

How to use KEPServer EX opc server with DVP28SV11R/T + DVPEN01-SL+DVP06XA

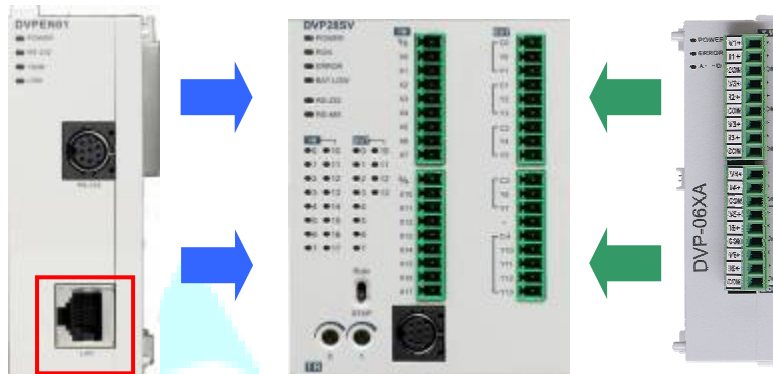
In this technical note, we cover the following topics.

1. How to connect DVP28SV, EN01 and 06XA
2. How to setup KEPServer EX communication with DVP28SV by EN01
3. How to setup KEPServer EX communication with DVP28SV by RS-485

1. How to connect DVP28SV, EN01 and 06XA.

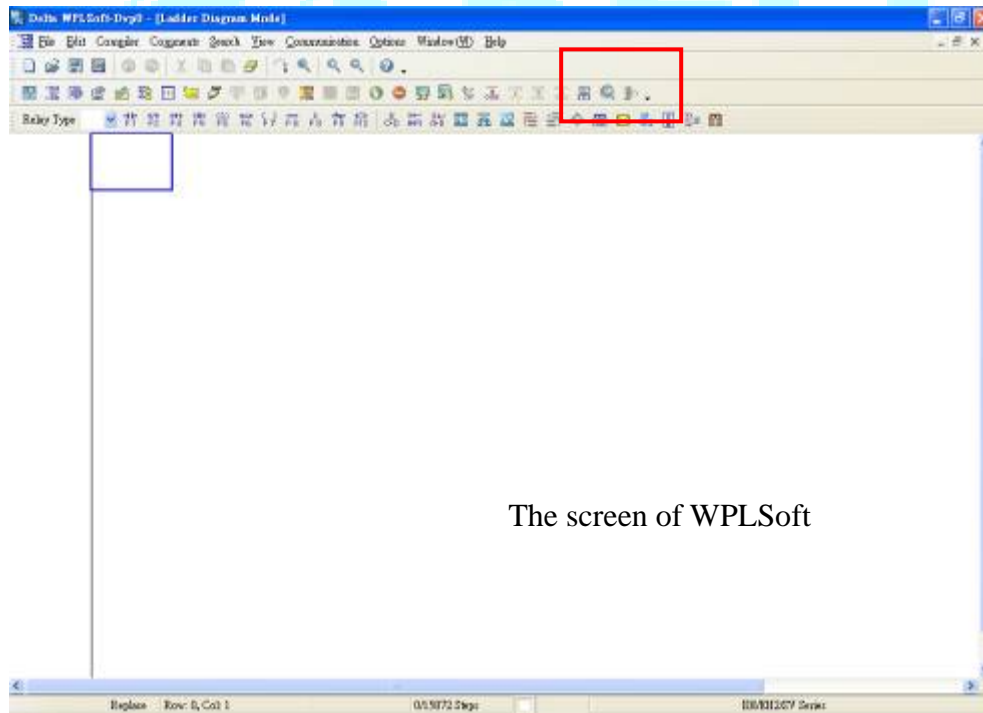
1-1. Plug EN01 to 28SV left side and plug 06XA to right side.

1-2. Connect Ethernet via EN01 「LAN」 hole .



Connect Ethernet

1-3. Open WPLSoft to configure EN01



The screen of WPLSoft



: Looking for EN01 module via broadcasting.



: Looking for EN01 module via indicating IP address.

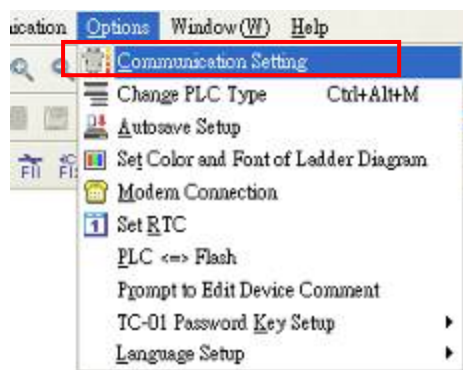


: Configuring EN01 via RS-232.(Doesn't need to connect to Ethernet)

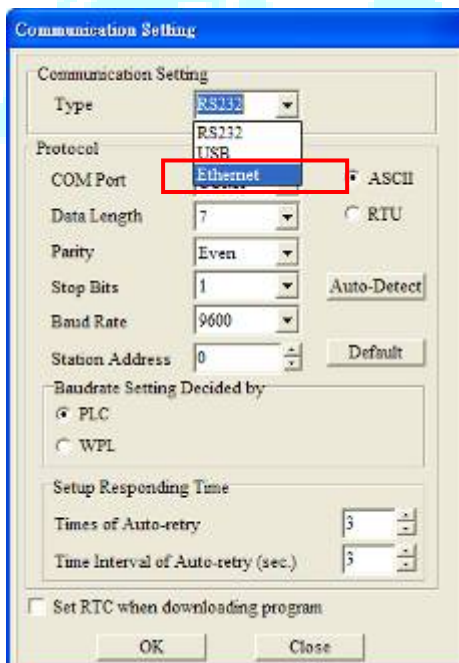
1-4. There is two way to search EN01 via Ethernet.

- Broadcast:

If this is the first time you connect EN01 to Ethernet and have no idea what's its IP address, then you can use “broadcast” to look for EN01 in the network.



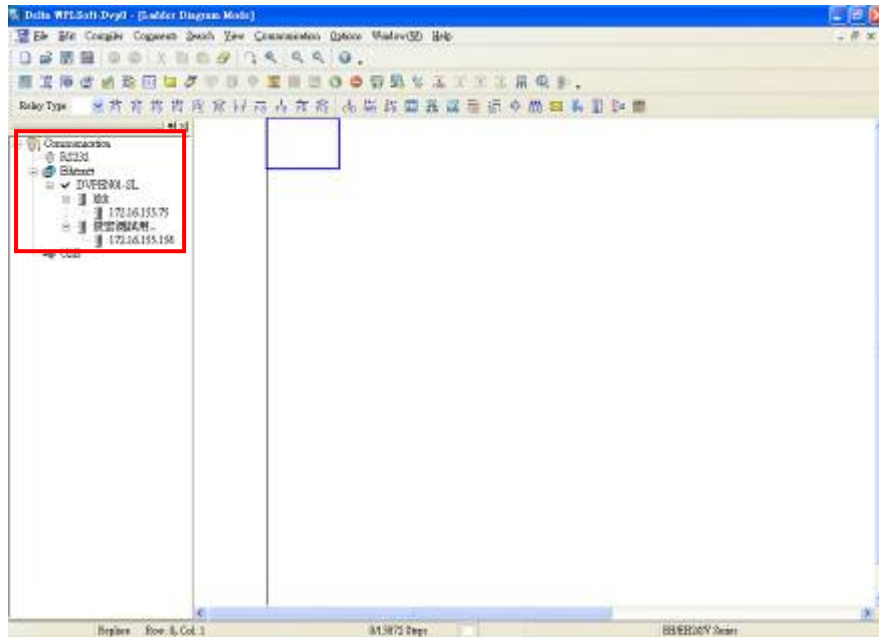
Choosing “option → communication setting” to set PLC communication port.



Set “Ethernet ” as your communication port.



Press “Broadcast” button, then WPLSoft will start to search EN01 in the network.



If success, the left window will show all EN01 modules in the network.

