10000 SE Pine Street

Portland, OR 97216

TEL: 800.852.1368

FAX: 503.262.3410

www.aimco-global.com

Configuring a Rockwell PLC with Modbus TCP

Authors: Kade Olson and Sam Stewart

Date: June 18, 2015

Introduction

Many AIMCO torque controllers come standard with Modbus TCP. A common use is interfacing them to an Allen-Bradley PLC for error proofing and data collection. This document is intended to configure a Rockwell PLC with Modbus TCP.

Equipment/Software

- Modbus capable controller from AIMCO.
  - Generation 4 controller (iEC4EGVP).
- 1769-L32E CompactLogix5332E Controller Rev 16.20.
- MVI69-MNET Modbus TCP/IP Master Module.
- ProSoft Configuration Builder version 4.1.0 (Build 4).
- RS-232 to RJ-45 Adapter.

Initial Setup

- Connect RS-232 to RJ-45 adapter to the Profibus module ‘CFG’ port.

10000 SE Pine Street

Portland, OR 97216

TEL: 800.852.1368

FAX: 503.262.3410

www.aimco-global.com

ProSoft Configuration Builder

This document was developed in parallel with 'Using an AIMCO Controller on a Rockwell PLC with Modbus TCP'. It will establish the connection between the Modbus TCP Master Network Interface Module and the Modbus TCP capable slave.

Configuring the Connection

Open the ProSoft Configuration Builder (PCB) software. Open a new project, right click on 'Default Module' and select 'Choose Module Type'. The module we are using in this example is the MVI69-MNET. Mark the correct field in 'Product Line Filter' as well as the drop down menu under 'Select Module Type'. See Figure 1

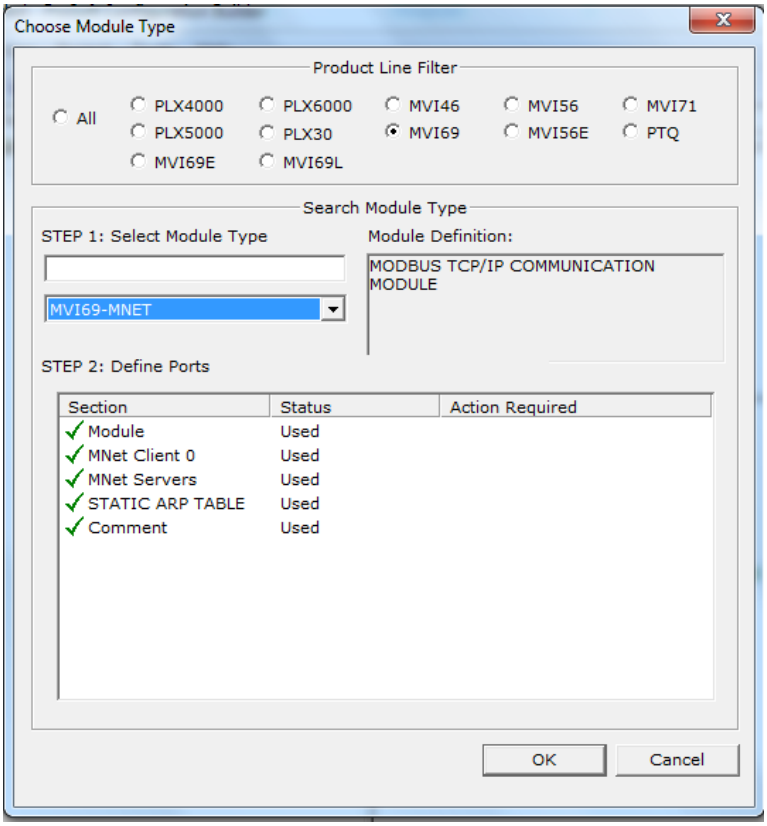


Figure 1 PCB Module Type

Click 'OK' when finished. The following screen should match Figure 2.

10000 SE Pine Street

Portland, OR 97216

TEL: 800.852.1368

FAX: 503.262.3410

www.aimco-global.com

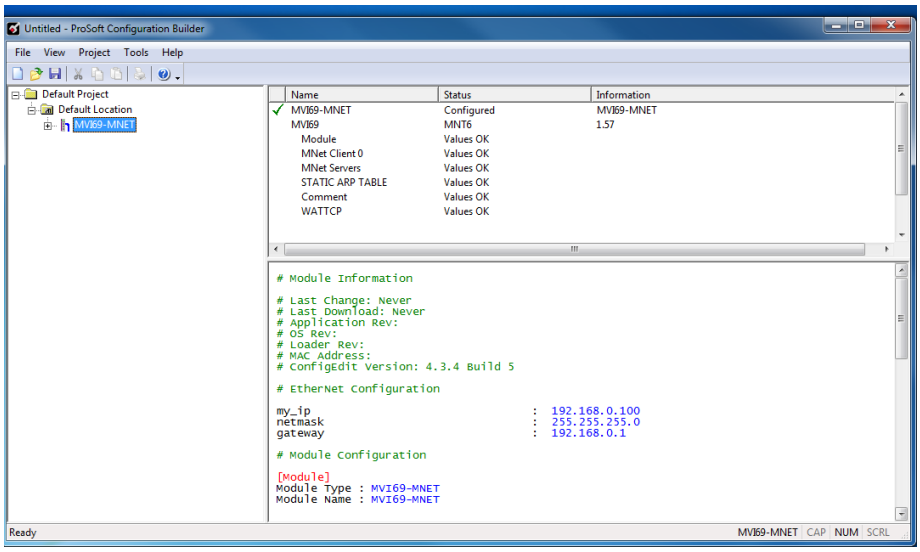


Figure 2 PCB Main Screen

Expand the 'MVI69-MNET' tree under 'Default Location' that now replaces the existing 'Default Module'. In that menu, expand 'Module' and double click 'Module'. Change the 'Read Register Count' and 'Write Register Count' to 300. Also change the 'Write Register Start' to 1000. See Figure 3. Click 'OK'

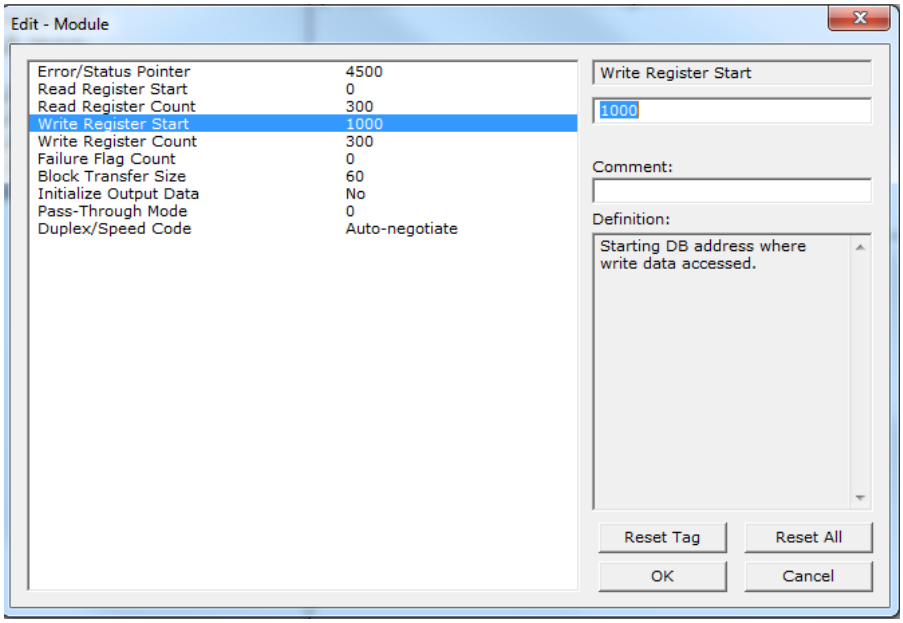


Figure 3 PCB Edit Modbus Module

10000 SE Pine Street

Portland, OR 97216

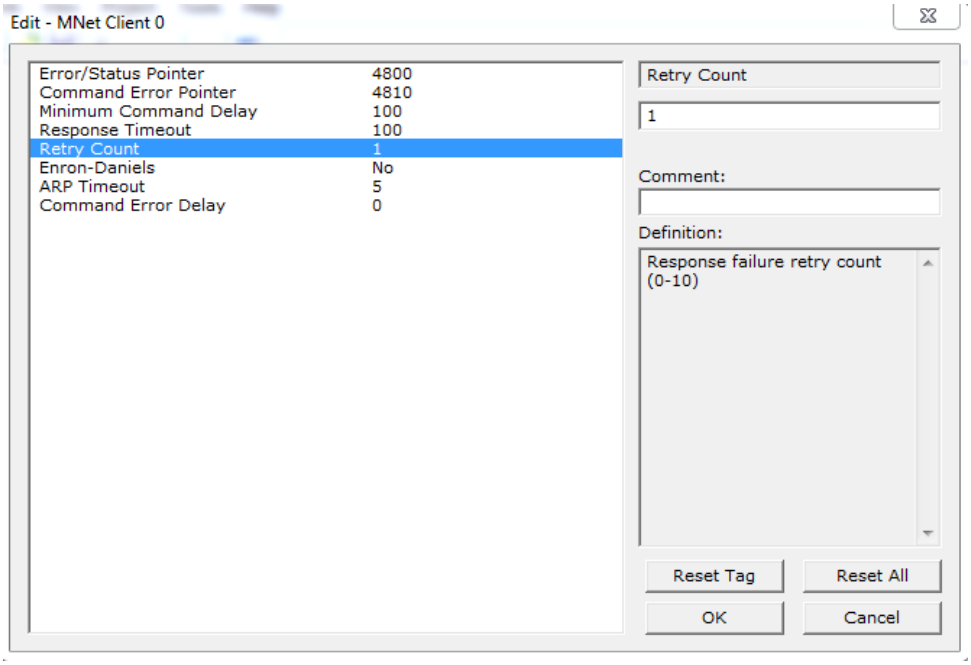
TEL: 800.852.1368

FAX: 503.262.3410

www.aimco-global.com

Now expand ‘MNET Client 0’ and double click ‘MNet Client 0’. Change the following:

- Error/Status Pointer - 4800
- Command Error Pointer - 4810
- Minimum Command Delay - 100
- Response Timeout - 100
- Retry Count - 1



Click ‘OK’.

Figure 4 PCB Modbus TCP Client

Expand ‘MNet Client 0 Commands’. To create a command, simply click ‘Add Row’ and make editions using ‘Edit Row’. Configure the commands according to Figure 5. Click ‘OK’.

10000 SE Pine Street

Portland, OR 97216

TEL: 800.852.1368

FAX: 503.262.3410

www.aimco-global.com

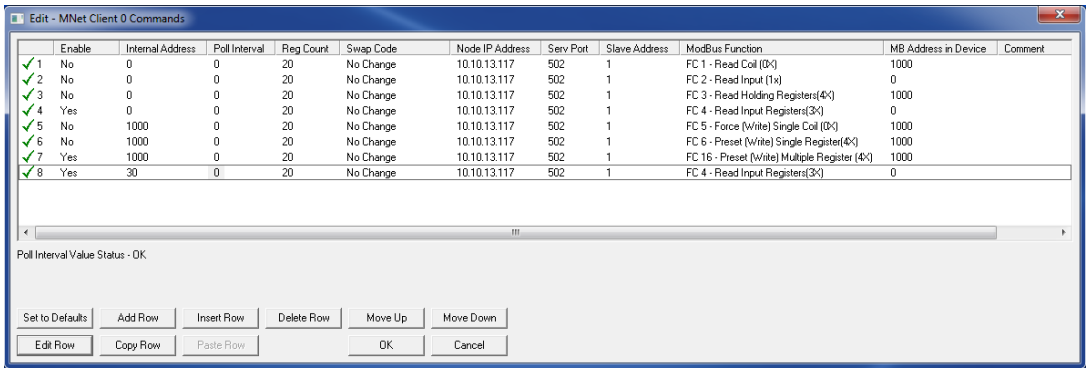


Figure 5 PCB Modbus TCP Client Commands

Expand 'MNet Servers' and double click 'MNet Servers'. The only value to change here is 'Output Offset' from 0 to 15. Click 'OK'.

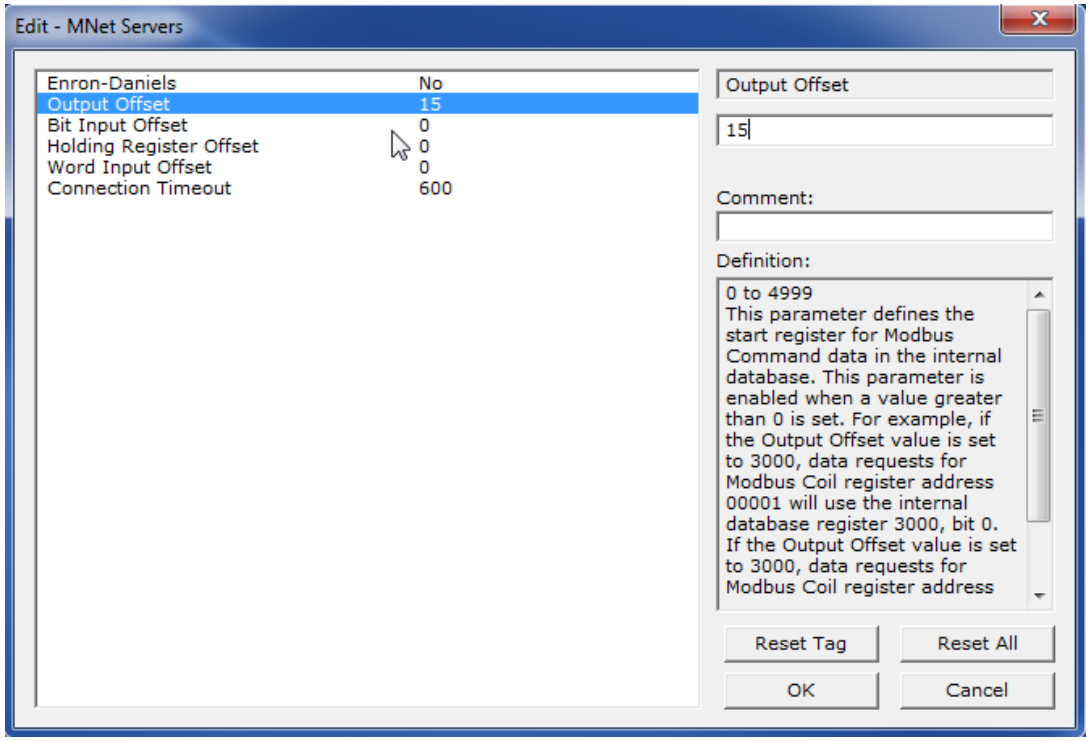


Figure 6 PCB Modbus TCP MNet Servers

10000 SE Pine Street

Portland, OR 97216

TEL: 800.852.1368

FAX: 503.262.3410

www.aimco-global.com

The last step in this process is to change the 'Ethernet Configuration' under the 'MVI69-MNET' tree. These values need to match the values on the Modbus module. If this does not match up, there will be no communication between the two devices. Click 'OK' when finished.

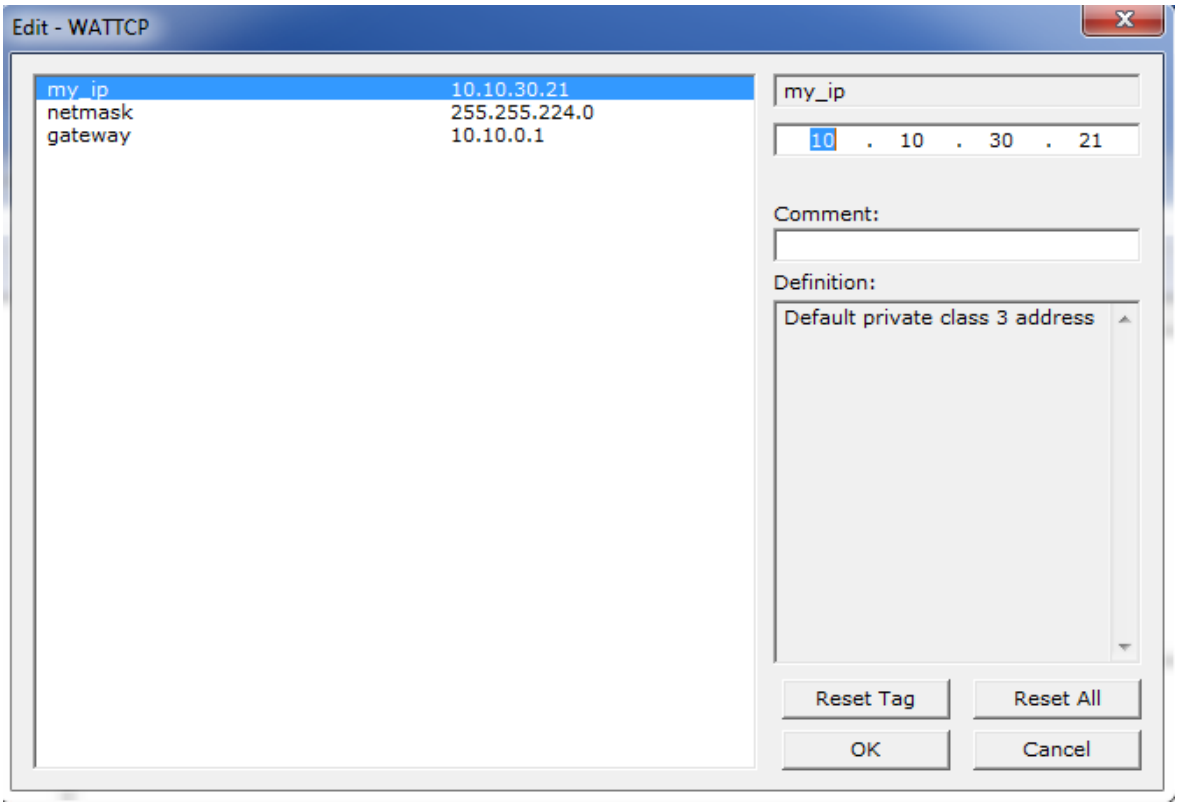


Figure 7 PCB Modbus TCP Ethernet Configuration

Save your settings. Right click on 'MVI69-MNET' and select 'Download from PC to Device'.

10000 SE Pine Street

Portland, OR 97216

TEL: 800.852.1368

FAX: 503.262.3410

www.aimco-global.com

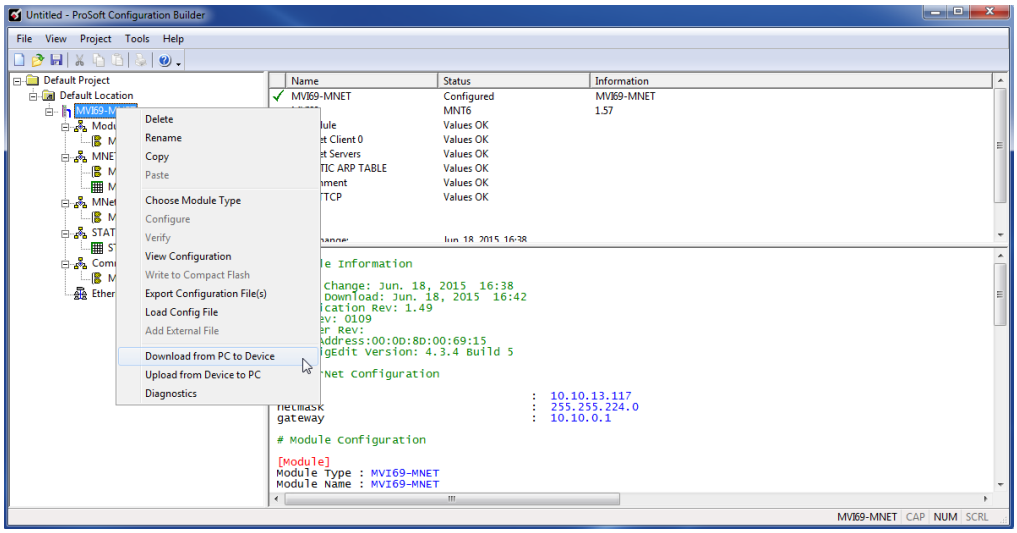


Figure 8 PCB Download

Select the 'Com' port being used to communicate with the Modbus master module. Click 'Download' when ready.

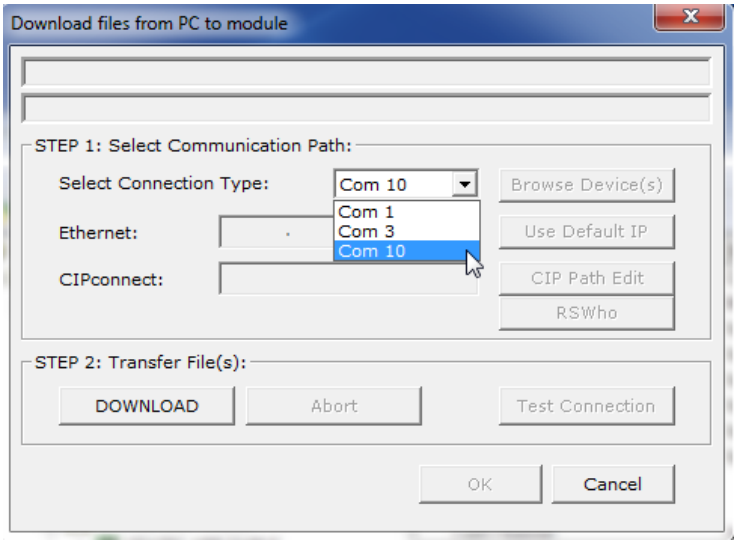


Figure 11 PCB Download

The AIMCO controller may need to be rebooted when the download has finished.