PROFIBUS Configuration for Moxa MGate 5101-PBM-MN and Siemens S7-1200

Moxa Technical Support Team
support@moxa.com

Contents

About Moxa

Moxa manufactures one of the world's leading brands of device networking solutions. Products include serial boards, USB-to-serial hubs, media converters, device servers, embedded computers, Ethernet I/O servers, terminal servers, Modbus gateways, industrial switches, and Ethernet-to-fiber converters. Our products are key components of many networking applications, including industrial automation, manufacturing, POS, and medical treatment facilities.

How to Contact Moxa

Tel: +886-2-8919-1230   Web: www.moxa.com

Fax: +886-2-8919-1231   Email: info@moxa.com

MOXA®

1. Introduction

This tech note describes how to configure a Moxa MGate device as a PROFIBUS DP master to connect to a Siemens S7-1200 PLC as a PROFIBUS DP slave. We illustrate the procedure by configuring data for one word input and one word output.

2. Applicable Products

Product Line	Model Name
MGate 5000 series	MGate 5101-PBM-MN
	MGate 5101I-PBM-MN
	MGate 5101-PBM-MN -T
	MGate 5101I-PBM-MN -T

3. System Requirements

| Description	Model/File Name	Version
Siemens S7-1200 PLC	CPU 1212C AC/DC/Rly	2.0
Siemens S7-1200 PROFIBUS module	CM 1242-5	1.0
Siemens PLC programming software	TIA Portal V11	
Moxa PROFIBUS DP master to Modbus TCP gateway	MGate 5101-PBM-MN	1.0
GSD file for Siemens S7-1200 DP slave	SI01818E.GSD	1.0
Software utility to configure Moxa device	MGate Manager	1.6
Modbus TCP master software	Modbus Poll	3.60a

4. System Overview

In this document, the MGate 5101-PBM-MN is used as an example. The system architecture is shown below.
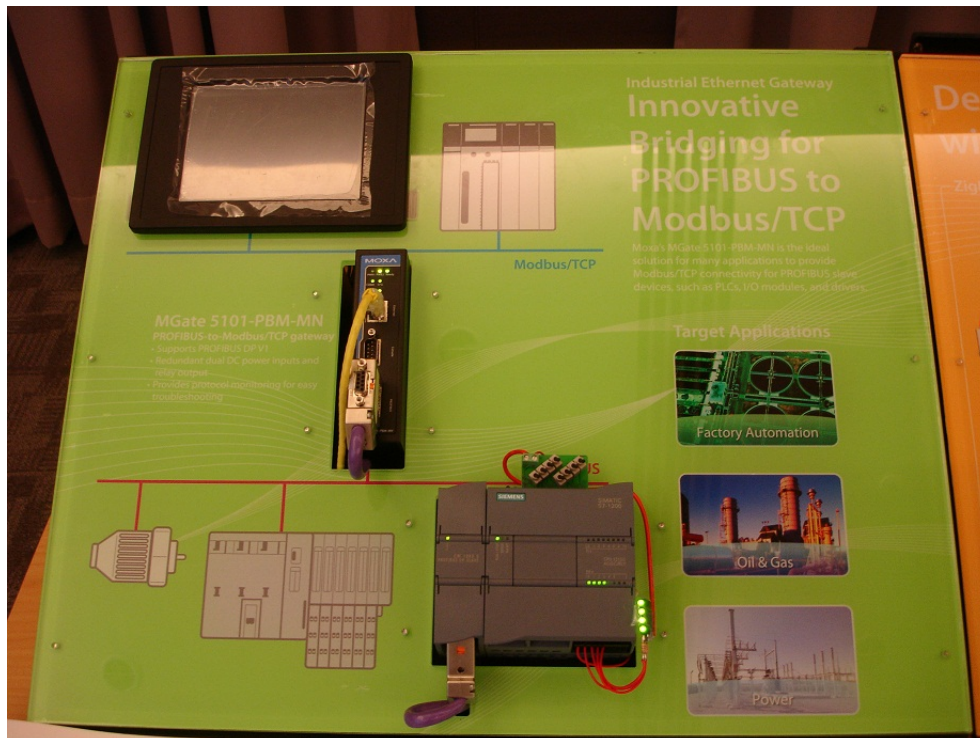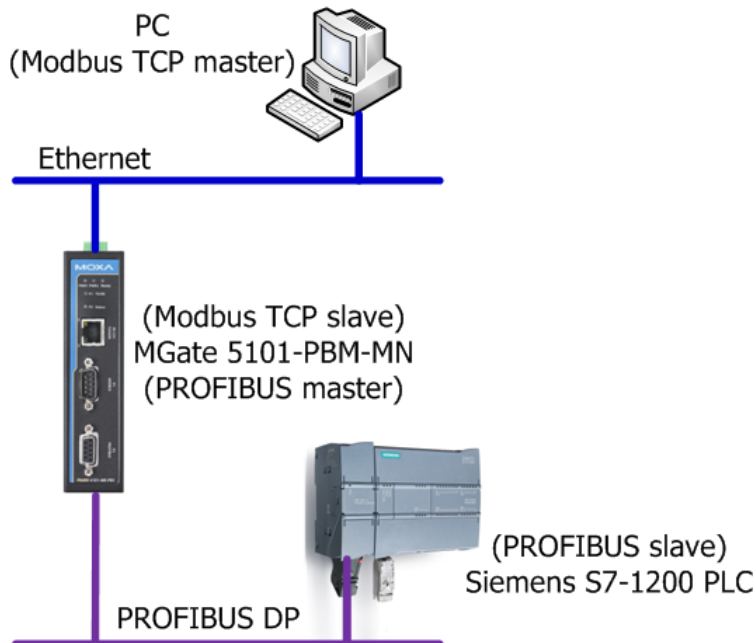
5. PLC Configuration