- Indicate IP address:

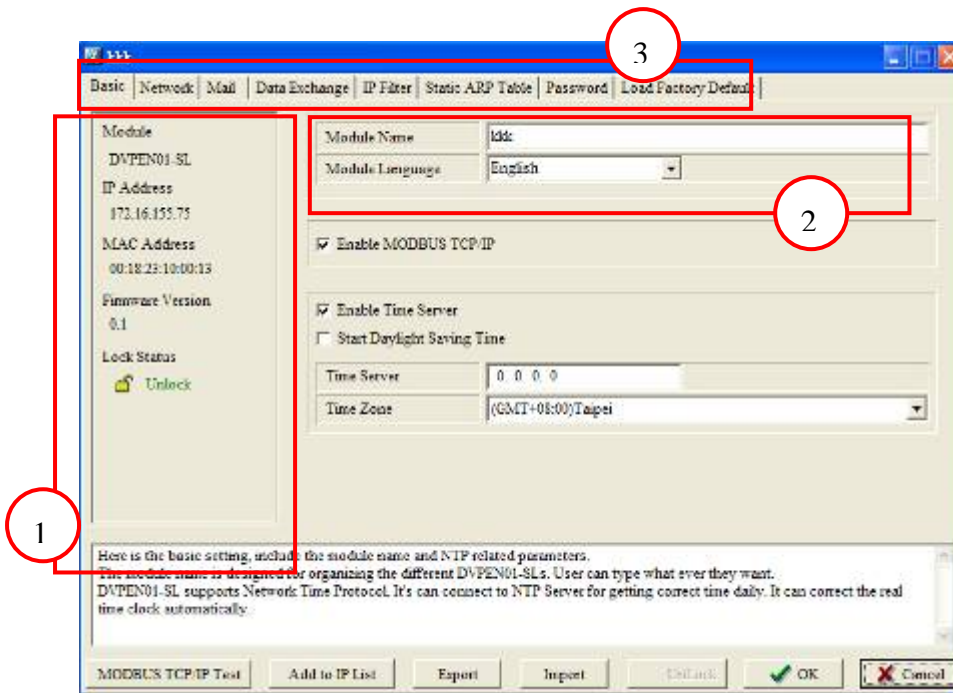


Press “IP search” button, then the input IP address window will pop out. User can type IP address in the upper space.

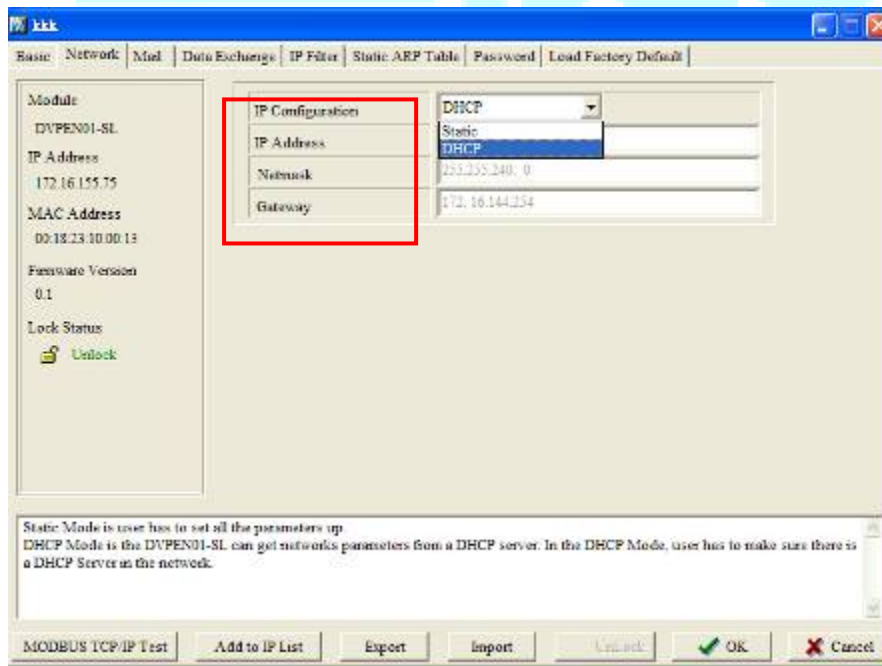
If success, the result will be just like the broadcast.

1-5. How to configure EN01.

- Double click the module in the left window.
- The configuration window will be pop out.



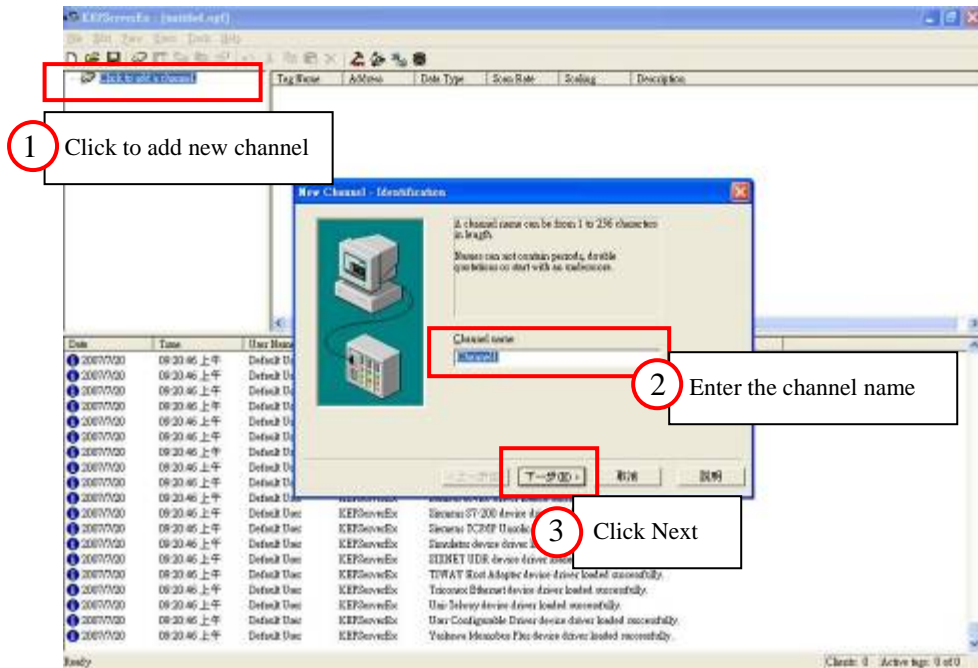
- ①. The basic information of EN01, includes IP address, MAC address, firmware version and so on.
- ②. Module name and language. (user define)
- ③. Option of EN01.



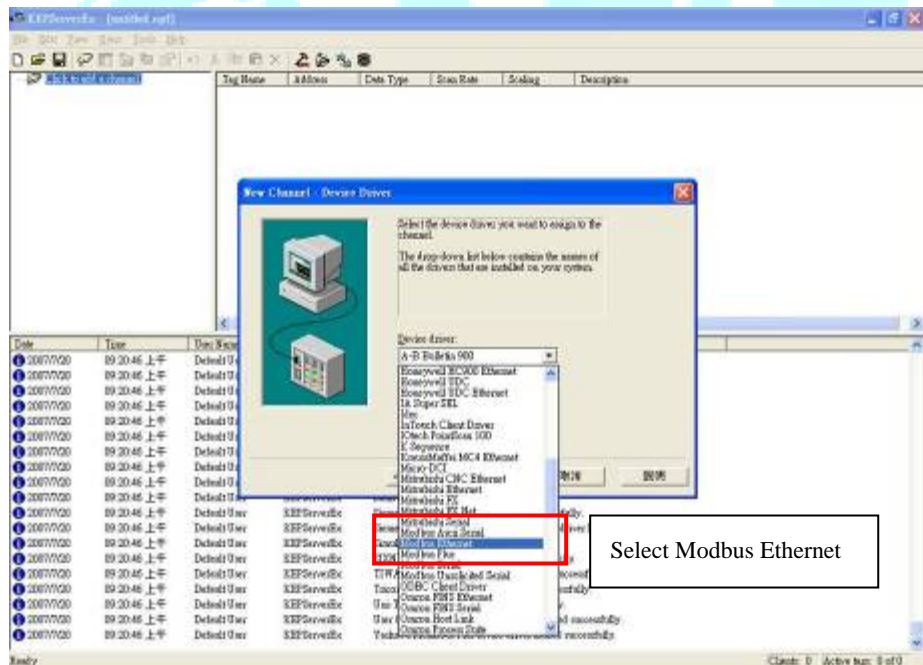
Network setting –IP configuration (Static/DHCP), IP address, Netmask, Gateway.

2. How to setup KEPServer EX communication with DVP28SV by EN01

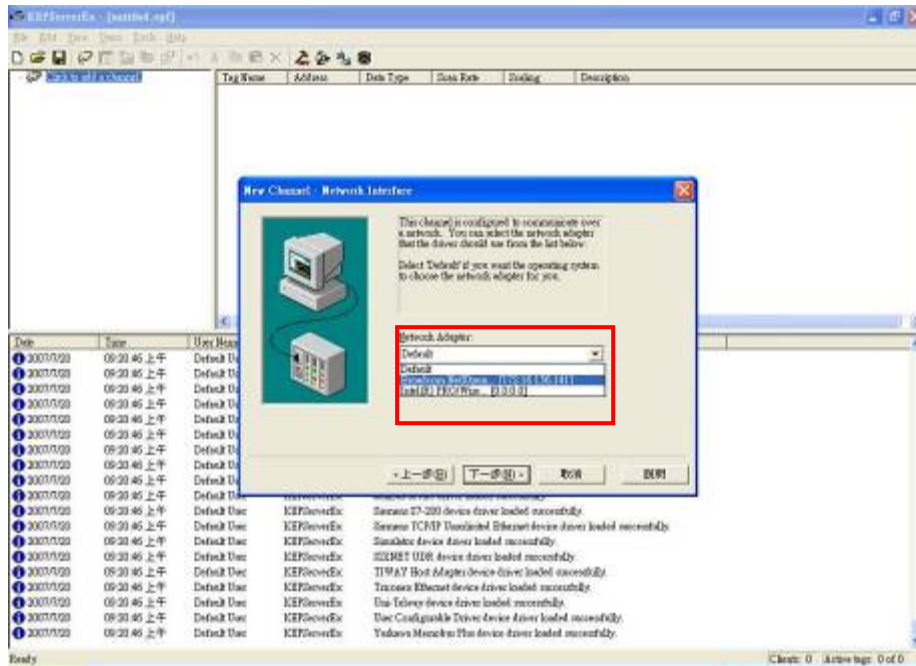
2-1. Run the KEPServerEX OPC Server to add a new channel and then click Next.



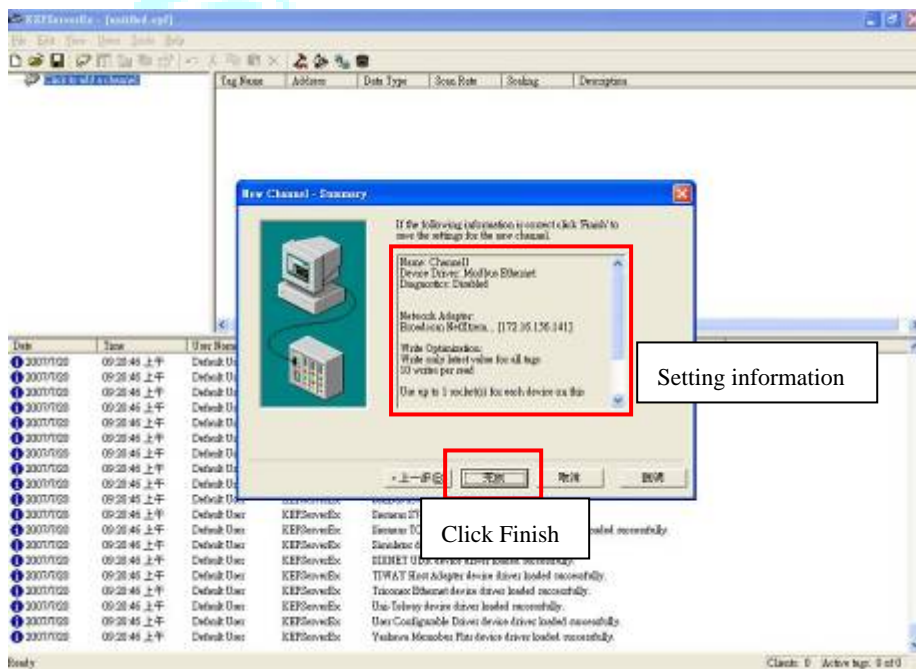
2-2. Select the **Device driver (Modbus Ethernet)** that you want to assign to the channel and then click **Next**.



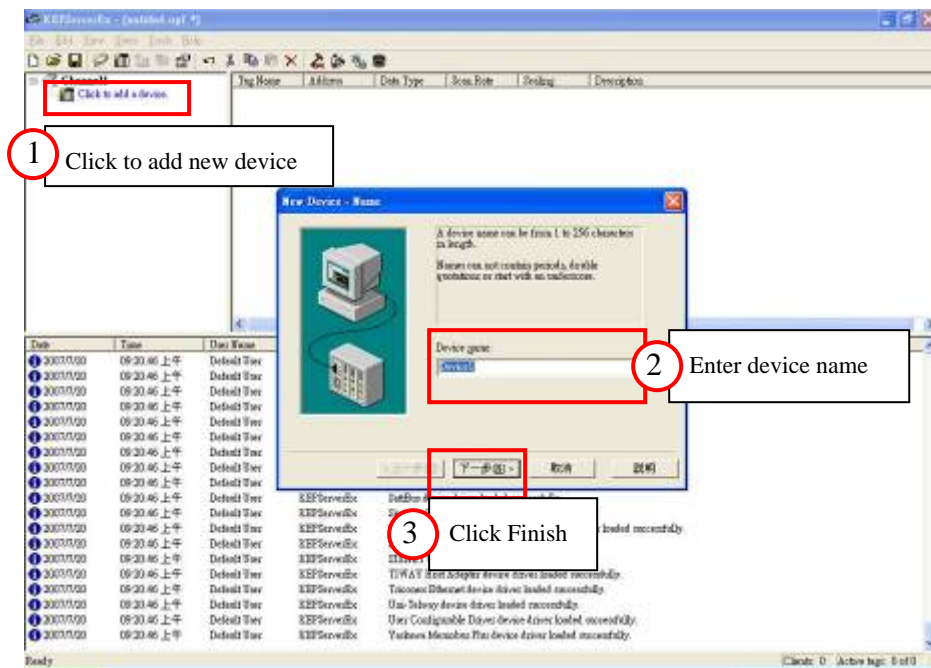
2-3. Select the correct Network Adapter on your Host and then click **Next**.



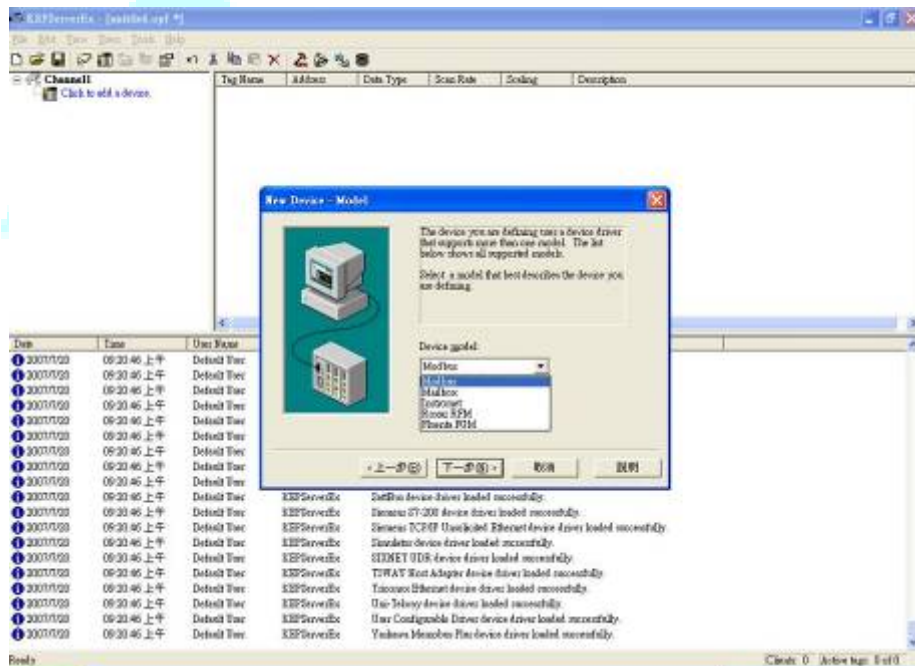
2-4. Then you can do some custom settings of KEPServer EX, or you can just follow the default settings. After setting finished, click **Finish**.



2-5. Add a new Device (Enter the name of the device) and then click **Next**.

