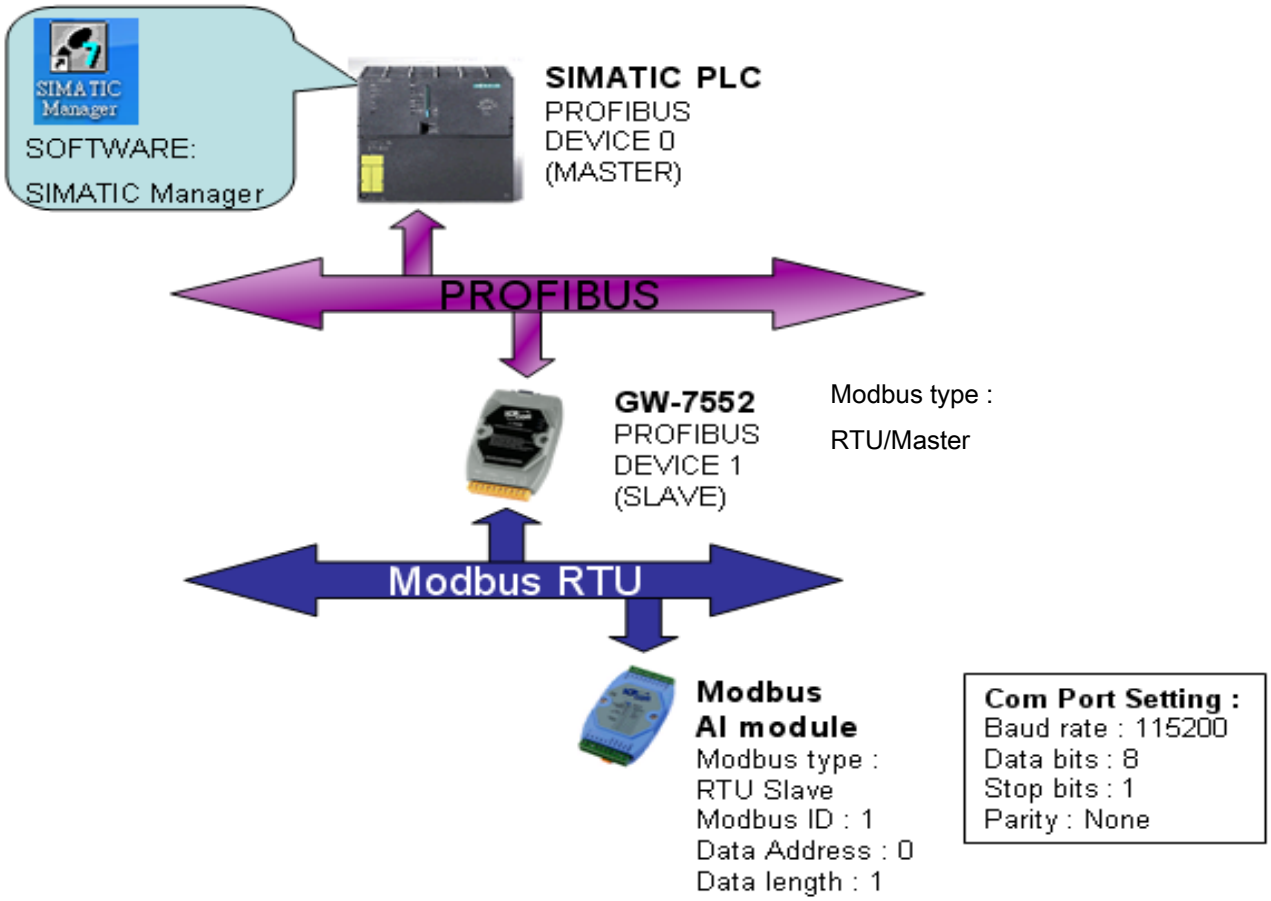
GW-7552 (Modbus RTU master)

example for SIMATIC STEP 7

Example 1: PLC reads AI module data from GW-7552.

Read a Modbus RTU AI module (PROFIBUS Slave & Modbus RTU/Master)

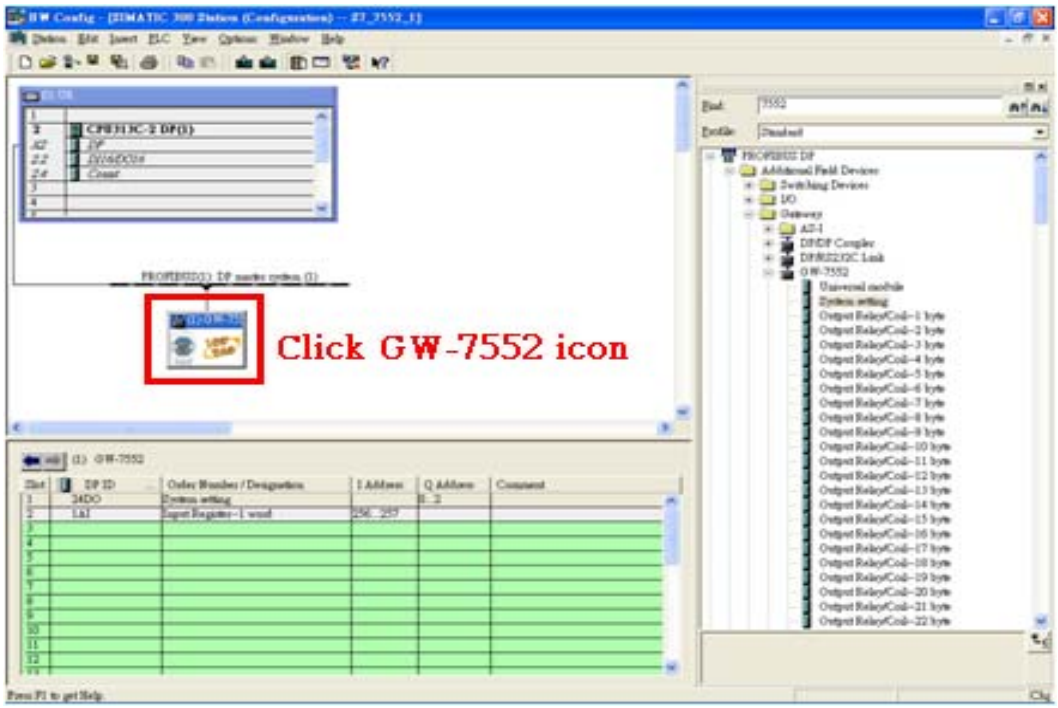


"Follow the below steps to establish the system!"

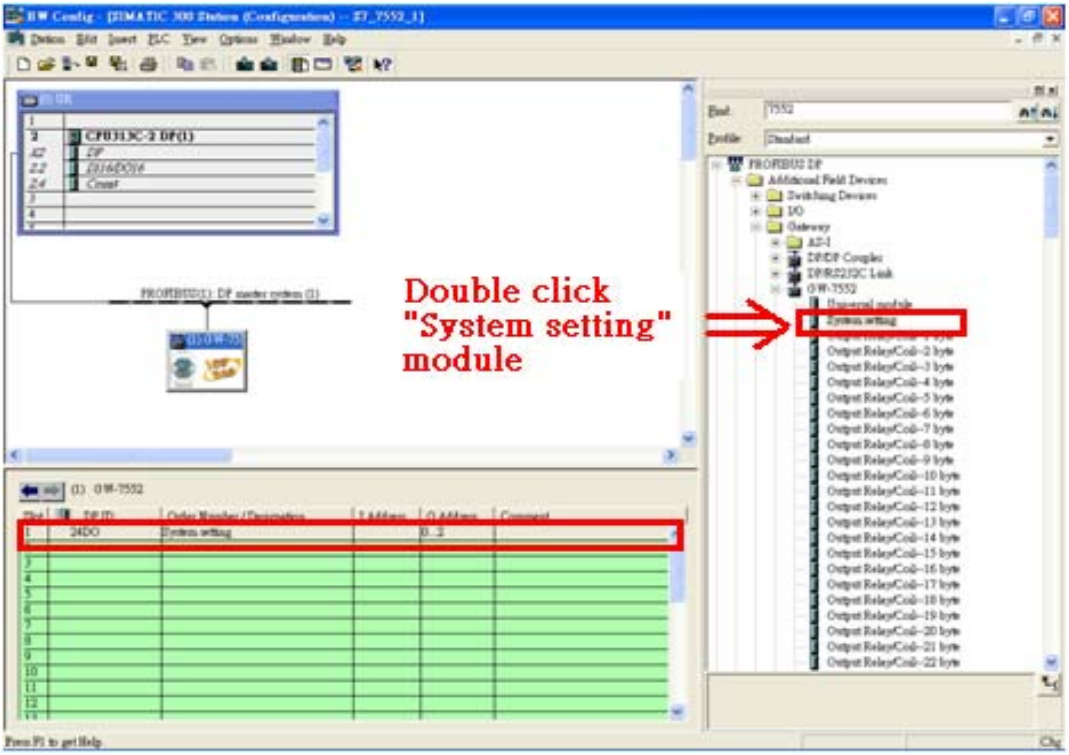
SIMATIC STEP7 Configuration:

