Application Note

How to Retain Modbus/TCP Outputs on a MPiec Controller

Subject: Application Note	Product: MPiec Controllers	Doc#: AN.MPIEC.12
Title: How to Retain Modbus/TCP Outputs on a MPiec Controller		

Contents

Application Overview

This application note describes the requirements to retain Modbus/TCP outputs when using a MPiec controller. Sample programs for the MP2300Siec controller and RedLion HMI are provided.   Please note that only clicking the individual variable Retain Column found in the Global Variables list, Figure 1 below, <u>WILL NOT</u> maintain the <u>Modbus/TCP</u> outputs upon a power cycle.

Figure 1 Global Variables List

Products Used:

Component	Product and Model Number
Servopack	Sigma-5
Motor	Sigma-5
Controller	MP2300Siec
Software	MotionWorks IEC Version 2.5.0.78 Pro
Third Party Device (HMI)	RedLion Crimson 3.0 Simulator

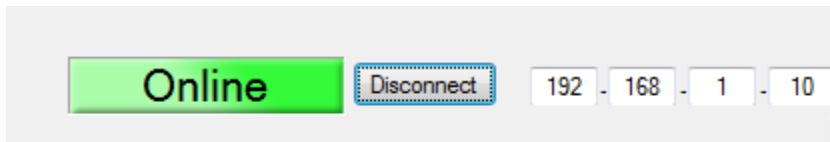| Subject: Application Note	Product: MPiec Controllers	Doc#: AN.MPIEC.12
Title: How to Retain Modbus/TCP Outputs on a MPiec Controller		

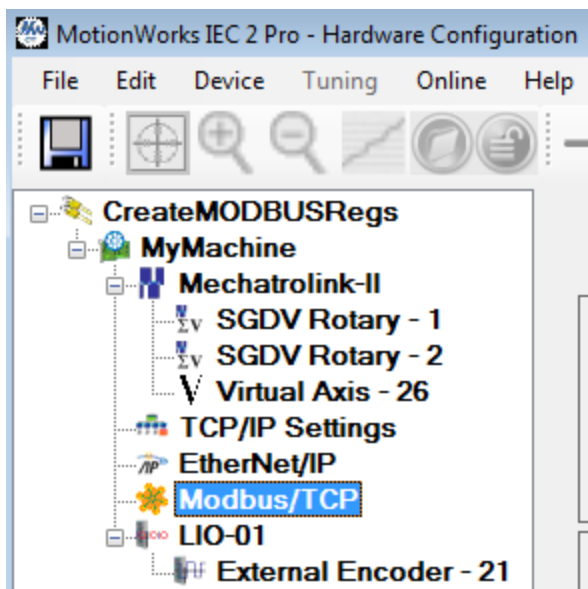## MPiec Firmware tested

Version 2.6.0

Areas of Importance

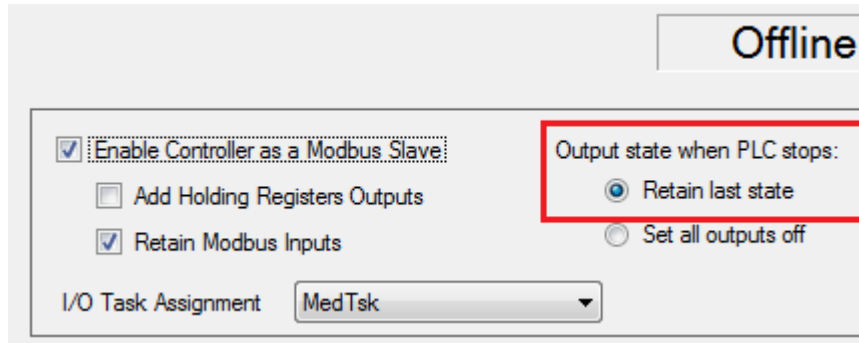### Hardware Configuration

- In the Hardware Configuration, connect to the controller by clicking Online with the correct IP address
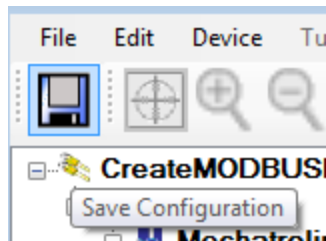
  o

