrated quick start guide it is possible to create a functional Profinet Controller within a few minutes.

4.1 Preparatory tasks

In the web configuration of the PLC the „Static” mode for the ETH1 interface in the „Network Configuration menu” has to be selected. The ETH0 interface can't be in the same subnet while using Profinet. Save the configuration and reboot the PLC to activate the settings.

Configuration

[Network](#)

[CAN](#)

[Time and Date](#)

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[FTP-Server](#)

[SSH-Server](#)

[WEB-Server](#)

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[Config Protection](#)

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System

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[Update](#)

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PLC-Manager

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[Application Files](#)

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Diagnostics

[PLC Log](#)

[System Log](#)

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Network Configuration

COMMON

Hostname: 270011200-00035

DNS Server 1: 0.0.0.0

DNS Server 2: 0.0.0.0

ETH0

Mode: static

IPAddress: 169.254.255.35

NetMask: 255.255.255.0

Gateway: 0.0.0.0

ETH0:1

Mode: inactive

ETH1

Mode: static

IPAddress: 192.168.1.1

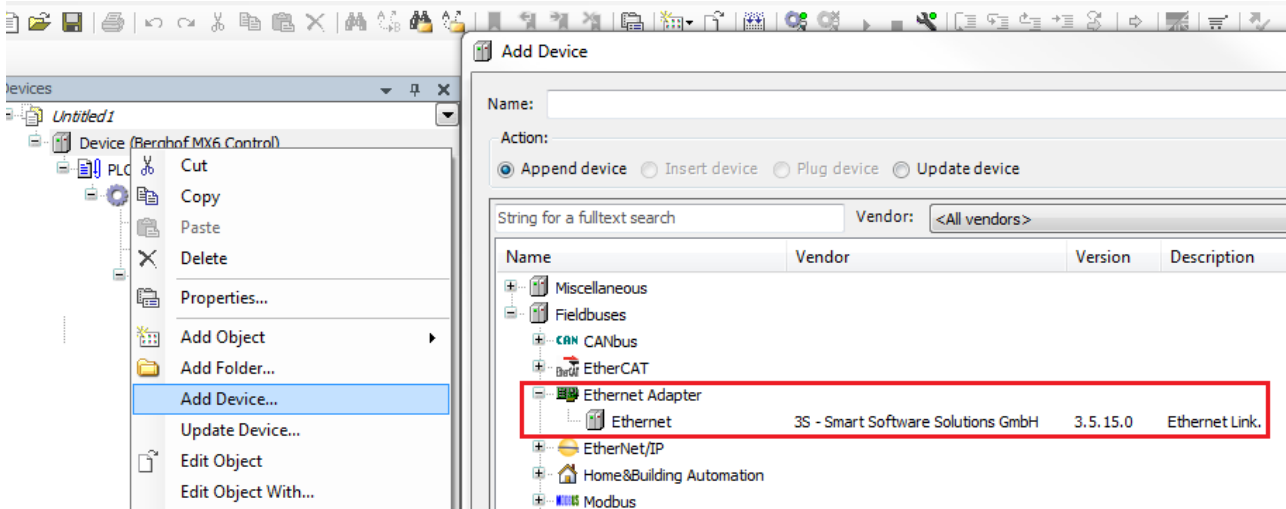
NetMask: 255.255.255.0

Gateway: 0.0.0.0

ETH1:1

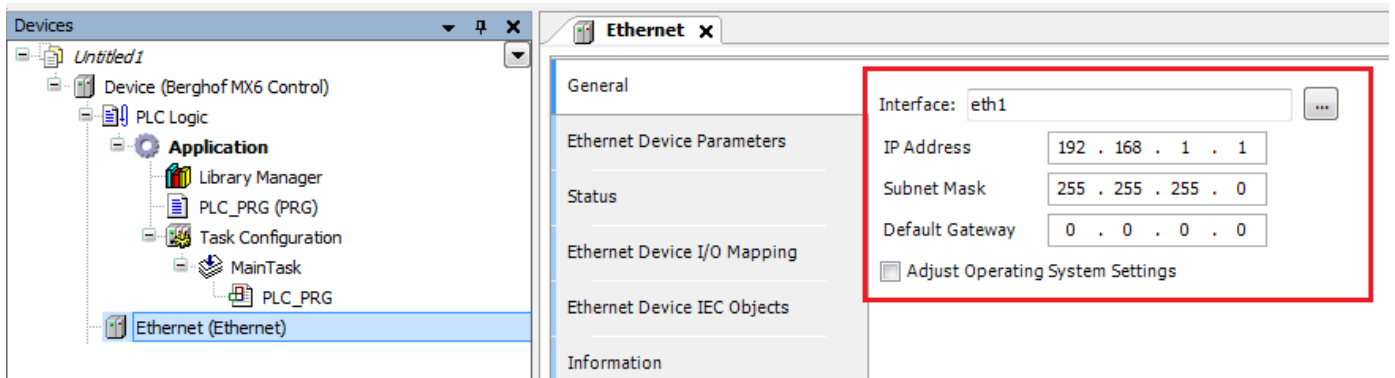
4.2 Addition of the ethernet adapter

At first an ethernet adapter has to be integrated into the CODESYS project, through the CODESYS function “Add Device” by right clicking on the PLC-Device in the devices window in CODESYS.