Step 1: Setup the GW-7552 module

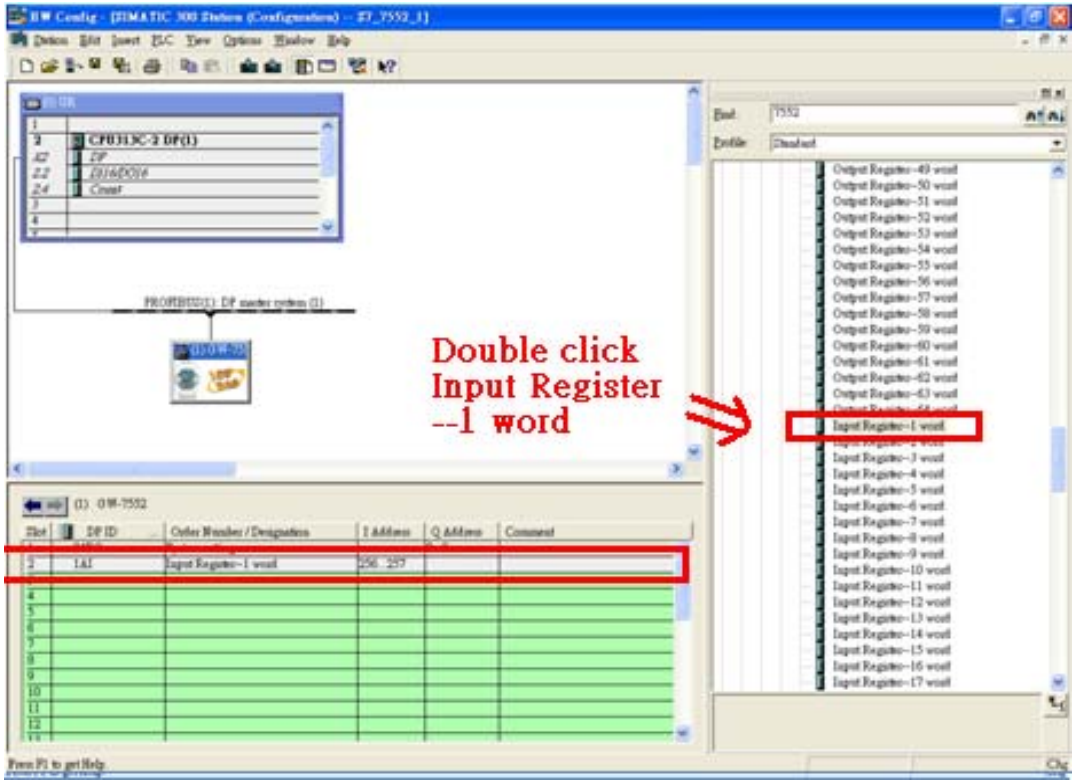
1. Select GW-7552 module



2. Add a System module

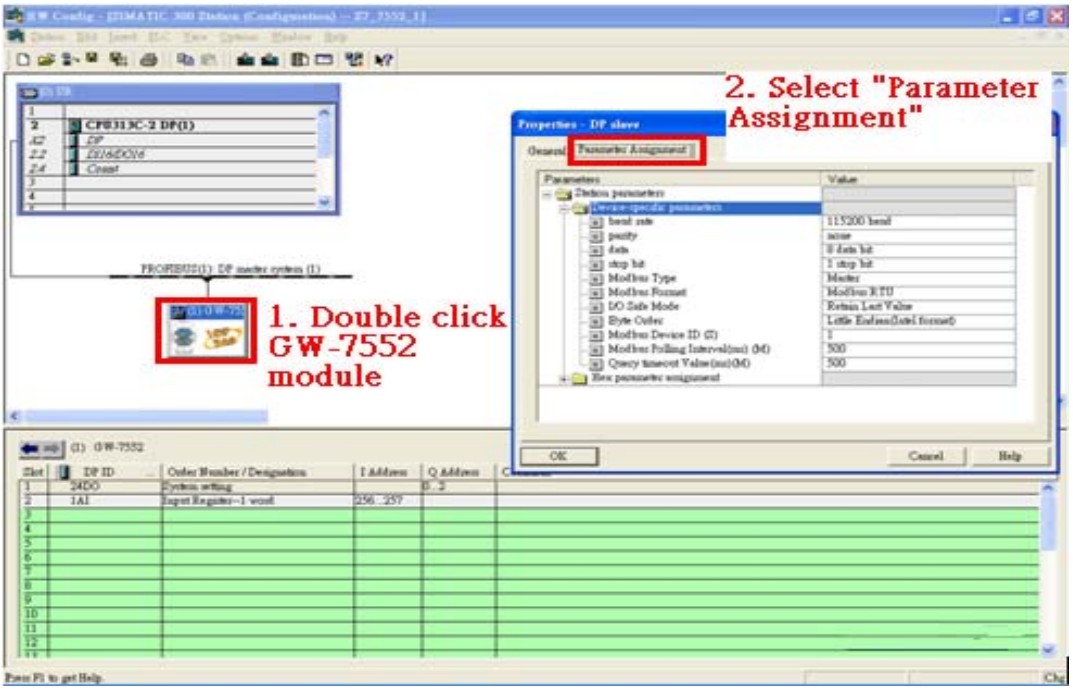


3. Add “Input Register—1 word” module



Step 2: Setup the parameters of the GW-7552

1. Double click GW-7552 icon
2. Select “Parameter Assignment”

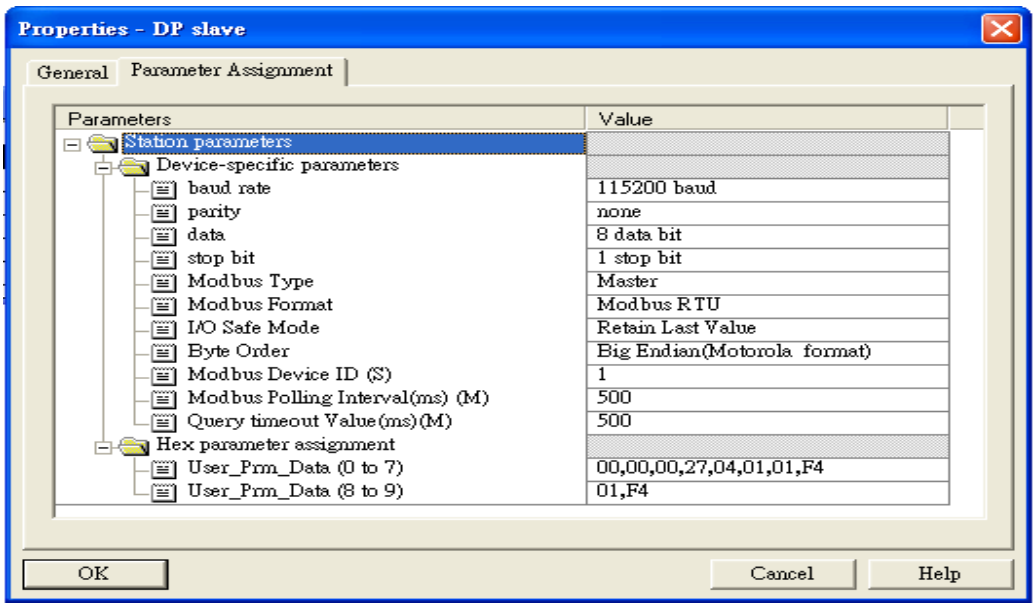


3. Set common parameters of the GW-7552

Common parameters➔

Baud rate: 115200; Parity: none; Data: 8 data bit; Stop bit: 1 stop bit; Modbus type: Master

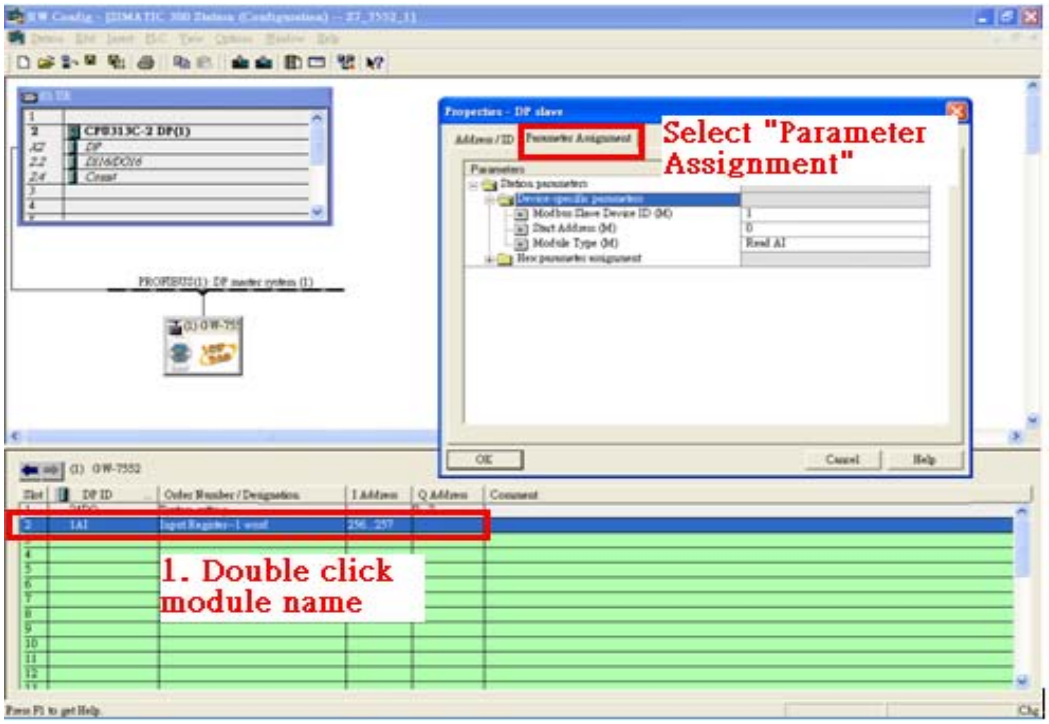
Modbus Format: Modbus RTU; Byte Order: Big Endian



4. Set module parameters of the GW-7552

(1)Double click “input register—1 word” module

(2)Select “Parameter Assignment”

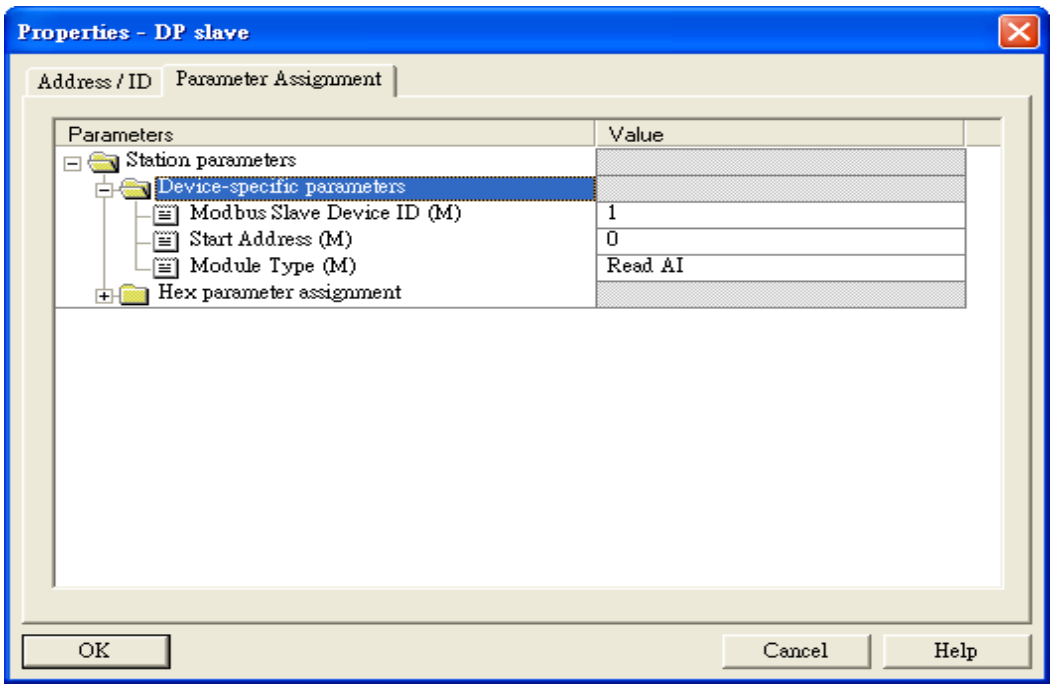


5. Setup “input register—1 word” module parameters

Module parameters➔

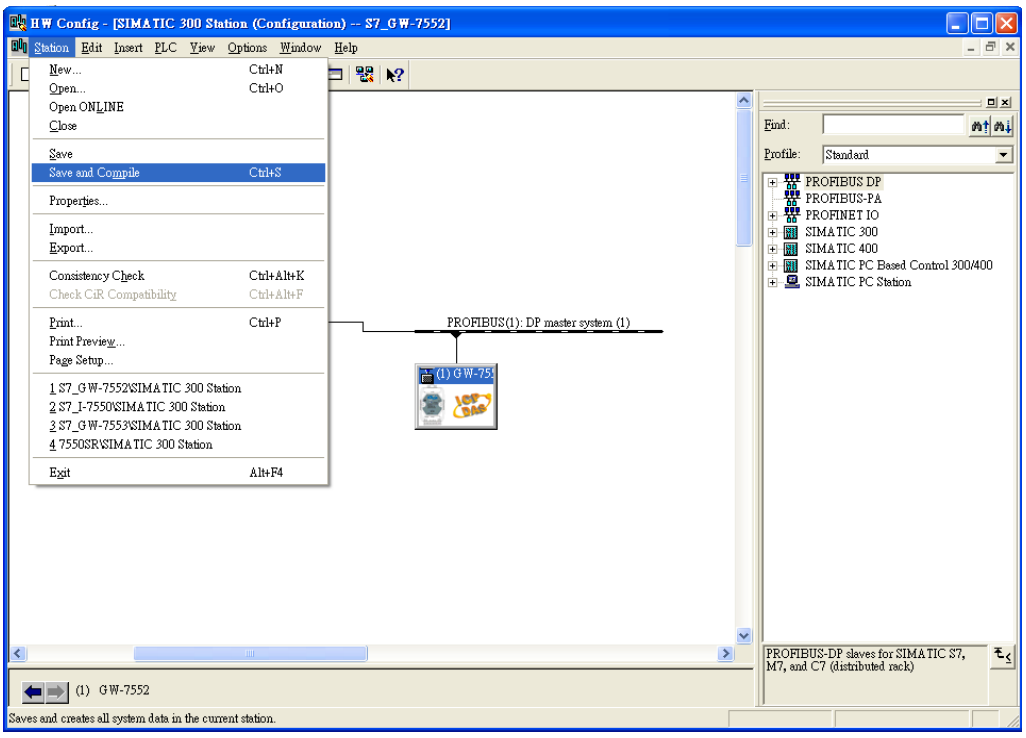
Modbus Slave Device ID: 1; Slave Address: 0 (Protocol address (base 0))

Module Type: Read AI, click ok.

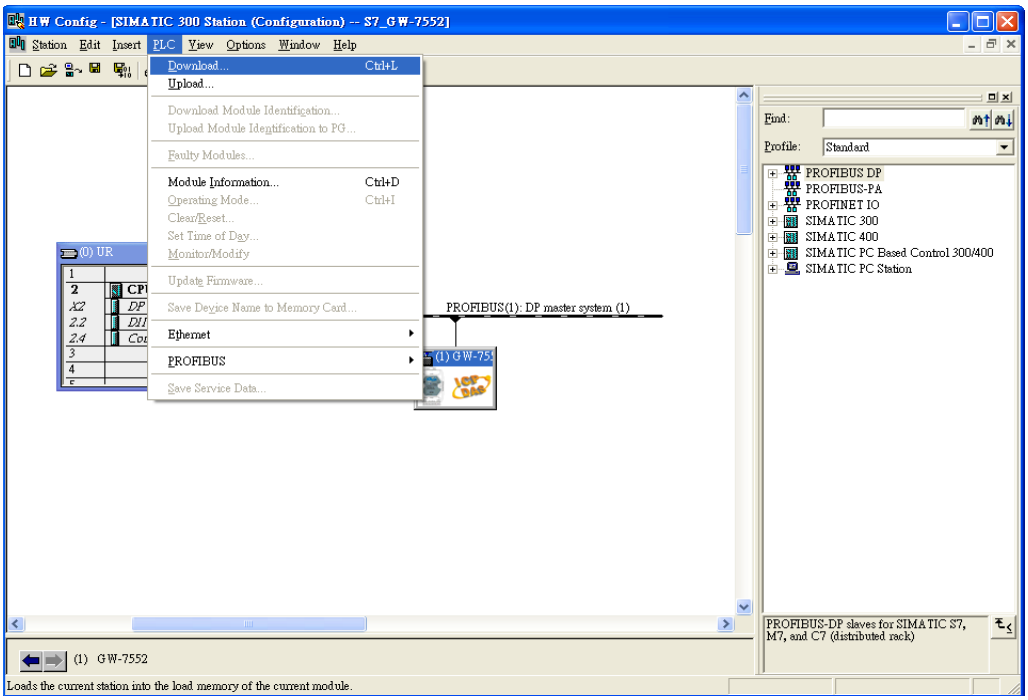


Step 3: Download the HW settings into SIMATIC PLC

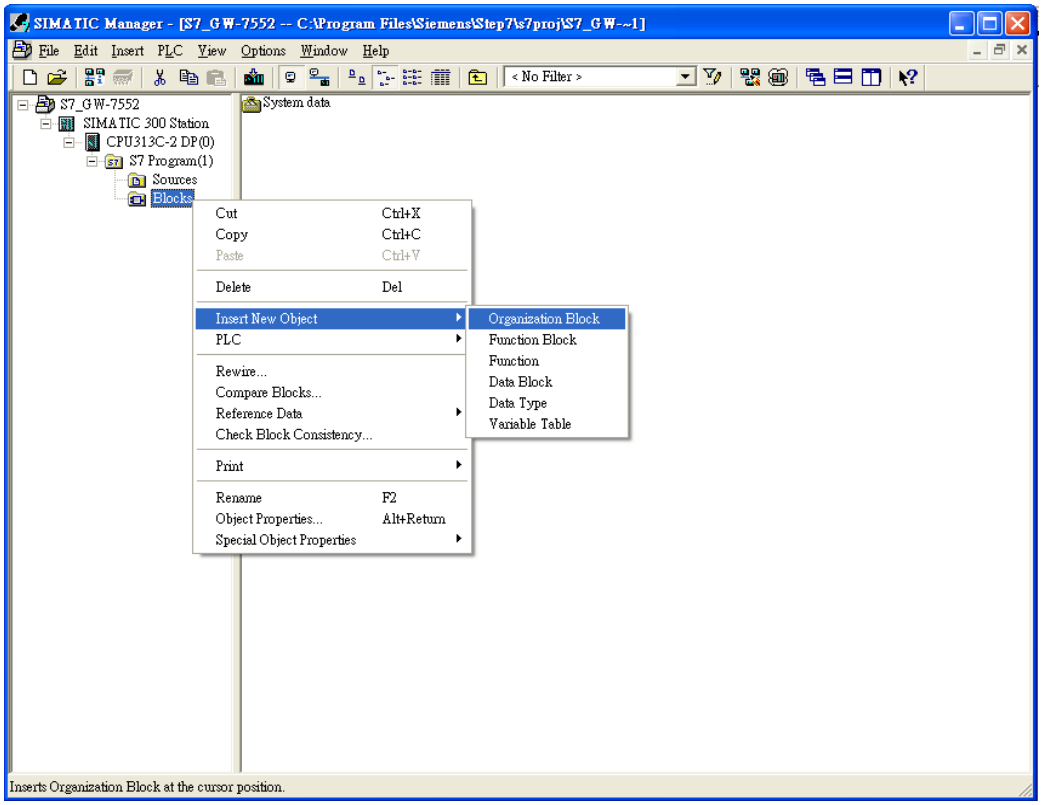
1. Save and Compile

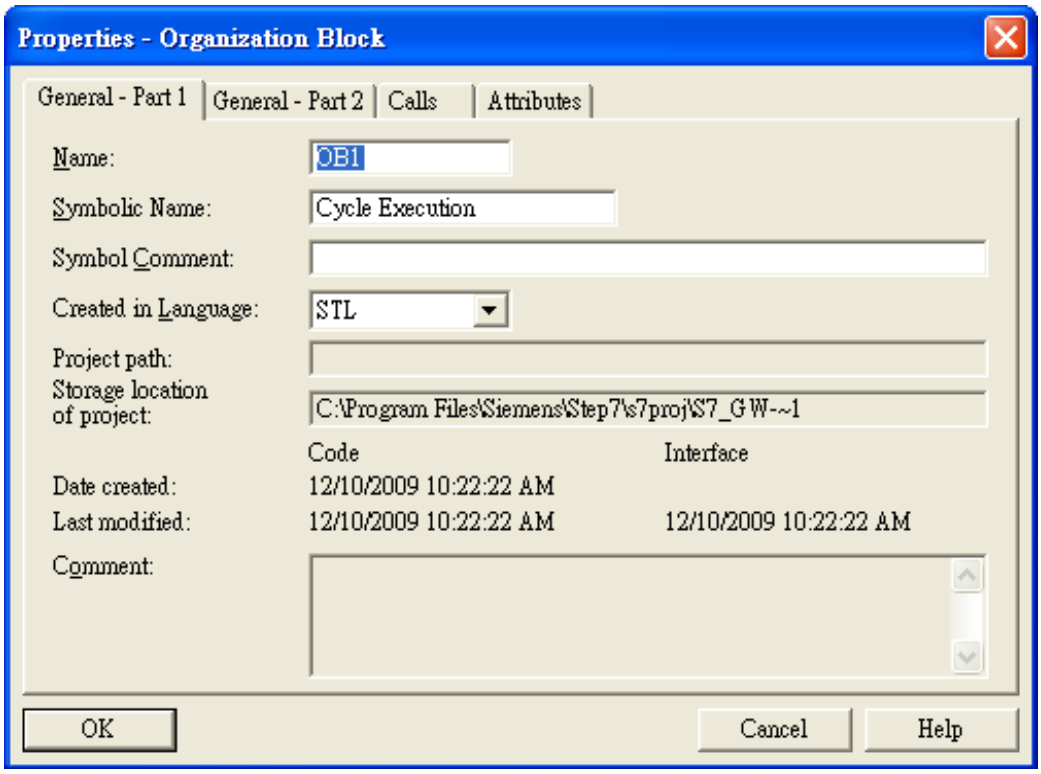


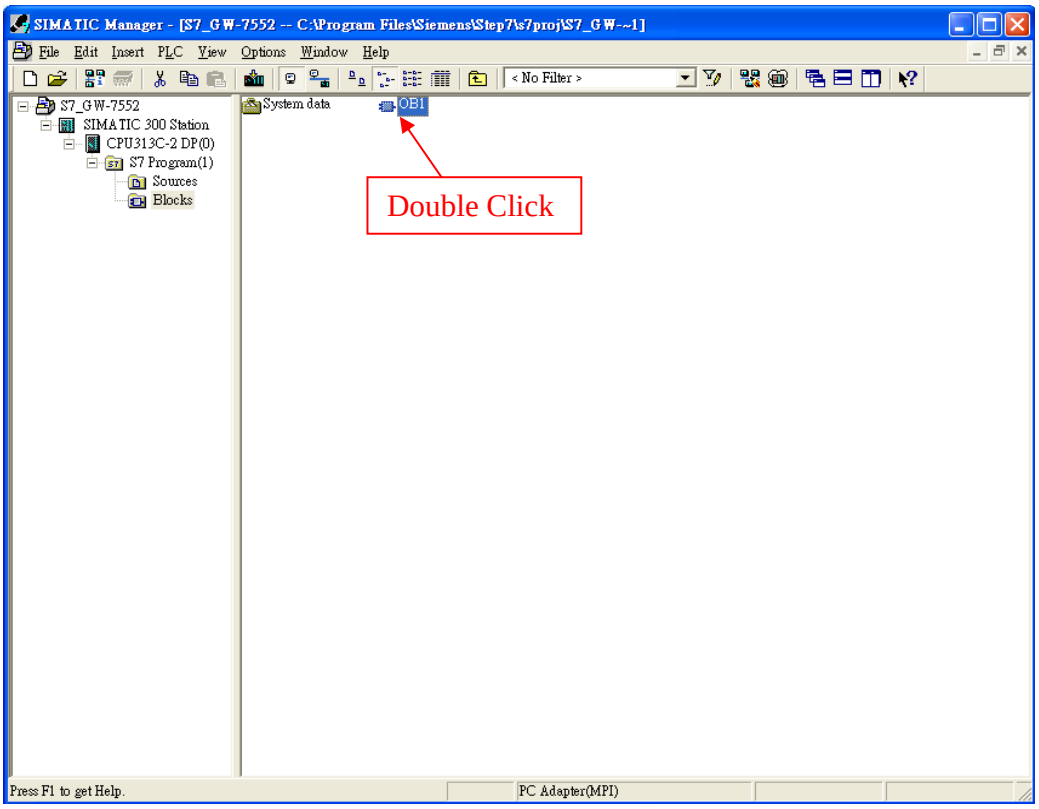
2. HW settings into SIMATIC PLC



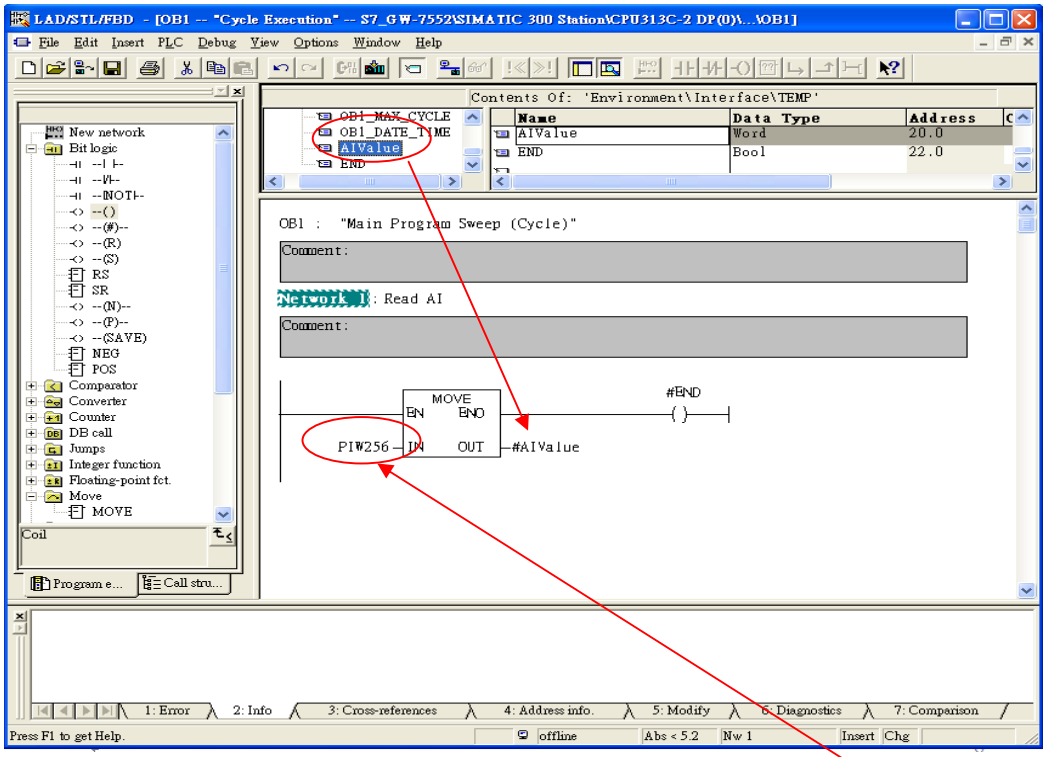
Step 4: Insert a new Organization Block (OB1)

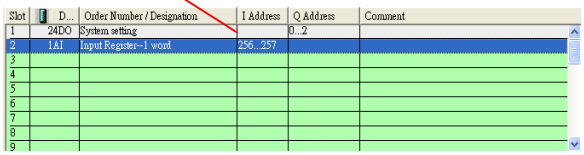



Properties - Organization Block
General - Part 1
General - Part 2
Calls
Attributes
Name:
OB1
Symbolic Name:
Cycle Execution
Symbol Comment:
Created in Language:
STL
Project path:
Storage location of project:
C:\Program Files\Siemens\Step7\s7proj\S7_GW~1
Code
Interface
Date created:
12/10/2009 10:22:22 AM
Last modified:
12/10/2009 10:22:22 AM
12/10/2009 10:22:22 AM
Comment:
OK
Cancel
Help

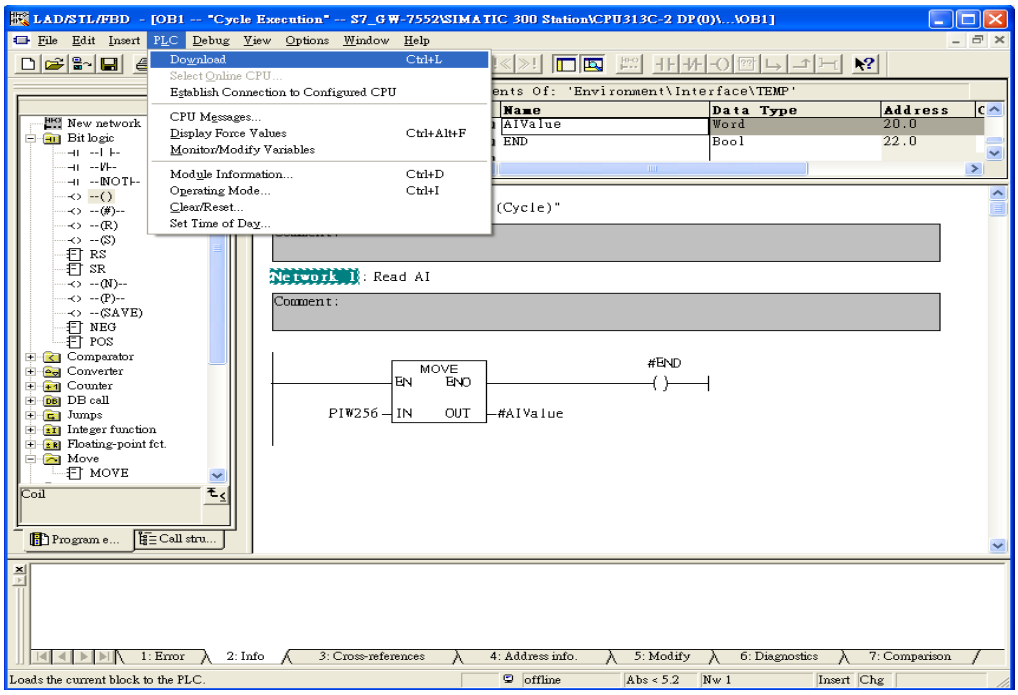

SIMATIC Manager - [S7_GW-7552 -- C:\Program Files\Siemens\Step7\s7proj\S7_GW~1]
File Edit Insert PLC View Options Window Help
< No Filter >
S7_GW-7552
SIMATIC 300 Station
CPU313C-2 DP(0)
S7 Program(1)
Sources
Blocks
System data
OB1
Double Click
Press F1 to get Help.
PC Adapter(MPI)

Step 5: Edit OB1



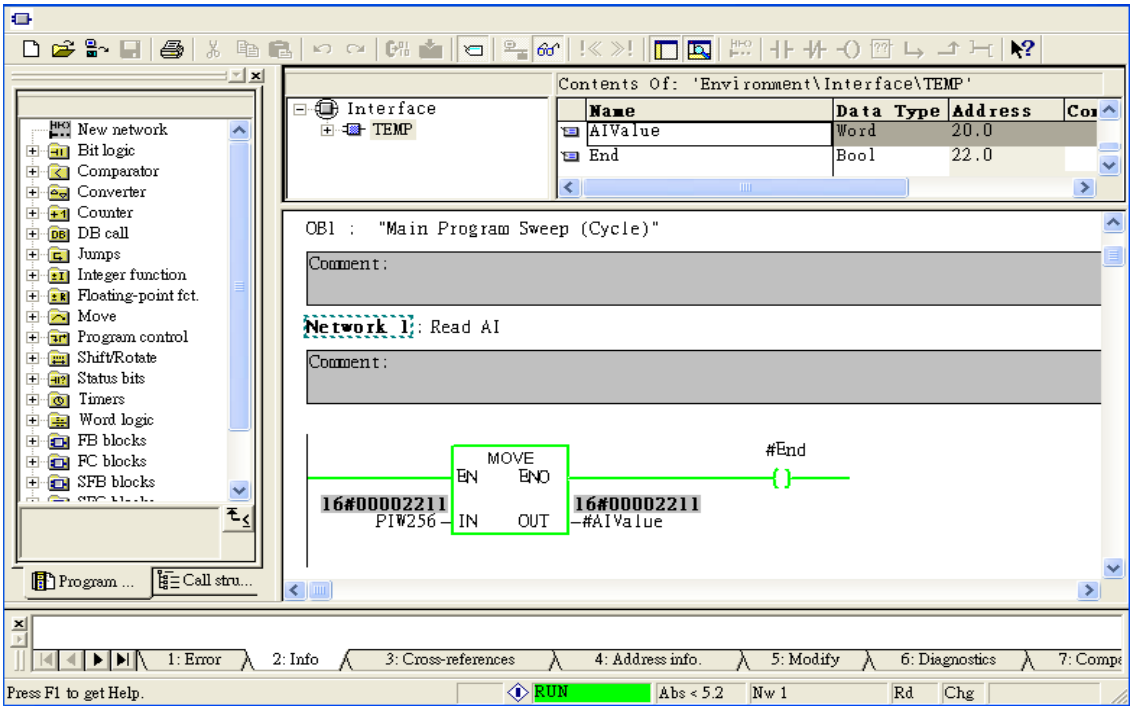


Step 6: Download the settings into SIMATIC PLC



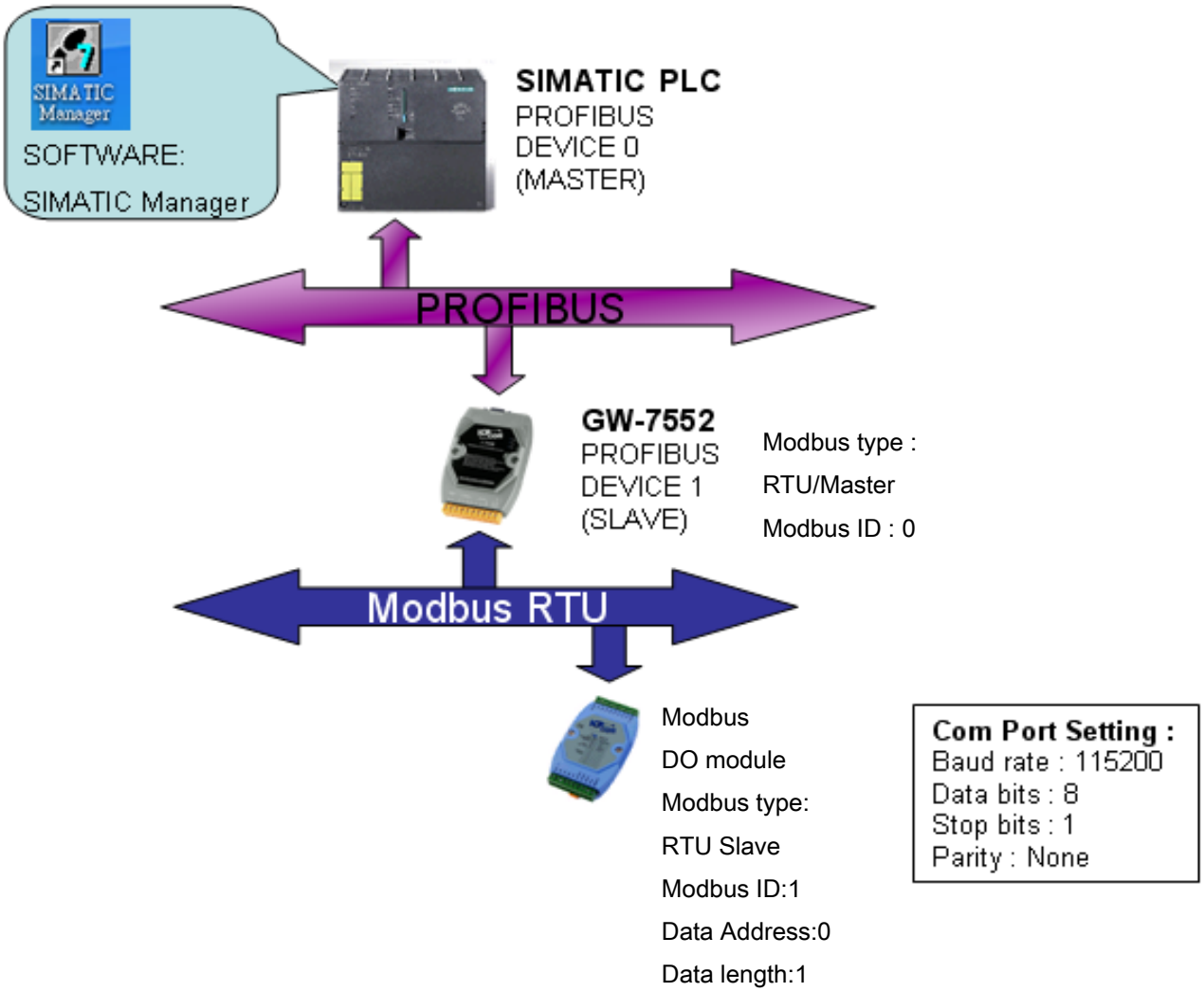
Step 7: Make sure the RUN LED of the GW-7552 is on and the switch of the GW-7552 is at Normal mode.

Now the setting procedure has been finished and the user can read the data of the Modbus AI module at address PIW256.



Example 2: PLC writes DO module data to GW-7552.

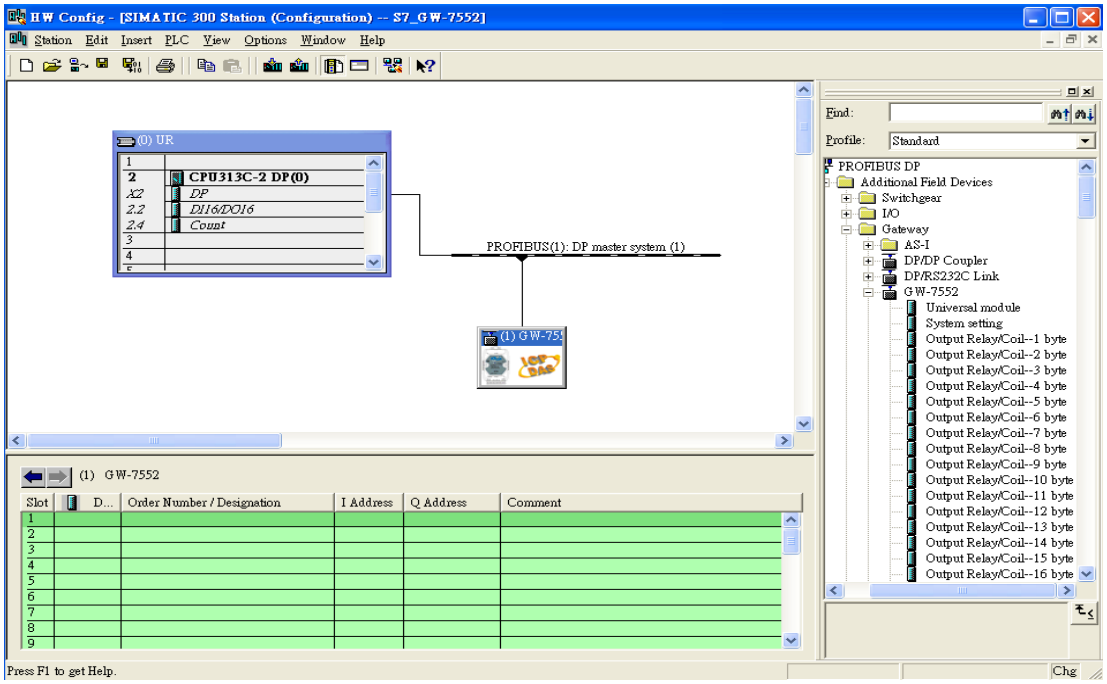
Write a Modbus RTU DO module (PROFIBUS Slave & Modbus RTU/Master)



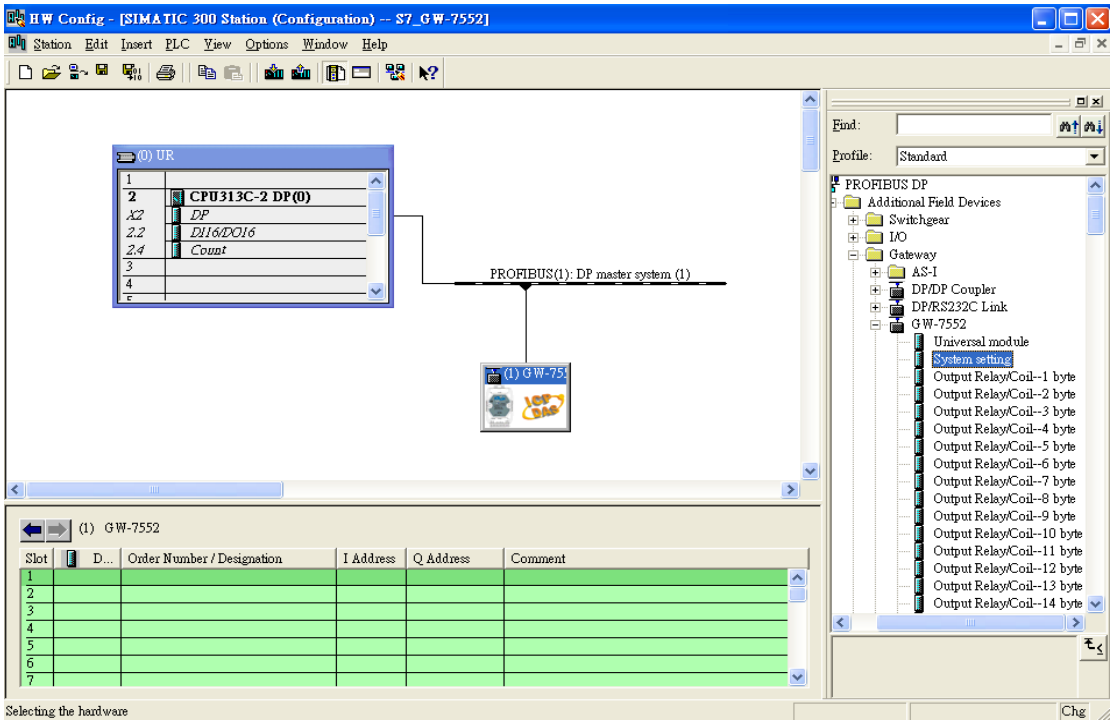
SIMATIC STEP7 Configuration:

