



Acromag Modbus OPC Server

APPLICATION NOTE

Configuring the Acromag Modbus OPC Server

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OBJECTIVE

This document illustrates two different procedures for configuring the Acromag Modbus OPC Server to use with any OPC Client application.

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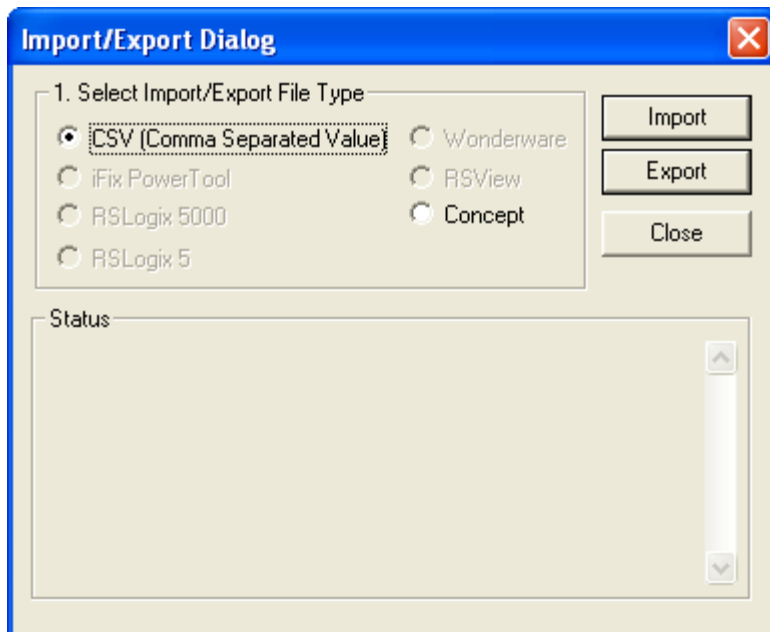
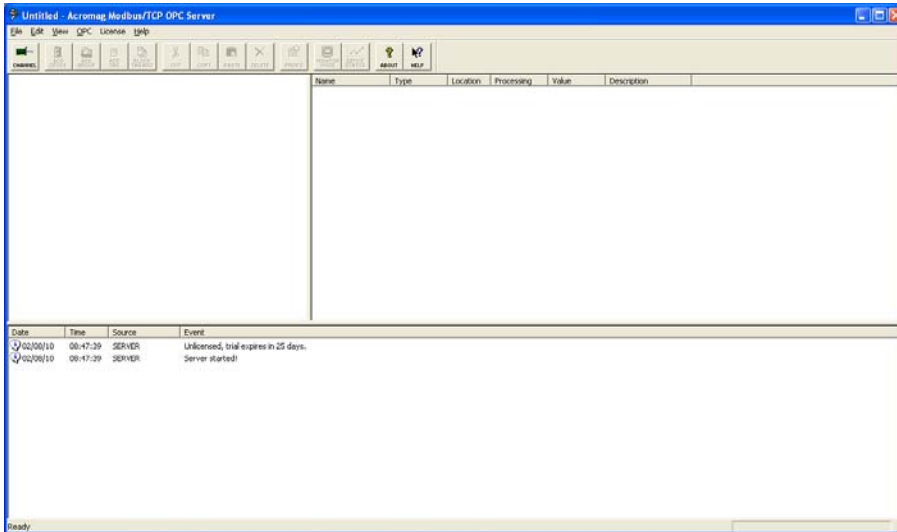
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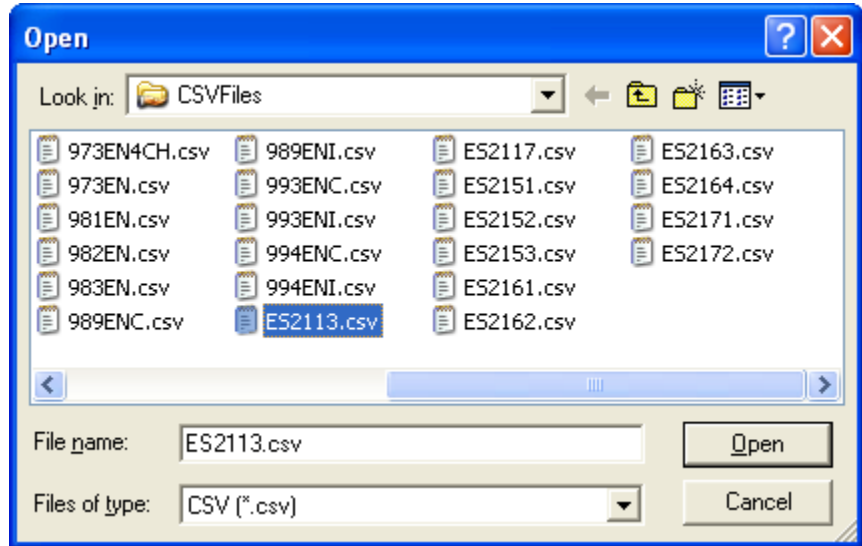
Configuring the Acromag Modbus OPC Server using CSV files

1. Start the Acromag Modbus OPC Server by selecting **Start-> All Programs->Acromag OPC-> Modbus TCP Master OPC DA Server-> OPC Server.**