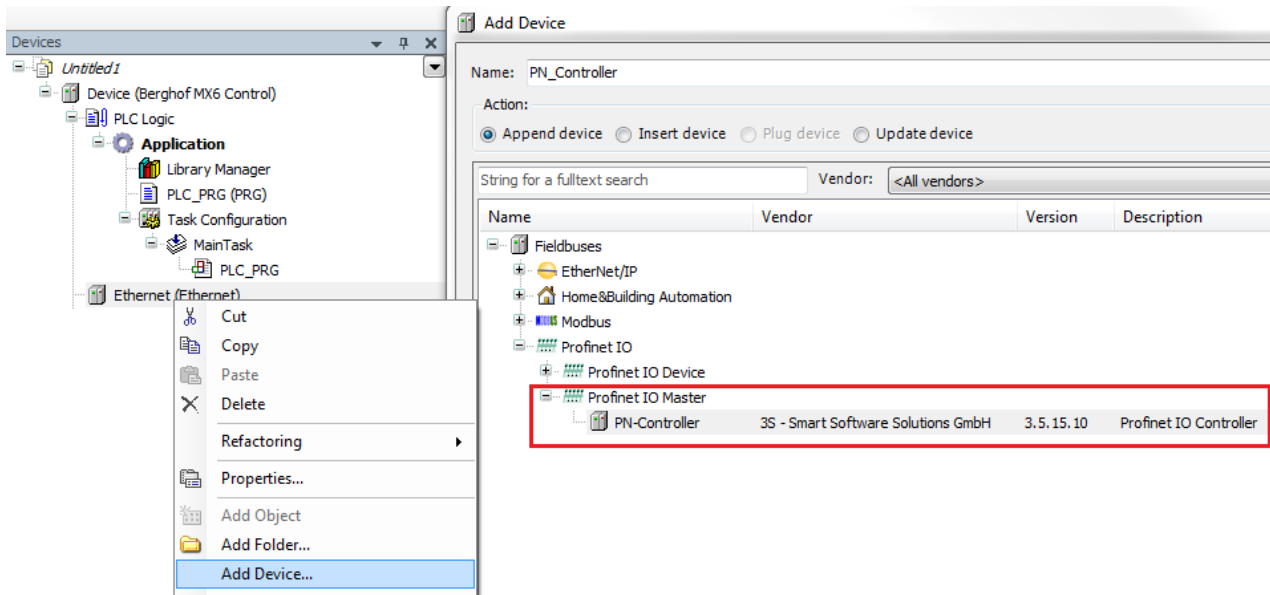
4.3 Configuration of the ethernet adapter

With a double click on the newly added Ethernet adapter you can open the configuration. Set the Ethernet interface and IP settings same as configured in the webinterface.



4.4 Addition of the Profinet Controller

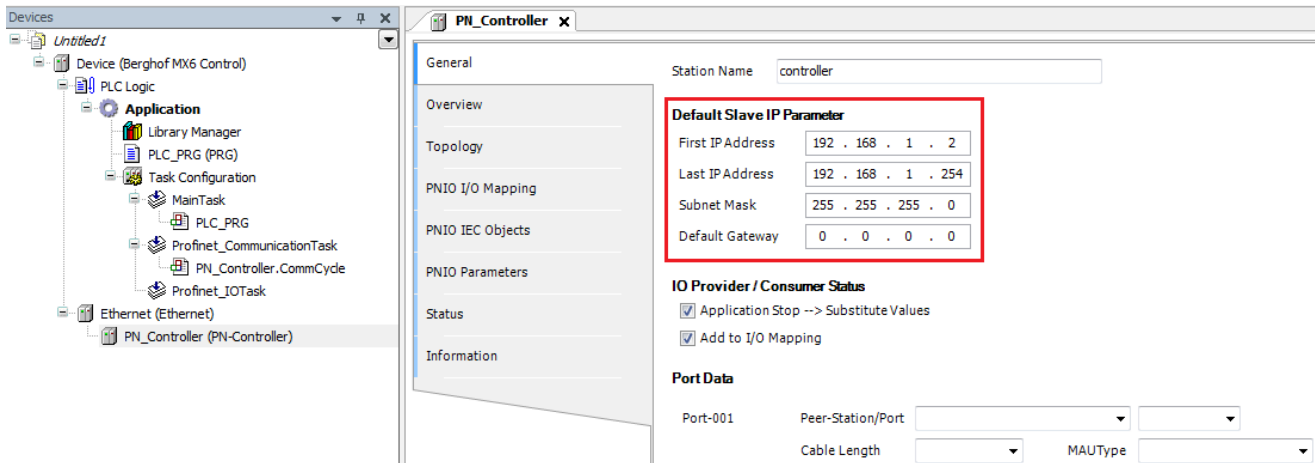
After that the Profinet Controller can be added under the ethernet adapter.