5.1. Create a new project

5.1.1. Start TIA Portal V11 and create a new project by selecting **Project → New**. and then assign a name to this project. In this example, we use "Project01" as the project name.
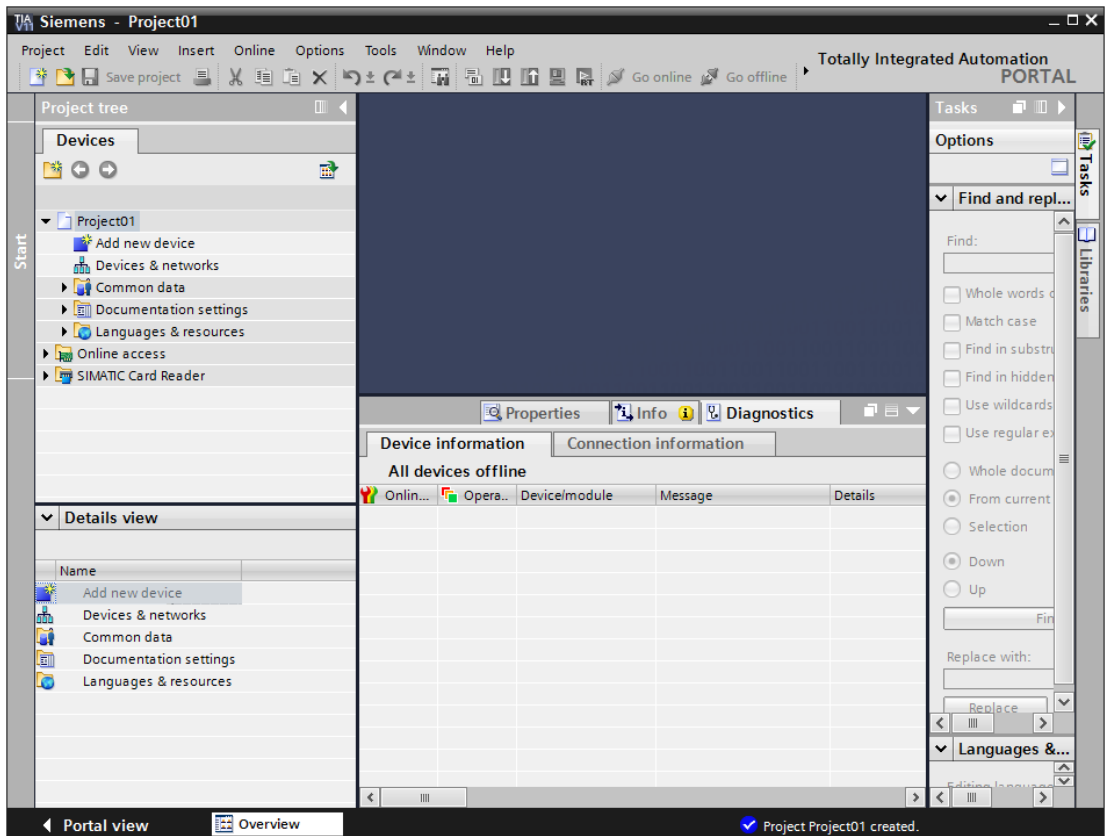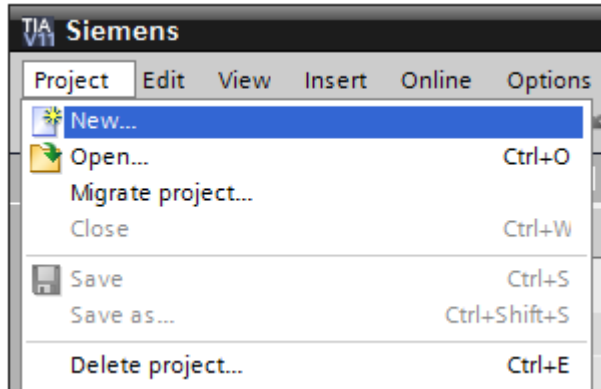
5.2.   Create a PROFIBUS slave device