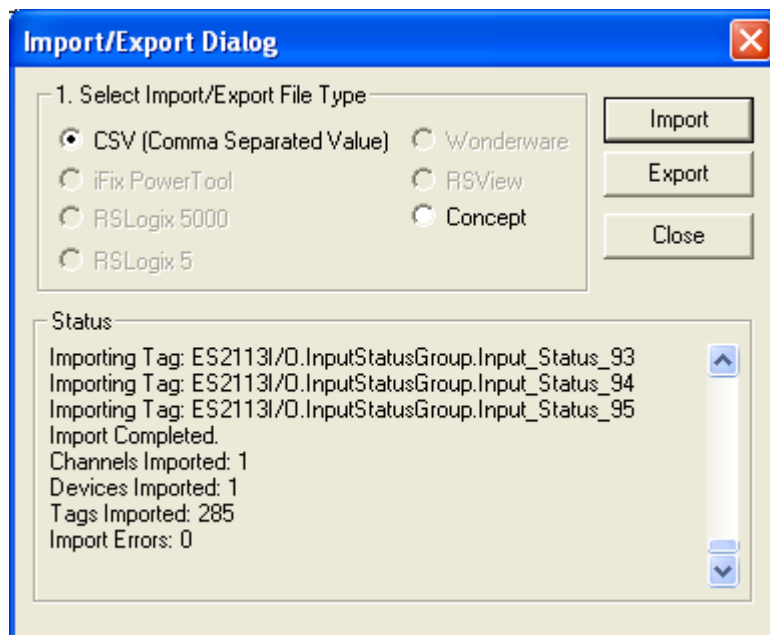


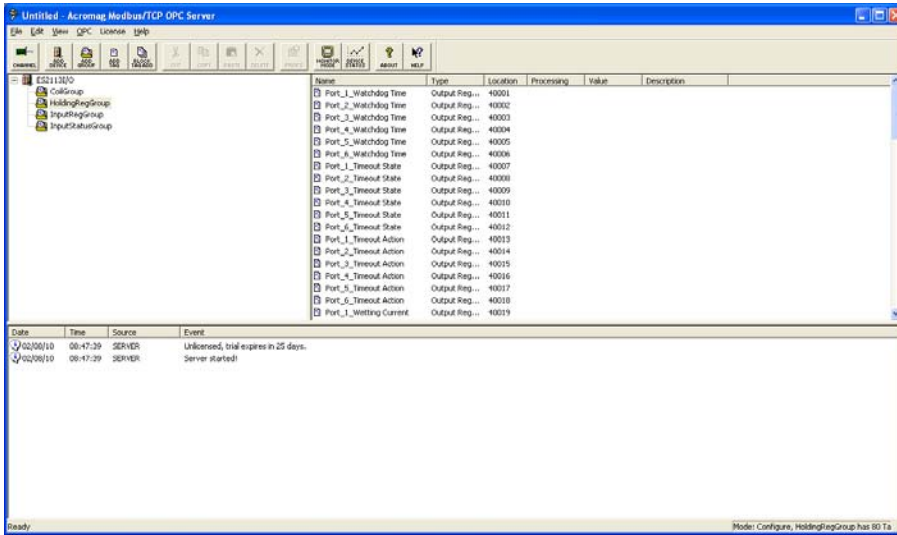
2. Acromag has created and tested CSV files for all of our Modbus TCP devices. These files can be used for easy configuration of the Acromag Modbus OPC Server. Select **File, Import/Export** to display this dialog box, then click on **Import.**

- In this box select the **CSV** file that corresponds to your Acromag device. In this example a ES2113-xxxx will be used. Then click on **Open**.

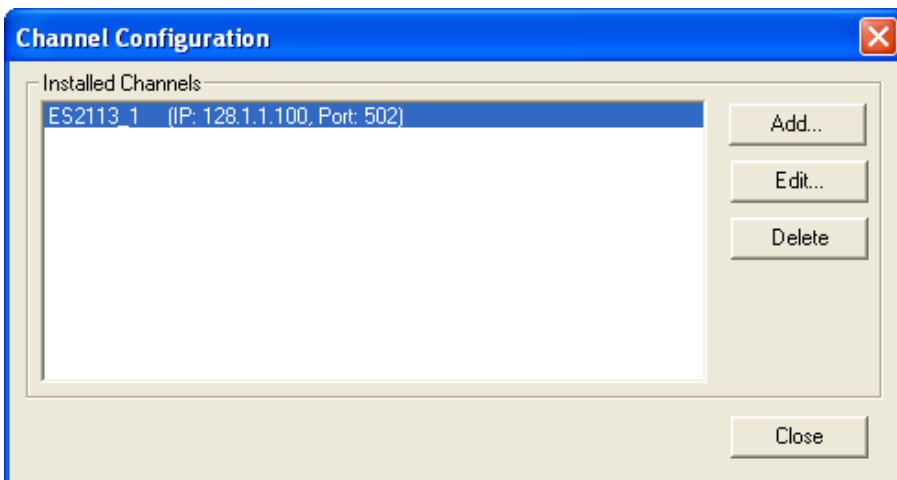


- Scroll down in the **Import/Export** Dialog box to verify there were no import errors. Most errors are caused by importing a **CSV** file that has the **Channel/Device** configuration as a previous import. This will be discussed a little later. Click on **Close**.