4.5 Configuration of the Profinet Controller

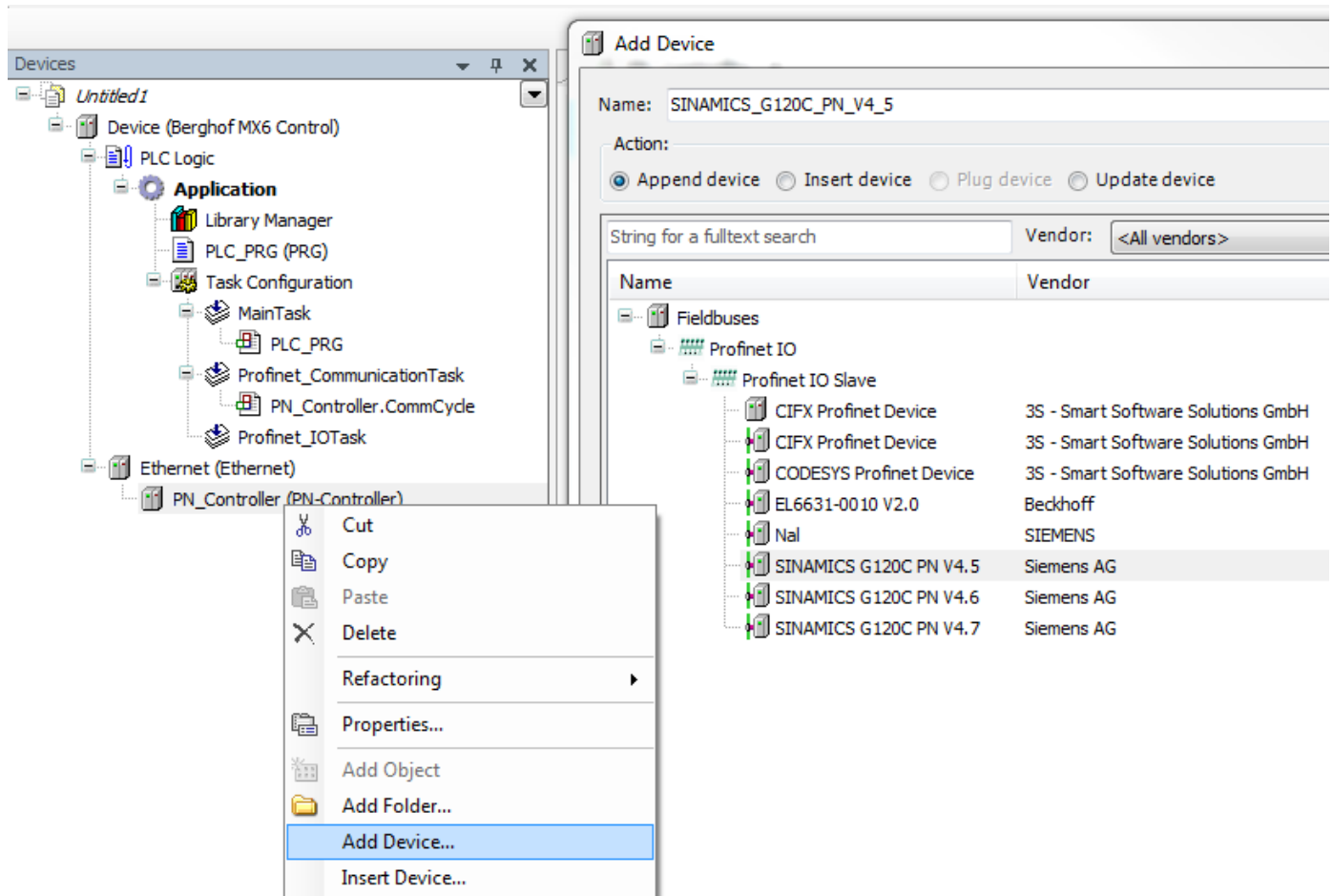
With a double click on the newly added Profinet Controller, you can open the configuration.

Check that the IP range for the Profinet devices are correct and match the network of the ethernet adapter.



4.6 Addition of the Profinet device

By using the “Add Device” function on the Profinet Controller it is now possible to add your Profinet devices. Please be aware that your Profinet device will only be shown in the device list the hardware description file (GDSML, XML) has been installed in CODESYS.



4.7 Configuration of the Profinet devices

With a double click on the newly added Profinet device, you can open the configuration.

Check that the IP of the Profinet device is inside the range set in the Profinet Controller and check the communication settings.

Parameters	Value	Datatype	Allowed values	Description
General settings				
Activate diagnostics	Inactive	Integer8		

Repeat the adding and configuration of Profinet devices until the device configuration in CODESYS matches the real hardware configuration which is connected to the PLC. When this is done download the project onto the PLC and start the application.

Your contact partner can be reached under:

Sales Team | T +49.7121.894-131 | controls@berghof.com

Berghof Automation GmbH | Arbachtalstrasse 26 | 72800 Eningen | www.berghof-automation.com

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