5.2.1. Double click on Devices & networks and select the proper device in the Catalog window. In this example, we choose the S7-1200 CPU 1212C and the PROFIBUS slave module, CM 1242-5.
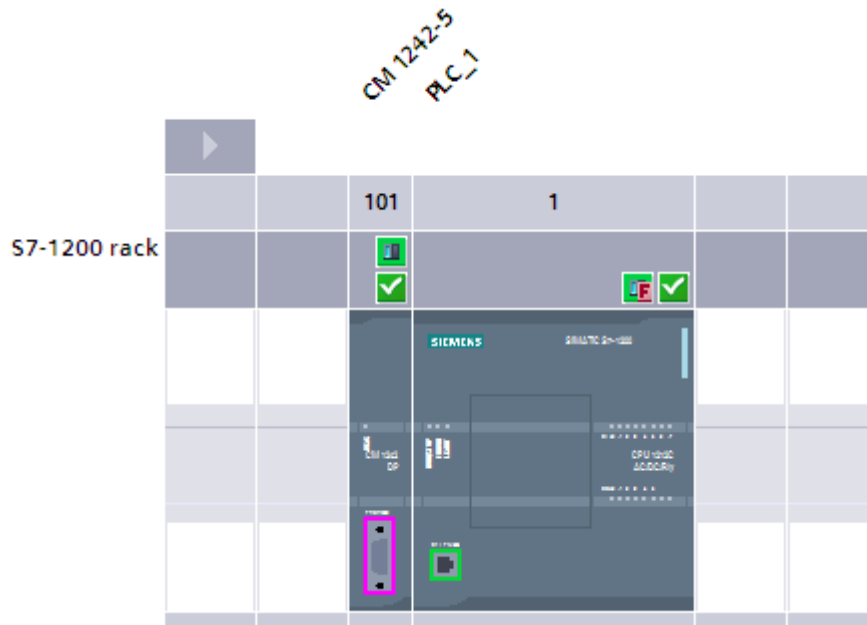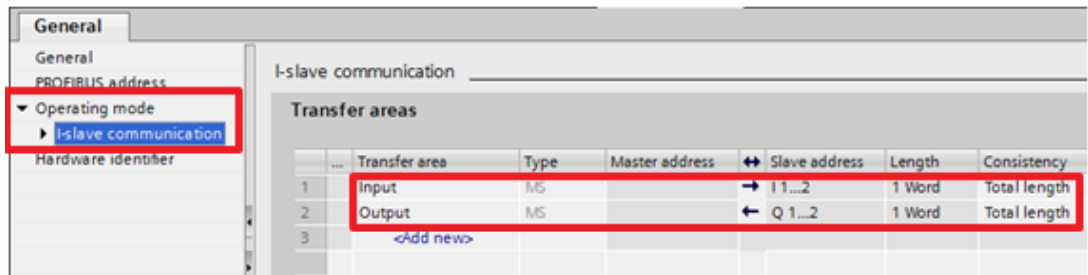