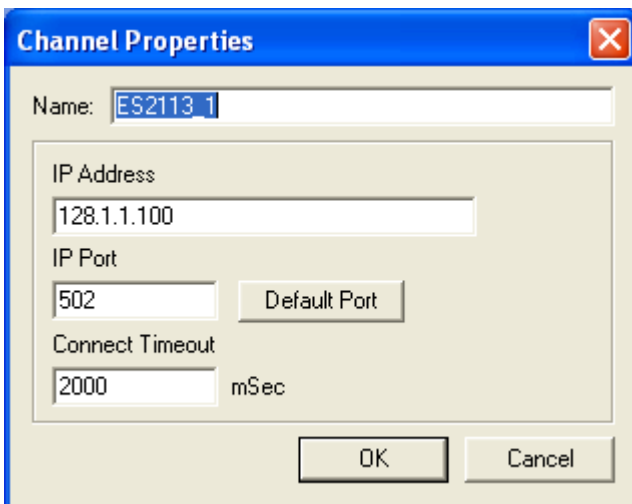




5. You can now see that an ES2113-xxxx device has been loaded. It is set to its default communication parameters so you will need to configure the **Channel** to match the IP address you have set your device to.

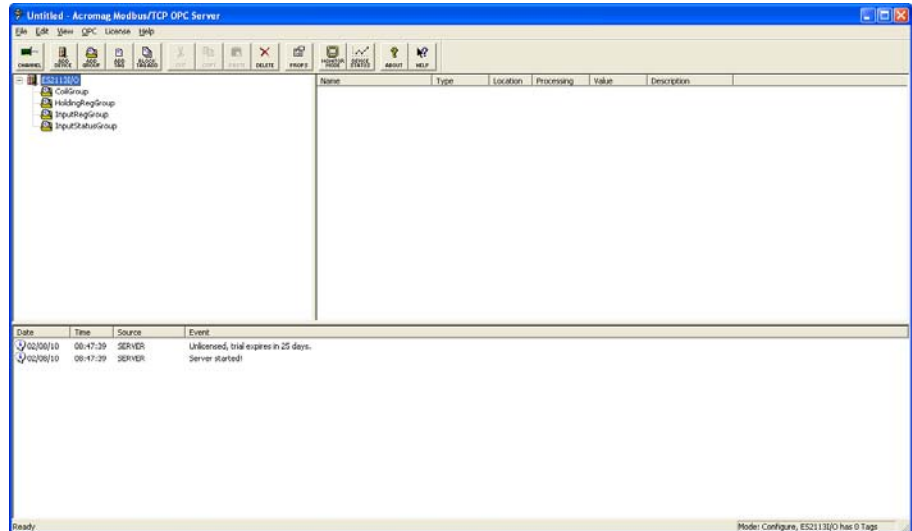


6. Click on the **Channel** icon in the main window to bring up this dialog box. Highlight the channel you wish to adjust and click **Edit**.

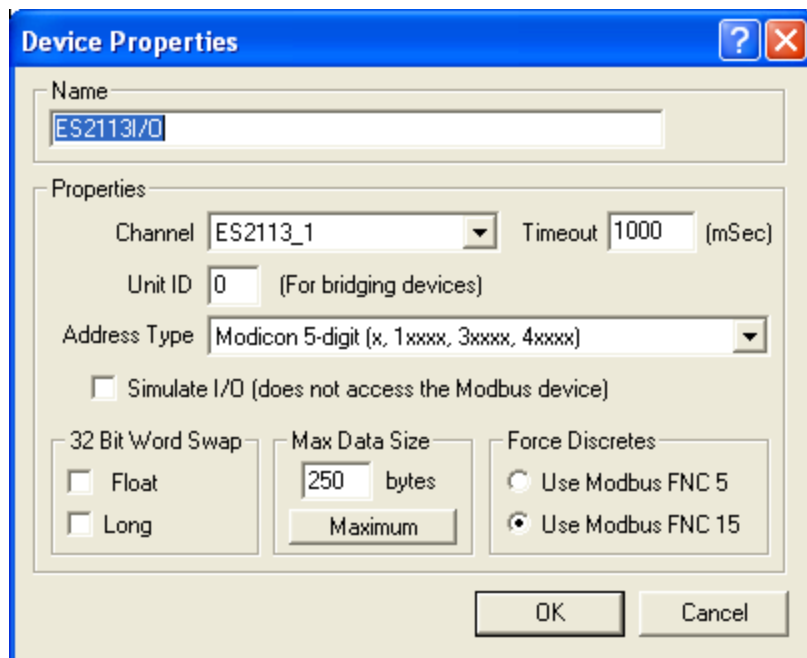


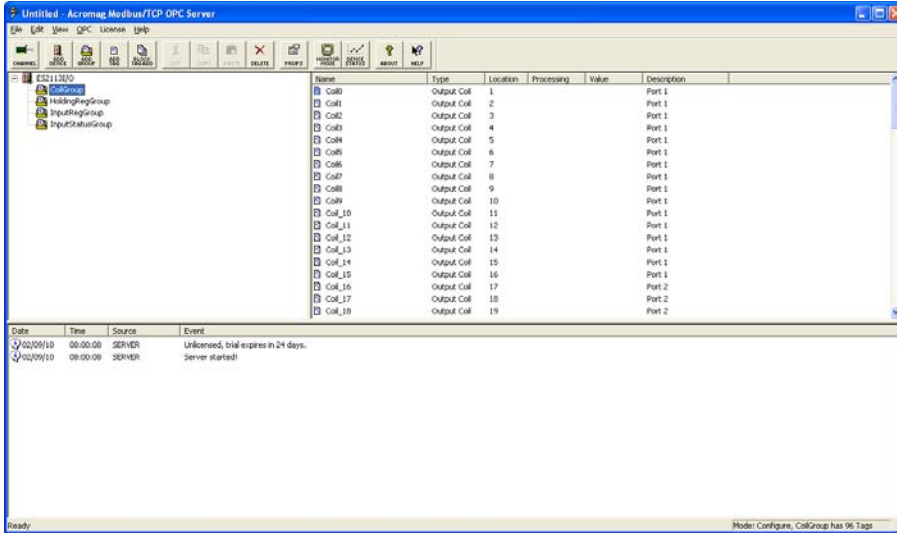
7. In this dialog box, you can change the **Name**, **IP Address** and **Connect Timeout** parameters. While it also allows you to change the **IP Port** setting, most Acromag devices work only on port 502 so this setting should not be changed. If you have more than one of the same devices to install, then you will need to modify its **Name** also, otherwise it can be left as default. Click **OK** when finished.