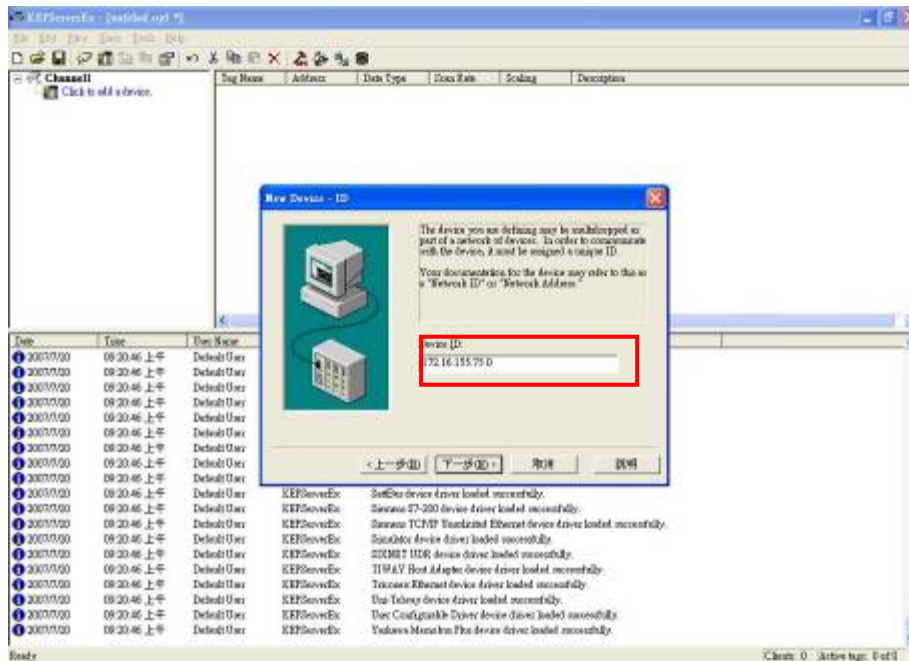


2-6. Select the device model (Modbus) and then click **Next**.

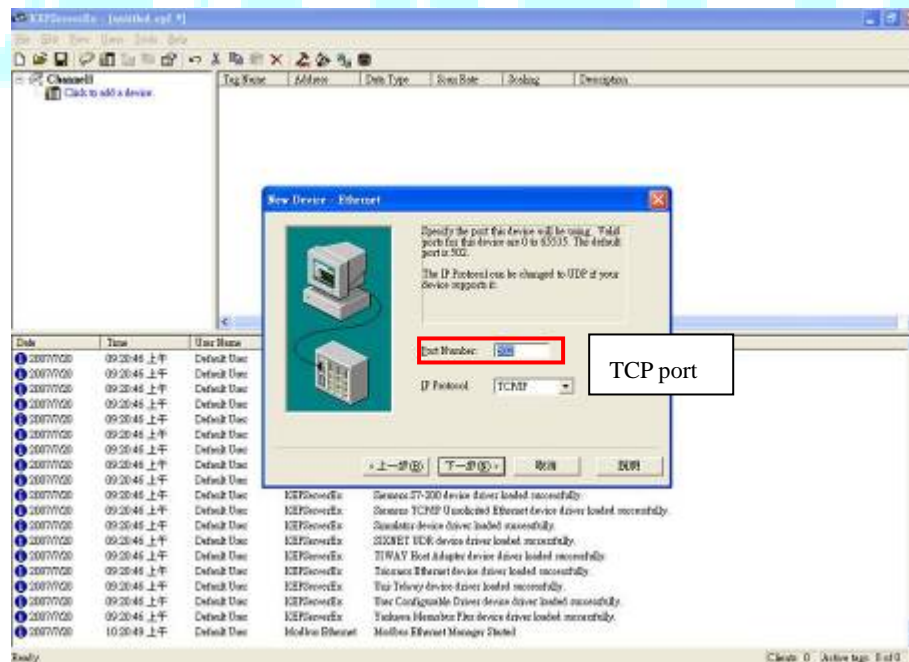


2-7. Define the EN01 IP and use default ID (0) in Device ID field. The entry should look like: **172.16.155.75.0**

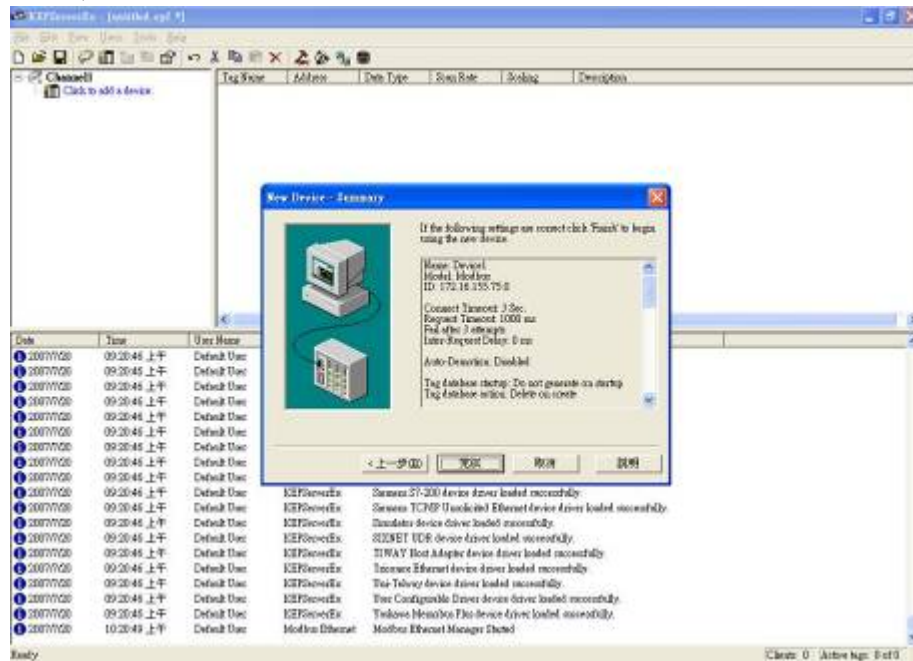
Click **Next** to continue.



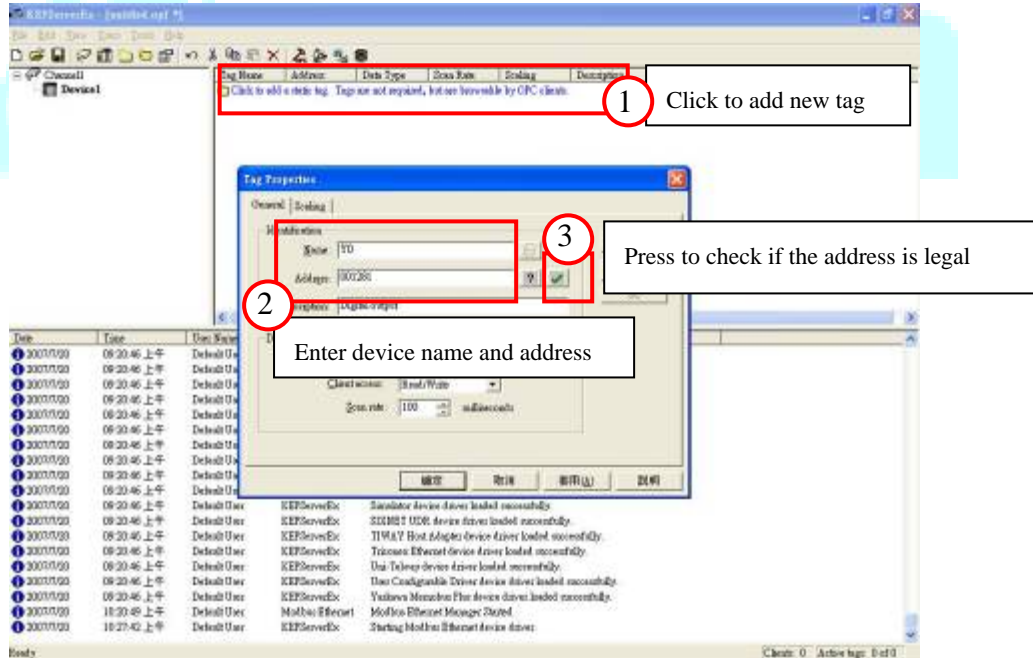
2-8. Setup Modbus TCP port (502), select the IP Protocol as **TCP/IP** and then click **Next**.



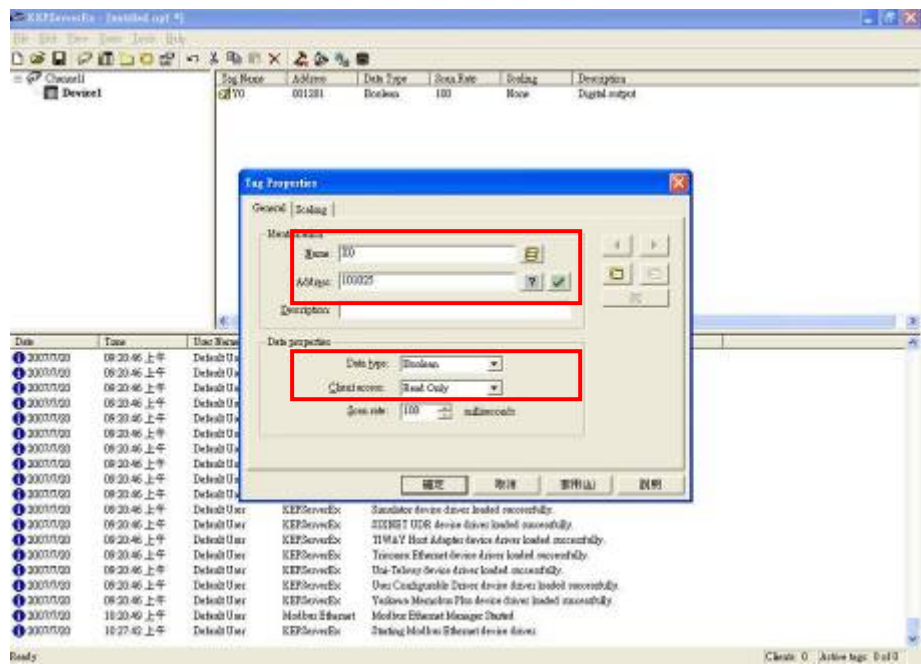
2-9. Then do some custom settings, or you can just follow the default settings. After setting finished, click **Finish**.



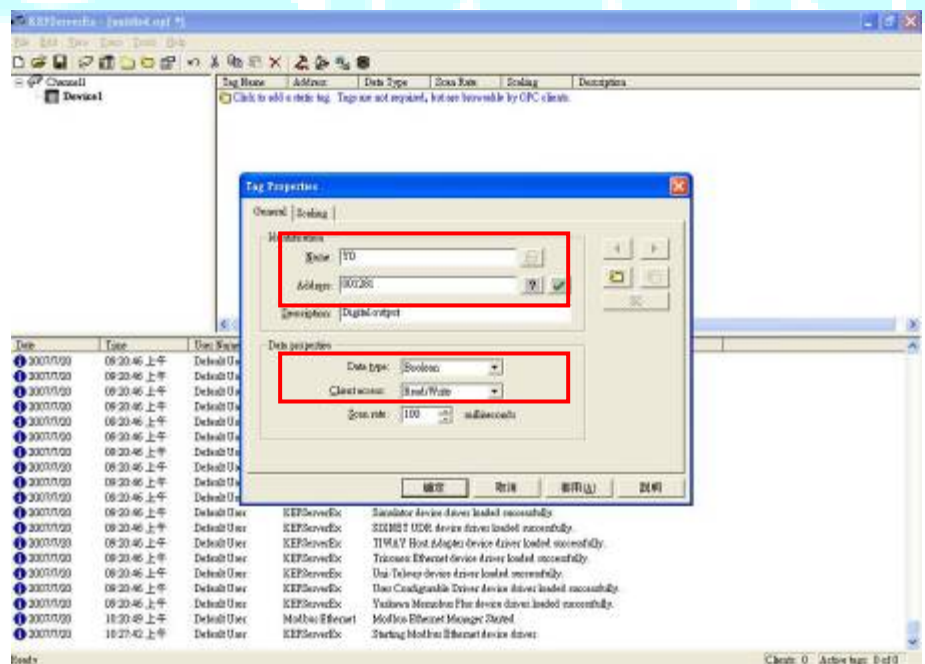
2-10. Click as indicated in the screen below, to add a static Tag for DI, DO, and AI,AO.



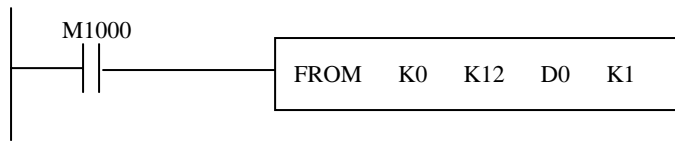
2-11. Define the DI tag (Address = 100065, Data type = Boolean, Client Address = Read only) and then click **Apply** to apply the changes. About the address, please refer the appendix.



2-13. Define the DI tag (Address = 001281, Data type = Boolean, Client Address = Read/Write) and then click **Apply** to apply the changes. About the address, please refer the appendix.



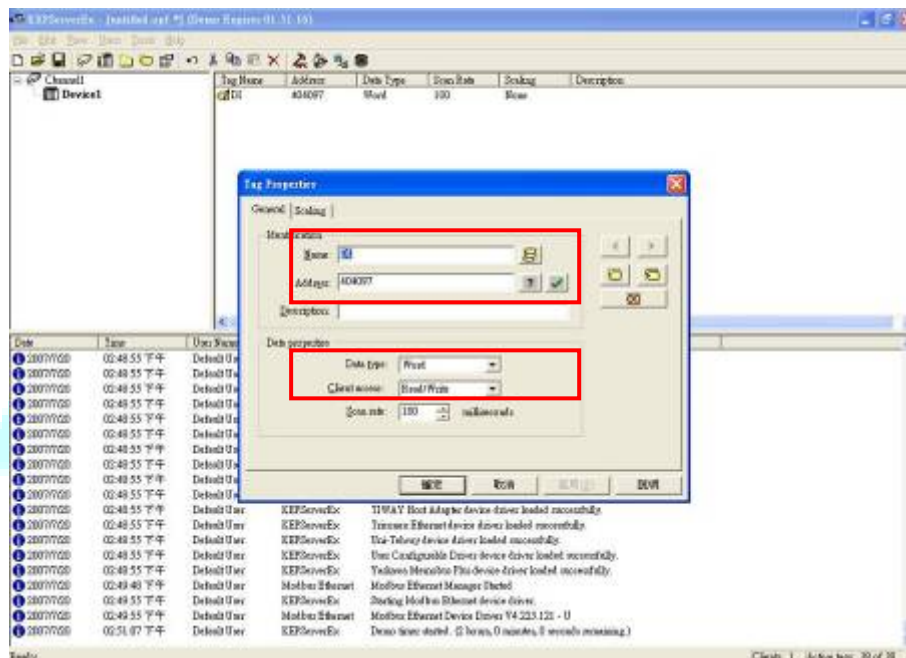
2-14. Define the AI tag. In the ladder program (WPLSpft), you have to indicate the register to store the analog input data from 06XA. The ladder program for example is as below:



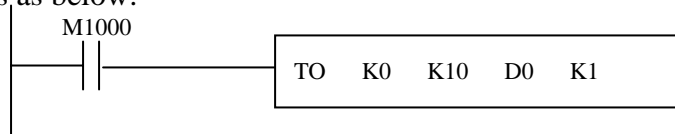
The program means read data from analog module DVP-06XA to D0. As a result, the D0 is set as analog input.

Note: For more information about DVP-06XA, please refer the user manual and you can download the manual on Delta official website.

Address = 404097, Data type = Word, Client Address =Read/Write and then click **Apply** to apply the changes. About the address, please refer the appendix.



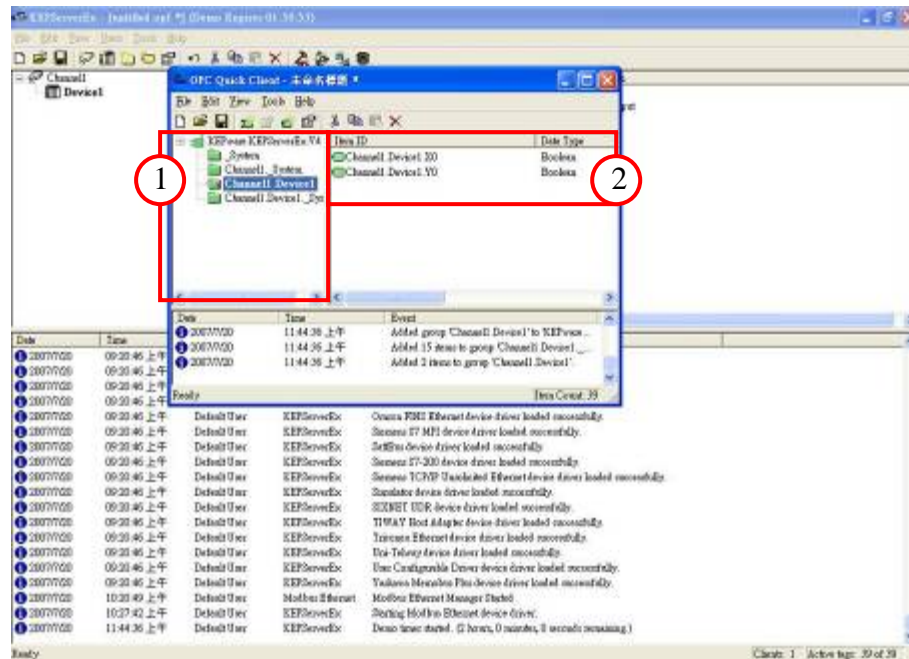
2-15. Define the AO tag. In the ladder program (WPLSpft), you have to indicate the register to store the analog output data from 06XA. The ladder program for example is as below:



The program means write data to analog module DVP-06XA via D0. As a result, the D0 is set as analog output. And the address is just like the description above.