5.2.2. Click on the CM 1242-5 module to carry out detailed configurations.
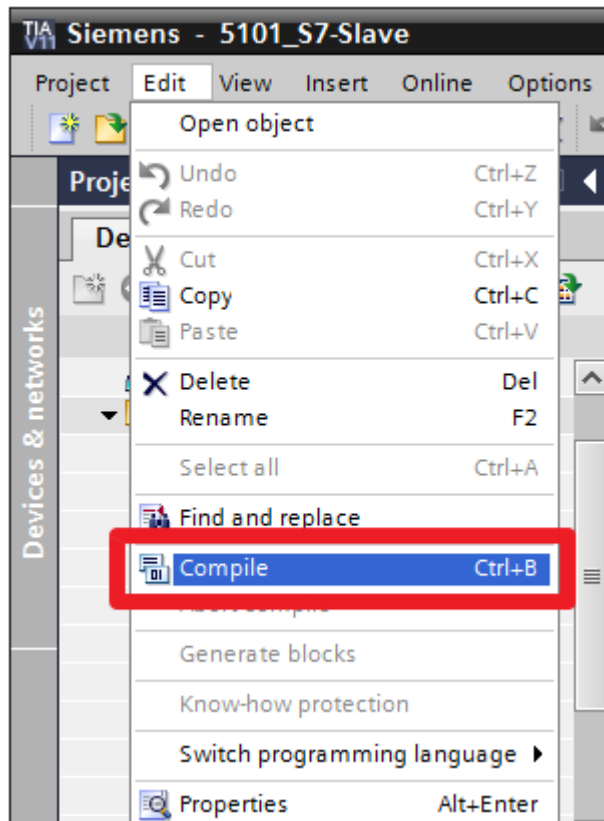
5.2.2.1.   Assign a PROFIBUS address:
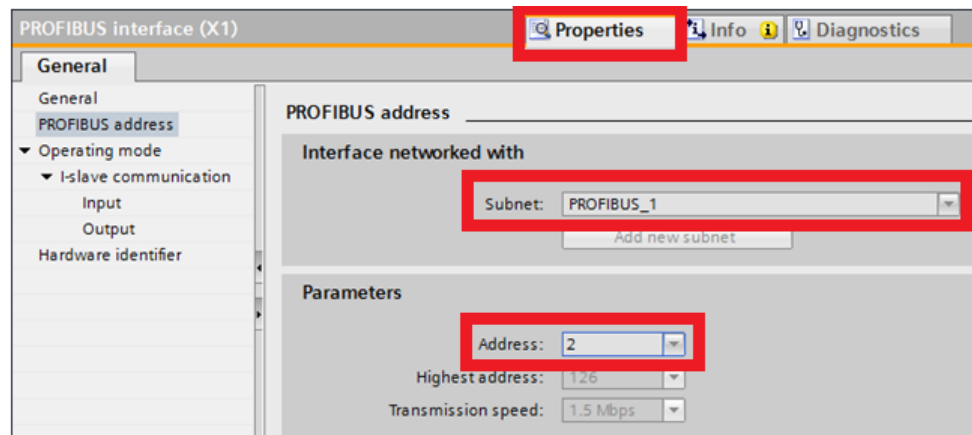
5.2.2.2.   Add I/O modules:

5.2.3. Next, you can compile and download this project to the S7-1200, and then click Go Online to run above settings on the S7-1200.
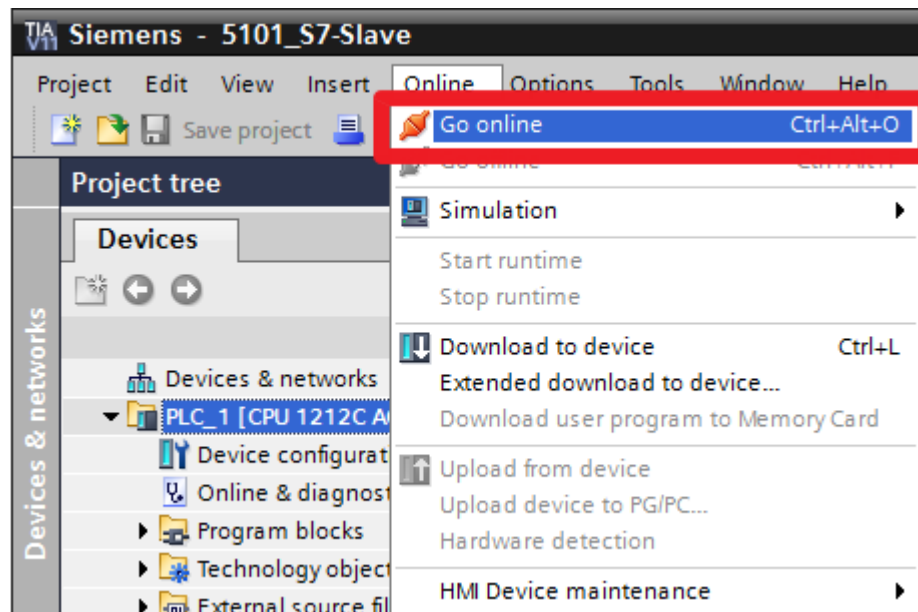
5.2.3.1.   **Edit → Compile**:

5.2.3.2. **Online → Download to device**:
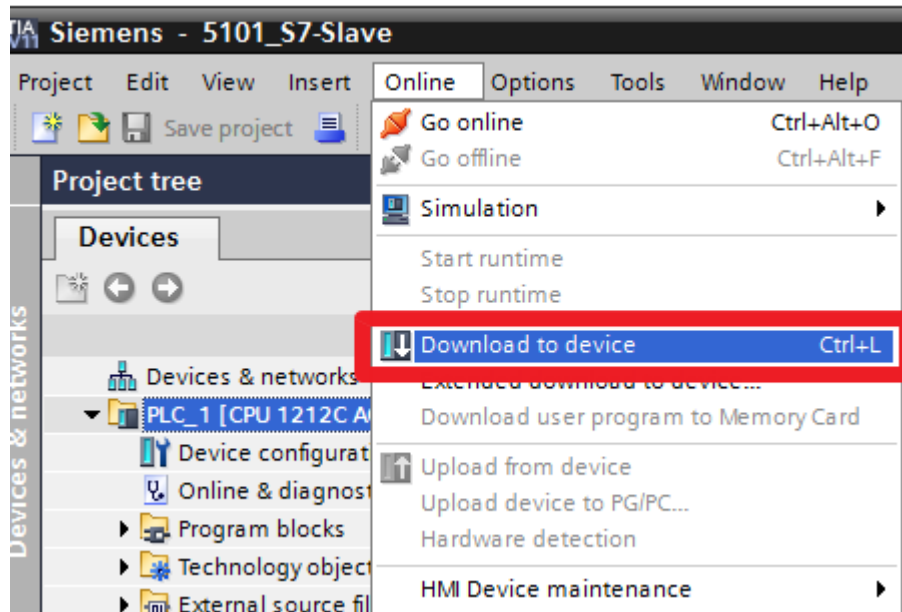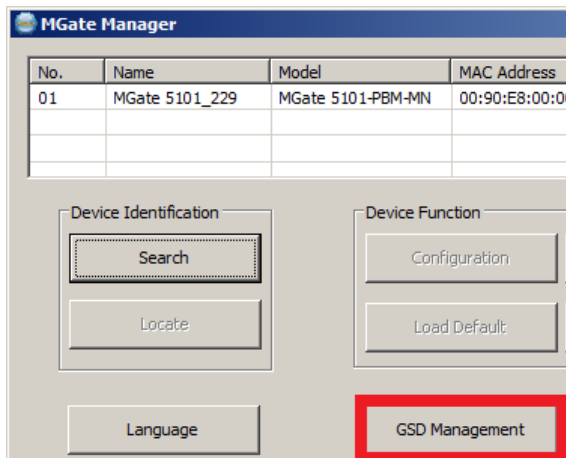

5.2.3.3. **Online → Go online**:

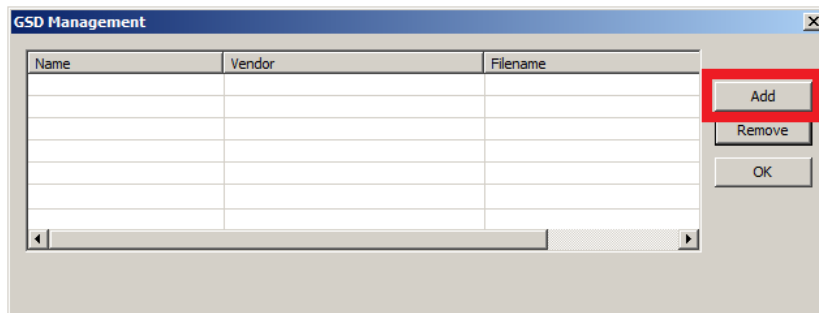# 6. Moxa's PROFIBUS device configuration

6.1.   Install the GSD file

Before configuring the Moxa MGate 5101-PBM-MN, first install the relevant GSD file of the PROFIBUS slave device to allow the MGate 5101-PBM-MN to recognize the device.

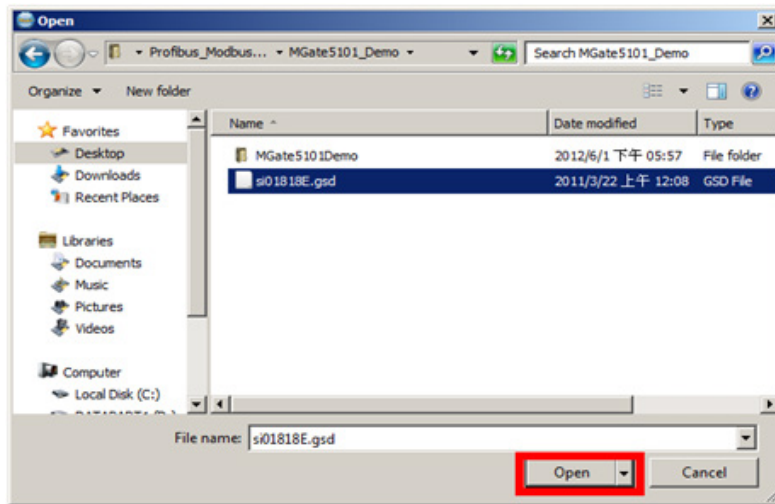6.1.1. Run MGate Manager and then click the **GSD Management** button to install the GSD file.