8. Right click on the device, **ES2113/O**, then select **Properties** to bring the **Device Properties** dialog box.

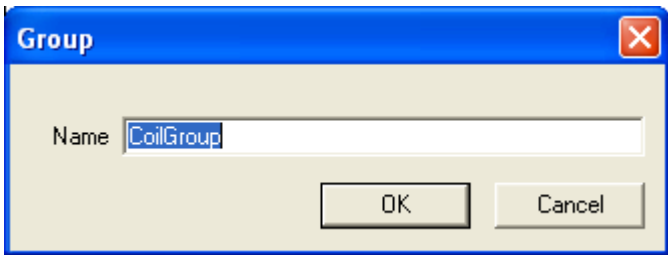


9. If you are going to **Import** more than one of the same device, the **Name** will need to be changed. The **Channel** field should be reflect the name that you assigned to the **Channel** in step 7. All other settings can be adjusted to your application or left at default.





10. Each Modbus register type has been given its own **Group** and had **Tag Items** defined. **Group** names and **Tag Item** names have been made generic and can be modified for your application by right clicking on either the **Group** or **Tag Item**, and selecting **Properties**.



11. Example of a **Group** property dialog box.

12. Example of a **Tag Item** property dialog box.

Tag Properties

Name:

Description:

Type:

Location:

Range: 1..9999

Data Type:

BCD Format:

Number of Bytes:

Access Rights:

Read + Write Read Only Write Only

Scaling:

Enable

Simulation signal:

13. The Acromag Modbus OPC Server is now configured and ready to use with a ES2113-xxxx. If you have more devices to add, simply repeat steps 2 to 10 for each one. Once finished, you can create a custom CSV file for the project by clicking **File->Import/Export->Export**, defining a **File Name**, and clicking **Save**. Now the fully configured project can be loaded at any time.

Save As

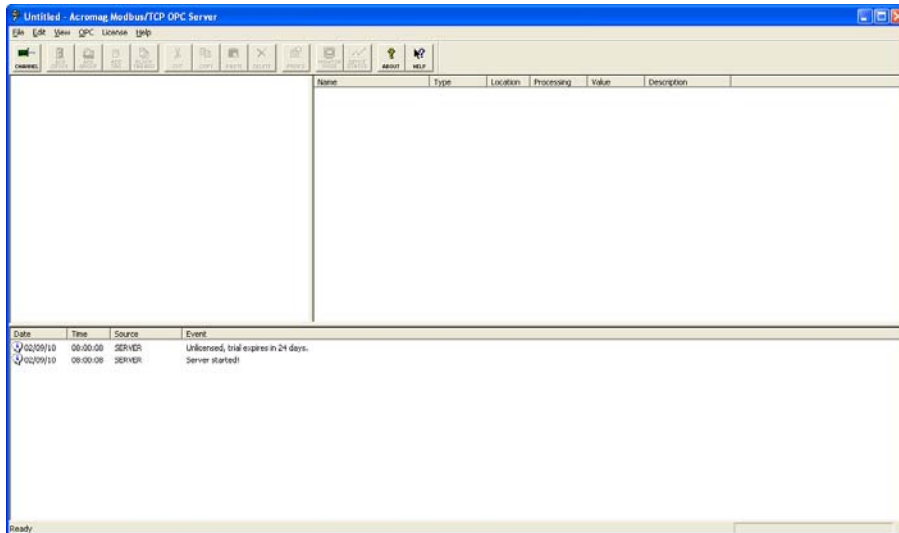
Save in:

951EN.csv	963EN.csv	967ENC.csv	973EN4CH.csv
952EN.csv	964EN.csv	967ENI.csv	973EN.csv
958ENC.csv	965EN4CH.csv	968ENC.csv	981EN.csv
958ENI.csv	965EN.csv	968ENI.csv	982EN.csv
961EN.csv	966EN4CH.csv	972EN4CH.csv	983EN.csv
962EN.csv	966EN.csv	972EN.csv	989ENC.csv