Step 1: Setup the GW-7552 module

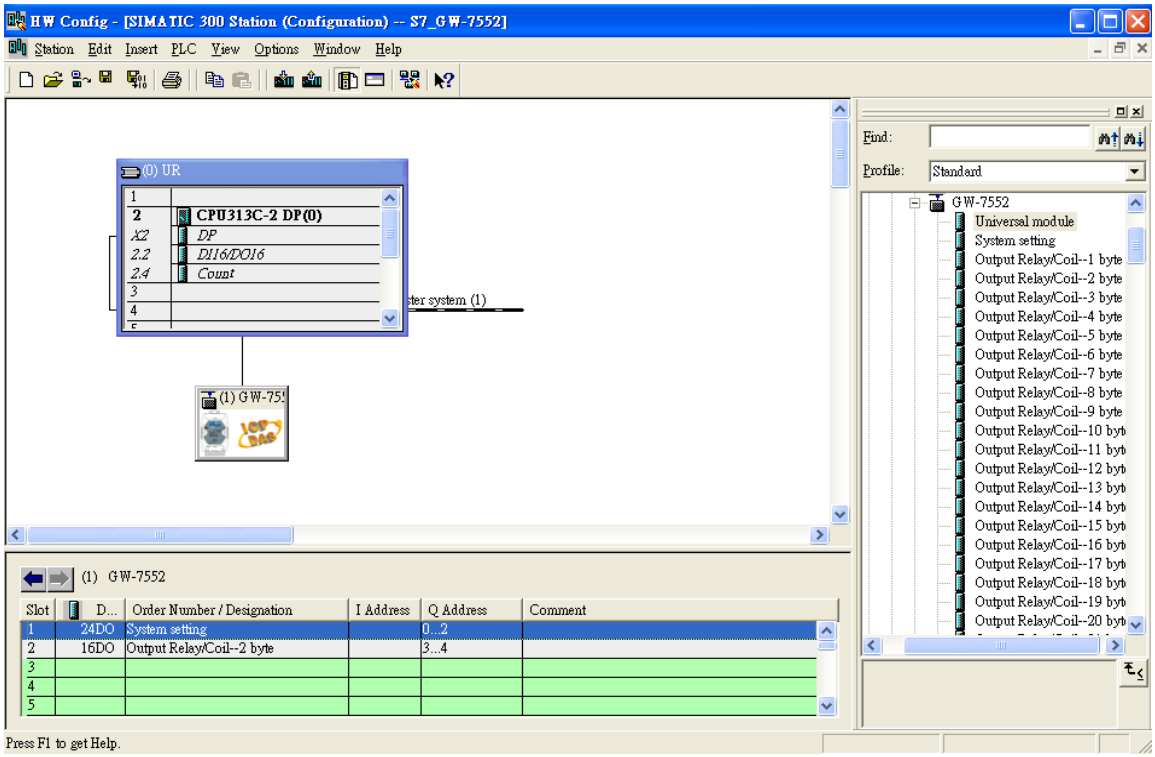
1. Select GW-7552 module



2. Add a System module



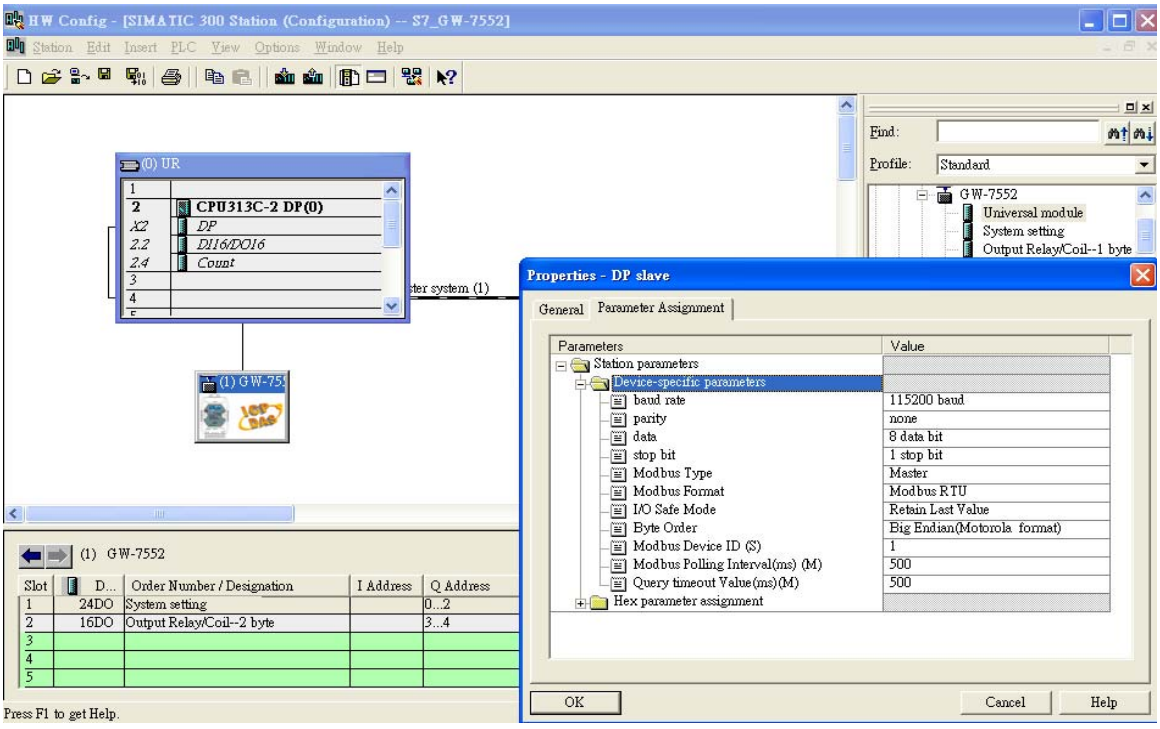
3. Add “Onput Relay/Coil—2 byte” module



Step 2: Setup the parameters of the GW-7552

1. Double click GW-7552 icon

2. Select “Parameter Assignment”

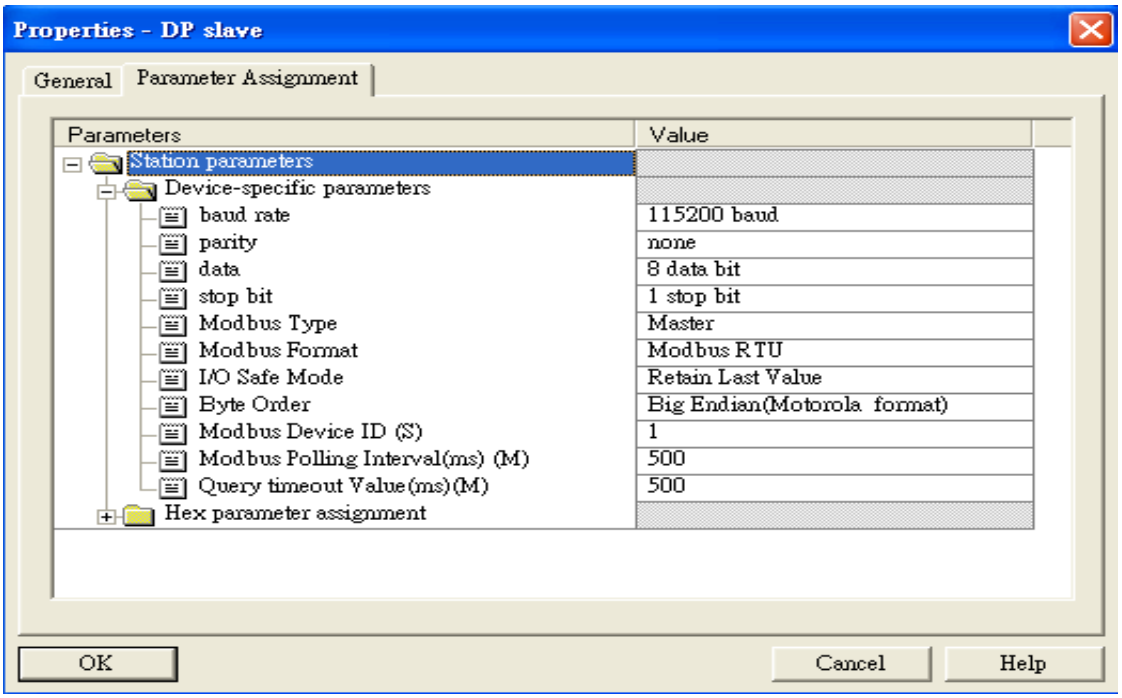


3. Set common parameters of the GW-7552

Common parameters➔

Baud rate: 115200; Parity: none; Data: 8 data bit; Stop bit: 1 stop bit; Modbus type: Master

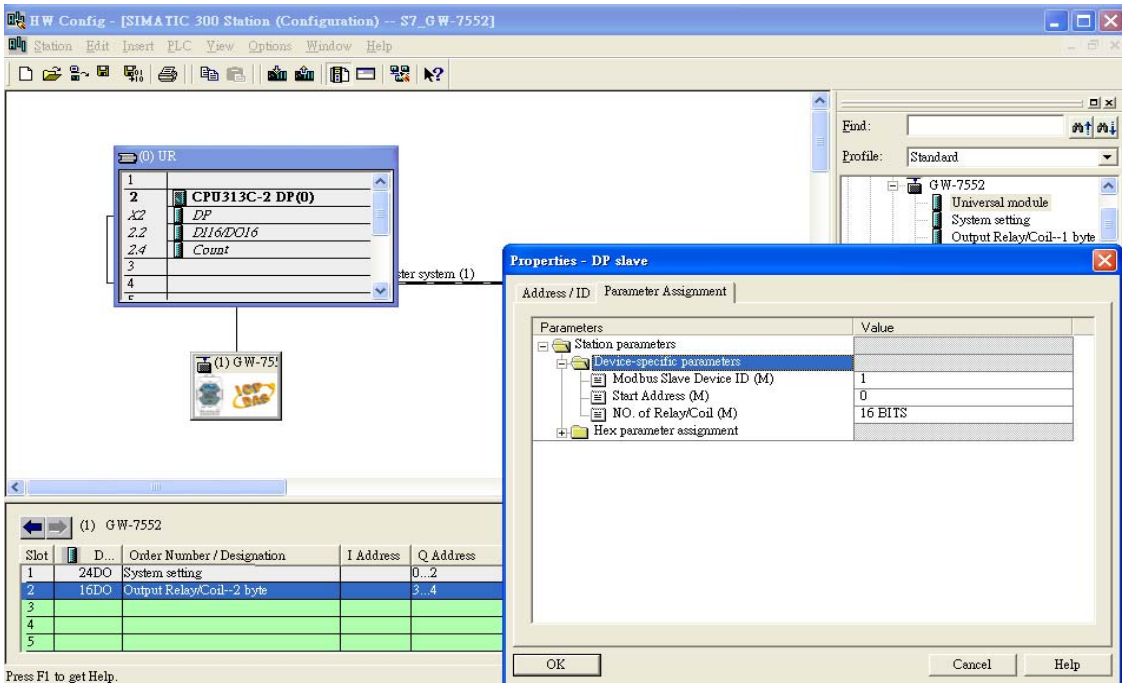
Modbus Format: Modbus RTU; Byte Order: Big Endian



4. Set module parameters of the GW-7552

(1)Double click “Output Relay/Coil—2 byte” module

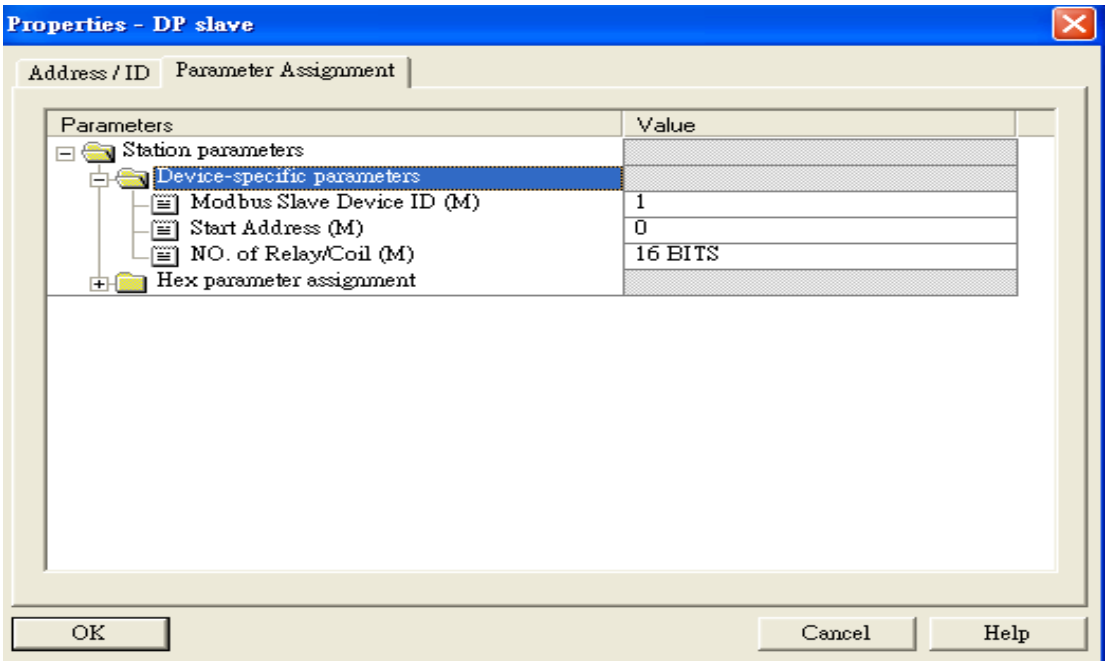
(2)Select “Parameter Assignment”



5. Setup “Output Relay/Coil—2 byte” module parameters

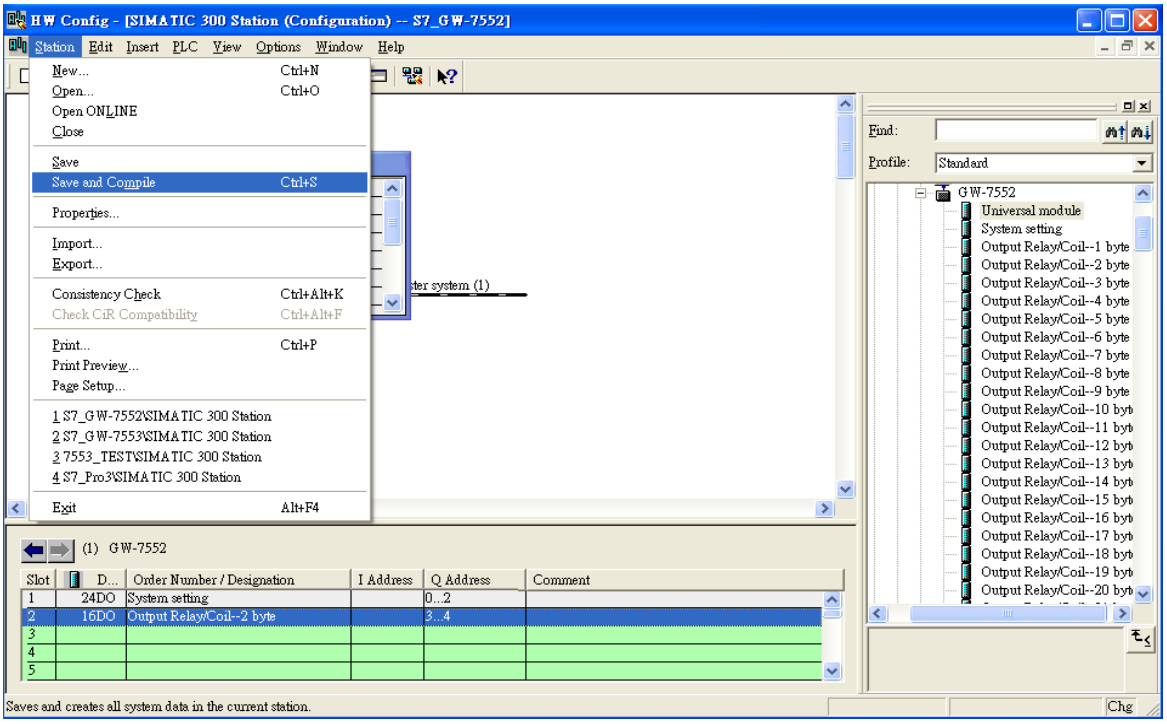
Module parameters➔

Modbus Slave Device ID: 1; Slave Address: 0 (Protocol address (base 0)), click ok.