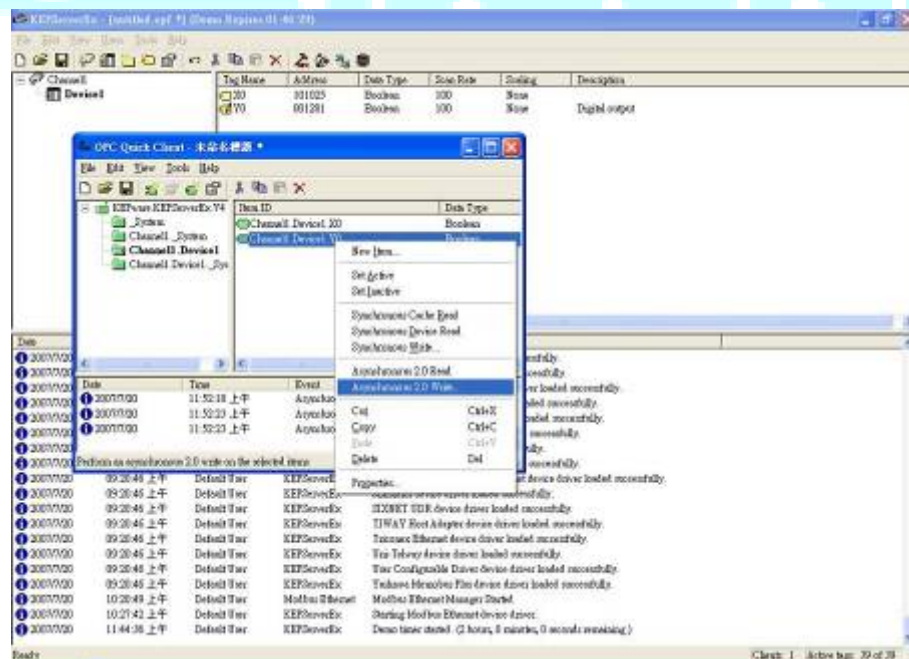
Note: For more information about DVP-06XA, please refer the user manual and you can download the manual on Delta official website

2-16. Click the **Quick Client** icon  to monitor all devices and values.

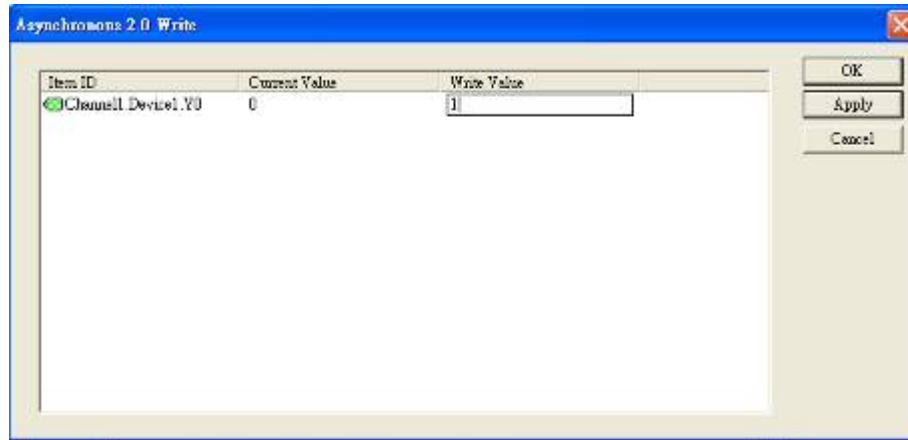


- ①. Select your device.
- ②. You can see all the tag you've set.

2-17. To test DI/DO/AI/AO, right click the tag and select **Asynchronous 2.0 Write** option and set values.

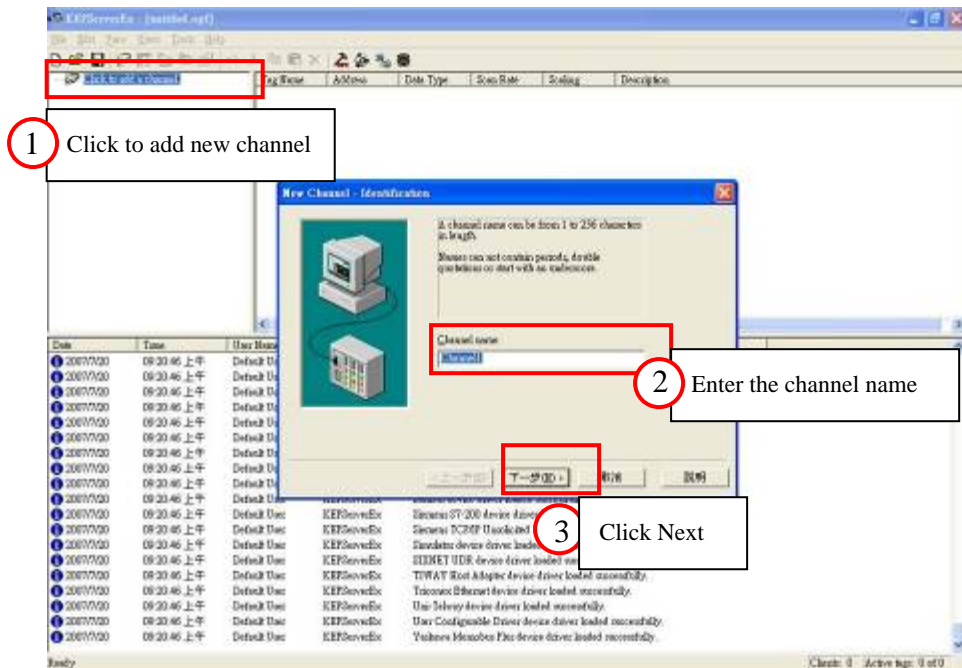


2-18. Enter the 『Write value』 and click **Apply** then you can see the value has been changed.

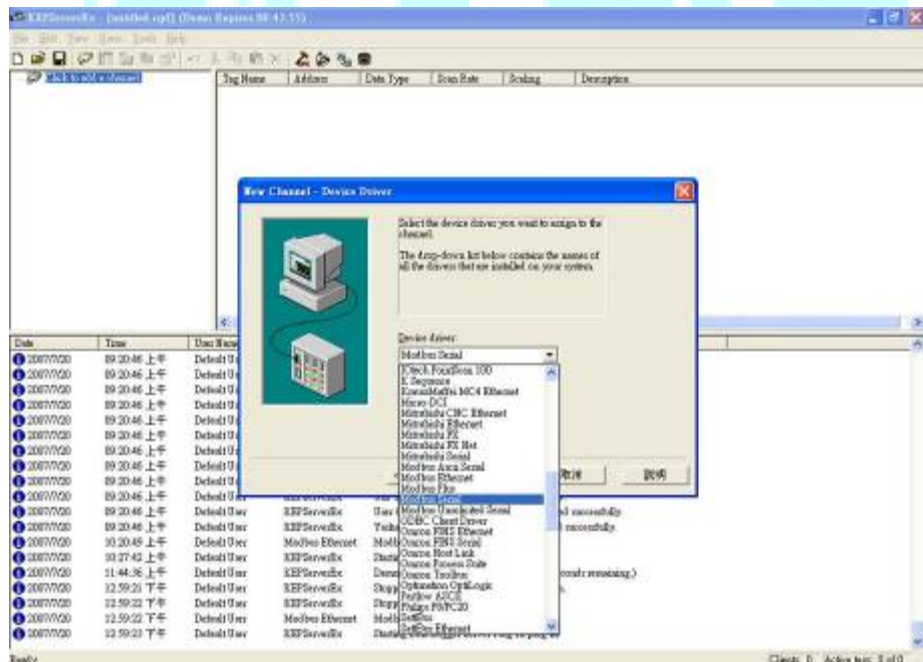


3. How to setup KEPServer EX communication with DVP28SV by RS485

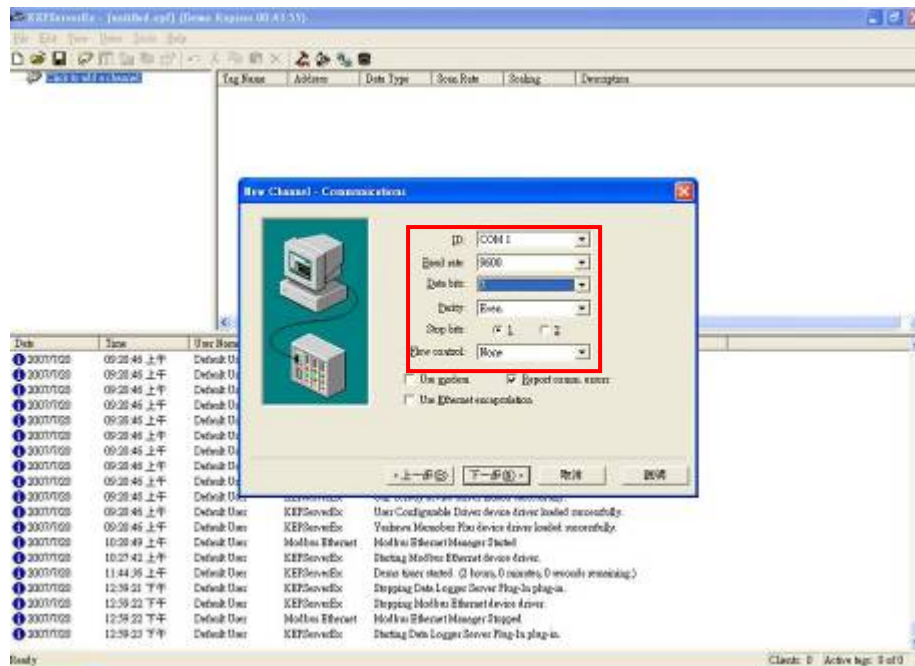
3-1. Run the KEPServerEX OPC Server to add a new channel and then click Next.



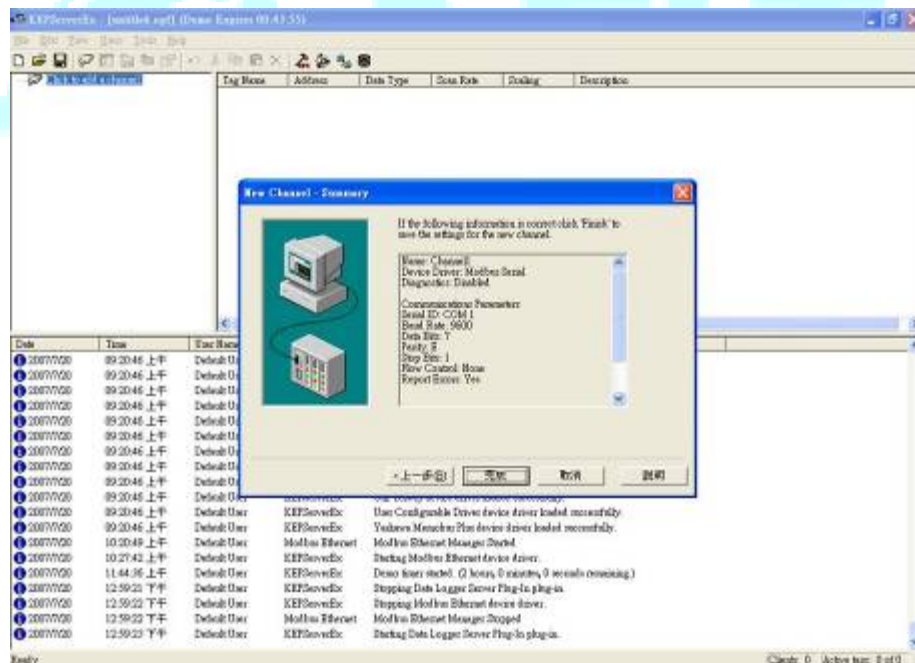
3-2. Select the **Device driver (Modbus Serial)** that you want to assign to the channel and then click **Next**.



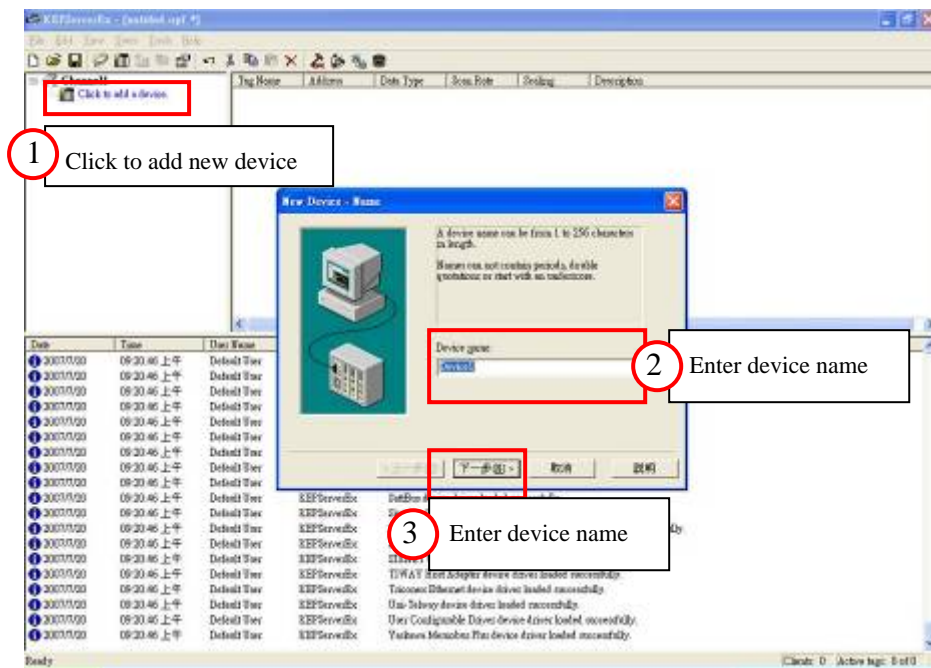
3-3. Set the Protocol to match PLC.



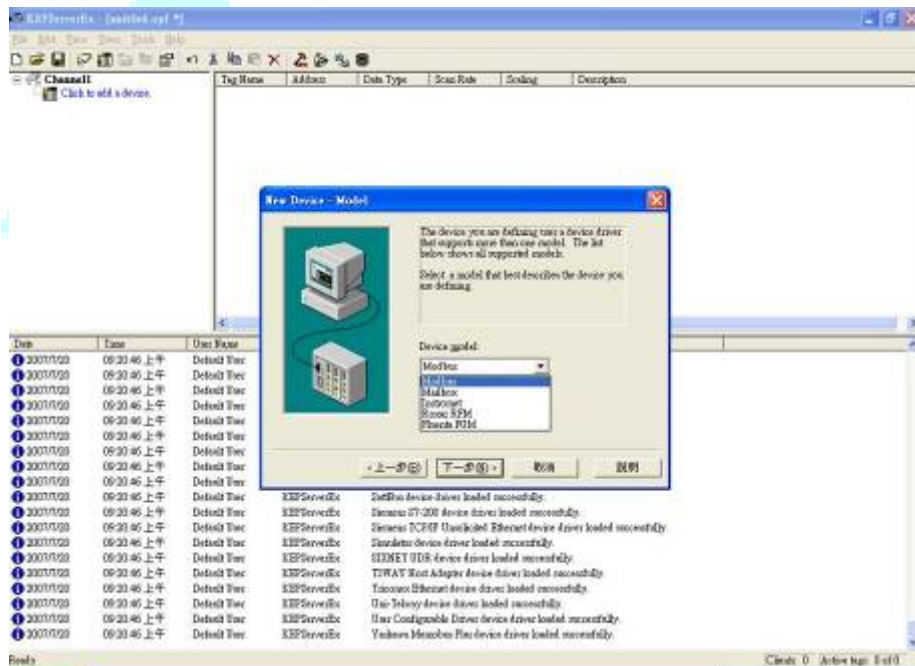
3-4. Then you can do some custom settings of KEPServer EX, or you can just follow the default settings. After setting finished, click **Finish**.



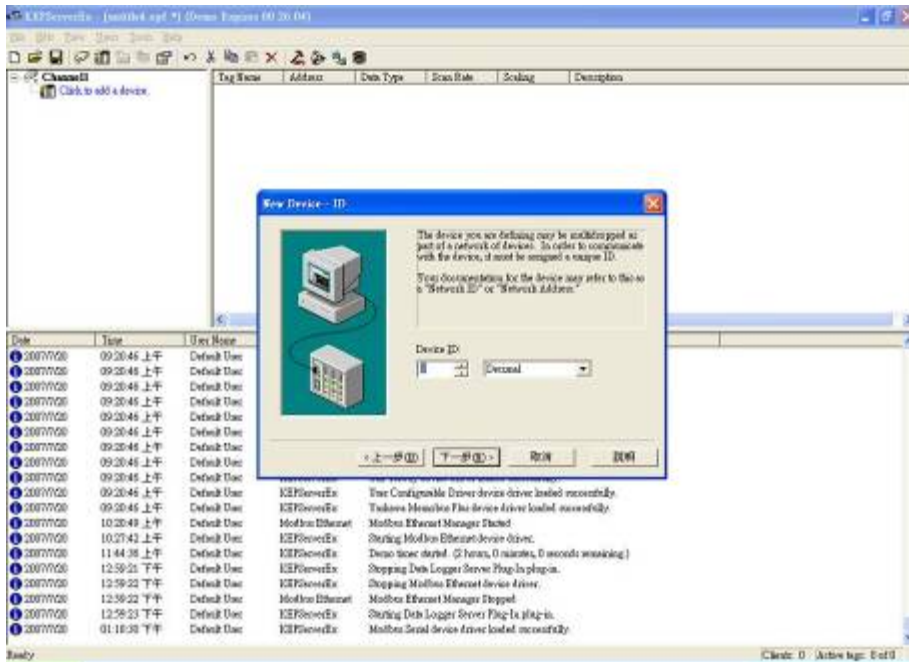
3-5. Add a new Device (Enter the name of the device) and then click **Next**.



3-6. Select the device model (Modbus) and then click **Next**.



3-7. Select the Device ID which match the PLC ID and Click **Next** to continue.



3-8. Follow steps 2.9 to 2.18 to complete the tag setting.

Note. If need any information about KEPServer EX, please visit the official website.

<http://www.kepware.com/>

Appendix

Modbus address table of Delta DVP series PLC.

| Device | Range | Type | DVP address (Hex) | Modbus address (Dec) | Effective | | | |
|--------|-----------|--------|----------------------|-------------------------|---------------|----------|---------|---------|
| | | | | | ES/EX/SS | SA/SX/SC | EH | |
| S | 000~255 | bit | 0000~00FF | 000001~000256 | 0~127 | 0~1024 | 0~1024 | |
| S | 256~511 | bit | 0100~01FF | 000247~000512 | | | | |
| S | 512~767 | bit | 0200~02FF | 000513~000768 | | | | |
| S | 768~1023 | bit | 0300~03FF | 000769~001024 | | | | |
| X | 000~377 | bit | 0400~04FF | 101025~101208 | 0~177 | 0~177 | 0~377 | |
| Y | 000~377 | bit | 0500~05FF | 001281~001536 | | | | |
| T | 000~255 | bit | 0600~06FF | 001537~001792 | 0~127 | 0~255 | 0~255 | |
| | | Word | 0600~06FF | 401537~401792 | | | | |
| M | 000~255 | bit | 0800~08FF | 002049~002304 | 0~1279 | 0~4095 | 0~4095 | |
| M | 256~511 | bit | 0900~09FF | 002305~002560 | | | | |
| M | 512~767 | bit | 0A00~0AFF | 002561~002816 | | | | |
| M | 768~1023 | bit | 0B00~0BFF | 002817~003072 | | | | |
| M | 1024~1279 | bit | 0C00~0CFF | 003073~003328 | | | | |
| M | 1280~1535 | bit | 0D00~0DFF | 003329~003584 | | | | |
| M | 1536~1791 | bit | B000~B0FF | 045057~045312 | 0~1279 | 0~4095 | 0~4095 | |
| M | 1792~2047 | bit | B100~B1FF | 045313~045568 | | | | |
| M | 2048~2303 | bit | B200~B2FF | 045569~045824 | | | | |
| M | 2304~2559 | bit | B300~B3FF | 045825~046080 | | | | |
| M | 2560~2815 | bit | B400~B4FF | 046081~046636 | | | | |
| M | 2816~3071 | bit | B500~B5FF | 046637~046592 | | | | |
| M | 3072~3327 | bit | B600~B6FF | 046593~046848 | | | | |
| M | 3328~3583 | bit | B700~B7FF | 046849~047104 | | | | |
| M | 3584~3839 | bit | B800~B8FF | 047105~047360 | | | | |
| M | 3840~4095 | bit | B900~B9FF | 046361~047616 | | | | |
| C | 0~199 | 16-bit | bit | 0E00~0EC7 | 003585~003784 | 0~127 | 0~199 | 0~199 |
| | | | Word | 0E00~0EC7 | 403585~403784 | | | |
| | 200~255 | 32-bit | bit | 0EC8~0EFF | 003785~003840 | 232~255 | 200~255 | 200~255 |
| | | | Dword | 0EC8~0EFF | 403785~403840 | | | |

| Device | Range | Type | DVP address (Hex) | Modbus address (Dec) | Effective | | |
|--------|-----------|------|----------------------|-------------------------|-----------|----------|--------|
| | | | | | ES/EX/SS | SA/SX/SC | EH |
| D | 000~255 | Word | 1000~10FF | 404097~404352 | 0~1311 | 0~4999 | 0~9999 |
| D | 256~511 | Word | 1100~11FF | 404353~404608 | | | |
| D | 512~767 | Word | 1200~12FF | 404609~404864 | | | |
| D | 768~1023 | Word | 1300~13FF | 404865~405120 | | | |
| D | 1024~1279 | Word | 1400~14FF | 405121~405376 | | | |
| D | 1280~1535 | Word | 1500~15FF | 405377~405632 | | | |
| D | 1536~1791 | Word | 1600~16FF | 405633~405888 | | | |
| D | 1792~2047 | Word | 1700~17FF | 405889~406144 | | | |
| D | 2048~2303 | Word | 1800~18FF | 406145~406400 | | | |
| D | 2304~2559 | Word | 1900~19FF | 406401~406656 | | | |
| D | 2560~2815 | Word | 1A00~1AFF | 406657~406912 | | | |
| D | 2816~3071 | Word | 1B00~1BFF | 406913~407168 | | | |
| D | 3072~3327 | Word | 1C00~1CFF | 407169~407424 | | | |
| D | 3328~3583 | Word | 1D00~1DFF | 407425~407680 | | | |
| D | 3584~3839 | Word | 1E00~1EFF | 407681~407936 | 0~1311 | 0~4999 | 0~9999 |
| D | 3840~4095 | Word | 1F00~1FFF | 407937~408912 | | | |
| D | 4096~4351 | Word | 9000~90FF | 408913~409168 | | | |
| D | 4352~4607 | Word | 9100~91FF | 436865~437120 | | | |
| D | 4608~4863 | Word | 9200~92FF | 437121~437376 | | | |
| D | 4864~5119 | Word | 9300~93FF | 437377~437632 | | | |
| D | 5120~5375 | Word | 9400~94FF | 437633~437888 | | | |
| D | 5376~5631 | Word | 9500~95FF | 437889~438144 | | | |
| D | 5632~5887 | Word | 9600~96FF | 438145~438400 | | | |
| D | 5888~6143 | Word | 9700~97FF | 438401~438656 | | | |
| D | 6144~6399 | Word | 9800~98FF | 438657~438912 | | | |
| D | 6400~6655 | Word | 9900~99FF | 438913~439168 | | | |
| D | 6656~6911 | Word | 9A00~9AFF | 439169~439424 | | | |
| D | 6912~7167 | Word | 9B00~9BFF | 439425~439680 | | | |

| Device | Range | Type | DVP address (Hex) | Modbus address (Dec) | Effective | | |
|--------|-----------|------|----------------------|-------------------------|-----------|----------|--------|
| | | | | | ES/EX/SS | SA/SX/SC | EH |
| D | 7168~7423 | Word | 9C00~9CFF | 439937~440192 | 0~1311 | 0~4999 | 0~9999 |
| D | 7424~7679 | Word | 9D00~9DFF | 440193~440448 | | | |
| D | 7680~7935 | Word | 9E00~9EFF | 440449~440704 | | | |
| D | 7936~8191 | Word | 9F00~9FFF | 440705~440960 | | | |
| D | 8192~8447 | Word | A000~A0FF | 440961~441216 | | | |
| D | 8448~8703 | Word | A100~A1FF | 441217~441472 | | | |
| D | 8704~8959 | Word | A200~A2FF | 441473~441728 | | | |
| D | 8960~9125 | Word | A300~A3FF | 441729~441984 | | | |
| D | 9126~9471 | Word | A400~A4FF | 441985~442240 | | | |
| D | 9472~9727 | Word | A500~A5FF | 442241~442496 | | | |
| D | 9728~9983 | Word | A600~A6FF | 442497~442752 | | | |
| D | 9984~9999 | Word | A700~A70F | 442753~443008 | | | |