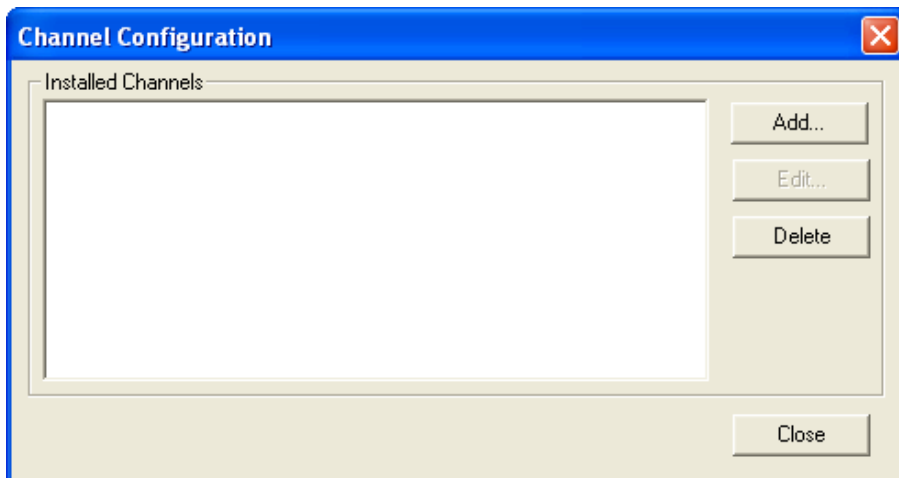
File name:

Save as type:

Manually Configuring the Acromag Modbus OPC Server

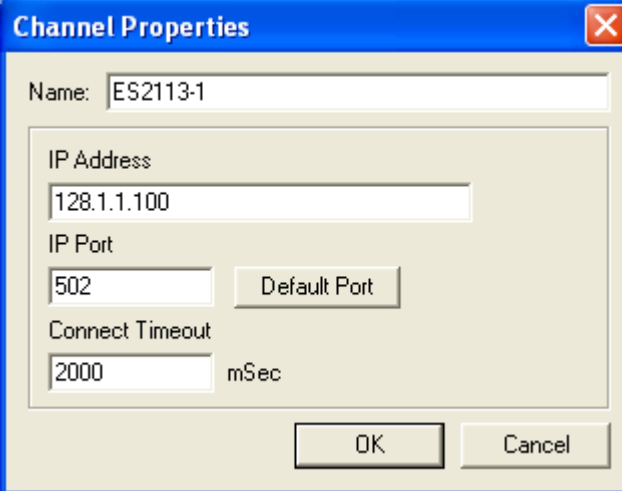


1. There may be instances where you will only be interested in just a few of the Modbus registers associated with an end device and don't want every register to have a **Tag Item** visible to an OPC Client. In these cases you will want to manually configure the Acromag Modbus OPC Server.



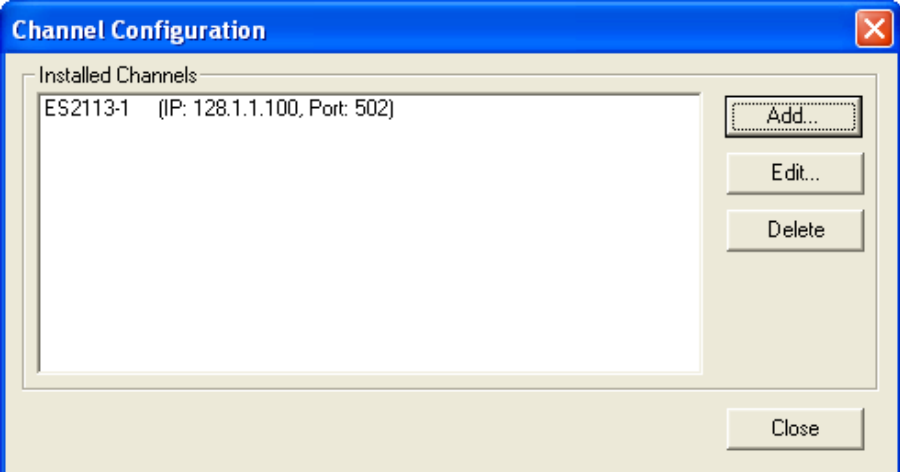
2. Start by clicking on the **Channel** icon in the main window above, then click on **Add** in the **Channel Configuration** dialog box.

3. In the **Channel Properties** dialog box, assign a **Name** to the device and set its **IP Address**. **IP Port** should be left at 502 and **Connect Timeout** should be good at 2000mS. Now click on **OK**. Then click **Close** in next dialog box.



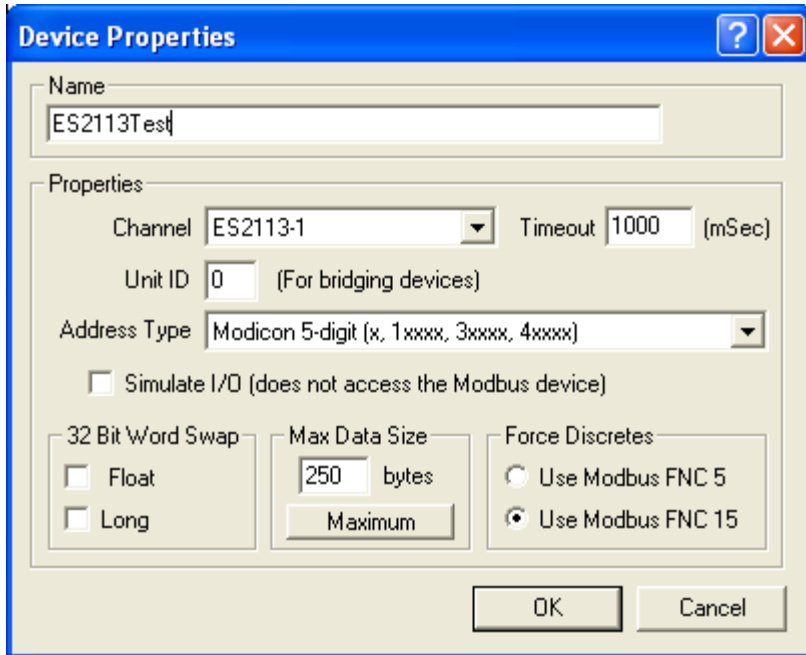
The **Channel Properties** dialog box is shown with the following fields and buttons:

- Name:** ES2113-1
- IP Address:** 128.1.1.100
- IP Port:** 502 (with a **Default Port** button next to it)
- Connect Timeout:** 2000 mSec
- Buttons:** OK, Cancel

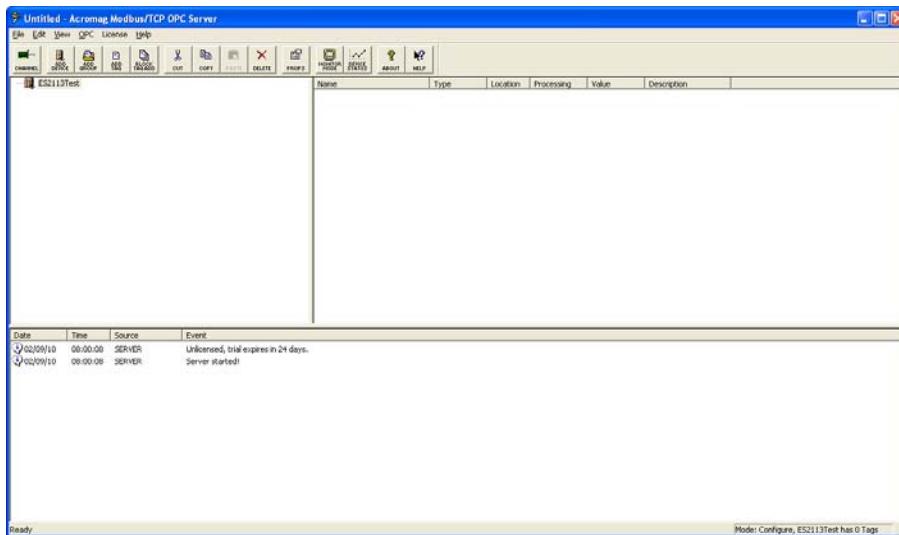


The **Channel Configuration** dialog box is shown with the following elements:

- Installed Channels:** A list box containing one entry: ES2113-1 (IP: 128.1.1.100, Port: 502)
- Buttons:** Add..., Edit..., Delete, Close

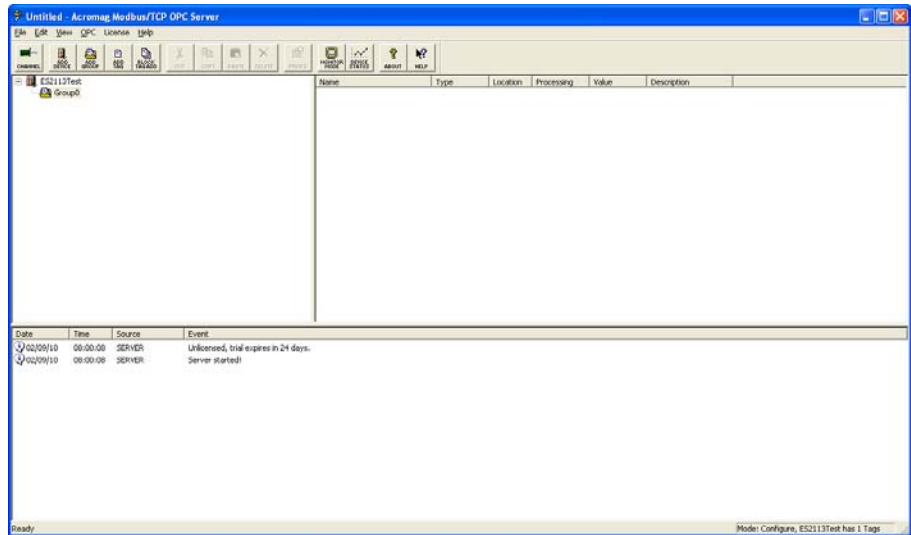
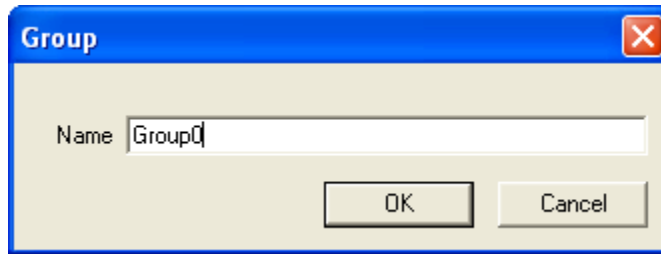


4. Click the **Add Device** icon in the main window to bring up the **Device Properties** dialog box. You will need to define a **Name** and verify that the **Channel** is the same as you set in the previous step. Other settings can be left at default. Now click on **OK** and the device will now be visible in the main window as below.



5. You can define **Tag Items** directly to the device or create **Groups** to add **Tag Items** too. How you approach this will depend on the project and what makes more sense for your application. To create a **Group** first, continue on. To start defining **Tag Items**, go to step 7.

- Click on the **Add Group** icon in the main window. Define a **Group Name** and then click **OK**, the **Group Name** will be added under the **Device** name.



