How to use the XV Board within the WP-5238-CE7 PAC?

Download FAQ-010 Demo

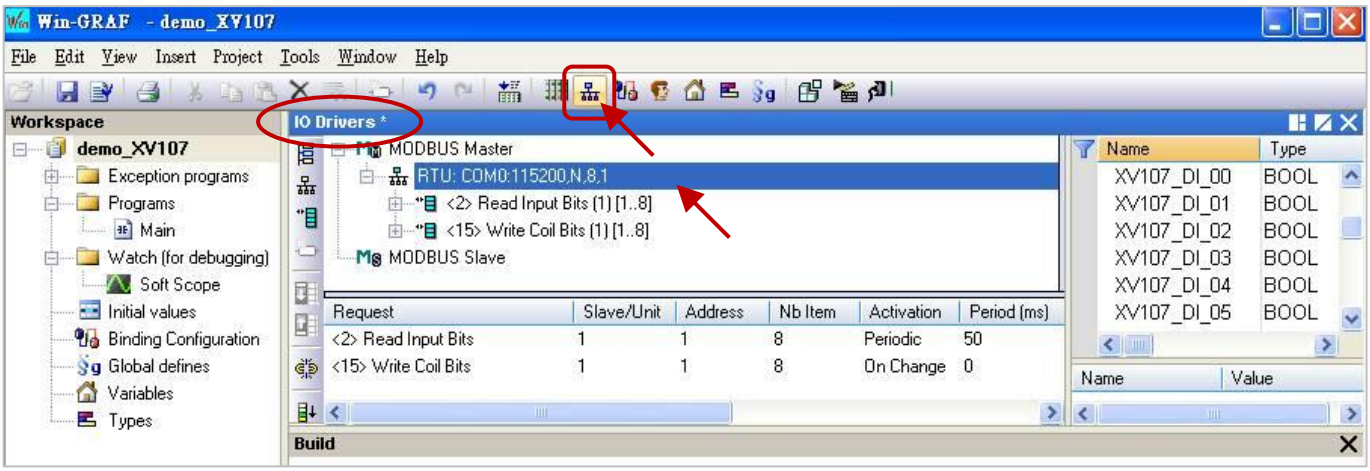
The XV board belongs to the Modbus Slave I/O board. Before using the I/O board, users must plug it into the WP-5238-CE7, and then enable the WP-5238-CE7 as a Modbus Master. Visit the XV board Selection Guide for more details: http://www.icpdas.com/en/product/guide+PACs+WinCE__PACs+WP-5000-CE7_WP-5000#967

The user can find all the following Win-GRAF demo projects on the CD-ROM (\Napdos\Win-GRAF\demo-project\) or download them on https://www.icpdas.com/en/download/show.php?num=712&nation=US&kind1=&model=&kw=win-graf

Demo	File Name	Description
XV107, XV107A	demo_XV107.zip	Read 8 DI, Write 8 DO
XV110	demo_XV110.zip	Read 16 DI
XV111, XV111A	demo_XV111.zip	Read 16 DO, Read 1 DO
XV116	demo_XV116.zip	Read 5 DI, Write 6 D0
XV308_1 XV308_2 XV308_3	demo_XV308_1.zip demo_XV308_2.zip demo_XV308_3.zip	1. Read 8 AI, Read 8 DI 2. Read 8 AI, Write 8 DO 3. Read 8 AI, Write 4 DO, Read 4 DI
XV310	demo_XV310.zip	Read 4 AI, Write 4 DO, Read 4 DI, Write 4 AO

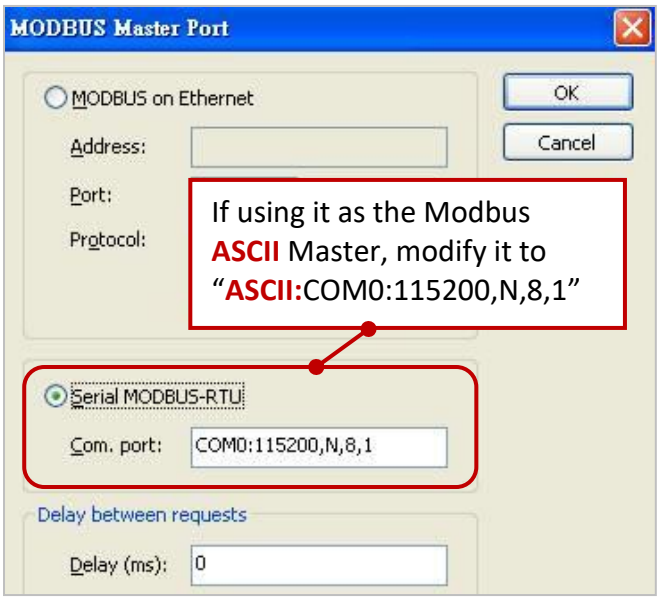
1.1. The Common Setting:

1. Mouse click the “Open Fieldbus Configuration” tool button to open the “I/O Drivers” window.



2. Double click on “RTU: COM:115200,N,8,1” to open the “MODBUS Master Port” window as the figure above.

Note: All the demo projects listed in above table enable the WP-5238-CE7 as a Modbus **RTU** Master device and set the "Com. Port" as **"COM0:115200,N,8,1”.**

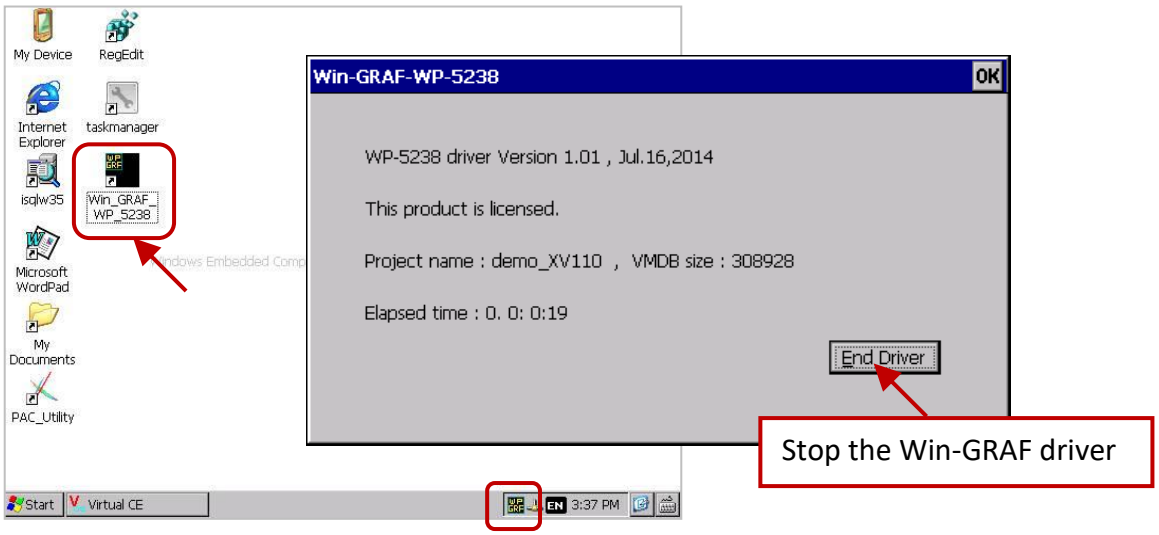


Configure the AI/AO channel

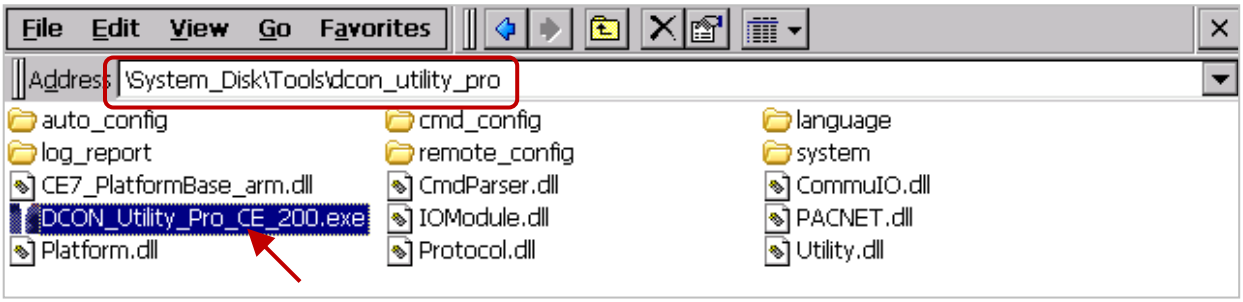
If you want to use the AI/AO channel of the XV Board (e.g., XV308, XV310) in the WP-5238-CE7. First, stop the Win-GRAF driver in the PAC and then configure each AI/AO channel by using "DCON_Utility_Pro_CE_200.exe".

Using the WP-5238 as an example:

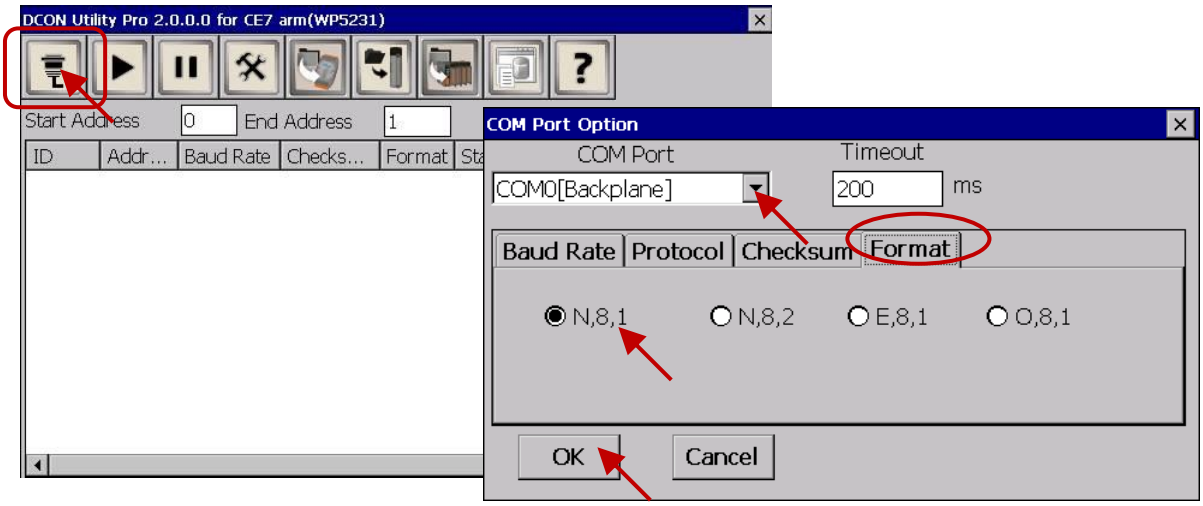
1. Click the "Win_GRAF_WP_5238" (or the small icon on the taskbar) to open the Win-GRAF driver window, and then click the "End Driver" button.



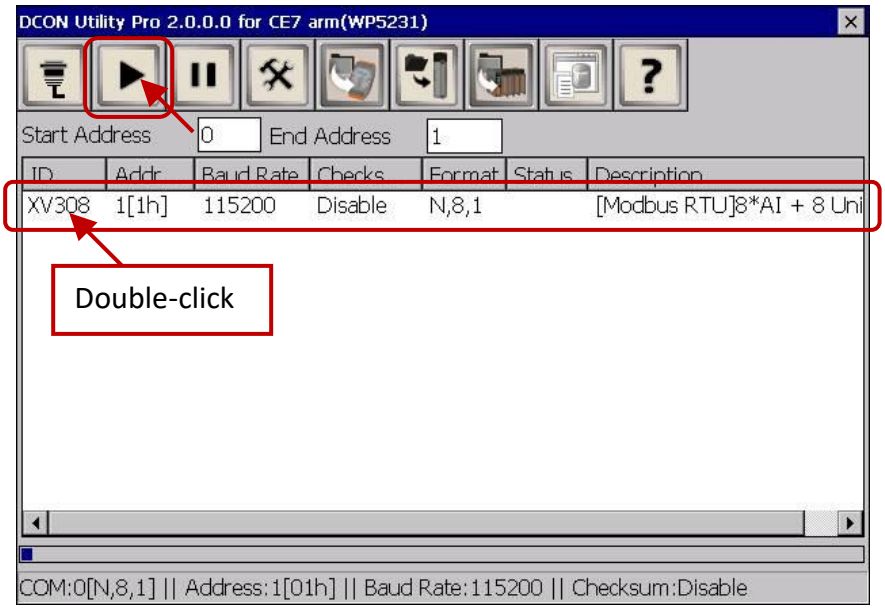
2. Click "My Device" on the desktop and then get into the path "\System_Disk\Tools\dcon_utility_pro" to run the "DCON_Utility_Pro_CE_200.exe".



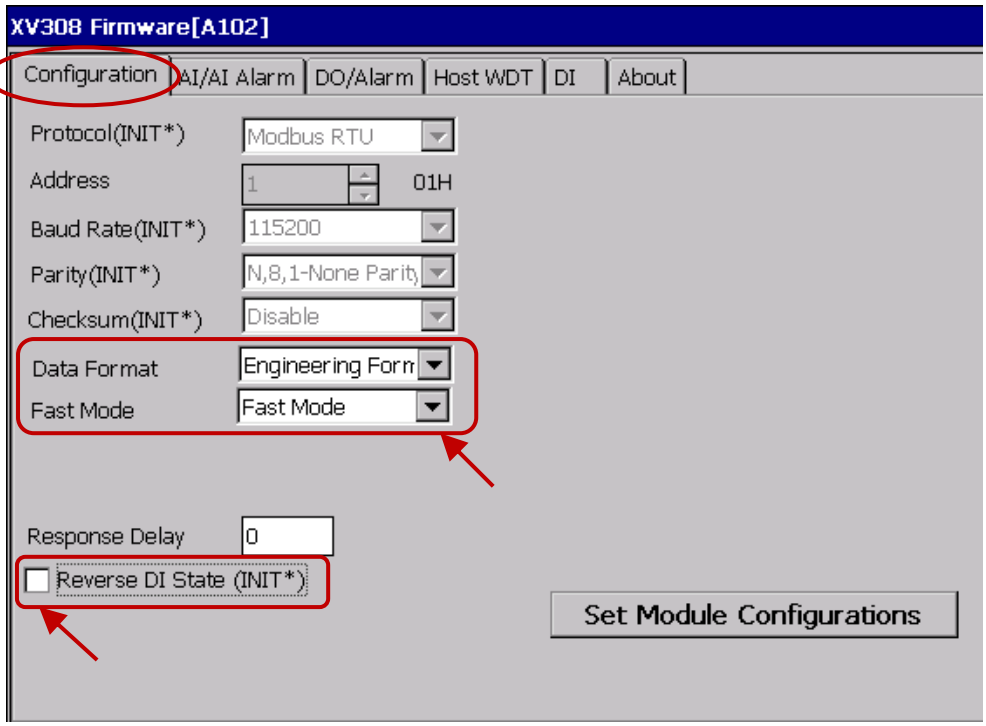
3. Click the COM Port button to set the "COM Port" as "COM0", set the "Baud Rate" as "115200" and set the "Format" as "N,8,1", and then click "OK".



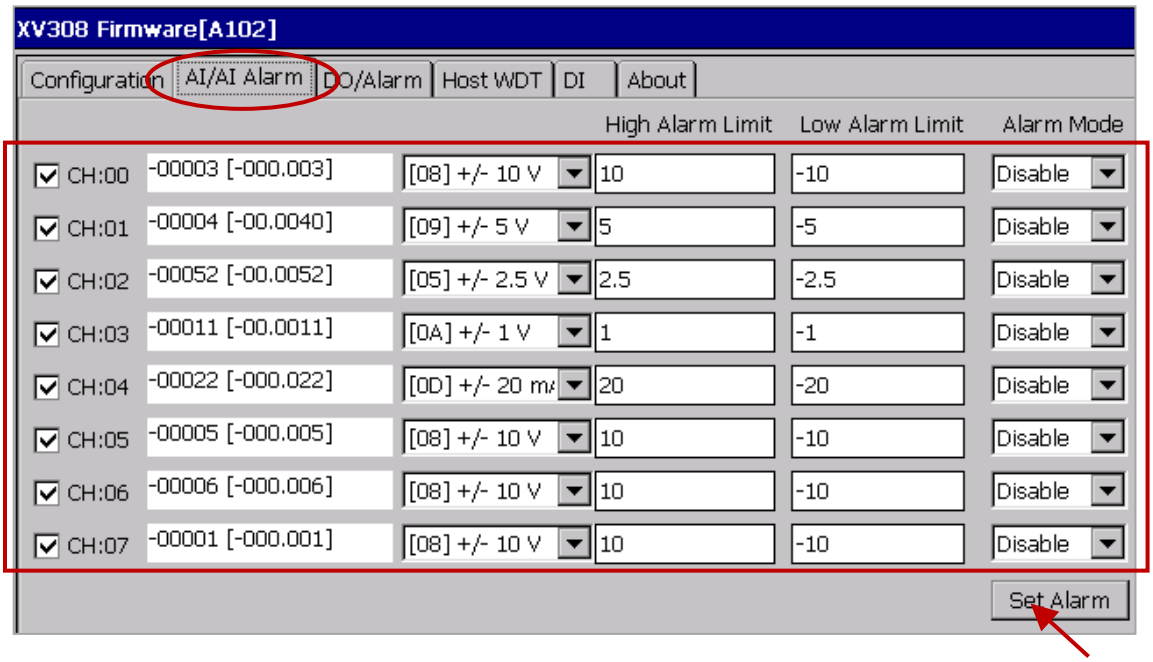
4. After clicking the Search (▶) button, the XV Board (e.g., XV308) will show in the window. Then, double click this item to get into the setting window.



5. In the "Configuration" tab, set the "Data Format" as "Engineering Format" (recommended setting), set the "Fast Mode" as "Fast Mode" and uncheck the "Reverse DI State (INIT*)".



6. In the "AI/AI Alarm" tab, to configure the proper ranges and values for each AI channel, and remenmber to select any AI channel (e.g.,"CH:00") you want to use, then click the "Set Alarm" button.



XV308:

Type Code	Range	Data Format	Minimum	Maximum
05	+/-2.5 V	Engineering	-25000	+25000
		Hexadecimal	8000h	7FFFh
06	+/-20 mA	Engineering	-20000	+20000
		Hexadecimal	8000h	7FFFh
07	+4 mA ~ +20 mA	Engineering	+4000	+20000
		Hexadecimal	0000h	FFFFh
08	+/-10 V	Engineering	-10000	+10000
		Hexadecimal	8000h	7FFFh
09	+/-5 V	Engineering	-5000	+5000
		Hexadecimal	8000h	7FFFh
0A	+/-1 V	Engineering	-10000	+10000
		Hexadecimal	8000h	7FFFh
0D	+/-20 mA	Engineering	-20000	+20000
		Hexadecimal	8000h	7FFFh
1A	0 mA ~ +20 mA	Engineering	0	+20000
		Hexadecimal	0000h	FFFFh

Note:

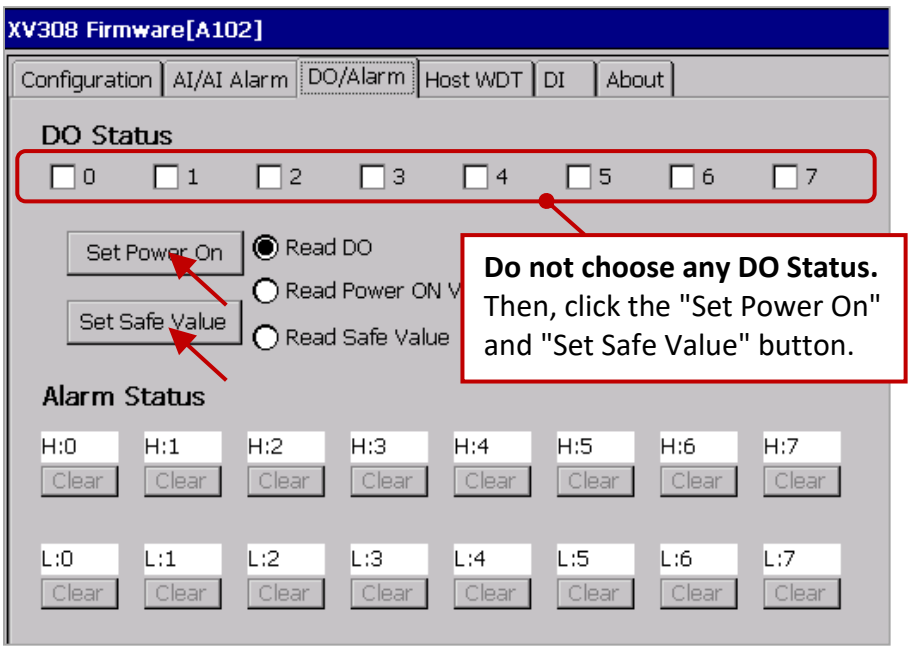
1. For easy to use, recommended to use the data format - "Engineering". (E.g., "+/-2.5 V" will show as "-25000 to +25000" and "+4 mA to +20 mA" will show as "+4000 to +20000")

2. When using these "Type Code" - 06, 07, 0D, 1A, please check if the position of eight hardware jumpers on the XV board are correct.

Refer to the data sheet:
http://www.icpdas.com/web/product/download/io_and_unit/local_io/xv_board/document/data_sheet/XV308.pdf

Note:

When using the XV308, you need to click the "Set Power On" and "Set Safe Value" button (do not choose any DO Status) in the "DO/Alarm" tab.



7. Finally, back to the "Configuration" tab and click the "Set Module Configuration" button (Step5) to finish the AI/AO configuration, and then close the "DCON_Utility_Pro_CE_200.exe". In addition, click the "Win_GRAF_WP_5238" on the desktop to run the Win-GRAF driver (like Step 1).

XV310 - Analog Input:

Follow the similar way like the steps above to configure the AI/AO of the XV310.

Type Code	Range	Data Format	Minimum	Maximum
05	+/-2.5 V	Engineering	-25000	+25000
		Hexadecimal	8000h	7FFFh
06	+/-20 mA	Engineering	-20000	+20000
		Hexadecimal	8000h	7FFFh
07	+4 mA ~ +20 mA	Engineering	+4000	+20000
		Hexadecimal	0000h	FFFFh
08	+/-10 V	Engineering	-10000	+10000
		Hexadecimal	8000h	7FFFh
09	+/-5 V	Engineering	-5000	+5000
		Hexadecimal	8000h	7FFFh
0A	+/-1 V	Engineering	-10000	+10000
		Hexadecimal	8000h	7FFFh
0D	+/-20 mA	Engineering	-20000	+20000
		Hexadecimal	8000h	7FFFh
1A	0 mA ~ +20 mA	Engineering	0	+20000
		Hexadecimal	0000h	FFFFh

Note:

1. For easy to use, recommended to use the data format - "Engineering". (E.g., "+/-2.5 V" will show as "-25000 to +25000" and "+4 mA to +20 mA" will show as "+4000 to +20000")
2. When using these "Type Code" - 0, 1, 06, 07, 0D, 1A, please check if the position of eight hardware jumpers on the XV board are correct.

Refer to the data sheet:
http://www.icpdas.com/web/product/download/io_and_unit/local_io/xv_board/document/data_sheet/XV310.pdf

XV310 - Analog Output:

Type Code	Range	Data Format	Minimum	Maximum
0	0 mA ~ +20 mA	Engineering	0	+20000
		Hexadecimal	0000h	FFFFh
1	+4 mA ~+20 mA	Engineering	+4000	+20000
		Hexadecimal	0000h	FFFFh
2	0V ~ +10 V	Engineering	0	+10000
		Hexadecimal	0000h	FFFFh
3	+/-10 V	Engineering	-10000	+10000
		Hexadecimal	8000h	7FFFh
4	0 V ~ +5 V	Engineering	0	+5000
		Hexadecimal	0000h	FFFFh
5	+/-5 V	Engineering	-5000	+5000
		Hexadecimal	8000h	7FFFh

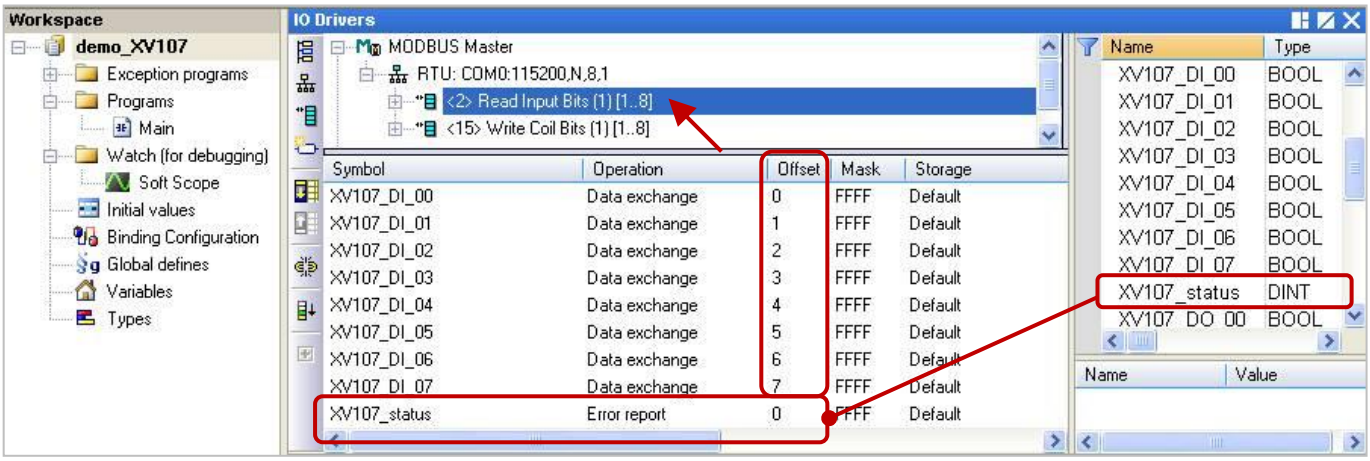
1.1.1. Connecting the XV107/ XV107A (8 DI, 8 DO)

The XV107/XV107A is an 8-channel digital input and 8-channel digital output board. This section provides a Win-GRAF demo project - "demo_XV107.zip". First, go to Section 1.1 for the information of the XV Board before using it.

Demo description:

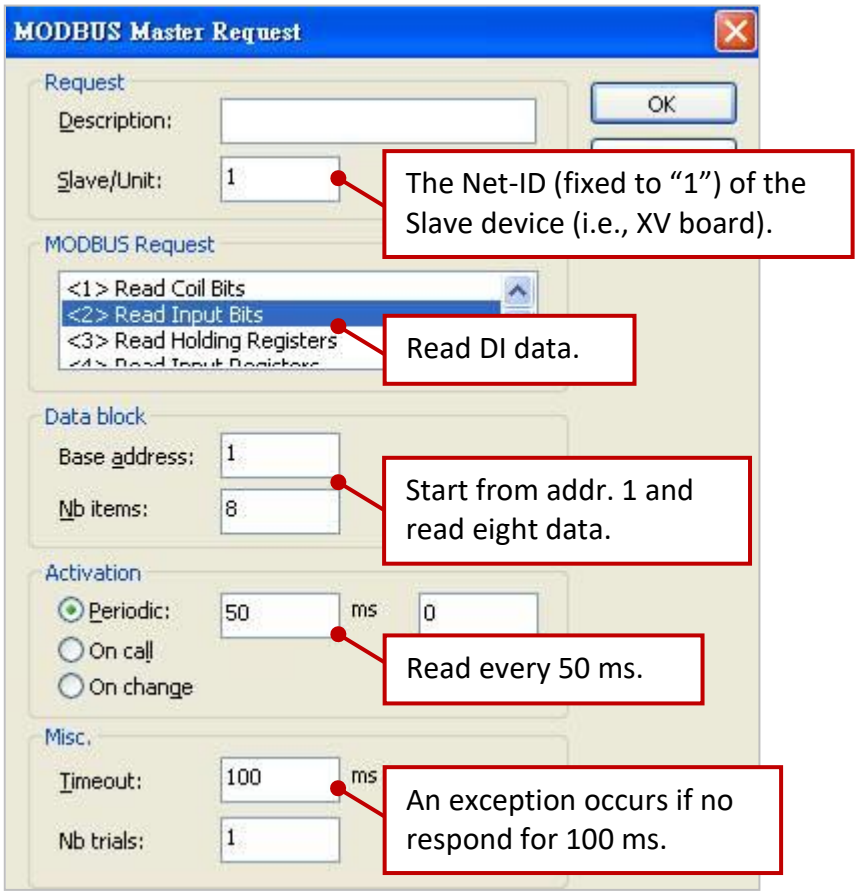
This demo added two data blocks. One is used to read 8 DI data and the other is used to write 8 DO data.

1. Mouse double click the 1st data block (i.e., <2> Read Input Bits) to open the setting window.

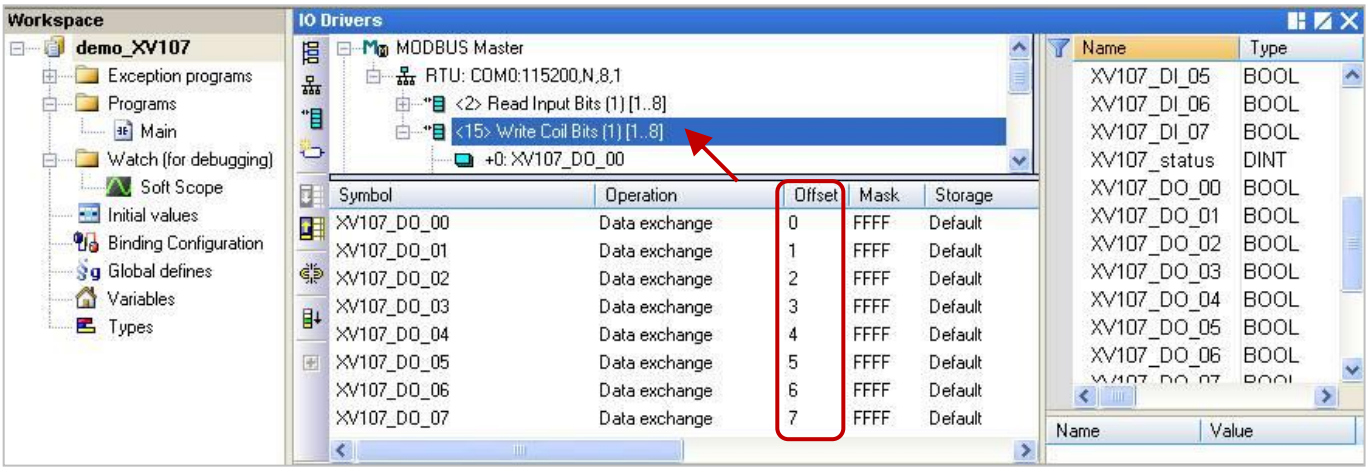


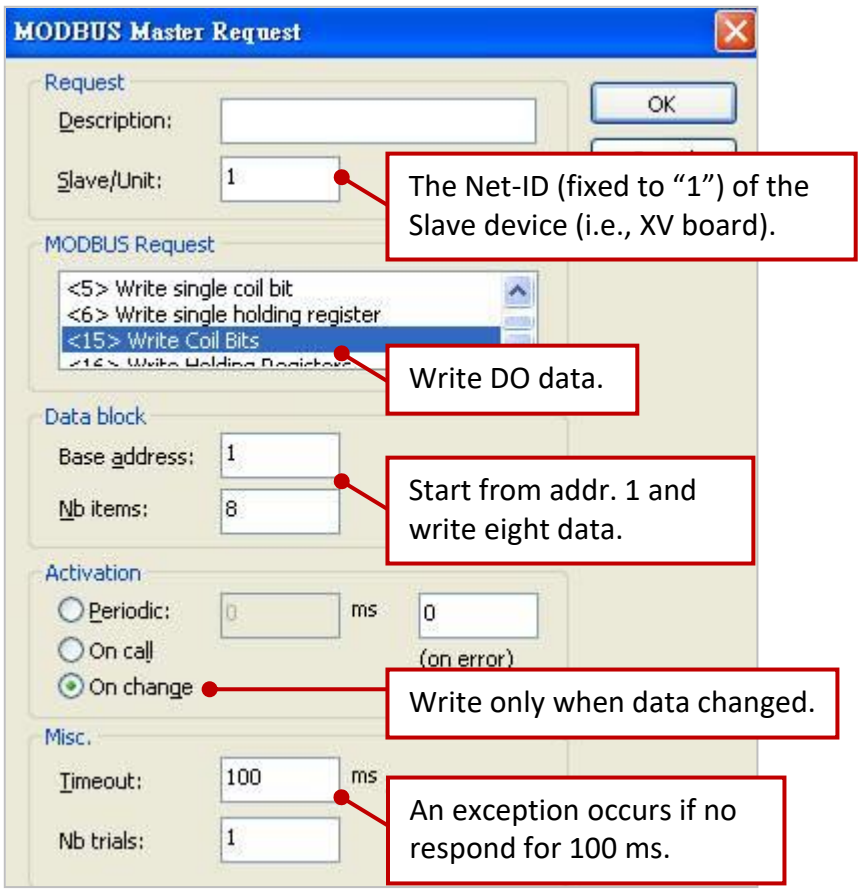
Note: (See the figure above)

The "Offset" value starts at "0" and the Modbus address of variable is equal to the "Offset" value plus 1 (Base address). Moreover, if you set the "Operation" as "**Error report**", the "Offset" value for the mapping variable (Date Type: DINT) must set to "**0**".



2. Mouse double click the 2nd data block (i.e., <15> Write Coil Bits) to open the setting window.



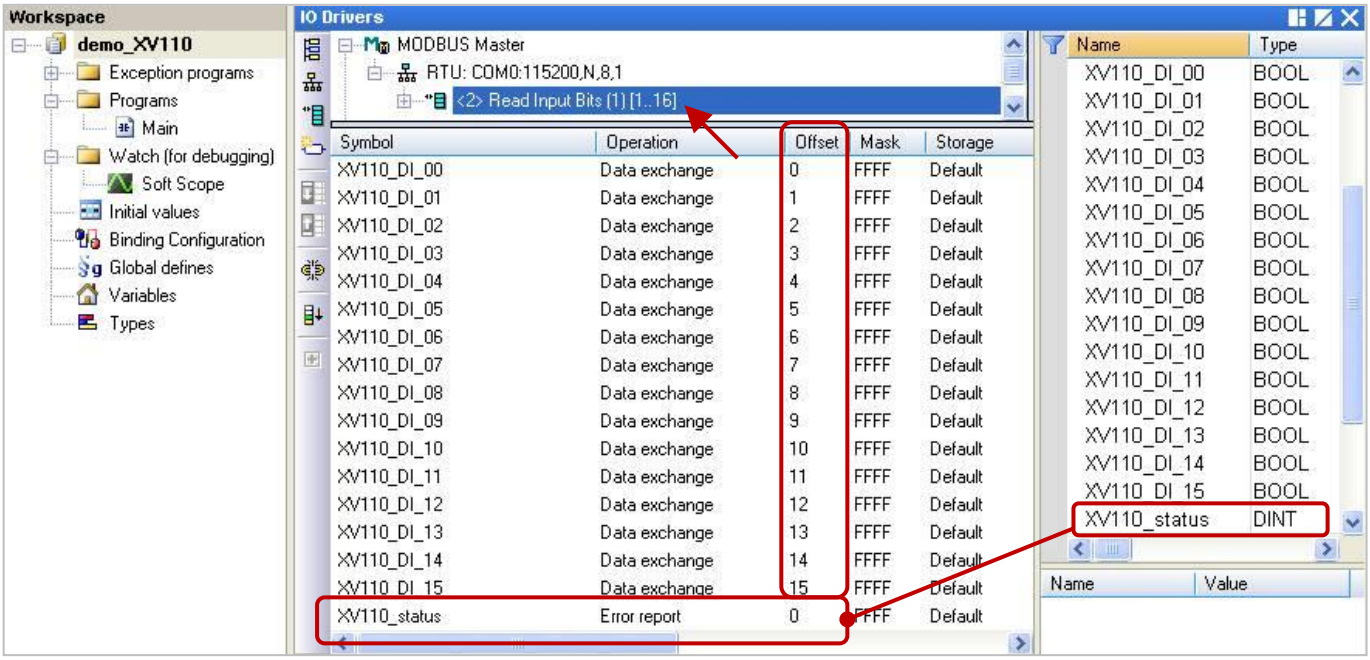


1.1.2. Connecting the XV110 (16 DI)

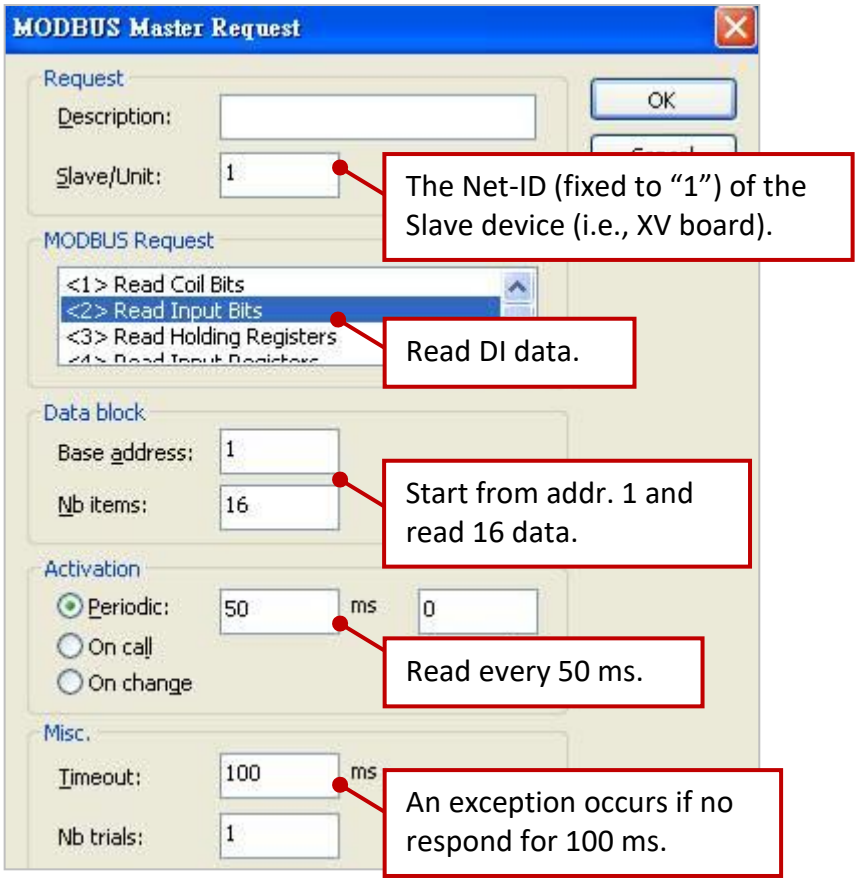
The XV110 is a 16-channel digital input board. This section provides a Win-GRAF demo project - "demo_XV110.zip". First, go to Section 1.1 for the information of the XV Board before using it.

Demo description: This demo added one data block that used to write 16 DI data.

1. Mouse double click "<2> Read Input Bits" to open the setting window.



Note: (See the figure above)
The "Offset" value starts at "0" and the Modbus address of variable is equal to the "Offset" value plus 1 (Base address). Moreover, if you set the "Operation" as "**Error report**", the "Offset" value for the mapping variable (Date Type: DINT) must set to "**0**".

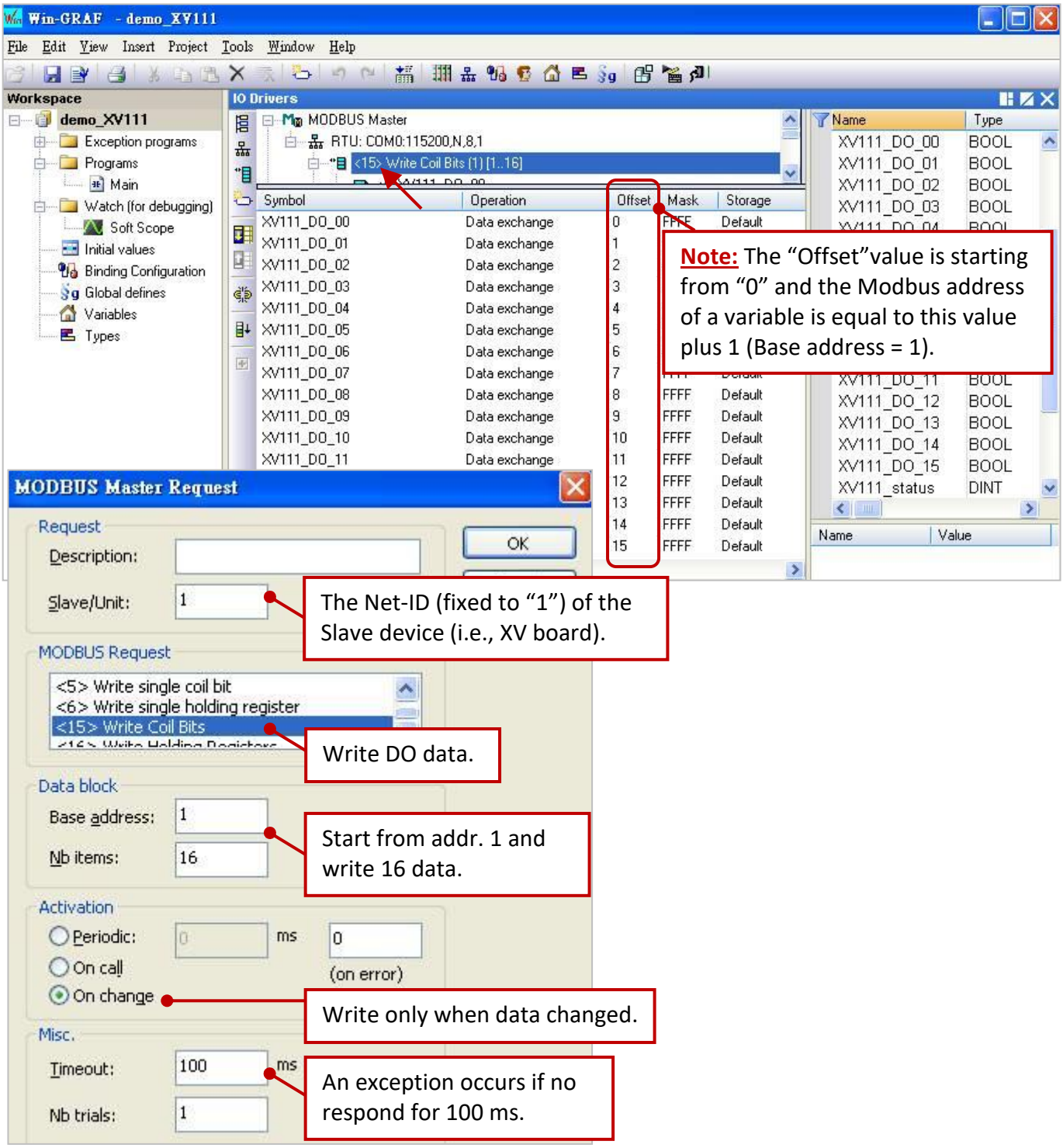


1.1.3. Connecting the XV111, XV111A (16 DO)

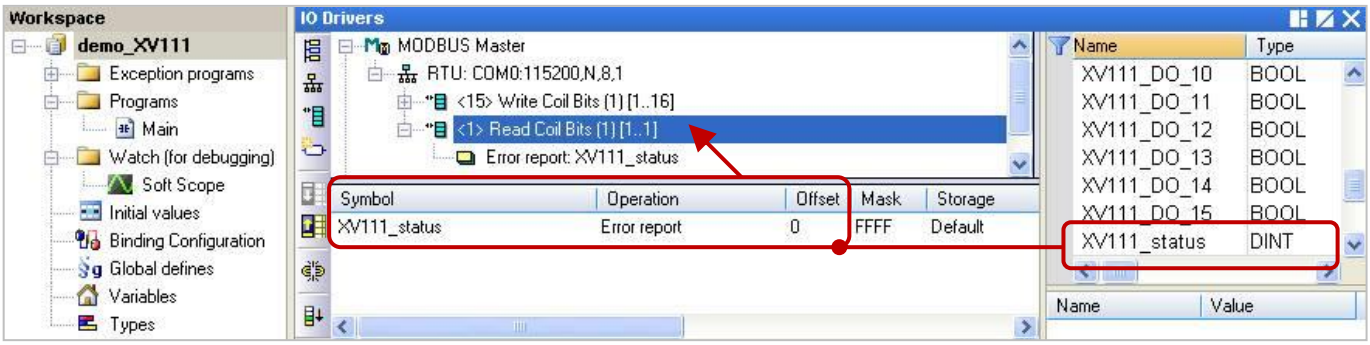
The XV111/ XV111A is a 16-channel digital output board. This section provides a Win-GRAF demo project - "demo_XV111.zip". First, go to Section 1.1 for the information of the XV Board before using it.

Demo description: This demo added two data blocks. One is used to write 16 DO data and the other is used to read the DO status.

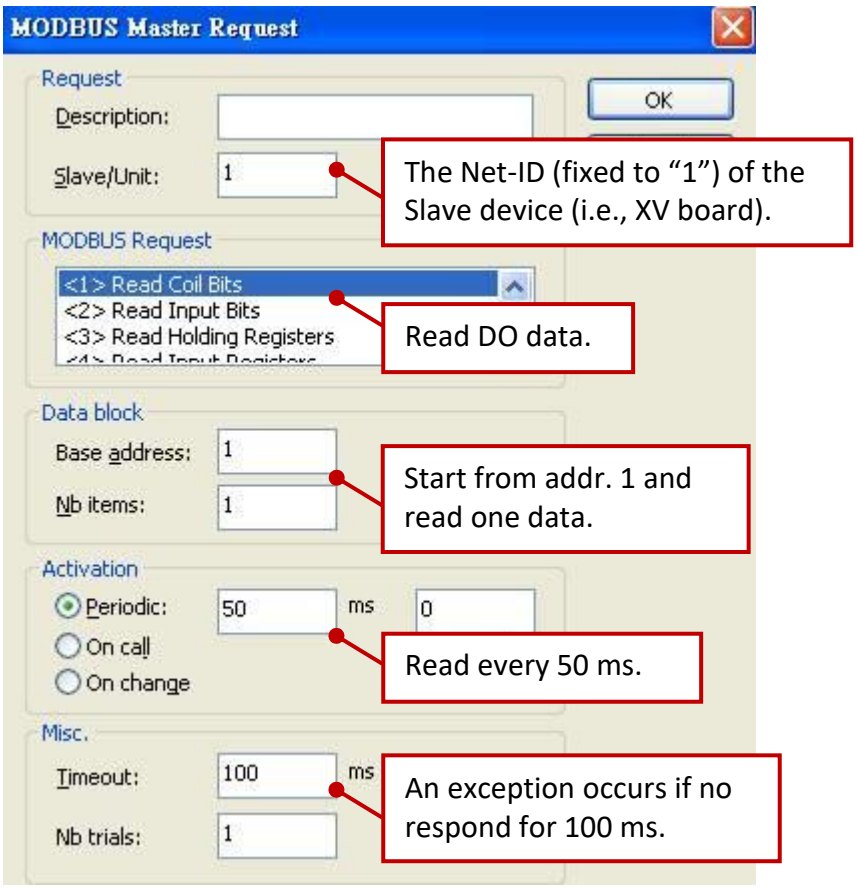
1. Mouse double click the 1st data block (i.e., <15> Write Coil Bits) to open the setting window.



2. Mouse double click the 2nd data block (i.e., <1> Read Coil Bits) to open the setting window.



Note: The "Offset" value starts at "0" and the Modbus address of variable is equal to the "Offset" value plus 1 (Base address).



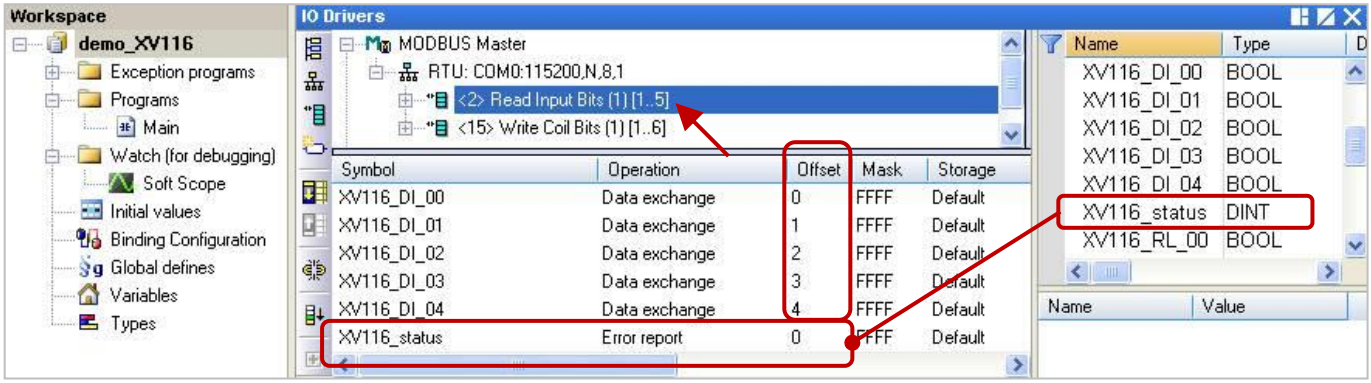
1.1.4. Connecting the XV116 (5 DI, 6 Relay)

The XV116 is a 5-channel digital input and 6-channel relay output board. This section provides a Win-GRAF demo project - "demo_XV116.zip". First, go to Section 1.1 for the information of the XV Board before using it.

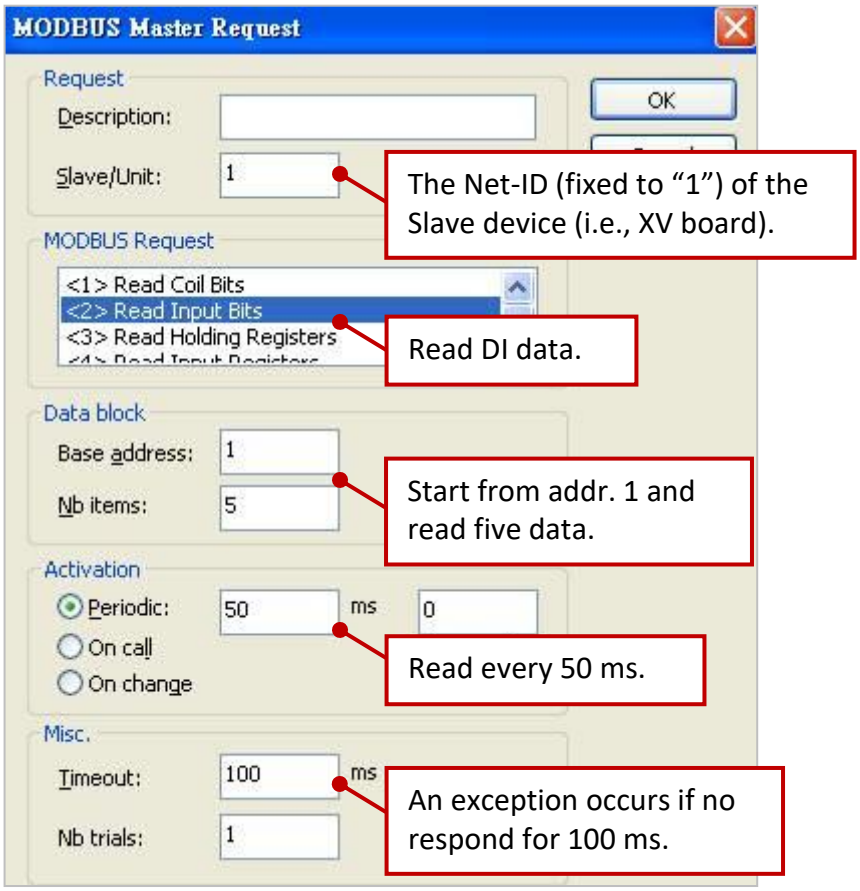
Demo description:

This demo added two data blocks. One is used to read 5 DI data and the other is used to write 6 DO data.

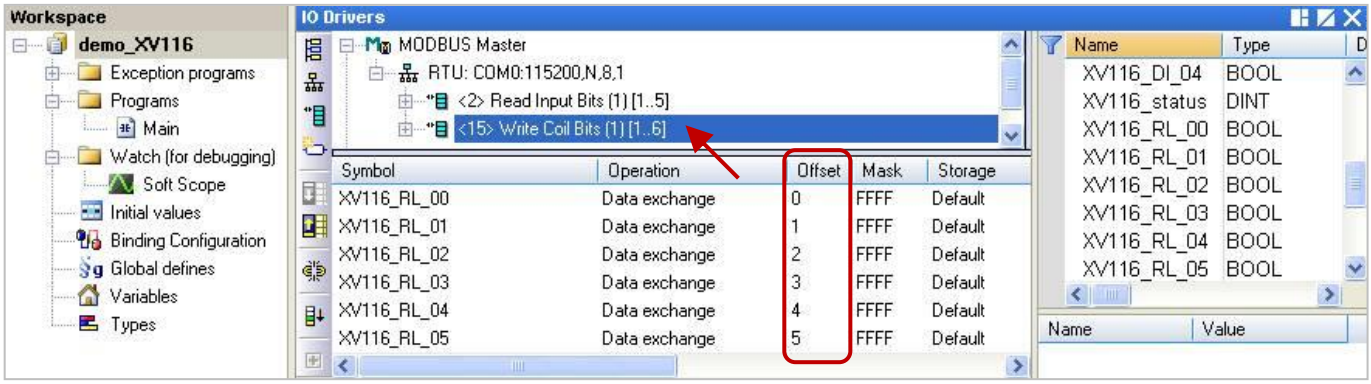
1. Mouse double click the 1st data block (i.e., <2> Read Input Bits) to open the setting window.

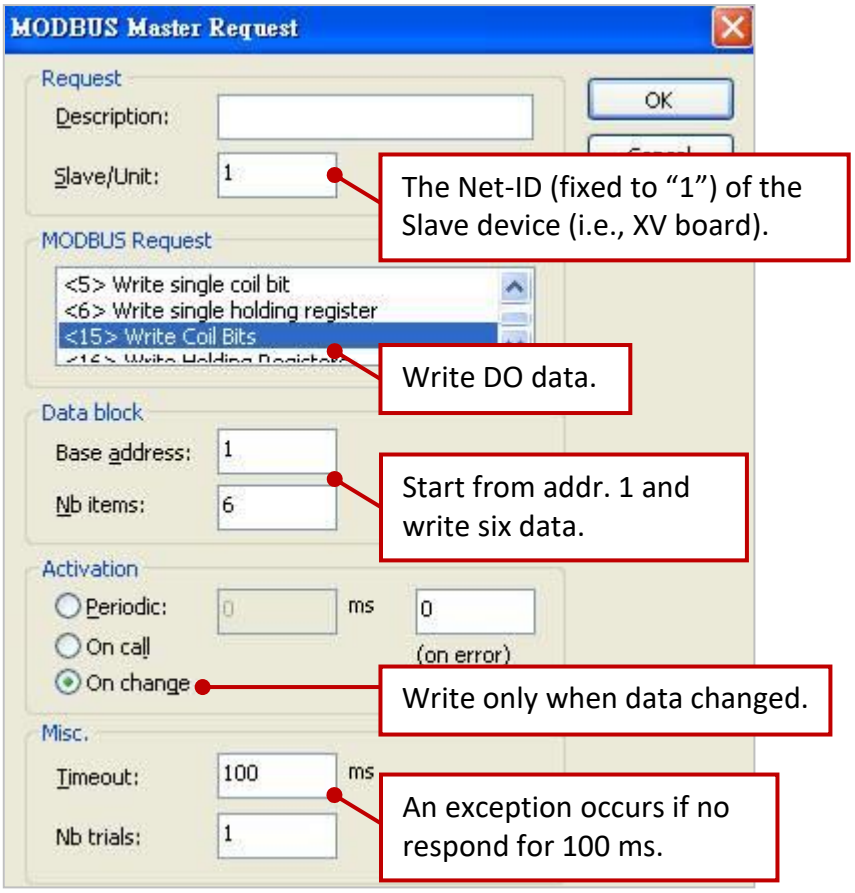


Note: (See the figure above)
The "Offset" value starts at "0" and the Modbus address of variable is equal to the "Offset" value plus 1 (Base address). Moreover, if you set the "Operation" as "**Error report**", the "Offset" value for the mapping variable (Date Type: DINT) must set to "**0**".



2. Mouse double click the 2nd data block (i.e., <15> Write Coil Bits) to open the setting window.





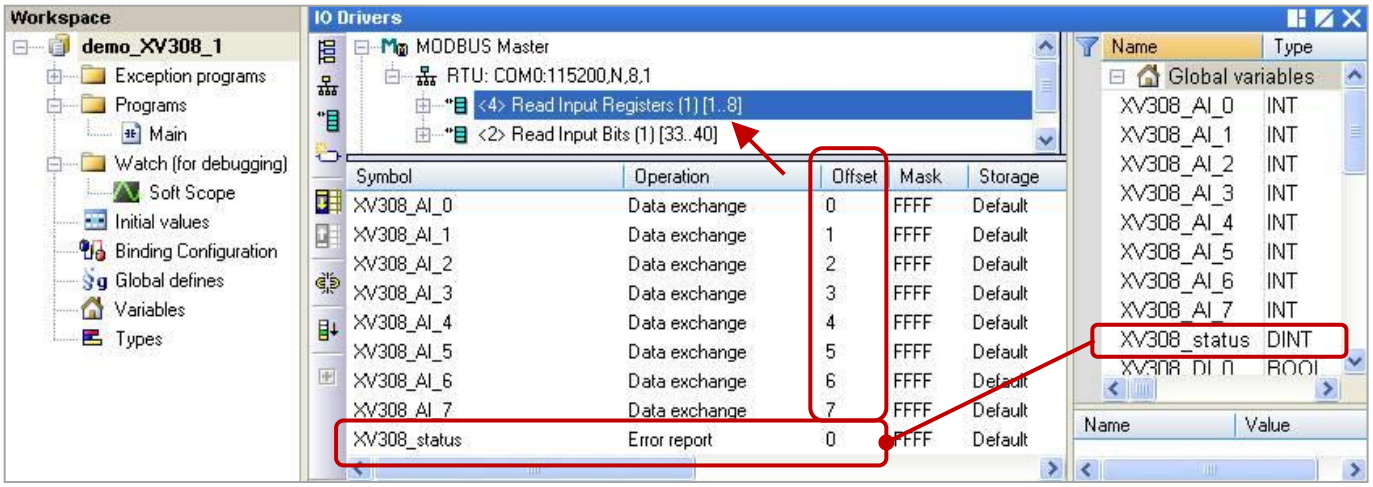
1.1.5. Connecting the XV308 (8 AI, 8 DIO)

The XV308 is a 8-channel analog input and 8-channel digital input/output board. This section provides three Win-GRAF demo projects - "demo_XV308_1.zip", "demo_XV308_2.zip" and "demo_XV308_3.zip". First, go to Section 1.1 to view the XV Board instructions and then configure each AI channel by using "DCON_Utility_Pro_CE_200.exe".

Demo description: (demo_XV308_1)

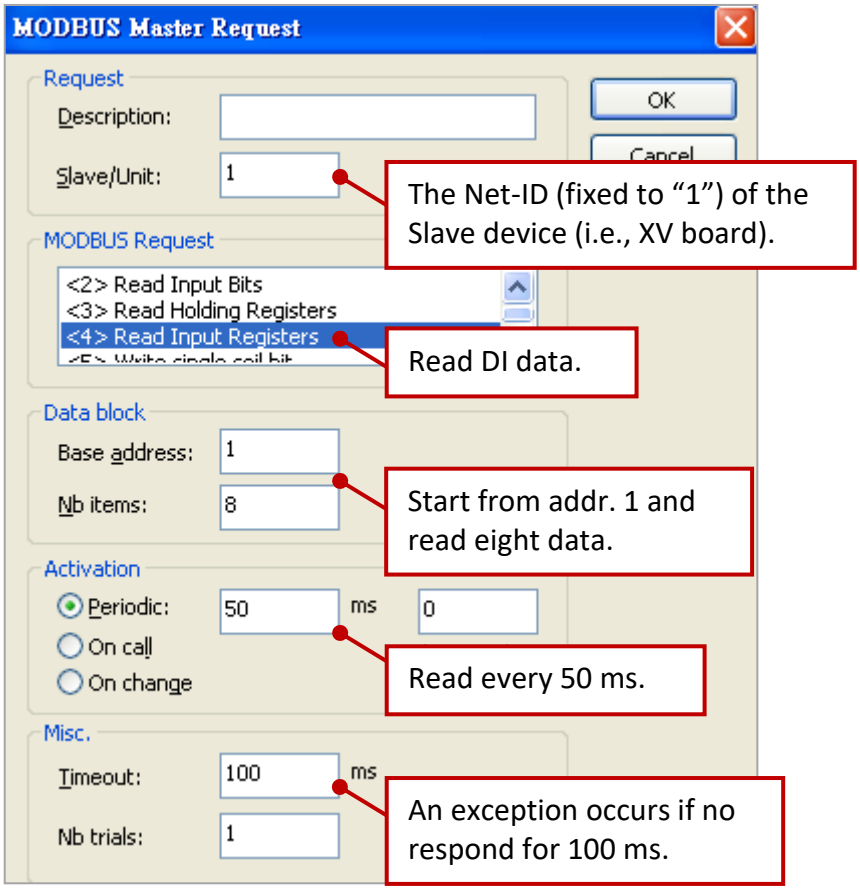
This demo added two data blocks, one is used to read 8 AI data and the other is used to read 8 DI data.

1. Mouse double click the 1st data block (i.e., <4> Read Input Registers) to open the setting window.

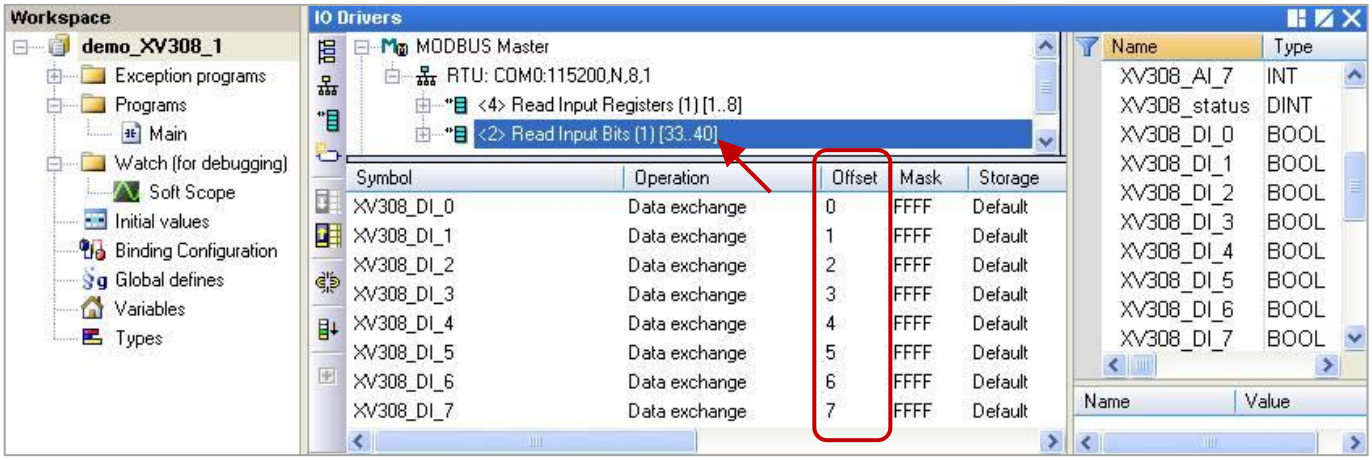


Note: (See the figure above)

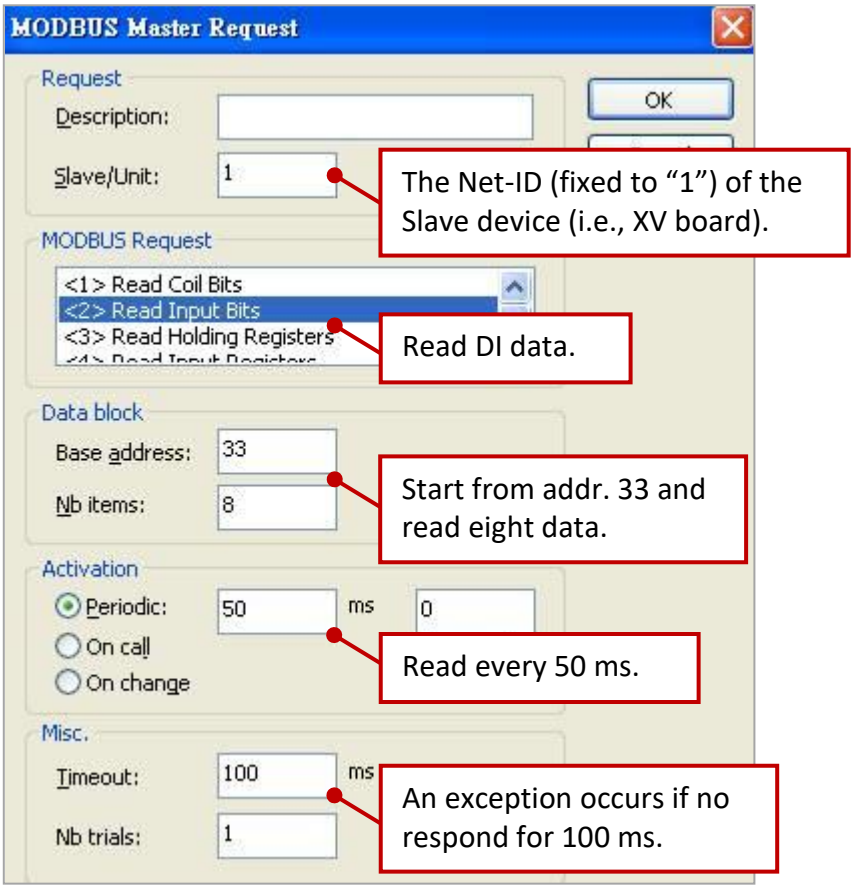
The "Offset" value starts at "0" and the Modbus address of variable is equal to the "Offset" value plus 1 (Base address). Moreover, if you set the "Operation" as "**Error report**", the "Offset" value for the mapping variable (Date Type: DINT) must set to "**0**".



2. Mouse double click the 2nd data block (i.e., <2> Read Input Bits) to open the setting window.



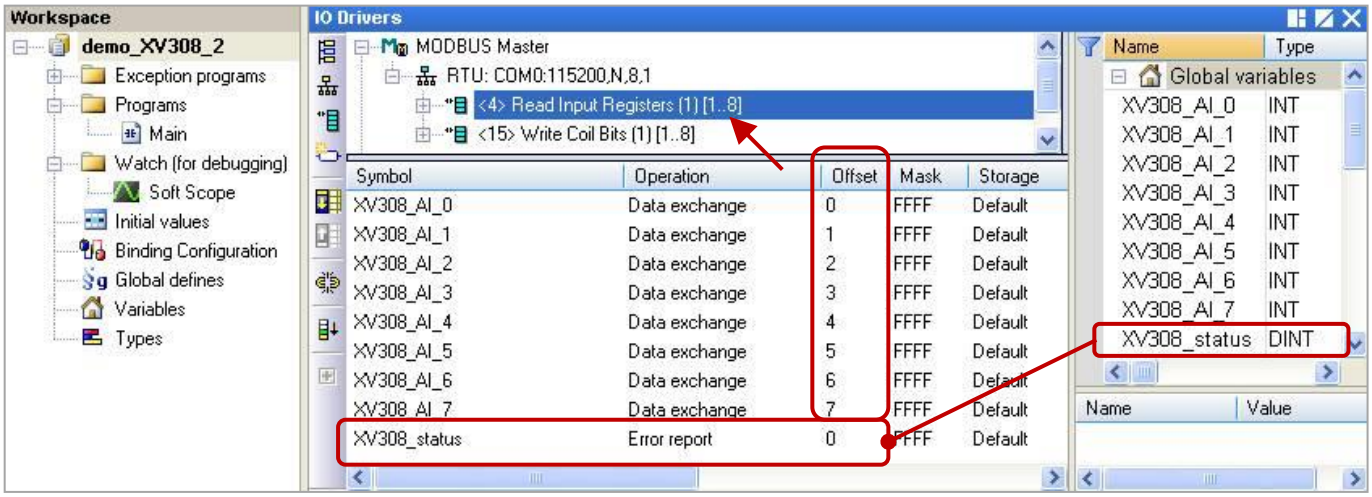
Notw: When using the XV308 to read DI data, the address must start from "33".



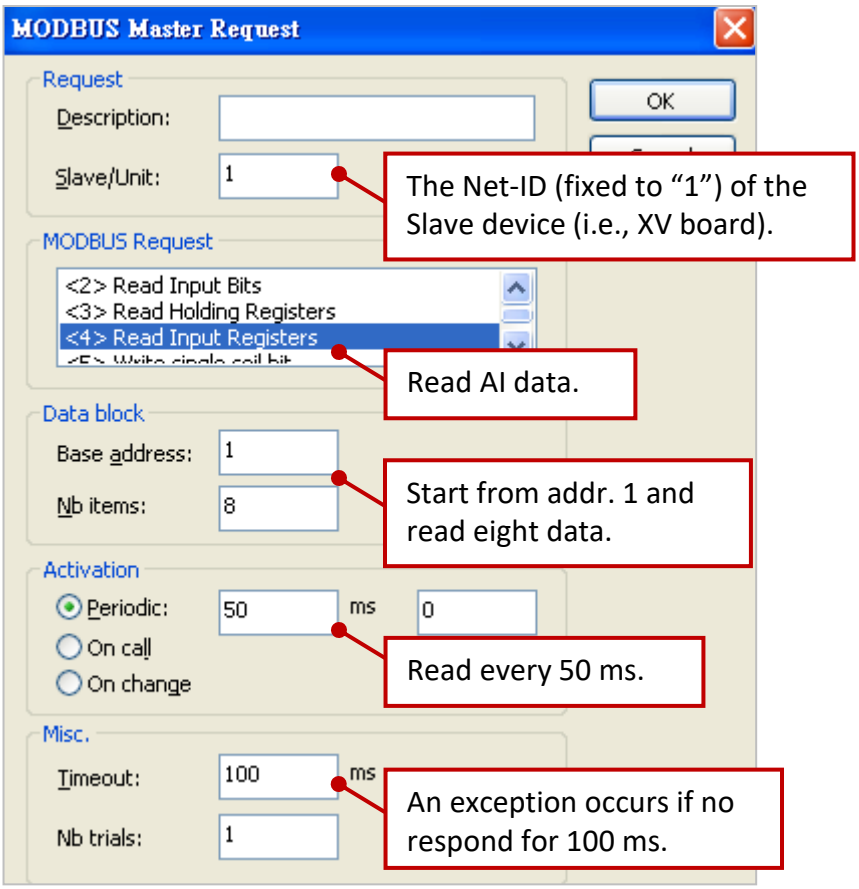
Demo description: (demo_XV308_2)

This demo added two data blocks, one is used to read 8 AI data and the other is used to write 8 DO data.

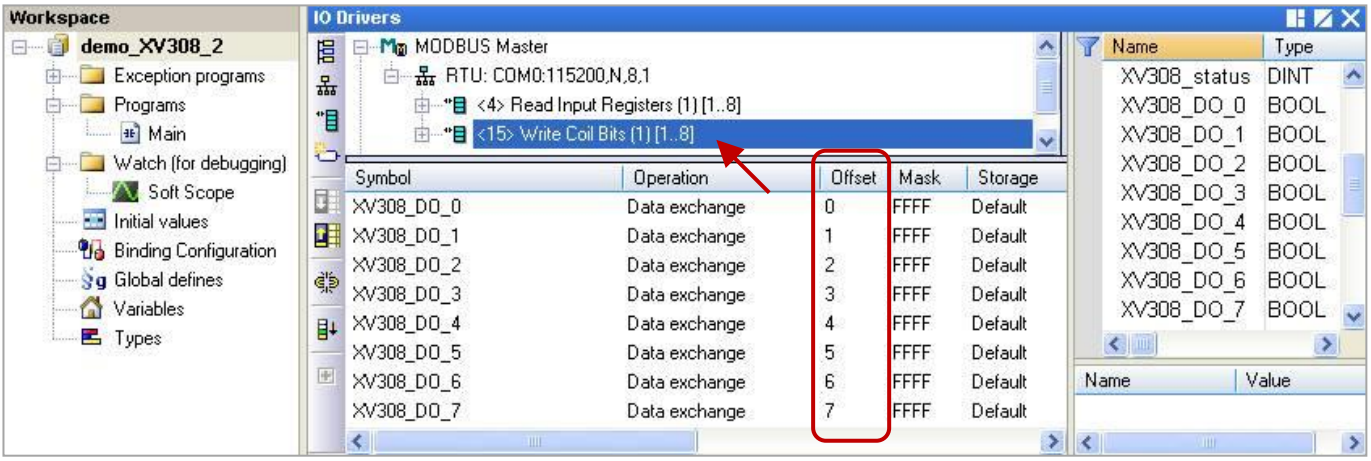
1. Mouse double click the 1st data block (i.e., <4> Read Input Registers) to open the setting window.

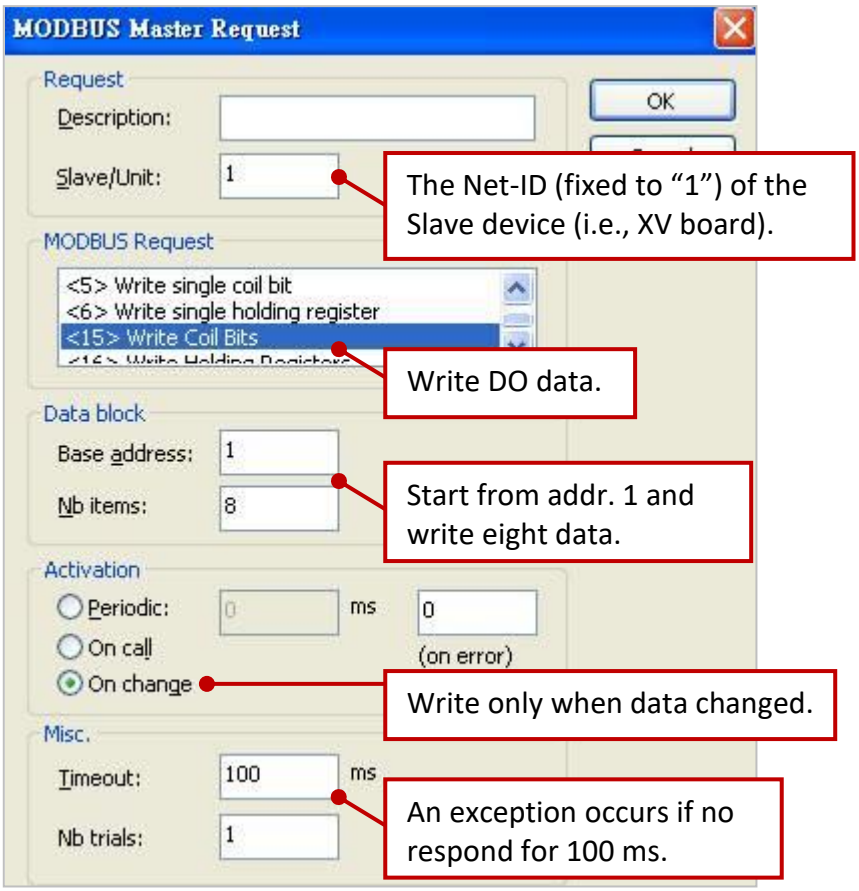


Note: The “Offset” value starts at “0” and the Modbus address of variable is equal to the “Offset” value plus 1 (Base address). Moreover, if you set the “Operation” as "Error report”, the “Offset” value for the mapping variable (Date Type: DINT) must set to “0”.



2. Mouse double click the 2nd data block (i.e., <15> Write Coil Bits) to open the setting window.

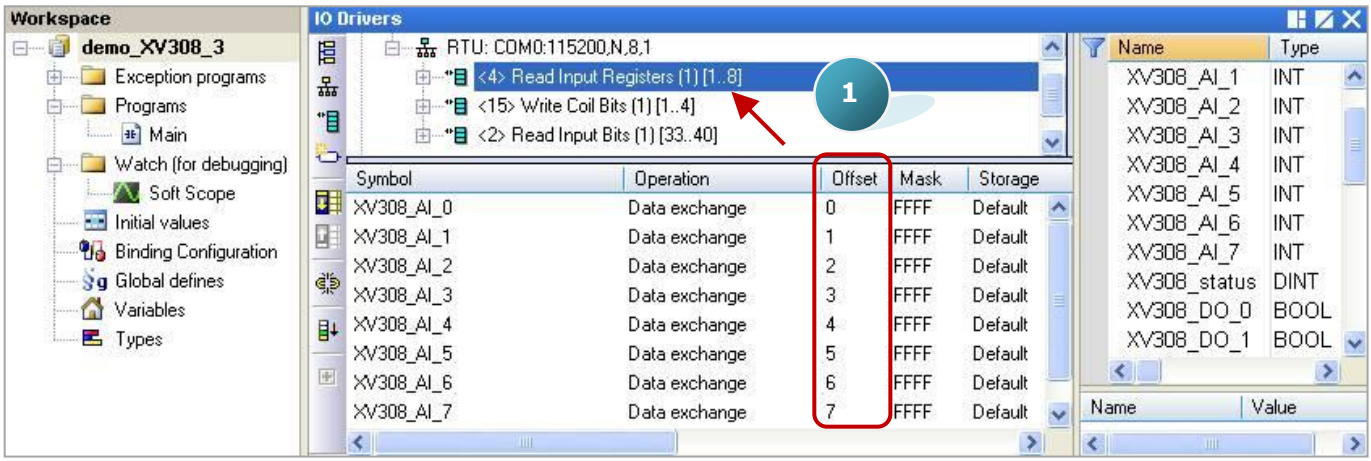




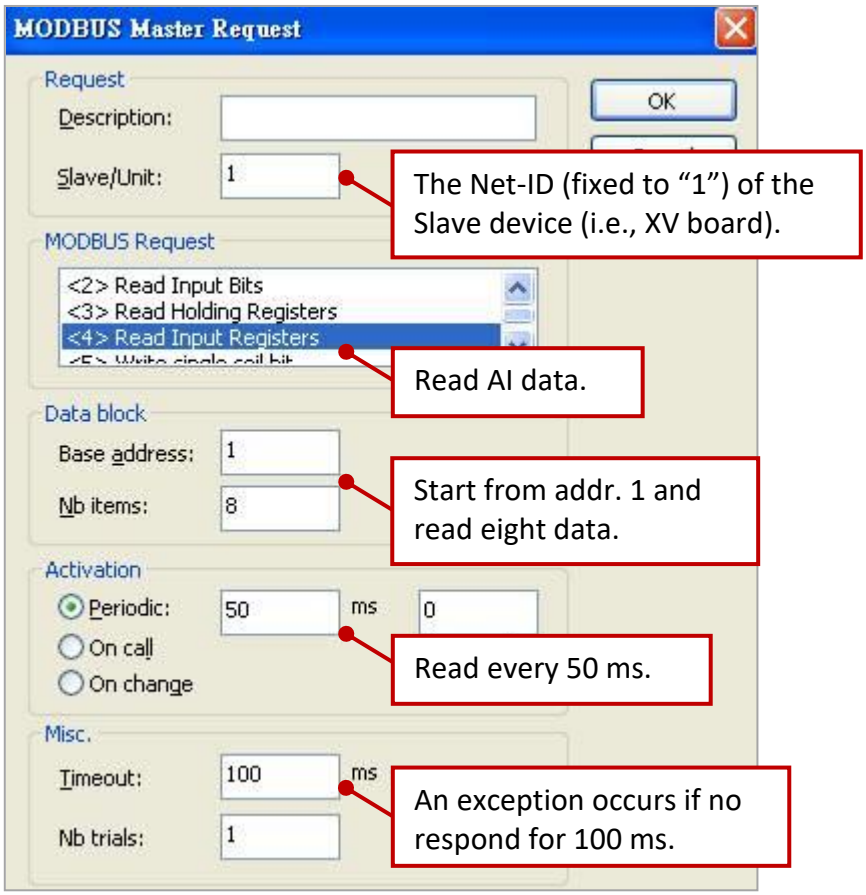
Demo description: (demo_XV308_3)

This demo added three data blocks, the 1st one is used to read 8 AI data, the 2nd one is used to write 4 DO data and the 3rd one is used to read only 4 DI data.

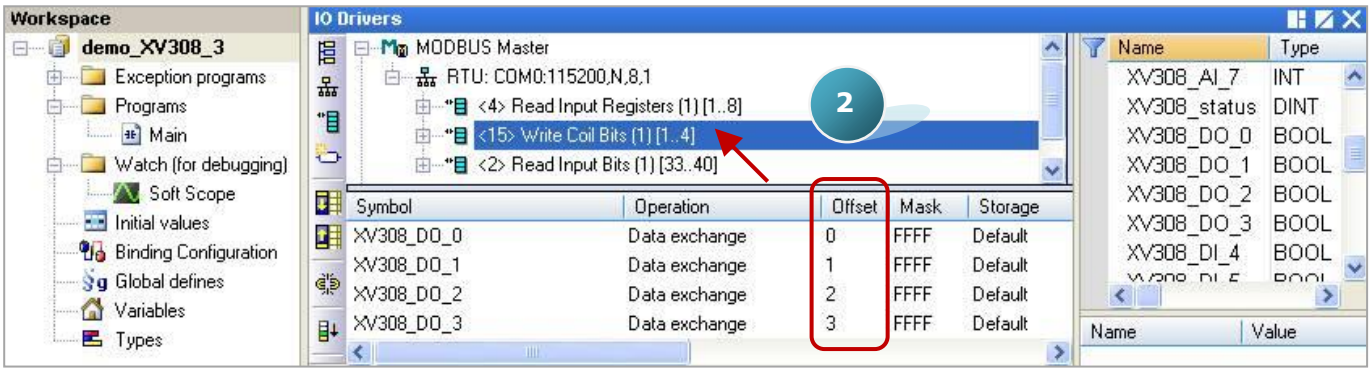
1. Mouse double click the 1st data block (i.e., <4> Read Input Registers) to open the setting window.

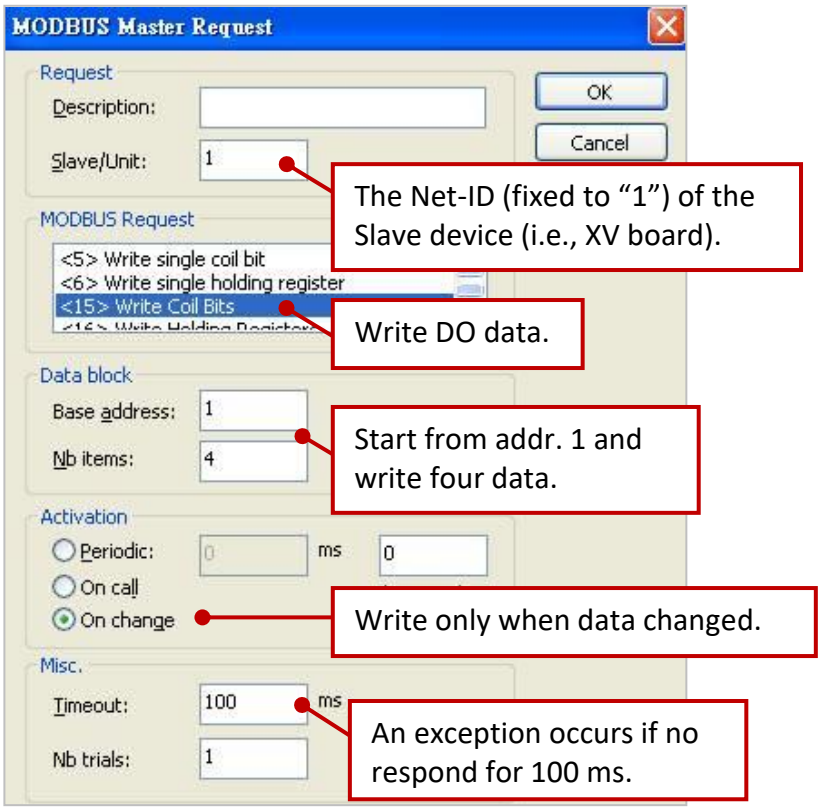


Note: The "Offset" value starts at "0" and the Modbus address of variable is equal to the "Offset" value plus 1 (Base address).

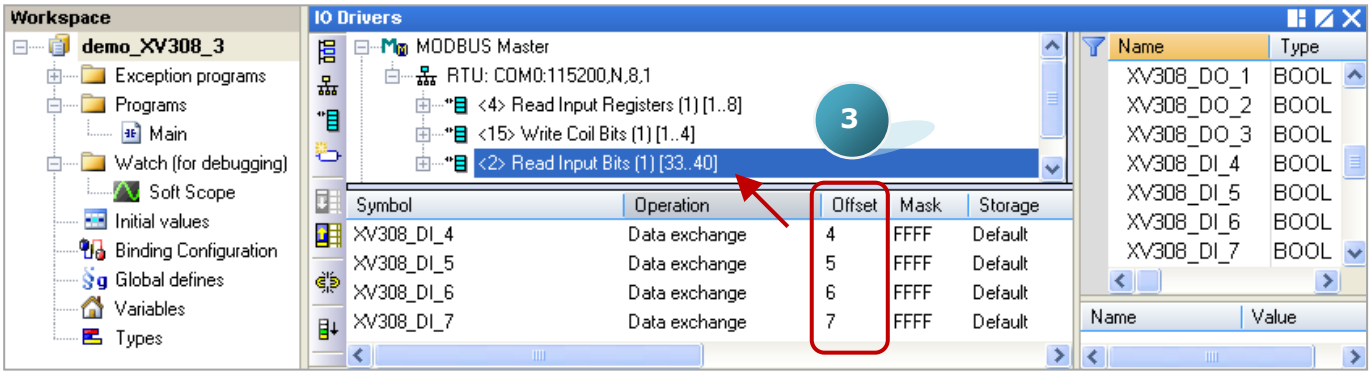


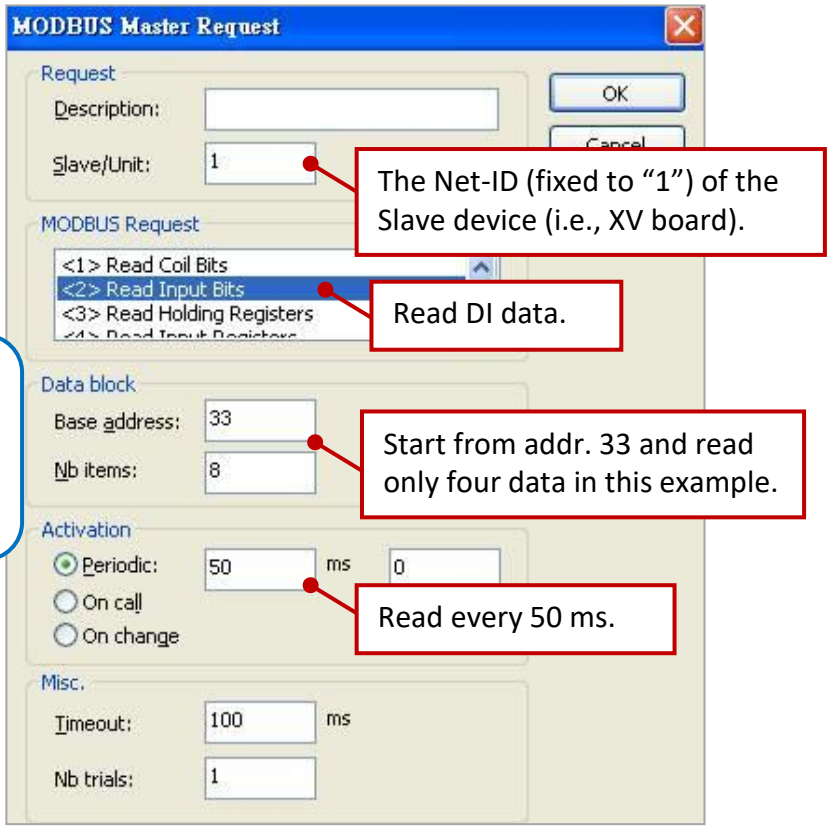
2. As the figure below, mouse double click the 2nd data block (i.e., <15> Write Coil Bits) to view the setting window.





3. As the figure below, mouse double click the 3rd data block (i.e., <2> Read Input Bits) to view the setting window.





Note:
When using the XV308 to read DI data, the address must start from "33".

1.1.6. Connecting the XV310 (4 AI, 2 AO, 4 DI, 4 DO)

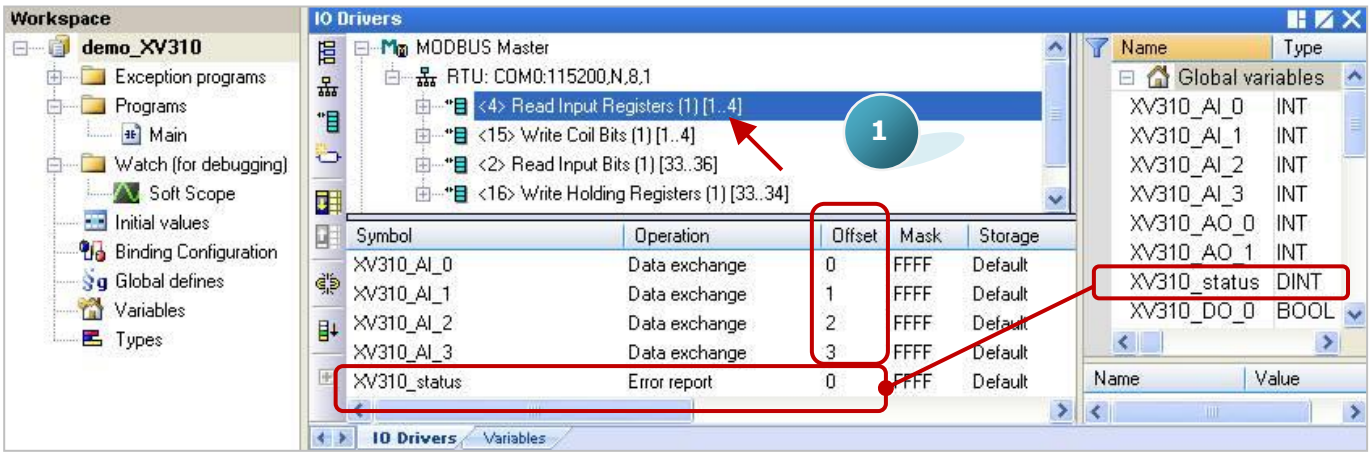
The XV310 is a 4-ch analog input, 2-ch analog output, 4-ch digital input and 4-ch digital ouput board. This section provides a Win-GRAF demo projects - "demo_XV310.zip".

First, go to Section 1.1 to view the XV Board instructions and then configure each AI channel by using "DCON_Utility_Pro_CE_200.exe".

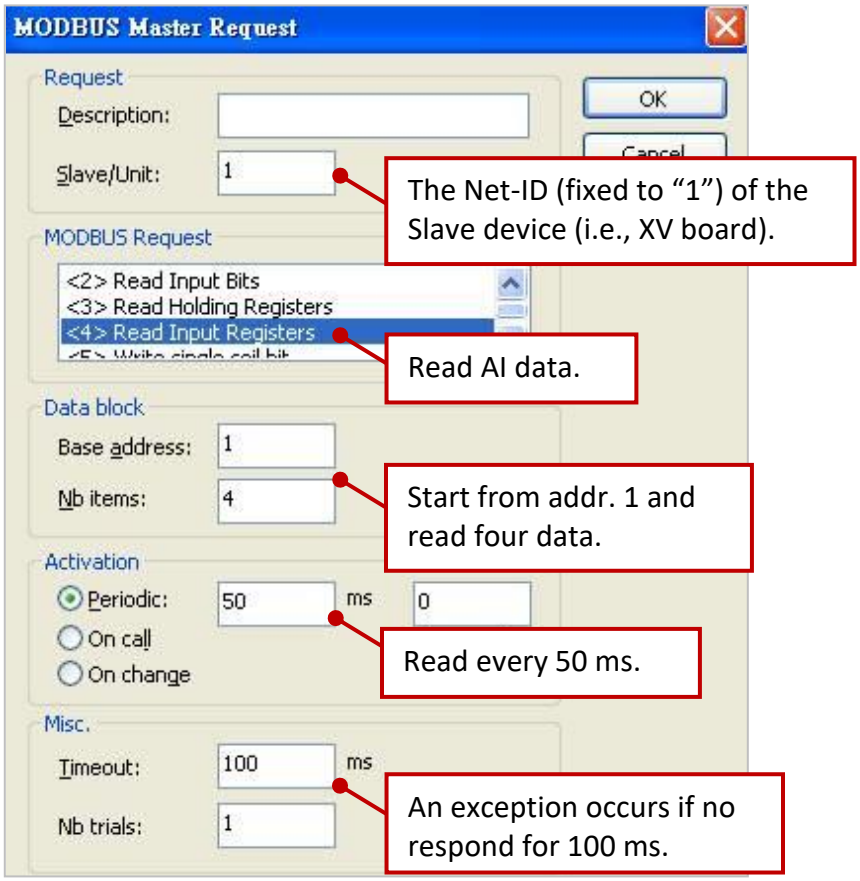
Demo Description

This demo added four data blocks. The 1st one is used to read 4 AI data, the 2nd is used to write 4 DO data, the 3rd is used to read 4 DI data and the 4th is used to write 2 AO data.

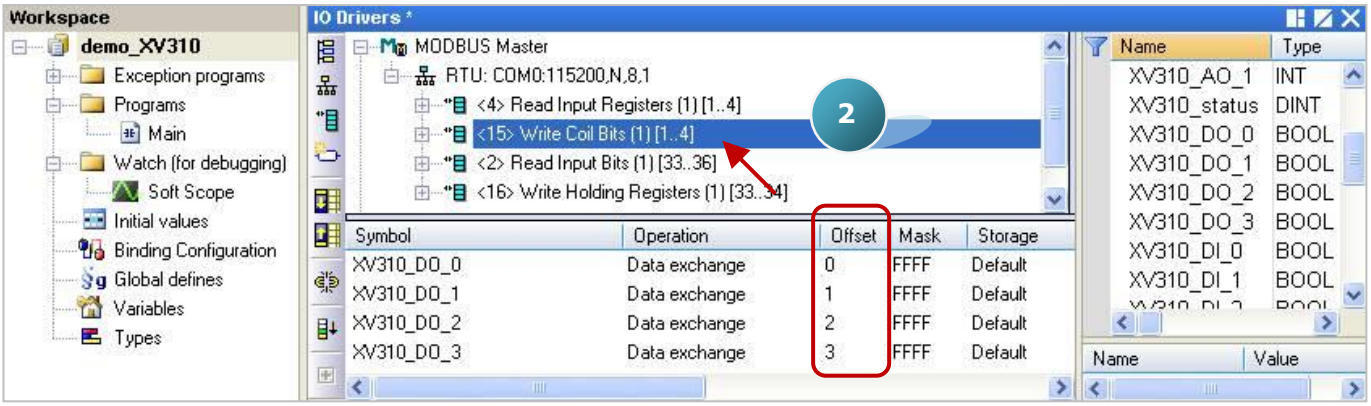
1. Mouse double click the 1st data block (i.e., <4> Read Input Registers) to open the setting window.

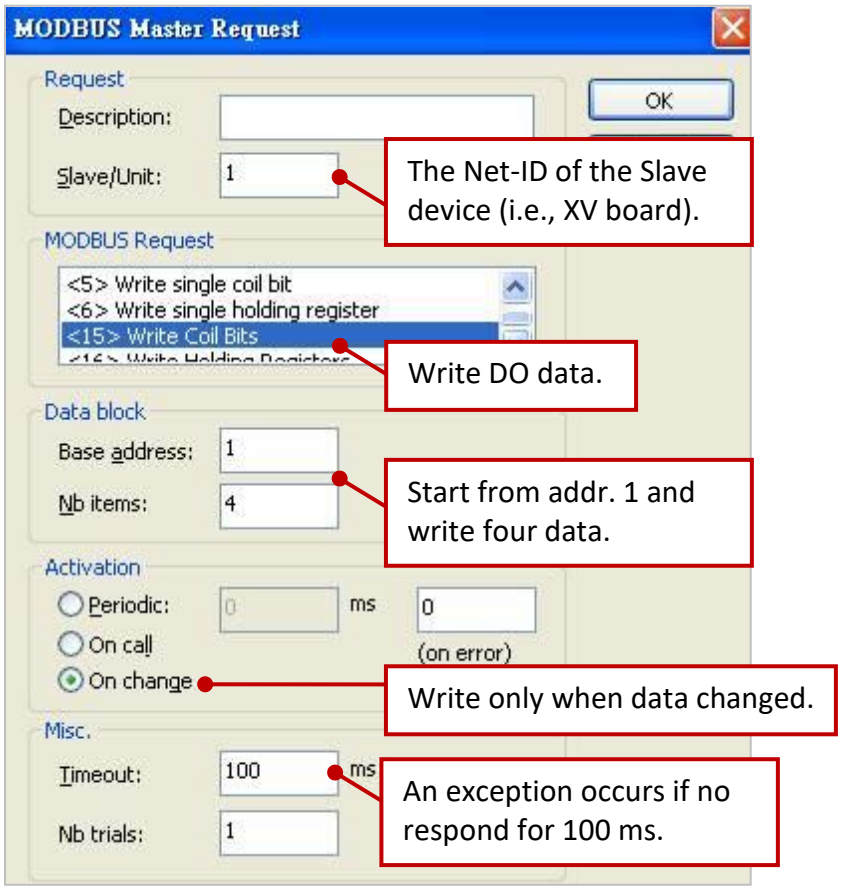


Note: The “Offset” value starts at “0” and the Modbus address of variable is equal to the “Offset” value plus 1 (Base address). Moreover, if you set the “Operation” as "Error report”, the “Offset” value for the mapping variable (Date Type: DINT) must be set to “0”.

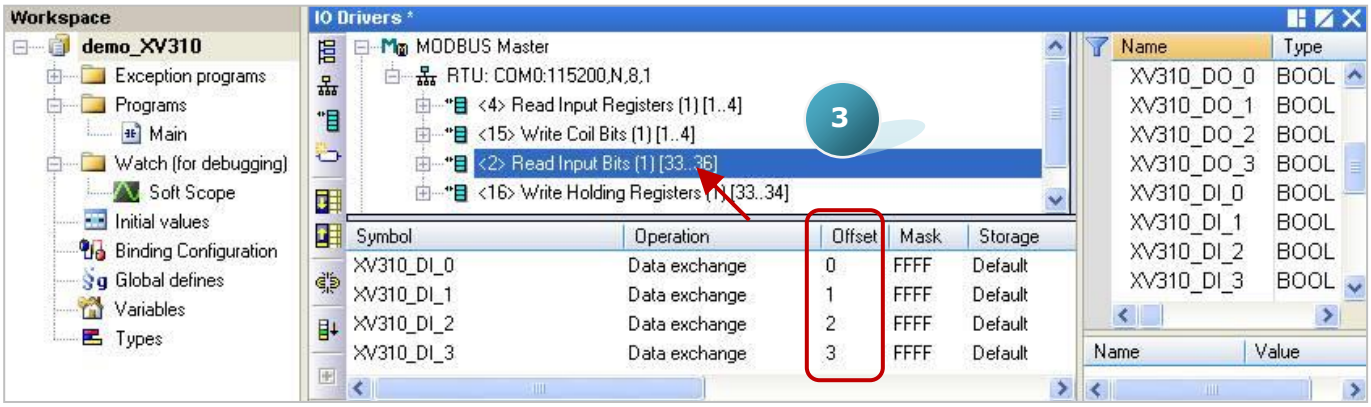


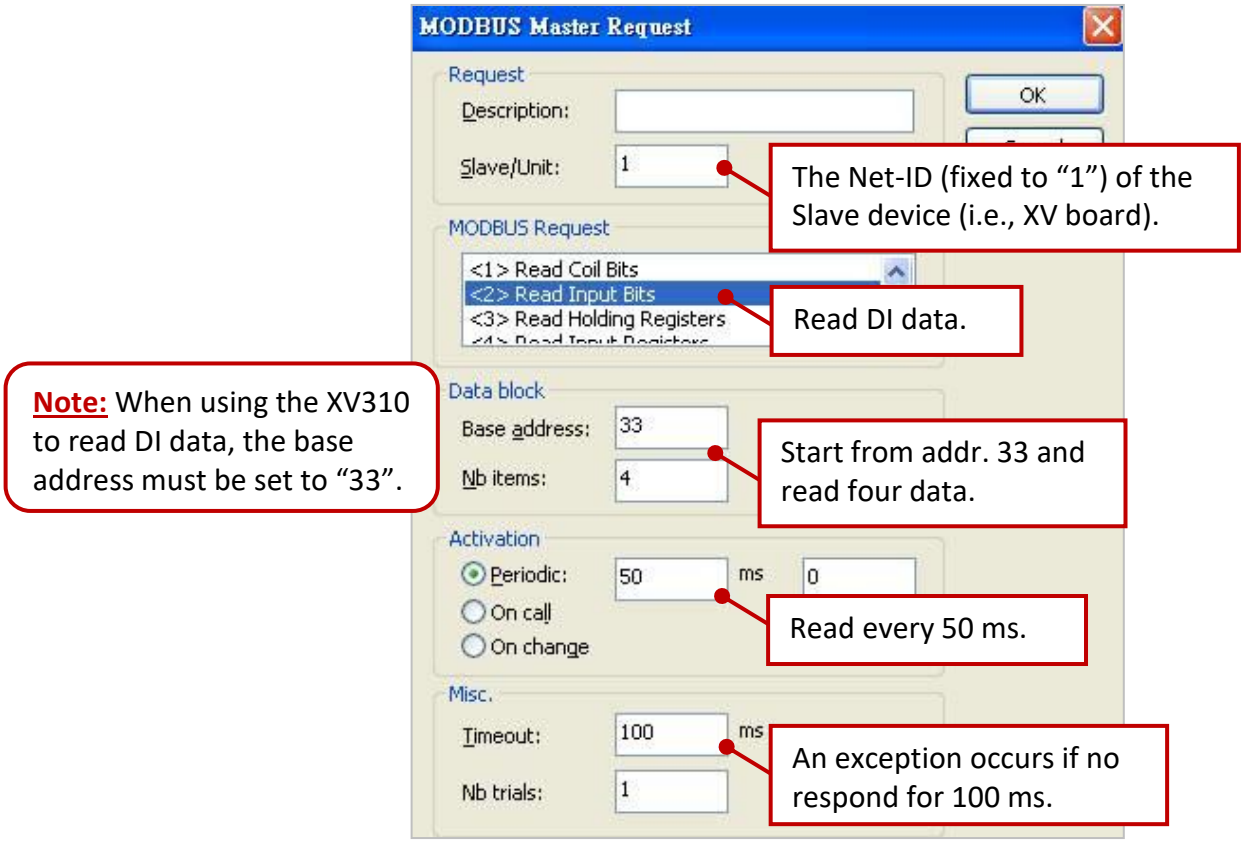
2. Mouse double click the 2nd data block (i.e., <15> Write Coil Bits) to view the setting window.



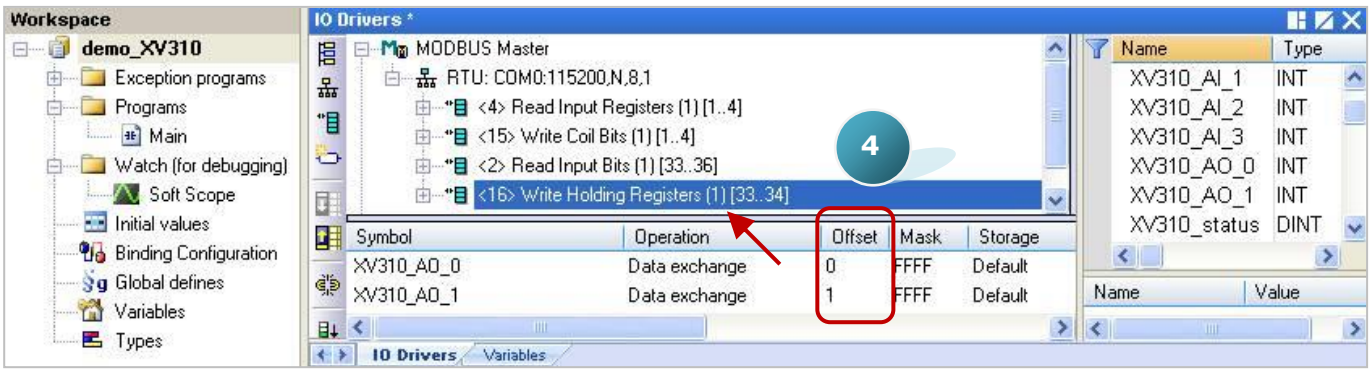


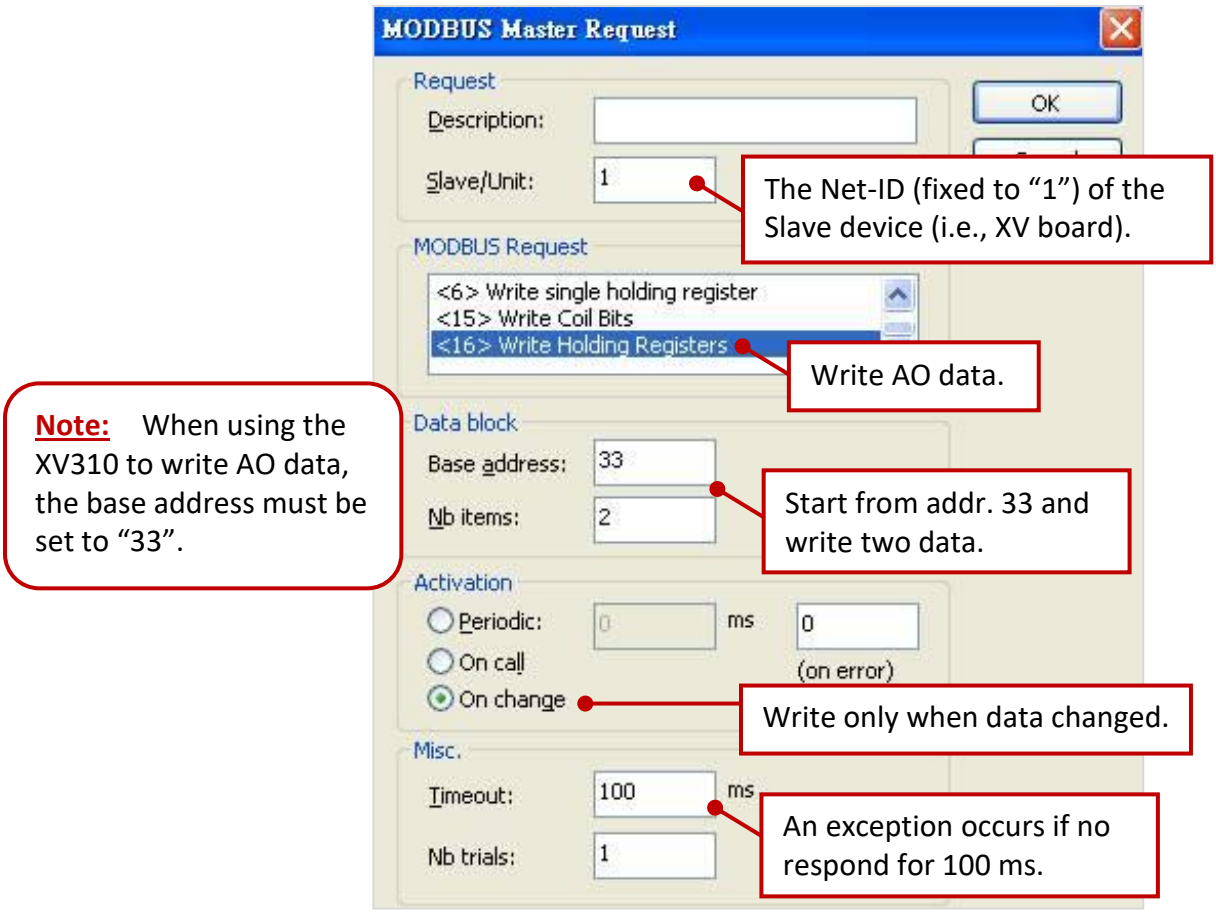
3. Mouse double click the 3rd data block (i.e., <2> Read Input Bits) to view the setting window.





4. Mouse double click the 4th data block (i.e., <16> Write Holding Registers)





Click the link for more Win-GRAF FAQ:
https://www.icpdas.com/en/faq/index.php?kind=273#840