  o

- Click on Modbus/TCP Setting from the Project Tree on the left
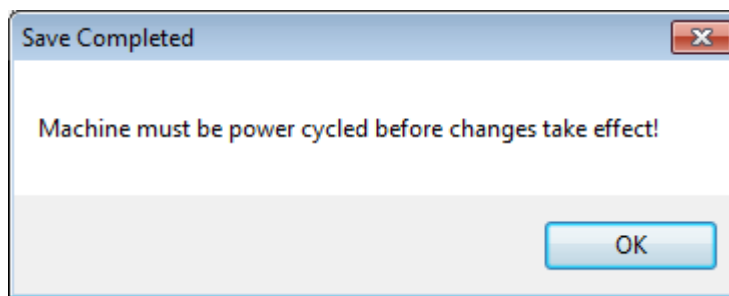
  o

- Confirm the button "Retain last state" is selected

- Save configuration, disconnect from the controller and cycle power to the controller and servopacks
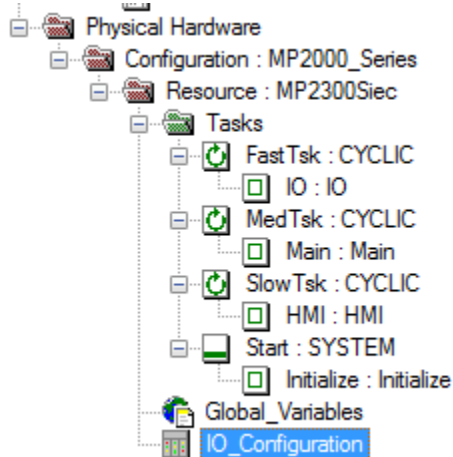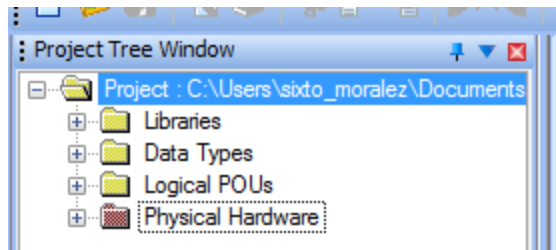
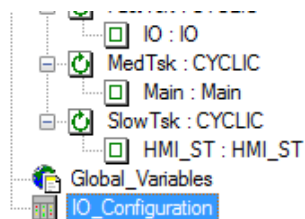| Subject: Application Note	Product: MPiec Controllers	Doc#: AN.MPIEC.12
Title: How to Retain Modbus/TCP Outputs on a MPiec Controller		

IO_Configuration

- Within the MotionWorks IEC environment, locate the Project Tree Window and open the Resource Folder under Physical Hardware > Configuration

    o

    o

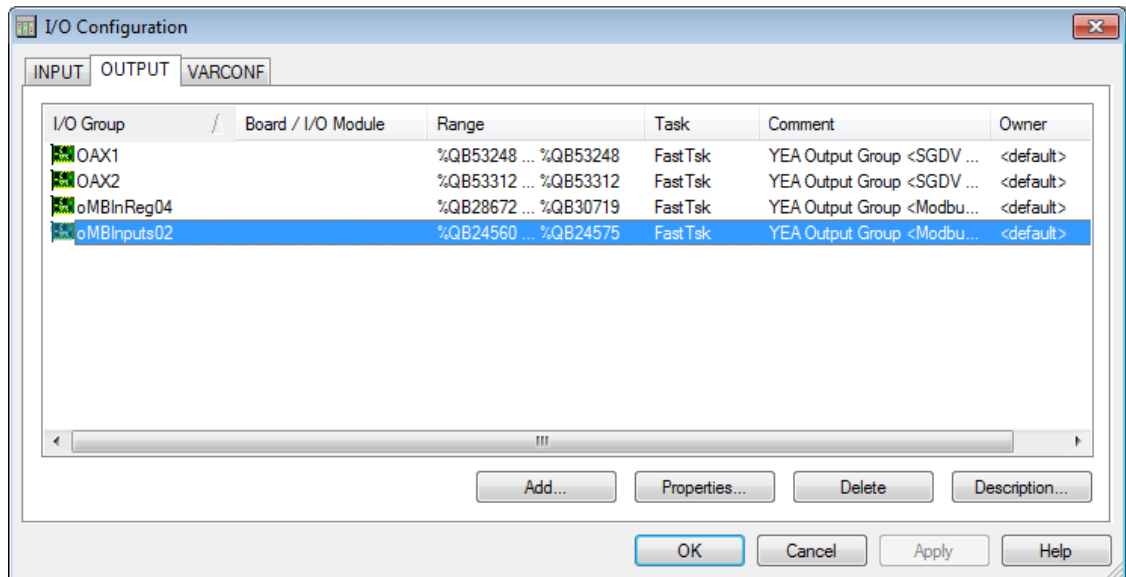- At the very bottom of the Project Tree, double click on IO_Configuration

    o

- Choose the Output Tab and the I/O Group to retain [Example shows Function Code: 02]

- o
- Click Properties
- Within the Properties Screen
  - o Specify the starting address to retain the information and the length
    - The default number is the total length of memory for the specific group
  - o Check the "Retain" check box below 'Data Configuration'
  - o Select "User defined Output" under 'Board / IO Module'
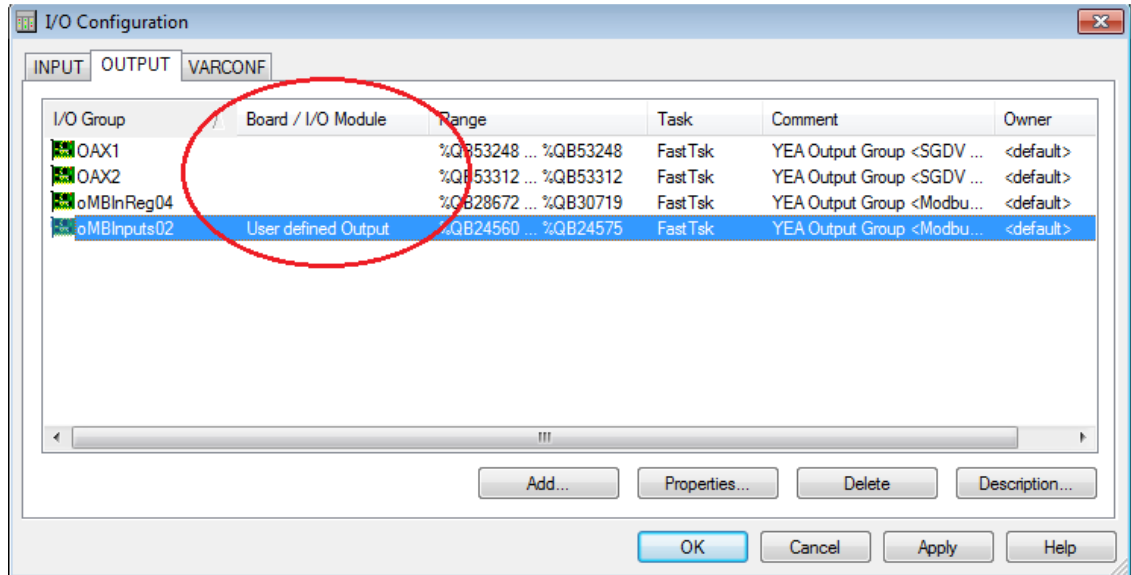 - o Click 'OK', then 'Apply', then 'OK'
    -

-

-
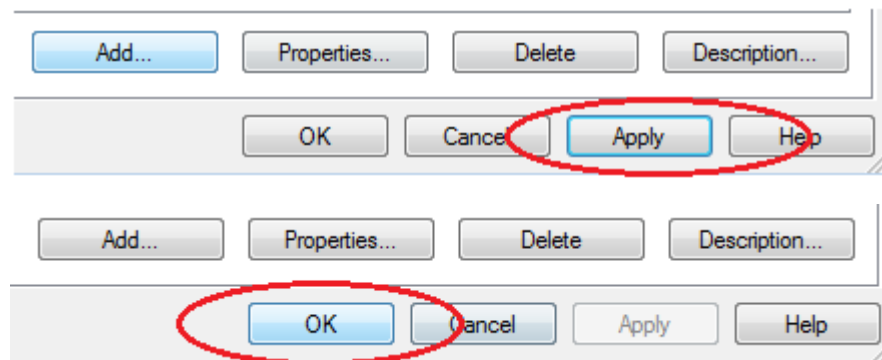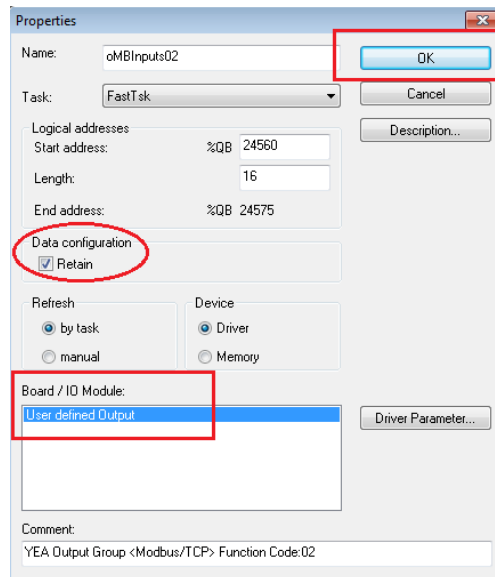
- If the error 'Missing I/O board!' appears, it is because there was no Board I/O Module selected. Please click on the "User defined Output" selection within the Board I/O Module Group

-
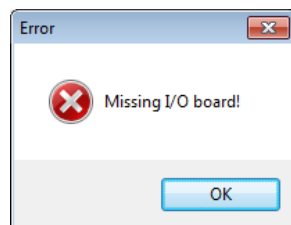
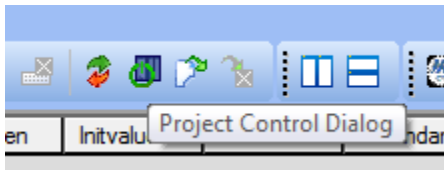- The I/O Configuration should look like the below with the Board I/O Module Column defined
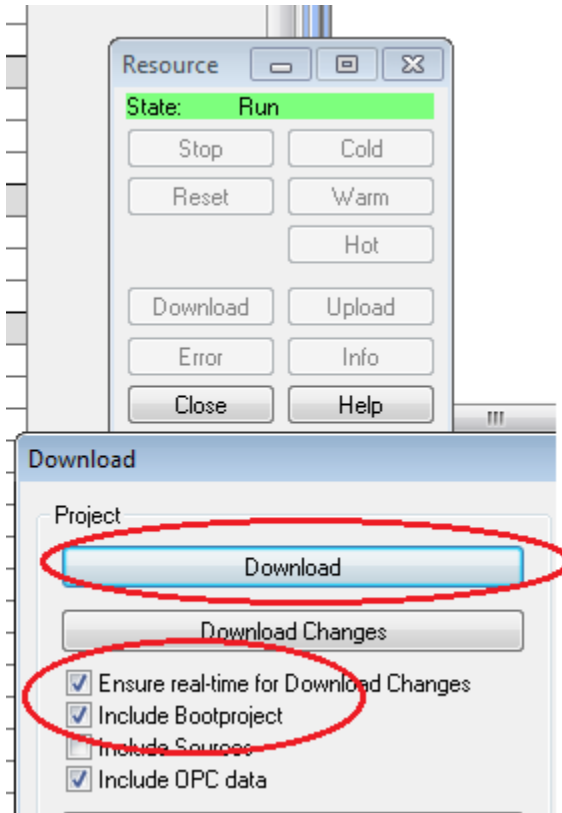
- o

Download

- Recompile (Make) the project

  - o

- Open the Project Control Dialog
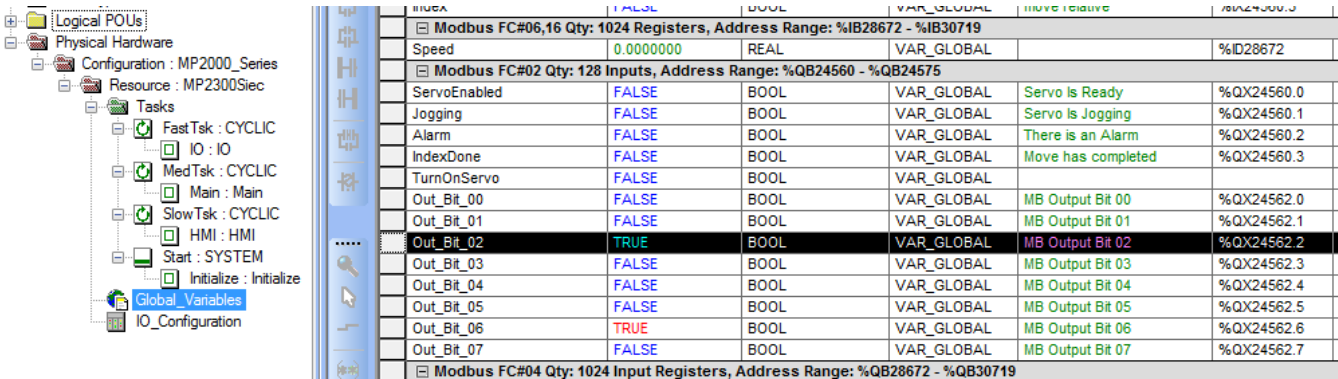

  - o

- Download the project and boot-project

- o
- Warm start the controller
- Modbus/TCP outputs are now ready to retain their values upon power cycle

Sample Program Testing

Use the MotionWorks IEC program "RetainMBOutputs.mwt" with the RedLion Crimson 3.0

"RetainMBOutputs_HMI.cd3" program to test retaining Modbus/TCP outputs with a power cycle.   Navigate to the

Global Variables list and Overwrite the Out_Bit variables, cycle power and verify the outputs are retained.
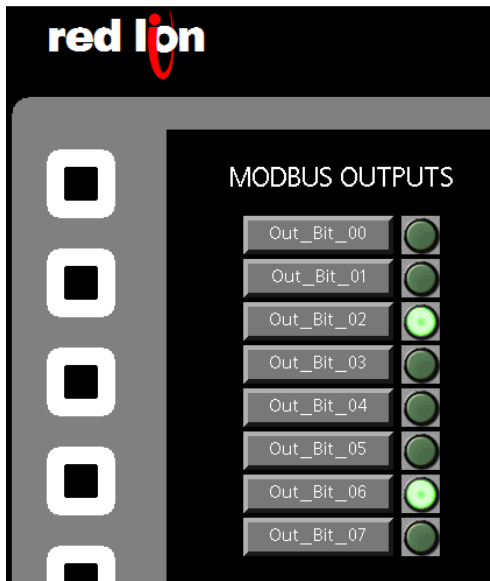

Figure 2 MWiec Global Variables Overwrite

Figure 3 RedLion HMI Simulation Outputs upon power cycle