Tag Properties

Name:

Description:

Type:

Location:

Range: 10001..19999

Data Type:

BCD Format:

Number of Bytes:

Access Rights: Read + Write Read Only Write Only

Scaling: Enable

Simulation signal:

- To add a **Tag Item**, click on the **Add Tag** icon in the main window. Here you can define a **Name, Description, Type, Location, Data Type** and **Access Rights**. You can also enable **Scaling** for analog devices which will give you access to the dialog box below. When finished, click OK in one, if you didn't use the scaling option, or both boxes. Your **Tag Item** will now be visible under the **Device** or the **Group** depending on which method you chose.

Tag Process Settings

Scaling

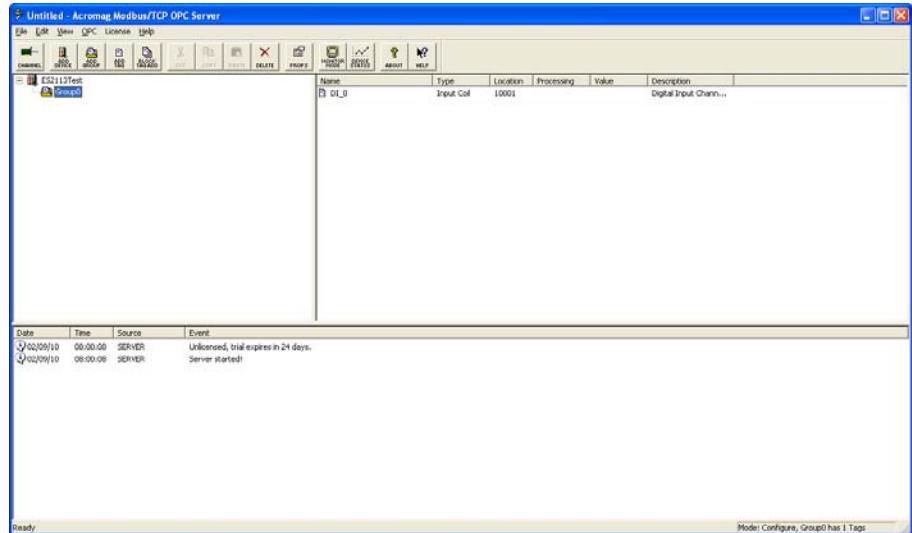
Raw: Units:

Min: Scales to: Min: Max: Max:

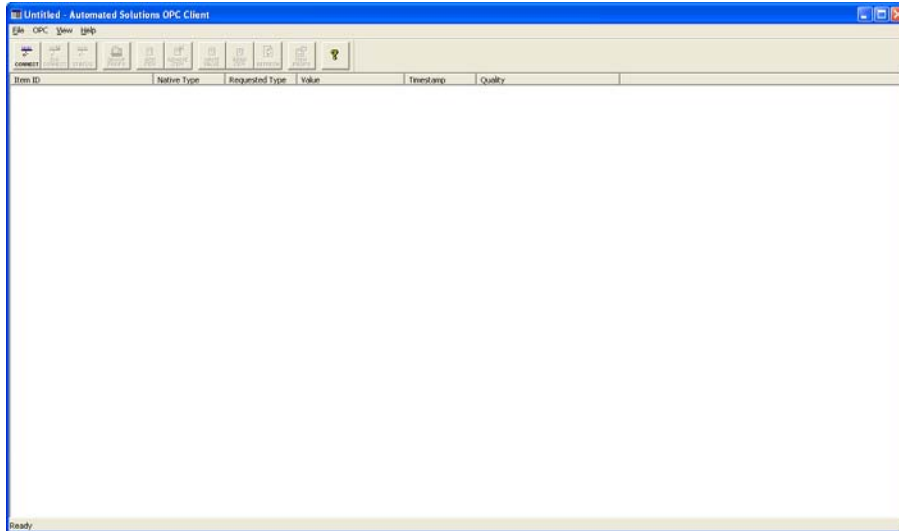
Conversion: Linear Square Root

Deadband: Log Deadband:

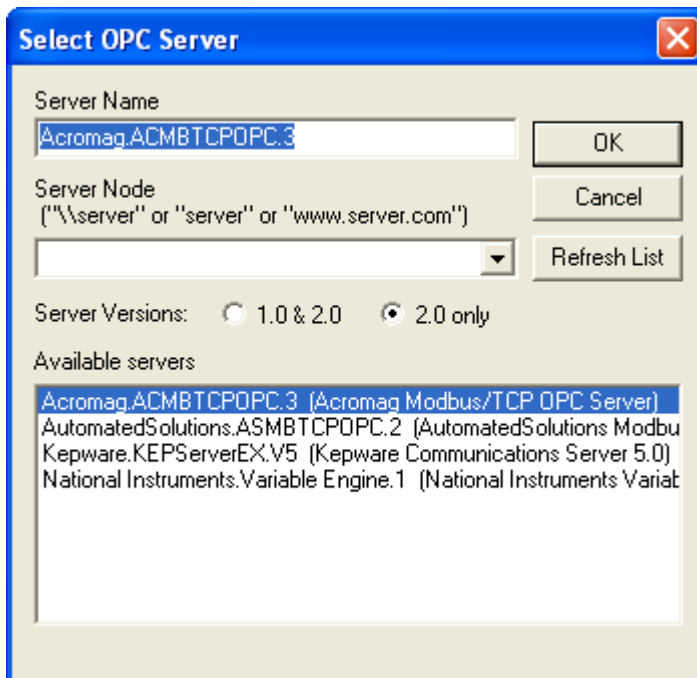
8. Continue steps 6 and/or 7 until all desired **Groups** and/or **Tag Items** are defined for the **Device**. If you have more devices to add, simply repeat steps 2 to 7 for each one. Once finished, you can create a custom **CSV** file for the project by clicking **File->Import/Export->Export**, defining a **File Name**, and clicking **Save**. Now the full configured project can be loaded at any time. The Acromag Modbus OPC Server is now configured and ready to use.