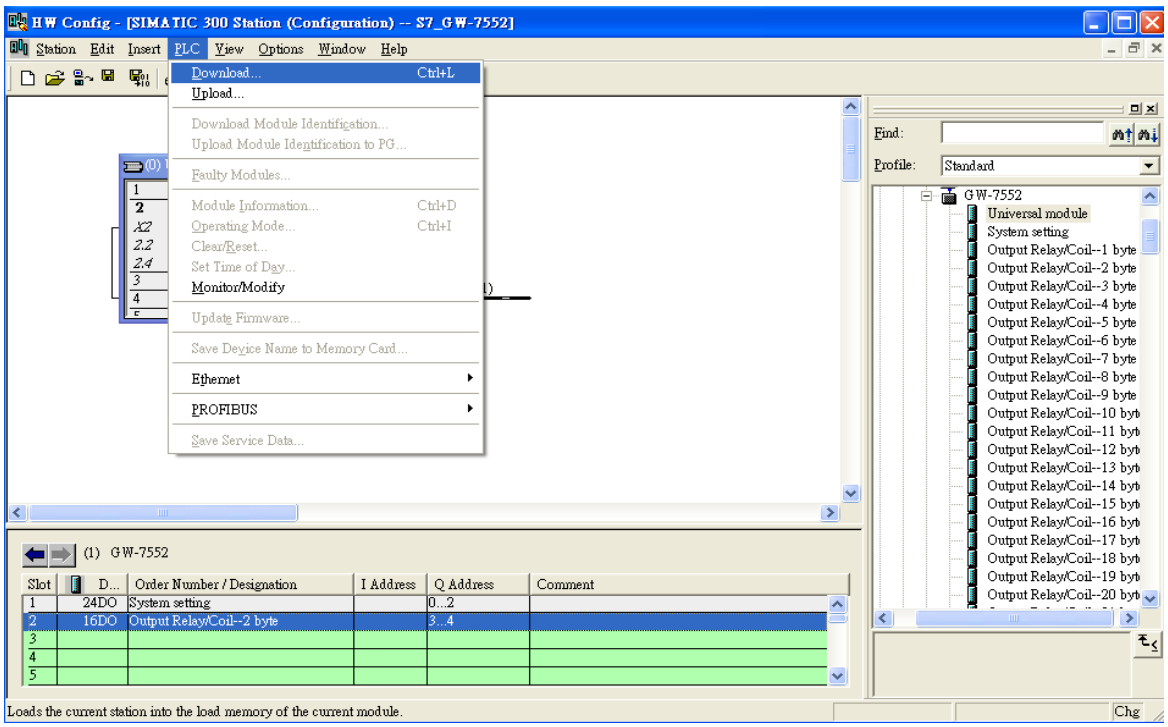


Step 3: Download the HW settings into SIMATIC PLC

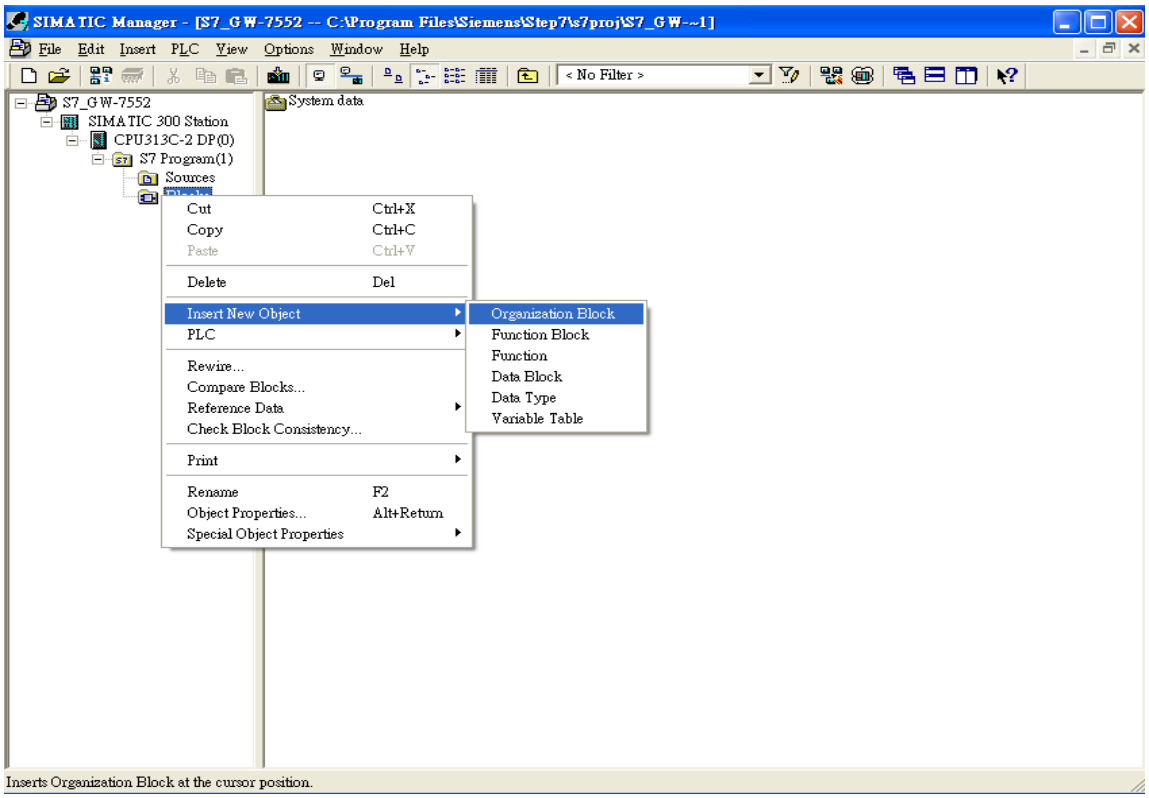
1. Save and Compile

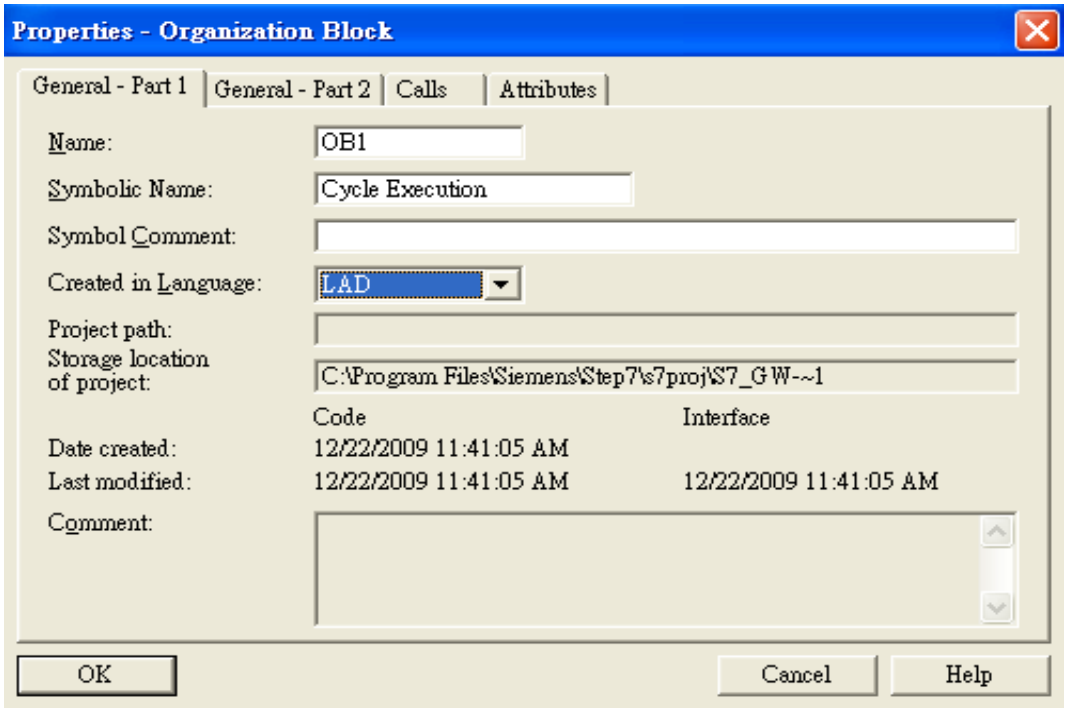


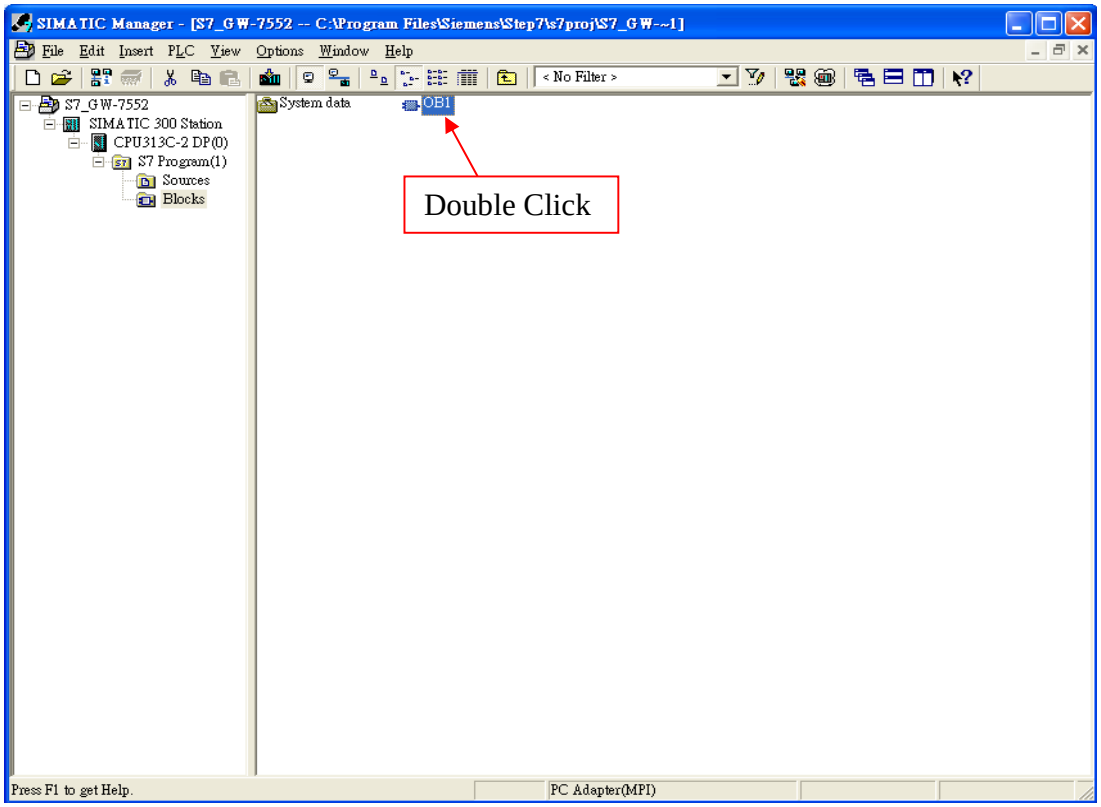
2. HW settings into SIMATIC PLC



Step 4: Insert a new Organization Block (OB1)

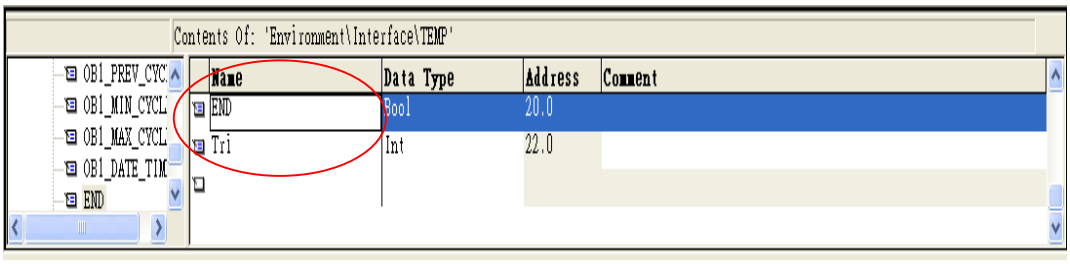



Properties - Organization Block
General - Part 1
General - Part 2
Calls
Attributes
Name:
OB1
Symbolic Name:
Cycle Execution
Symbol Comment:
Created in Language:
LAD
Project path:
Storage location of project:
C:\Program Files\Siemens\Step7\s7proj\S7_GW~1
Code
Interface
Date created:
12/22/2009 11:41:05 AM
Last modified:
12/22/2009 11:41:05 AM
12/22/2009 11:41:05 AM
Comment:
OK
Cancel
Help


SIMATIC Manager - [S7_GW-7552 -- C:\Program Files\Siemens\Step7\s7proj\S7_GW~1]
File Edit Insert PLC View Options Window Help
< No Filter >
S7_GW-7552
SIMATIC 300 Station
CPU313C-2 DP(0)
S7 Program(1)
Sources
Blocks
System data
OB1
Double Click
Press F1 to get Help.
PC Adapter(MPI)

Step 5: Edit OB1

Variables used in the example LD Program:

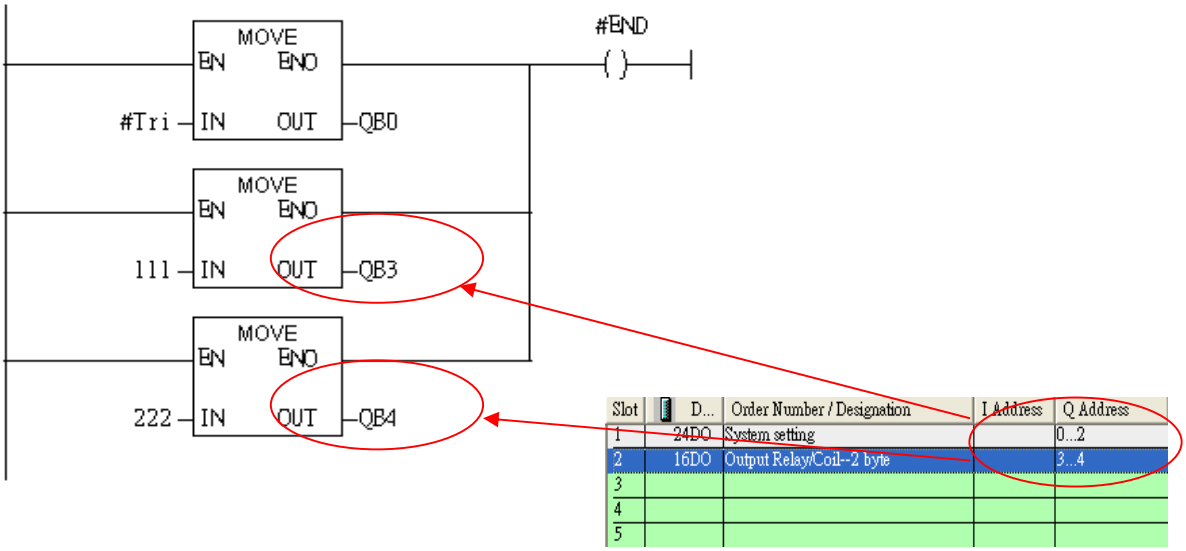


OB1 : "Main Program Sweep (Cycle)"

PROFIBUS slave
Modbus master

Network 1 : QB0 add "1: then PLC will send QB3 & QB4 out.

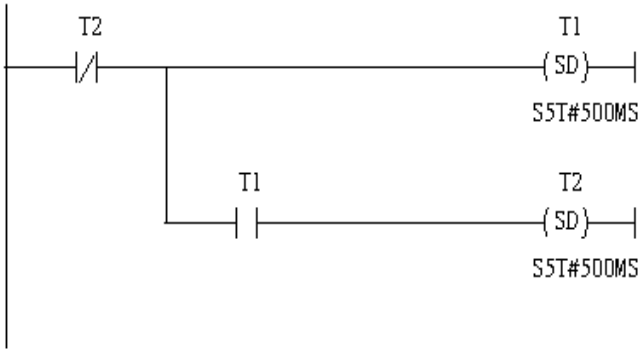
2 byte 16DO



Using T2 trigger T1 If counter (C1) add 1 and Tri will add 1 every 1s.

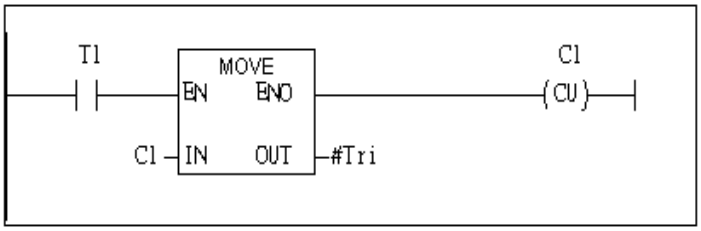
Network 2 : Timer T1 & T2

Using T2 trrigle T1



Network 3 : Counter C1

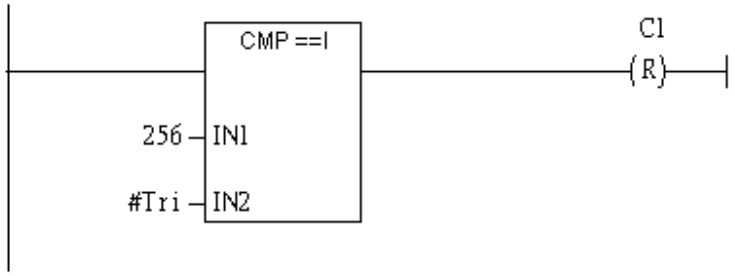
If counter(C1) add "1" and Tri will add "1" , too .



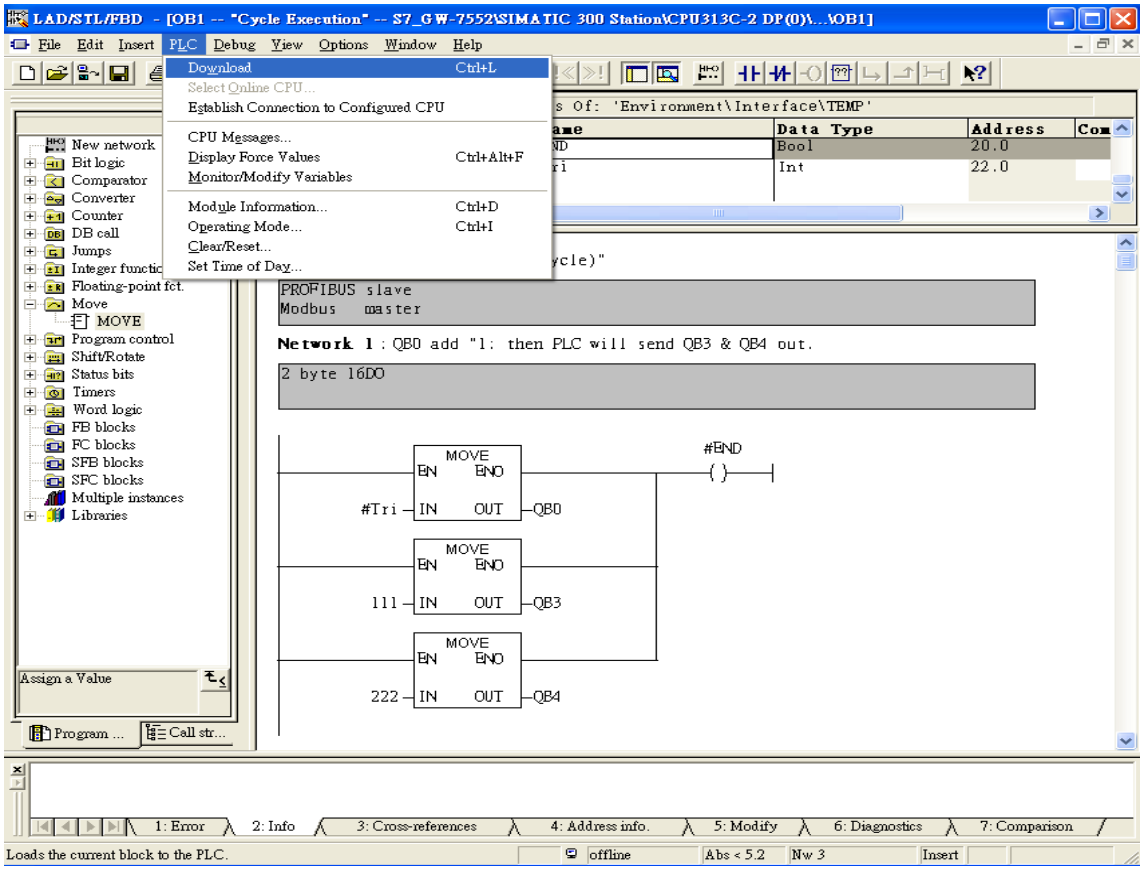
If Tri is equal to 256 then reset counter (C1).

Network 4 : Compare Tri & 256

If Tri is equal to 256 ,C1 will reset.



Step 6: Download the settings into SIMATIC PLC



Step 7: Make sure the RUN LED of the GW-7552 is on and the switch of the GW-7552 is at Normal mode.

Now the setting procedure has been finished and the user can write the data to the Modbus DO module at address QB3 & QB4.