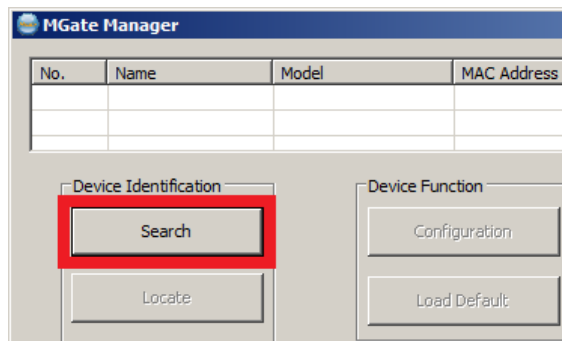Click the **Add** button to select the location of the GSD file.

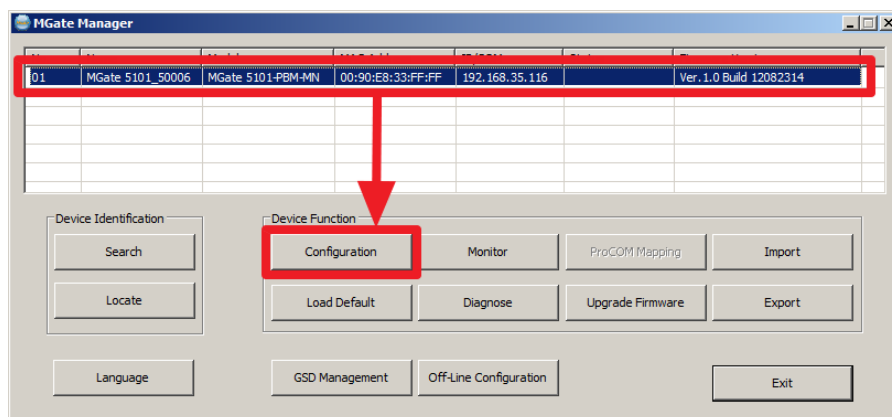Select the GSD file and then click the **Open** button to install it.

6.2.   Device configuration with MGate Manager

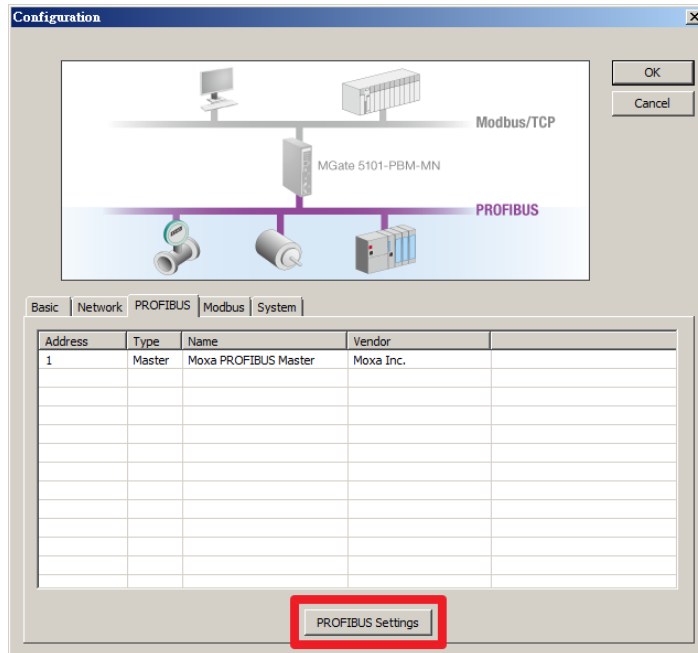6.2.1. Start MGate Manager and then **Search** for Moxa MGate 5101-PBM-MN.

6.2.2. Select the target device and click the **Configuration** button to configure it.

6.2.3. Select the "PROFIBUS" tab and click the **PROFIBUS Settings** button to start PROFIBUS configuration.

6.2.4. Select **PROFIBUS → AutoScan** or click the **AutoScan** button to enable the AutoScan function to scan the PROFIBUS slave device automatically.

or

6.2.5. Check the appropriate checkbox to add the slave device to the PROFIBUS network:


Next, click the **OK** button. The MGate 5101-PBM-MN will complete the configuration for you.

6.2.6. After confirming that everything is correct, select **File → Save** to save the configuration and **File → Exit** to exit the "PROFIBUS Settings" window.
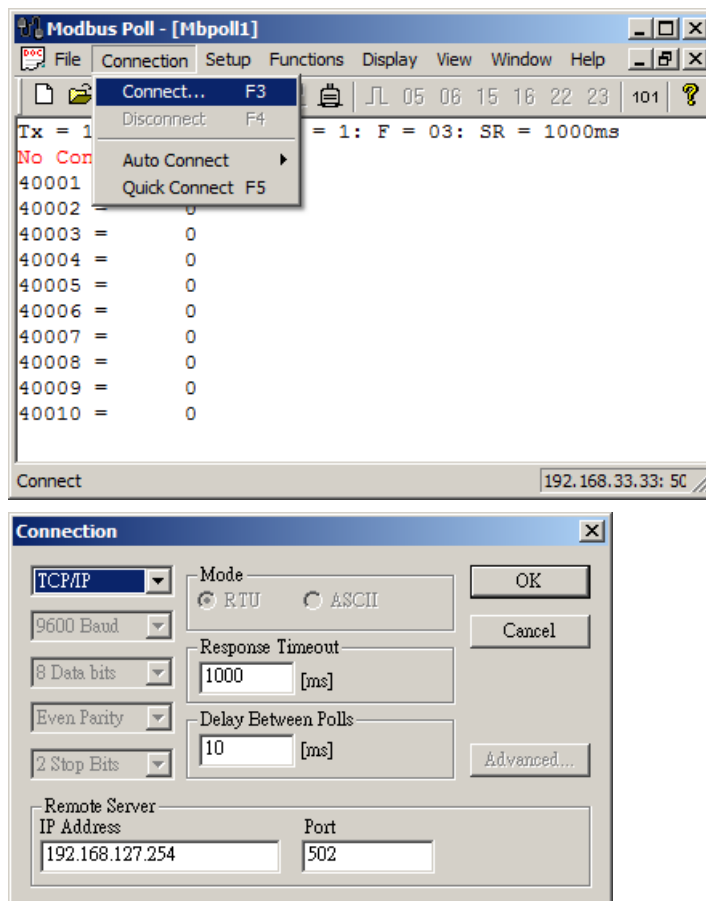
6.2.7. From the main window, click the **OK** button to save your modifications. The MGate 5101-PBM-MN will reboot, at which time the new configurations will be activated.
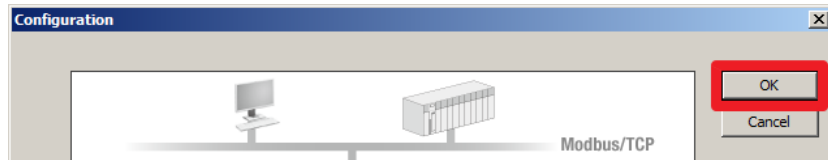
7. Communication Test

7.1.   Execute Modbus Poll as the Modbus TCP master device

7.1.1. Execute the Modbus Poll on the PC to simulate the Modbus TCP master to exchange data with the MGate 5101-PBM-MN.

After the Modbus TCP connection is established, the application is ready.

7.2.   Modifying and monitoring I/O data

7.2.1. After making the above settings, the MGate device should work in a Modbus TCP / PROFIBUS environment. For example, we can use Modbus Poll to write or read data from the S7-1200 via the MGate 5101-PBM-MN.
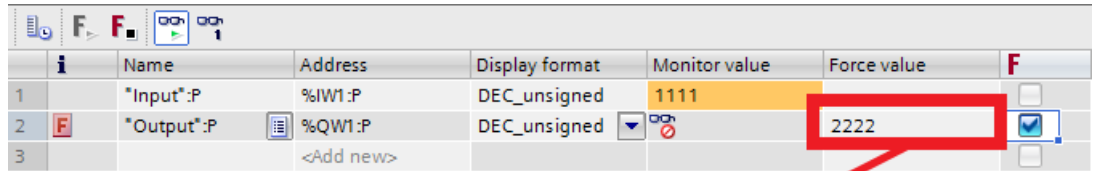
7.2.2. Double click on the value of address 40001, input 0x1111, and then click the **Send** button to write the new value to the S7-1200. The value of the Input module should change automatically.
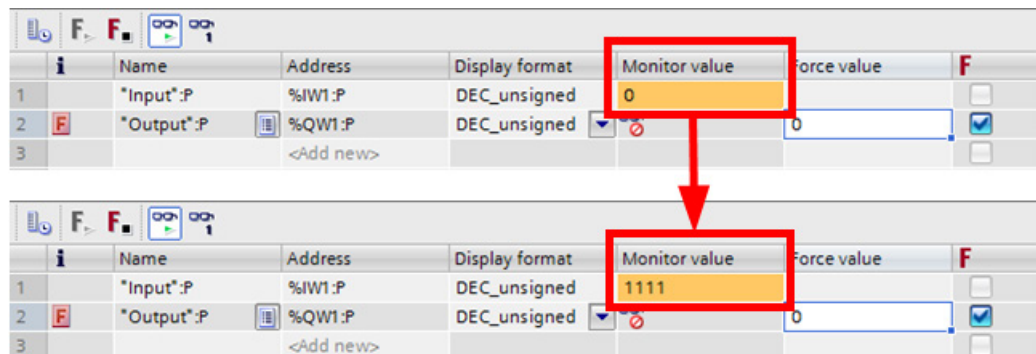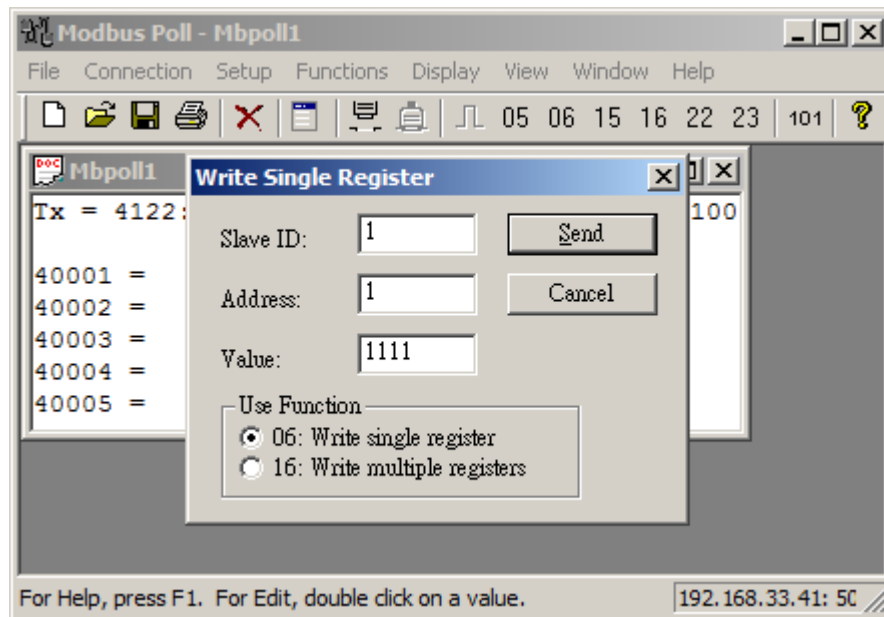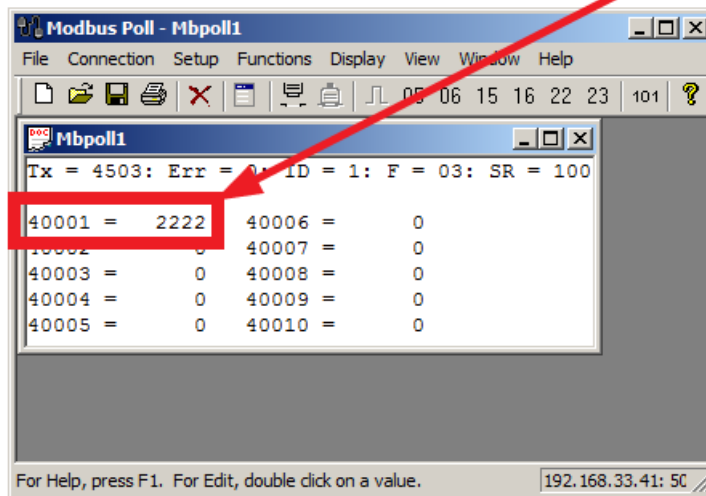
7.2.3. Input 0x2222 in the **Force value** column in TIA Portal V11and click the

Force button ![F button icon] to output the new value to Modbus Poll address 40001.

The above test confirms that the MGate 5101-PBM-MN will poll the PROFIBUS slave device regularly.