Testing with the OPC Client Application

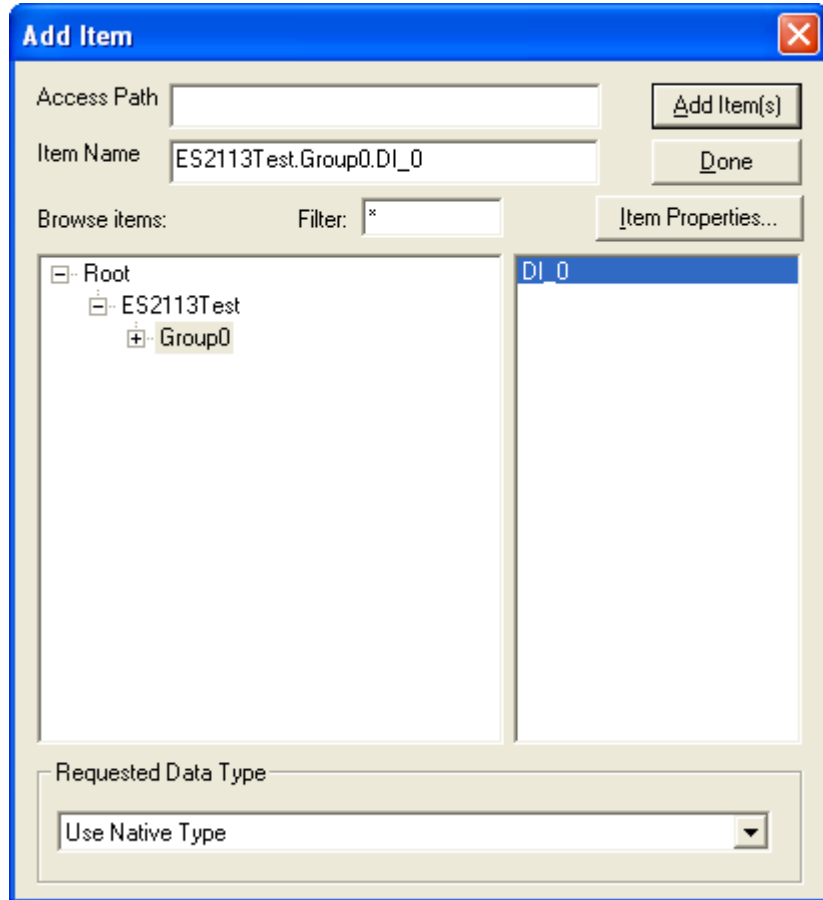


1. To start the OPC Client application, click **Start->All Programs->Acromag OPC->Modbus TCP Master OPC DA Server->OPC Client**. Main window will appear as to the left.

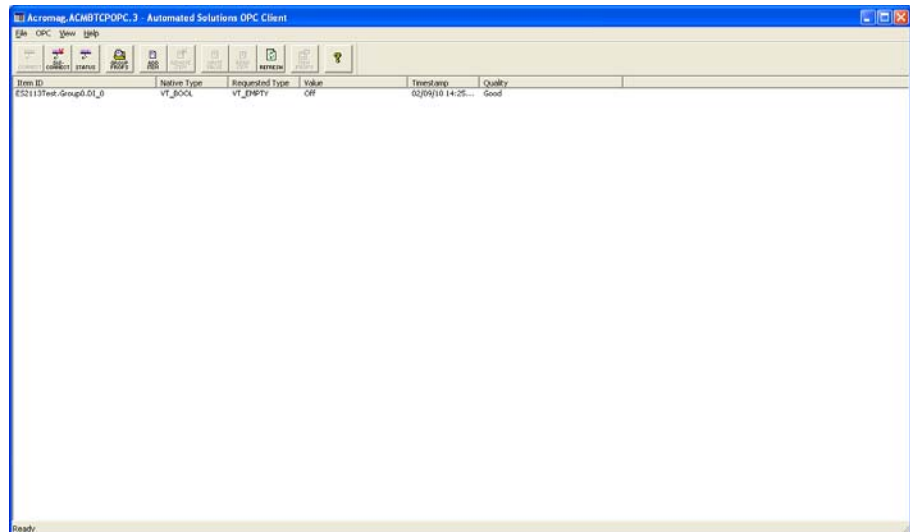


2. Click on the **Connect** icon in the main window. Now select the **Acromag.ACMBTCPOPC.3** from the list of available servers and click **OK**.

- Click on the **Add Item** icon on the main window. In the **Browse Items** window you can see the **Device** that was created in the OPC server. Expanding the **Device** makes the **Group** visible and by highlighting the **Group**, the **Tag Items** are listed in the right hand window. Highlight the **Tags** you wish to monitor and then click on **Add Items**.



- The **Tag Item(s)** you selected are now displayed in the main window. The **OPC Client** will begin exchanging data with the **OPC Server** and if the **OPC Server** has connectivity to the end device, the **Quality** will be reported as **Good**. If the **Quality** is reported as **BAD**, this means that OPC Server is unable to communicate to the end device and either your configuration of the **IP Address** and **IP Port** in **OPC Server** are suspect or you have a networking issue.



NOTES: