



*Powering Business Worldwide*

## Application of SmartWire-DT®

# How to use SmartWire-DT on EtherNet/IP® and Modbus TCP

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## Application

The EU5C-SWD-EIP-MODTCP Ethernet to SmartWire-DT gateway supports both EtherNet/IP and Modbus TCP Ethernet protocols. This allows any EtherNet/IP or Modbus TCP master to fully control and monitor all devices on the SmartWire-DT network. Devices that may be connected to SmartWire-DT include XT contactors and starters, M22 pushbuttons and pilot devices and digital and analog input and output modules. SmartWire-DT dramatically reduces wiring time and reduces panel complexity by consolidating complex circuit wiring into a single, durable 8-pole cable.

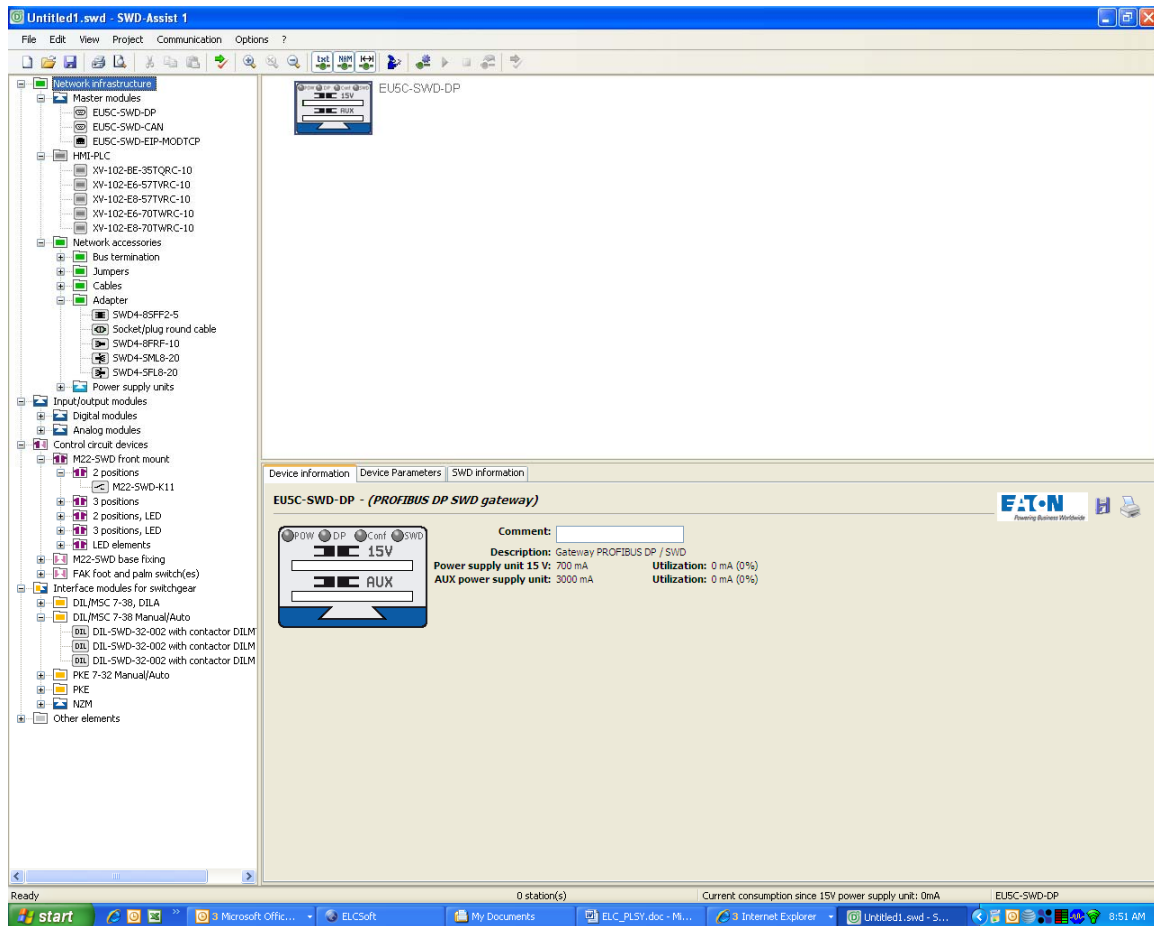
## Overview

The purpose of this application note is to demonstrate how to configure a SmartWire-DT system and how to set up an Ethernet master to control and monitor all devices on that SmartWire-DT system. A Rockwell® CompactLogix® controller will be used to demonstrate EtherNet/IP connectivity to SmartWire-DT and an Eaton ELC-PV controller with Modbus TCP Ethernet master will be used to demonstrate Modbus TCP connectivity to SmartWire-DT. XT starters and M22 pushbuttons and pilot devices will be connected to the SmartWire-DT network.

## Configuring the SmartWire-DT System using SWD-Assist®

SWD-Assist is a software tool for configuring a SmartWire-DT system. This software allows the user to fully build and configure a system offline without any hardware present; then download to the system once the hardware is in place. Or, connect the software to a wired and powered SmartWire-DT system and use the auto-configuration feature to map the data for all connected devices into the SmartWire-DT Ethernet gateway (EU5C-SWD-EIP-MODTCP).

After downloading and installing SWD-Assist, double click its icon on the desktop to start the software and the following screen will open.



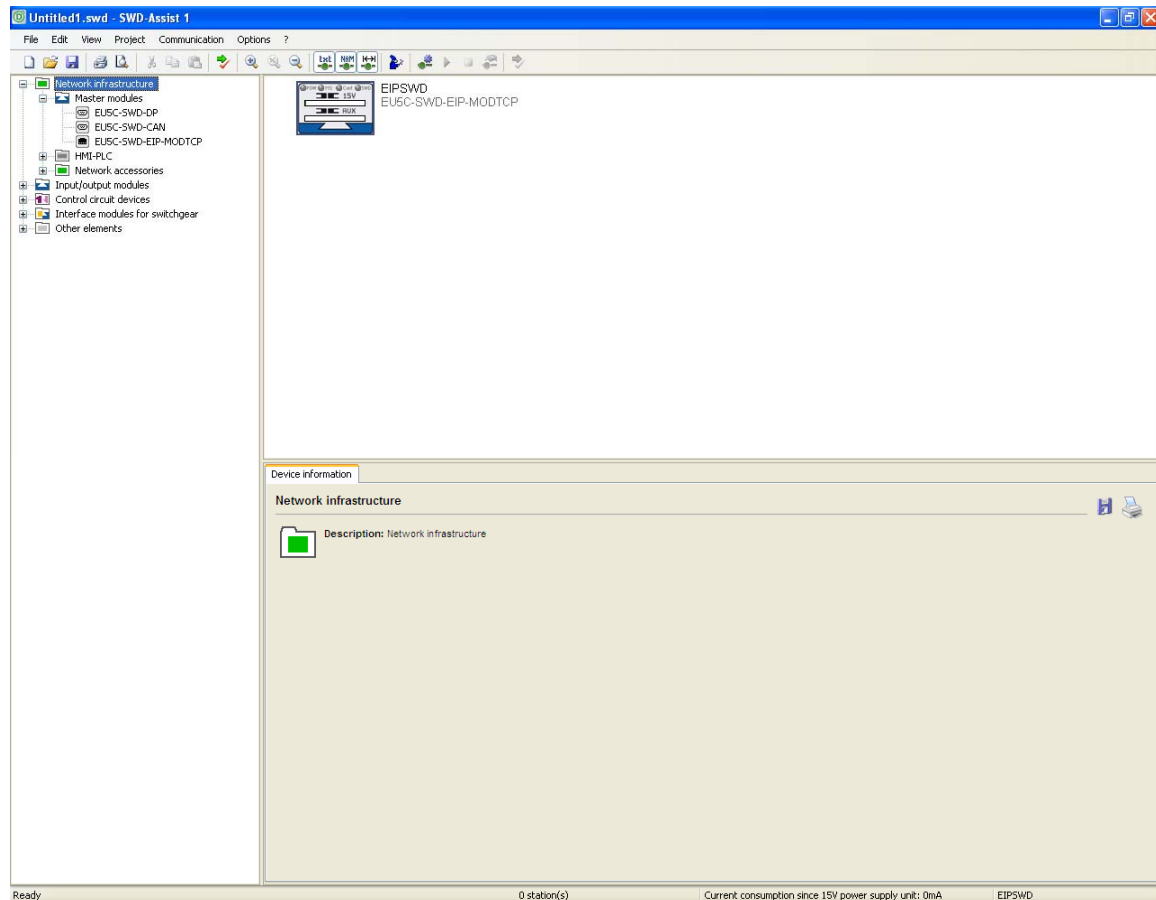
This is the offline environment for building a SmartWire-DT system. To accomplish this all part numbers for the equipment being connected to this system must be known. For this example, the following SmartWire-DT devices will be used:

- (1) EU5C-SWD-EIP-MODTCP (SmartWire-DT Ethernet gateway)
- (3) DIL-SWD-32-002 (contactor modules)
- (1) M22-SWD-LED-R (red LED module)
- (1) M22-SWD-K22LED-W (start/stop pushbutton with white LED module)
- (1) M22-SWD-K22LED-G (selector switch with green LED module)
- (1) M22 enclosure (M22-I3) with the following:
  - (1) M22-SWD-K11LEDC-W (pushbutton and white LED module)
  - (1) M22-SWD-KC11 (pushbutton module)
  - (1) M22-SWD-K11LEDC-W (pushbutton and white LED module)

The following section will demonstrate configuring a SmartWire-DT system offline then downloading it to the Ethernet gateway. The next section will demonstrate connecting SWD-Assist to a wired and powered SmartWire-DT system utilizing the auto configuration feature.

## Building and Configuring a SmartWire-DT System Offline with SWD-Assist

SWD-Assist opens in the offline environment with a PROFIBUS-DP® gateway on the project screen. For this example we are using the Ethernet gateway. On the left portion of the screen, if it is not already expanded, expand Network Infrastructure, then Master Modules under it. The screen should look like the following:

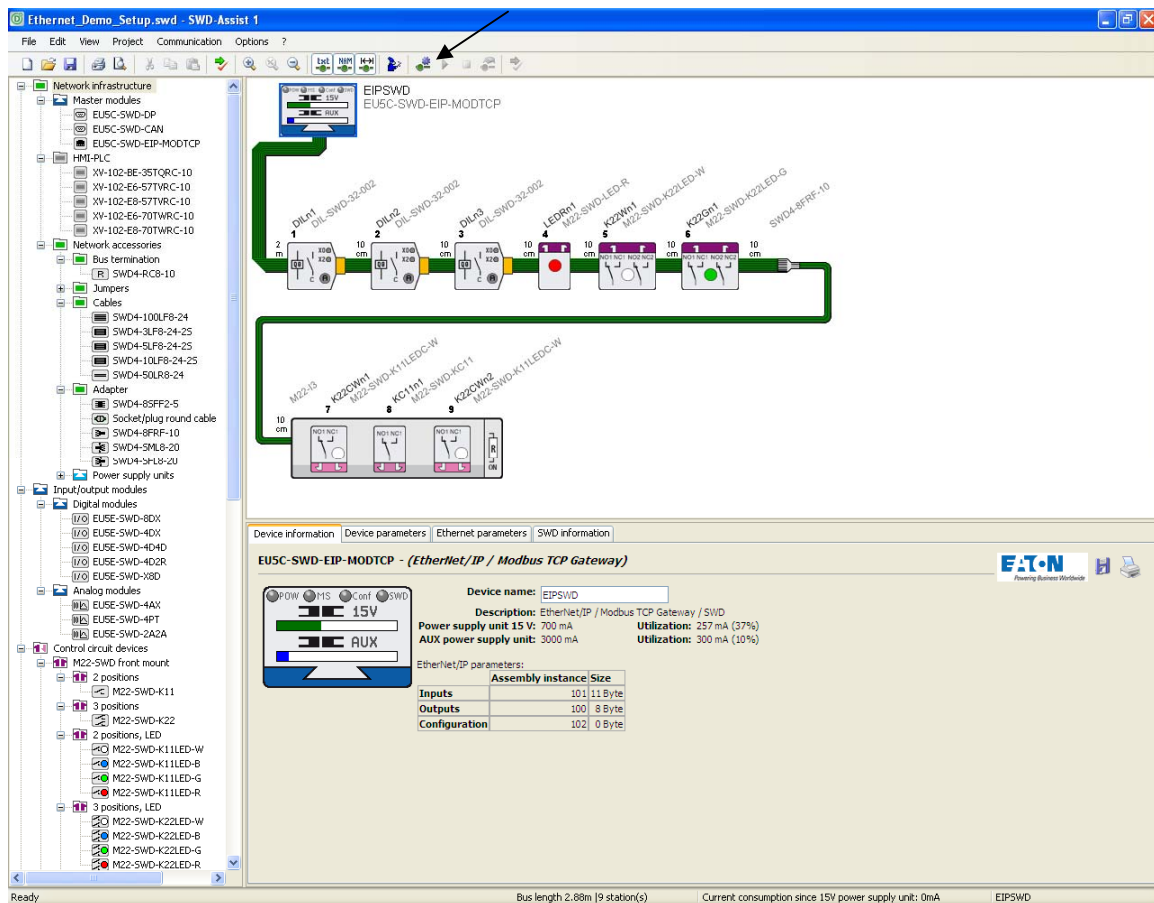


The SmartWire-DT Ethernet gateway is located under Master Modules. The part number is EU5C-SWD-EIP-MODTCP. Grab, drag and drop it onto the project screen over the PROFIBUS-DP gateway. It will drop onto the other gateway, replacing it. Then click the gateway's icon on the project screen. Then click the Device Parameter tab below. This is where the Ethernet protocol is selected. Choose Modbus TCP for this example. Under the Ethernet Parameters tab is where the EtherNet/IP Address, Subnet Mask and Gateway addresses are entered. Also, be sure to set the DIP switches on the gateway to represent the low octet of the IP address for the module. Disable BootP and DHCP to use a static IP address.

Next drag and drop the SmartWire-DT node devices in the order that they are listed in the previous section. You may need to expand sections on the left

portion of the screen to reveal these devices. After dropping the first device on the project screen, drop the next one on the wire between the previous device and the terminator that was automatically added when the first device was added. A blue vertical bar will appear indicating that it is okay to drop the new device at that location. Add the remainder of the devices in this same manner. For the M22 enclosure, drag and drop an M22-I3 onto the project, then add the three devices listed under the M22-I3 above. When finished there will be a couple of exclamation points displayed before and after the M22 enclosure on the project screen. This is indicating that the flat cable must be converted to the round cable for connection to the M22 enclosure. First we need to add an adapter that converts the flat cable to a round cable for the M22-I3 enclosure. The part number for this device is SWD4-8FRF-10. Drag and drop it between the M22-SWD-K22LED-G and the enclosure M22-I3. That will remove the exclamation point below the enclosure. To resolve the other exclamation point under the bus terminator, simply delete the terminator by selecting it and pressing the Delete key on your keyboard. The enclosure includes a built-in terminator that is turned ON and OFF with a switch. This terminator must be turned ON on the physical device for this application.

The offline project is now complete. Save the project. The project screen should look like the following:



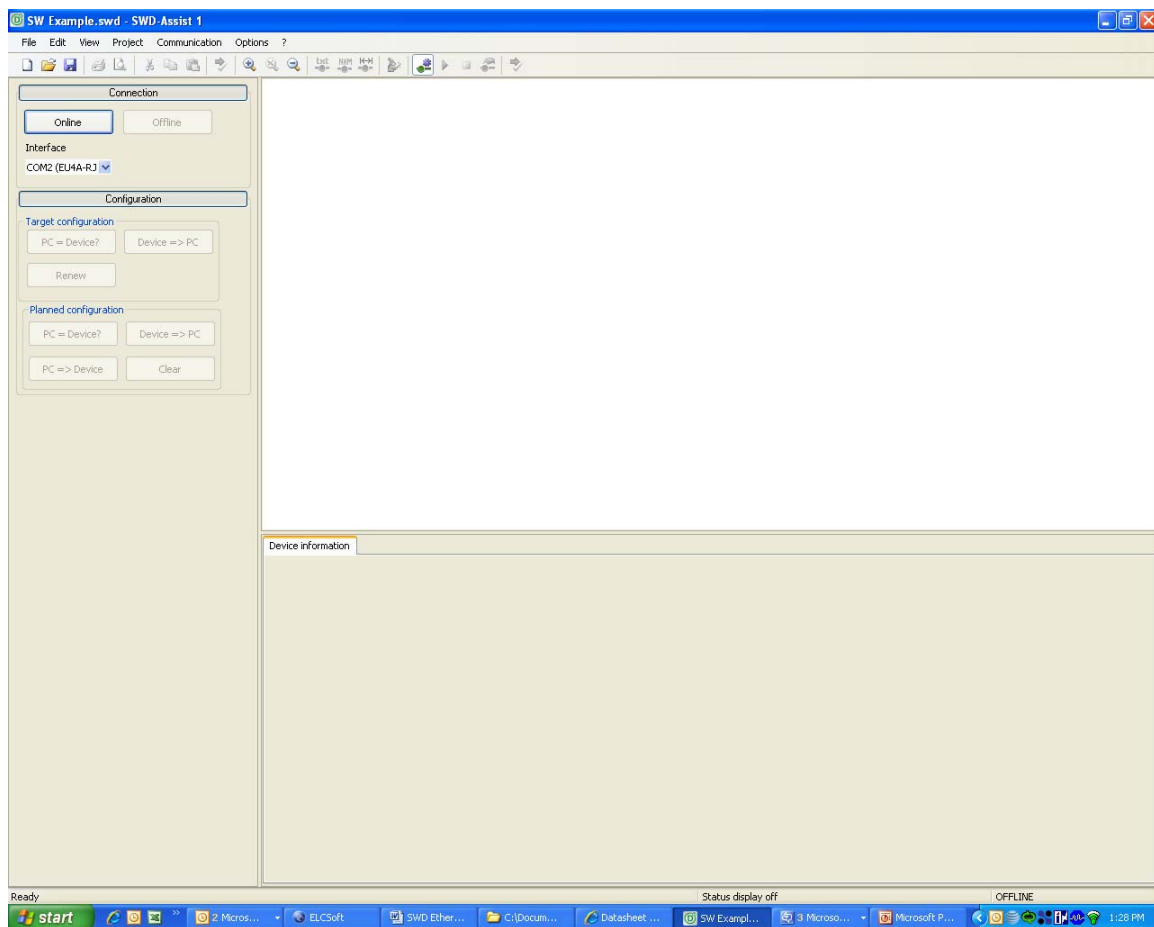
Connect the SmartWire-DT Ethernet gateway to the SmartWire devices and apply power. **Note: the connected devices must match the offline configuration you set up in your project.** Connect the SmartWire-DT Ethernet gateway to your PC using the EU4A-RJ45-USB-CAB1 cable or equivalent.

There is an icon on the tool bar above with an arrow pointing to it that allows toggling between the Project and the Communication views. Or, under the View drop down menu, select Communication View to toggle between the Project and Communication views.

This icon contains a gear and if you hold the cursor over it the following appears:

Communication View (Ctrl + Alt + 1)  
Toggles between Project and  
Communication View

Click this icon and the following will be displayed:



Choose the communication port where the cable between the PC and the SmartWire-DT gateway is connected. If using the EU4A-RJ45-USB-CAB1 USB cable, choose the virtual comm port the USB port has been mapped to. Click Online to go online with the Ethernet gateway.

Press the **Renew** button under target configuration. This triggers the SmartWire-DT Ethernet gateway to read and store the list of devices physically present in the SmartWire-DT system.

Press the **PC to Device** button under the Planned Configuration on the left portion of the screen. This will download the offline project just created to the Ethernet gateway.

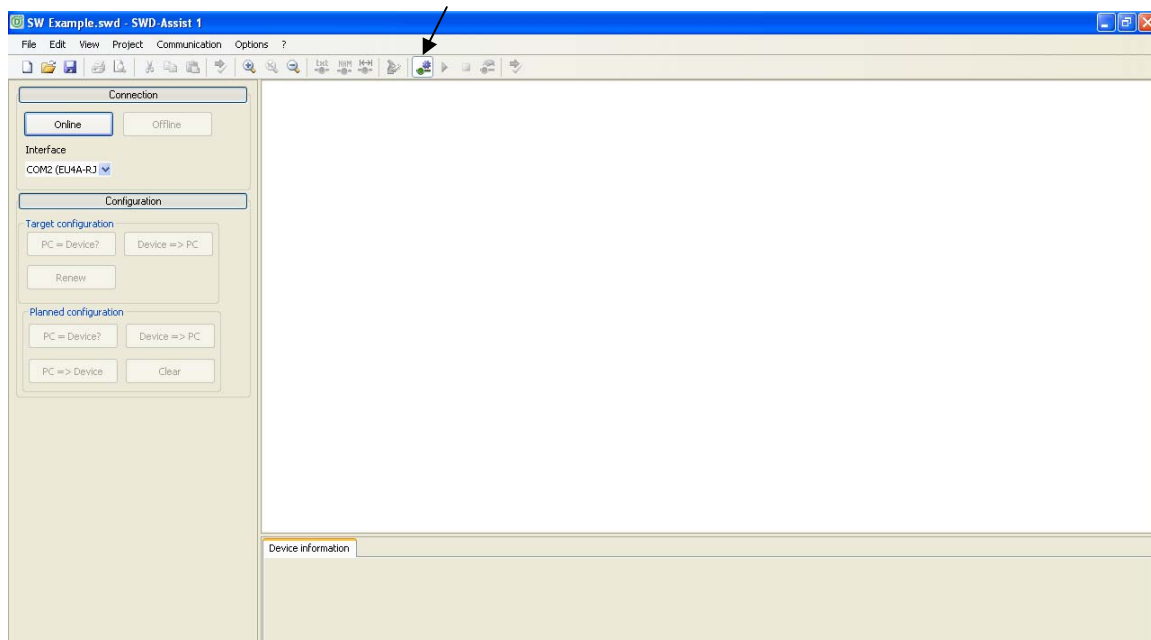
The SmartWire-DT system is now ready to be controlled and monitored with an EtherNet/IP or Modbus TCP Ethernet master. Please refer to the EtherNet/IP or Modbus TCP section below for additional information on configuring these master modules to control and monitor the devices on the SmartWire-DT system.

## Using the Auto-Configuration Feature to Build and Configure a SmartWire-DT System

If the procedure above was used to build, configure, and download a SmartWire-DT system, you may skip this section. This section provides an alternate approach, but the entire SmartWire-DT system must be assembled and powered.

Connect the SmartWire-DT Ethernet gateway to the SmartWire devices and apply power. Connect the SmartWire-DT Ethernet gateway to your PC using the EU4A-RJ45-USB-CAB1 cable or equivalent.

Start SWD-Assist. There is an icon on the tool bar shown below with an arrow pointing to it that allows toggling between the Project and the Communication views. Or, under the View drop down menu, select Communication View to toggle between the Project and Communication views. Click the icon or select Communication View and the following screen will be displayed:



Choose the communication port where the cable between the PC and the SmartWire-DT gateway is connected. If using the EU4A-RJ45-USB-CAB1 cable, choose the virtual comm port the USB port has been mapped to. Click the Online button. Under Target Configuration click the **Renew** button. This triggers the SmartWire-DT Ethernet gateway to read and store the list of devices physically present in the SmartWire-DT system. Also under Target Configuration, click the **Device to PC** button. This will upload the SmartWire-DT system configuration from the gateway to the PC.

Under the View drop down menu select Communication View to toggle back to the offline project which is the project we just uploaded from the gateway. Make the following changes/additions:

1. Click on each contactor (DIL-SWD-32-002) one at a time and select the Device Parameters tab in the section at the bottom of the screen.
2. Select the following contactor type for each contactor: DIL-SWD-32-002 with contactor XTCE 7-9, XTRE per the list of SmartWire-DT part numbers shown earlier in this document.
3. Add the following flat to round cable adapter between the M22-SWD-K22LED-G and the M22-I3 enclosure: SWD4-8FRF-10. Note that when the software allows you to drop the device onto the network is when the blue vertical bar appears. This adapter part number is located under Network Accessories/Adapter on the left portion of the screen.
4. Click the Ethernet gateway to select it and display its parameters at the bottom portion of the screen. Then click the Device Parameters screen to select the mode, EtherNet/IP or Modbus TCP.
5. Click the Ethernet Parameters tab and enter the IP address, Subnet Mask and Gateway Address for the gateway.
6. Save the project then select Communication View under the View drop down menu to toggle back to the Communication screen.
7. Click the Online button then select the **PC to Device** button under the Planned Configuration to download the modified project to the gateway.

The SmartWire-DT system is now ready to be controlled and monitored with an EtherNet/IP or Modbus TCP Ethernet master. Please refer to the EtherNet/IP or Modbus TCP section below for additional information on configuring the network master to control and monitor the devices on the SmartWire-DT system.

# Using SmartWire-DT on Modbus TCP Ethernet via the EU5C-SWD-EIP-MODTCP Gateway and the ELC-COENETM Modbus TCP Master

The Eaton ELC-PV28 controller with the ELC-COENETM Modbus TCP master module may be used to control and monitor a SmartWire-DT system via the EU5C-SWD-EIP-MODTCP Ethernet gateway. The SmartWire-DT gateway is a node on Modbus TCP and a master on the SmartWire-DT network. The data for each SmartWire-DT device connected to the gateway is mapped to the Input and Output images in the gateway. This is what the Modbus TCP master reads and writes from/to the gateway.

In SWD-Assist in the offline mode the SmartWire-DT gateway will display the total number of input and output bytes mapped to accommodate the data from all of the SmartWire-DT devices connected to it. Click the gateway in the offline mode to select it. Then select the SWD Information tab and the following will be displayed:

The screenshot shows the SWD-Assist software interface. The top part displays a network diagram with various modules connected to a central gateway. The bottom part shows the 'SWD information' tab for the selected gateway, which includes a table of device information.

EU5C-SWD-EIP-MODTCP - (Ethernet/IP / Modbus TCP Gateway)				
Number of modules: 9				
Total current consumption 15V: 257 mA				
Total current consumption AUX: 300 mA				
User data volume:				
		Current	Maximum	
Inputs	9 Byte	799 Byte	125Kbit/s	4.06ms 7.10ms
Outputs	8 Byte	642 Byte	250Kbit/s	2.03ms 2.03ms
Image size	18 Byte	1000 Byte		

In the lower portion of the window the information in the table below will be displayed. This confirms the total number of devices attached to the gateway and also provides the total number of input and output bytes mapped to it for these devices. SmartWire-DT is byte based while Modbus TCP is based on 16-bit



register data. So, the Modbus TCP master will need to be configured to poll this gateway for 5 input registers and 4 output registers to accommodate the 9 input bytes and 8 output bytes.

**Number of modules:** 9

**Total current consumption 15V:** 257 mA

**Total current consumption AUX:** 300 mA

**User data volume:**

	Current	Maximum
<b>Inputs</b>	9 Byte	799 Byte
<b>Outputs</b>	8 Byte	642 Byte
<b>Image size</b>	18 Byte	1000 Byte

**SWD cycle time:**

	cyclical	also acyclic
<b>125Kbit/s</b>	4.06ms	7.10ms
<b>250Kbit/s</b>	2.03ms	2.03ms

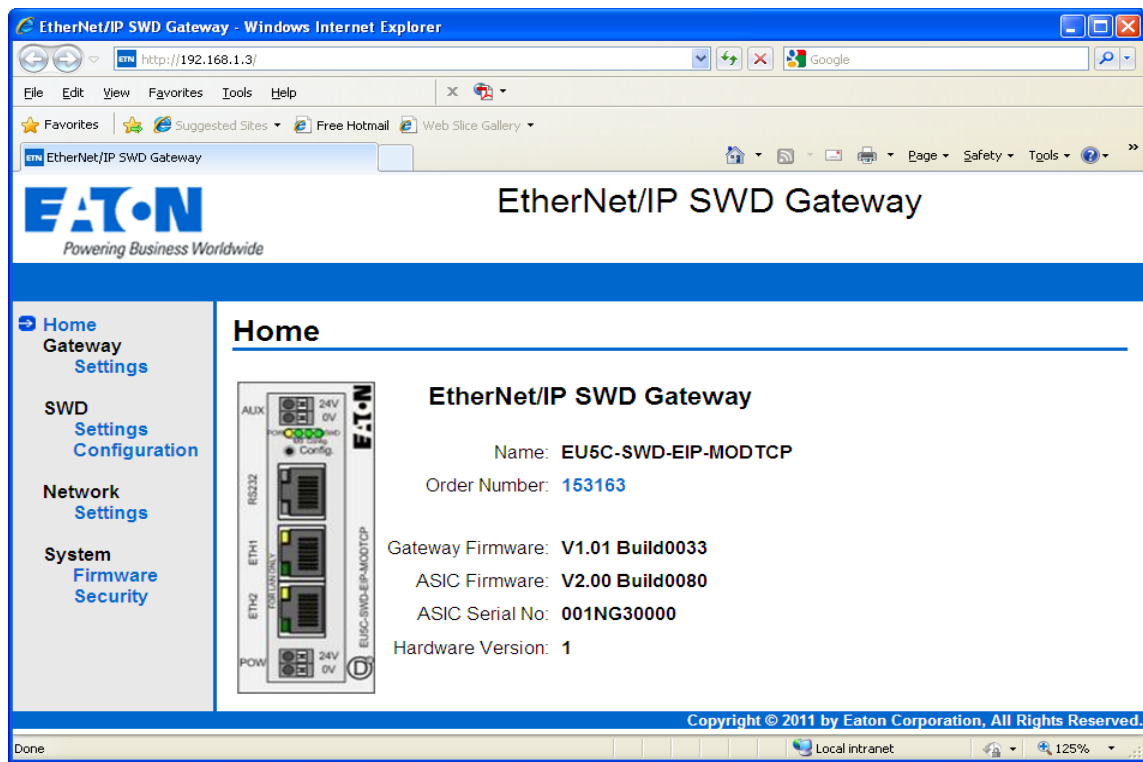
The starting Modbus Data Addresses for the input and output data in the SmartWire-DT gateway are as follows:

Starting address for the Input data: 0, Length = 5 registers

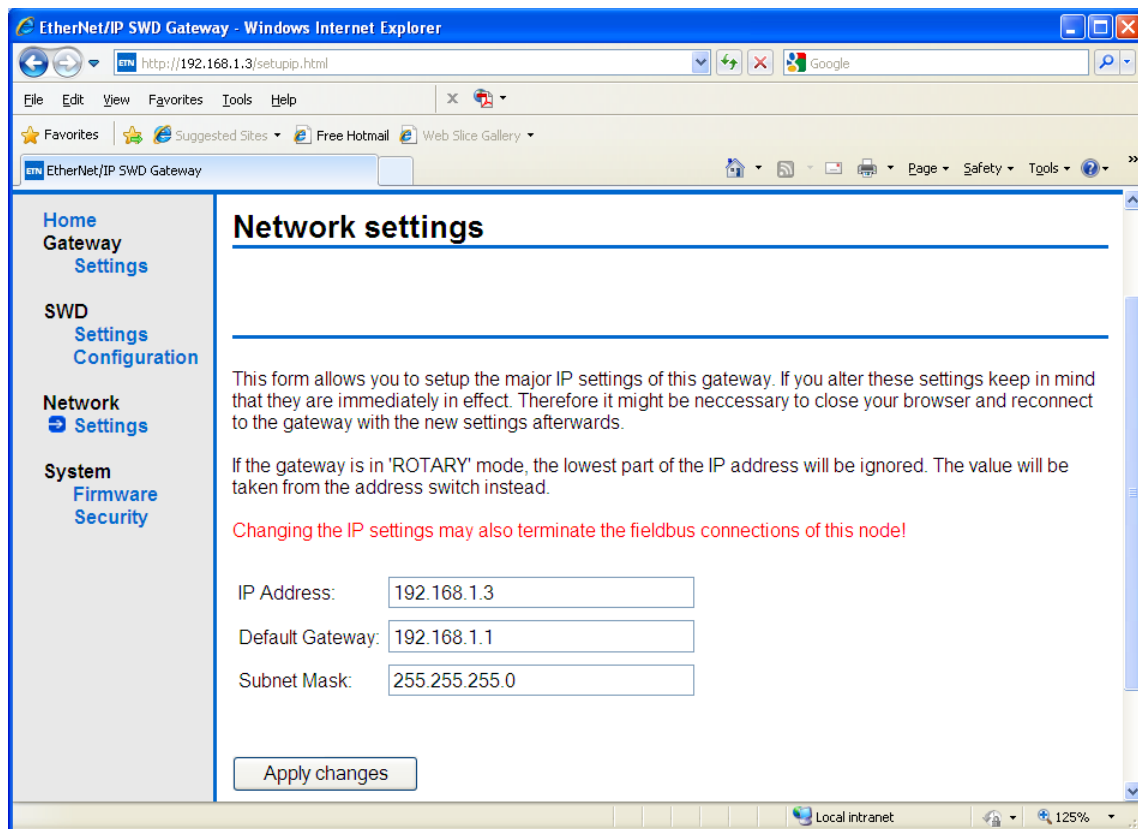
Starting address for the output data: 2048, Length is 4 registers

When clicking to select each SmartWire-DT device attached to the SmartWire-DT gateway in the offline mode, under each device's Device Information tab the actual Modbus Data Address for each bit will be displayed. Note that the high byte of the first input and output data register is where the input and output data for the first device is located. The second device uses the low byte of the first data registers and so on. This is very important because this is how each SmartWire-DT device is controlled and monitored by the ELC controller.

Using the SWD-Assist software, go online with the EU5C-SWD-EIP-MODTCP Ethernet gateway. Download the offline configuration by selecting PC to Device under Planned Configuration. Then single click the gateway to select it. The Device Parameters tab for the gateway displays the Fieldbus Protocol the module is configured for, which is Modbus TCP for this example. This must be selected in the Offline mode before downloading to the module. The Ethernet Parameters tab displays the Ethernet settings for this module. To change any of these parameters in the Online mode, click the IP address and the following window will open:



Select Network Settings on the left portion of the screen above to modify the Ethernet parameters online. Apply the changes and they will be saved in the gateway. Gateway, SWD, and System settings may also be viewed or modified from this screen. The Network Setting page will look like the following for this example:



For this example, all devices will be configured with a subnet mask of 255.255.255.0. Each device will be configured with the following IP Addresses:

ELC-COENETM	192.168.1.2
EU5C-SWD-EIP-MODTCP	192.168.1.3

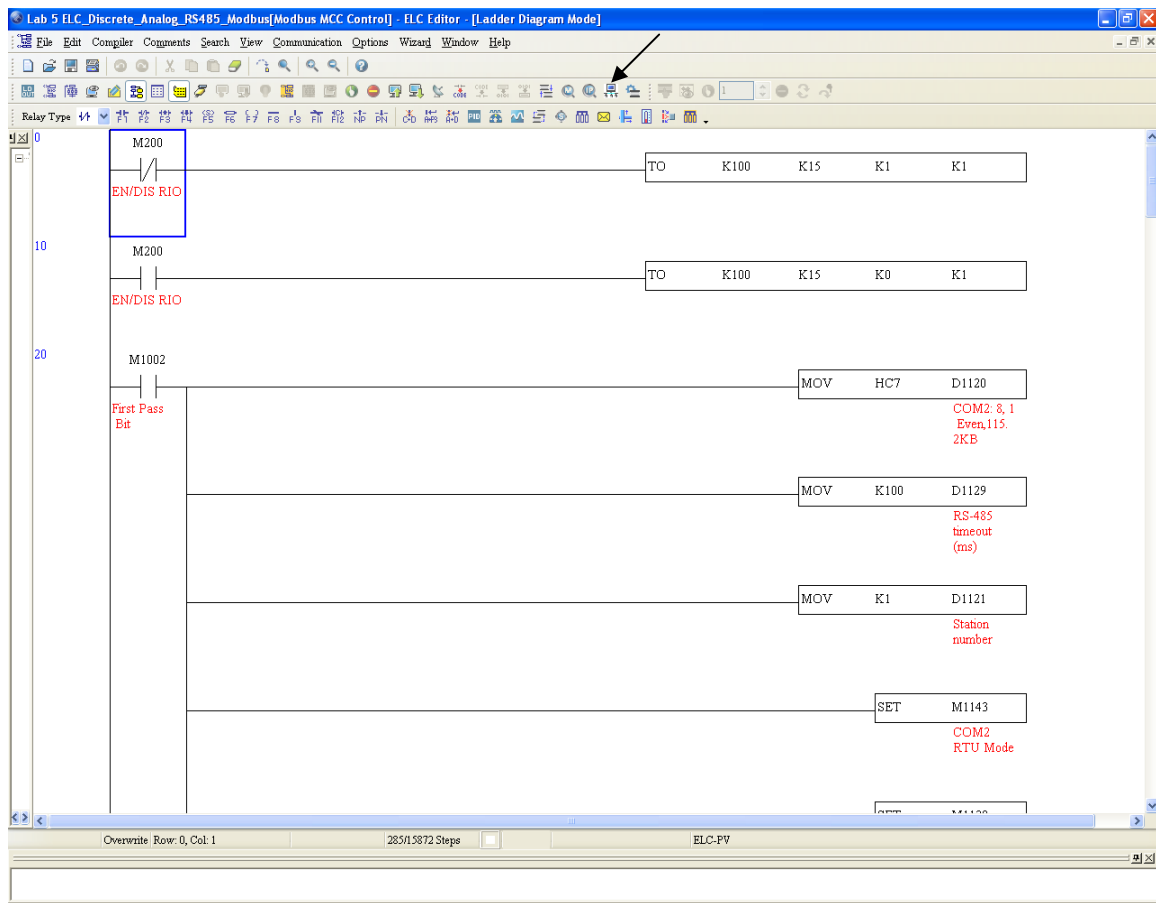
Apply the changes and close this window.

The information required by the Modbus TCP master is now all known. The IP address of the gateway along with the Modbus Data addresses and lengths for the Input and Output data is shown above.

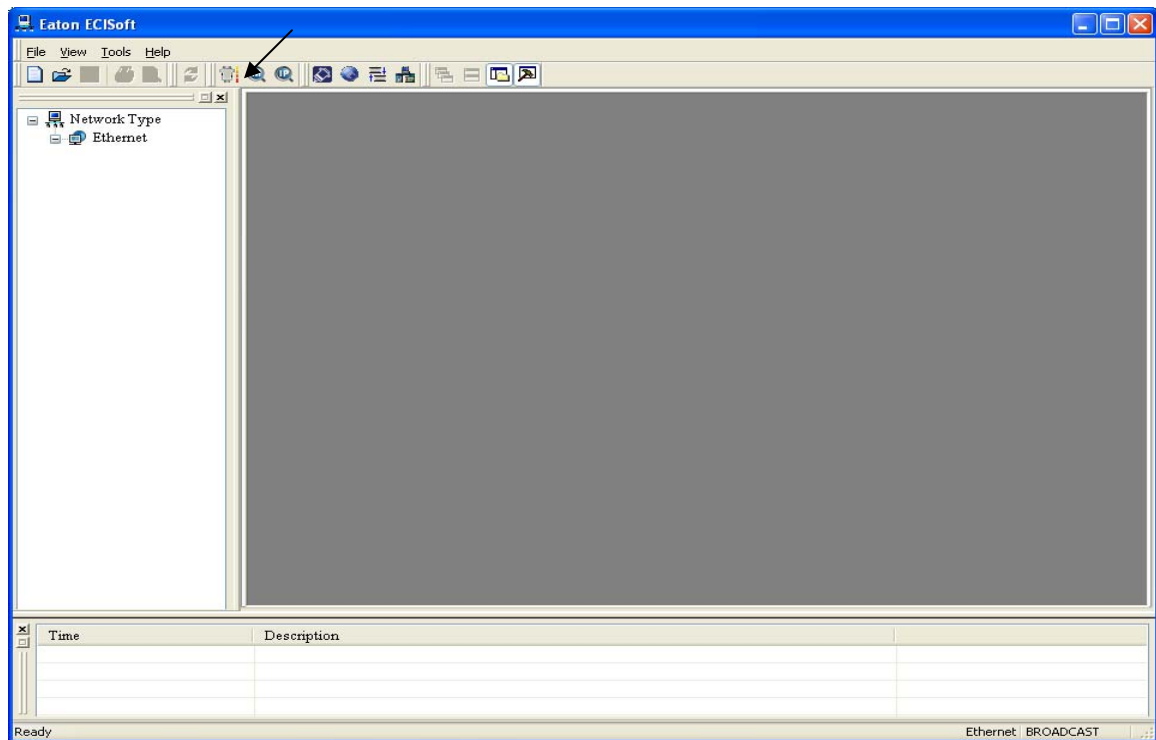
Double click the ELCSoft icon to open the ELC programming software. ECISoft must have been previously installed then the ECISoft icon on the ELCSoft toolbar will open this Ethernet configuration software for the ELC-COENETM module. If it has not been installed, close ELCSoft, download ECISoft from the Eaton website at the link below and install it.

<http://www.eaton.com/Electrical/USA/ProductsandServices/AutomationandControl/ProgrammableLogicControllers/EatonLogicControllers/ELCSoftwareHandheldProgrammer/index.htm>

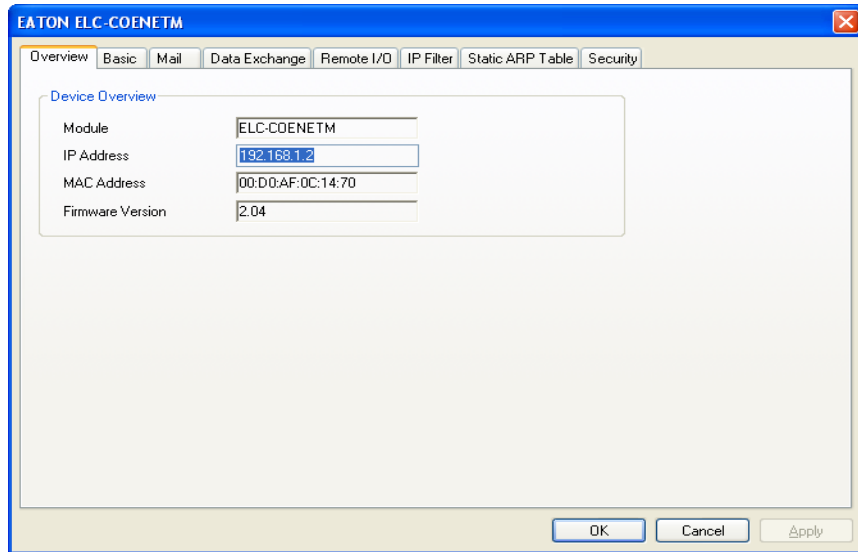
Then open ELCSoft and click the ECISoft icon to open it per the window shown below:



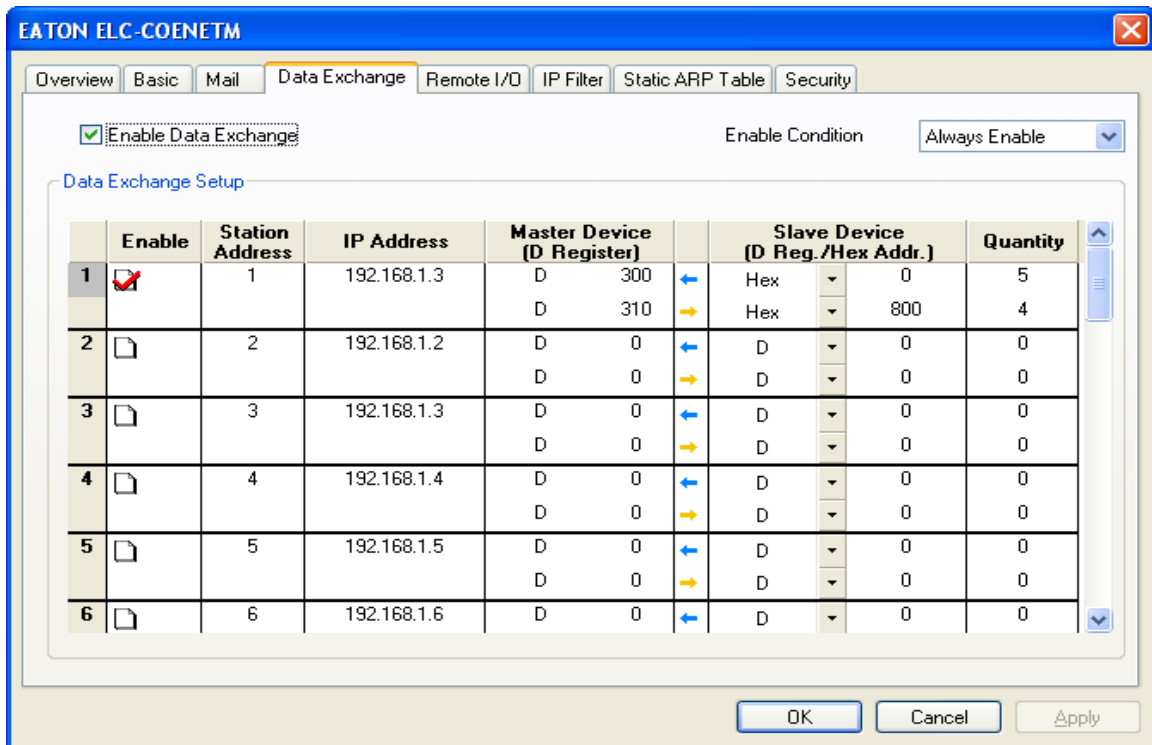
ECISoft will look like the following:



The computer must be configured with an IP Address and Subnet Mask to communicate with the ELC-COENETM module. Or, use the RS232 ELC programming cable (part number ELC-CBPCELC3) to access the module via the round mini-din RS232 port. Under the Tools drop down menu, select Communication Setting to choose Ethernet or RS232 to go online to configure the Ethernet master module. Then click the “M” icon on the tool bar indicated by the arrow in the screen shot above and the software will find the ELC-COENETM module. Double click the module’s icon to display its Property Pages shown below.



Modify the Ethernet parameters for the Ethernet master from the Basic tab. Then select the Data Exchange tab to set up polling for the SmartWire-DT gateway at IP Address 192.168.1.3. The following shows the poll messages set up in the ELC-COENETM module. The Modbus Data addresses must be entered in Hexadecimal.



Note that Modbus Data Address 2048 decimal is 800 hexadecimal and of course, 0 decimal is 0 hexadecimal. The 5 registers of input data are mapped to D300-D304 in the ELC-PV controller and the 4 registers of output data are mapped to D310-D313 in the controller. As mentioned earlier in this document, each SmartWire-DT device displays the Modbus Data addresses for each bit in SWD-Assist. These can then be correlated to the D registers in the ELC-PV controller as follows:

<u>SW Device</u>	<u>Modbus Data Address</u>	<u>ELC-PV data table</u>
DIL-SWD-32-002 #1	Input: 0.8 – 0.15 Output: 2048.8	D300, high byte D310, high byte
DIL-SWD-32-002 #2	Input: 0.0 – 0.7 Output: 2048.0	D300, low byte D310, low byte
DIL-SWD-32-002 #3	Input: 1.8 – 1.15 Output: 2049.8	D301, high byte D311, high byte
M22-SWD-LED-R	Input: 1.4 – 1.7 Output: 2049.0	D301, low byte D311, low byte
M22-SWD-K22LED-W	Input: 2.8 – 2.15 Output: 2050.8	D302, high byte D312, high byte
M22-SWD-K22LED-G	Input: 2.0 – 2.7 Output: 2050.0	D302, low byte D312, low byte
M22-SWD-K11LEDC-W	Input: 3.8 – 3.15 Output: 2051.8	D303, high byte D313, high byte
M22-SWD-KC11	Input: 3.0 – 3.7 No Output data	D303, low byte
M22-SWD-K11LEDC-W	Input: 4.8 – 4.15 Output: 2051.0	D304, high byte D313, low byte

With this information, the ELC-PV controller program can be written to control and monitor these SmartWire-DT devices via Modbus TCP Ethernet.

## Using SmartWire-DT on EtherNet/IP via the EU5C-SWD-EIP-MODTCP Gateway and a Rockwell CompactLogix L23E controller

Any EtherNet/IP master may be used to monitor and control a SmartWire-DT system with the EU5C-SWD-EIP-MODTCP Ethernet gateway. The SmartWire-DT gateway is a slave on EtherNet/IP and a master on the SmartWire-DT network. The data for each SmartWire-DT device connected to the gateway is mapped to the Input and Output images in the gateway. This is what the EtherNet/IP master reads and writes from/to the gateway.

After setting up the SmartWire-DT system per one of the two methods described earlier in this application example, the SmartWire-DT system should look like the following in the SWD-Assist software:

The screenshot shows the SWD-Assist software interface for configuring a SmartWire-DT system. The main window displays a network diagram with a central gateway (EIPSWD EU5C-SWD-EIP-MODTCP) connected to several SmartWire-DT devices: three DIL-SWD-32-002, two M22-SWD-LED-R, two M22-SWD-F32LED-W, one SWD4-8FRF-10, one M22-10, and three M22-SWD-K11LED-C-W. The left sidebar contains connection and configuration options. The bottom status bar shows 'Ready', 'Status display off', and 'ONLINE'.

**Device Information** | Device parameters | Ethernet parameters | Diagnostics | Diagnostics buffer | HW info

**EU5C-SWD-EIP-MODTCP - (Ethernet/IP / Modbus TCP Gateway)**

Device name: EIPSWD  
Description: EtherNet/IP / Modbus TCP Gateway / SWD

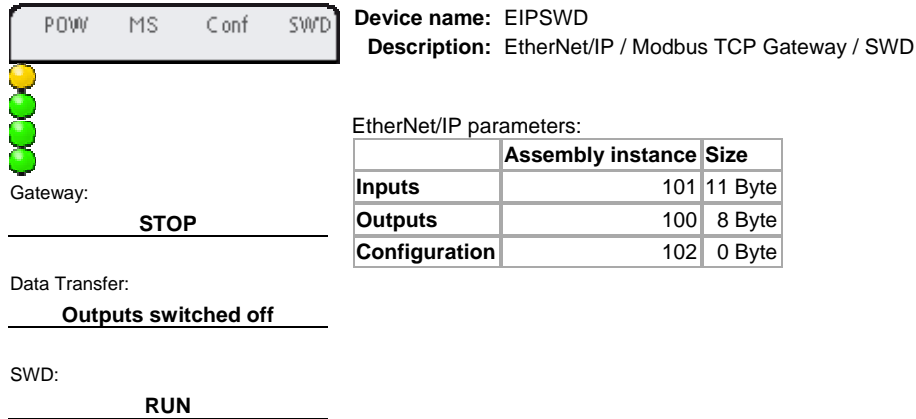
Gateway: **STOP** (Red bar)  
Data Transfer: **Outputs switched off** (Red bar)  
SWD: **RUN** (Green bar)

EtherNet/IP parameters:

Assembly instance	Size
Inputs	101 11 Byte
Outputs	100 8 Byte
Configuration	102 0 Byte

Ready | Status display off | ONLINE

Single click on the EU5C-SWD-EIP-MODTCP gateway. The Device Information tab should look like the following:



**Device name:** EIPSWD  
**Description:** EtherNet/IP / Modbus TCP Gateway / SWD

EtherNet/IP parameters:

	Assembly instance	Size
<b>Inputs</b>	101	11 Byte
<b>Outputs</b>	100	8 Byte
<b>Configuration</b>	102	0 Byte

Gateway: **STOP**

Data Transfer: **Outputs switched off**

SWD: **RUN**

The Input, Output and Configuration Assembly Instance numbers and the number of bytes for each is displayed on this tab. This is the information needed for the EtherNet/IP master to poll the EU5C-SWD-EIP-MODTCP Ethernet gateway to control and monitor the connected SmartWire-DT devices.

Another piece of necessary information required by the Ethernet master is the IP address of the gateway.

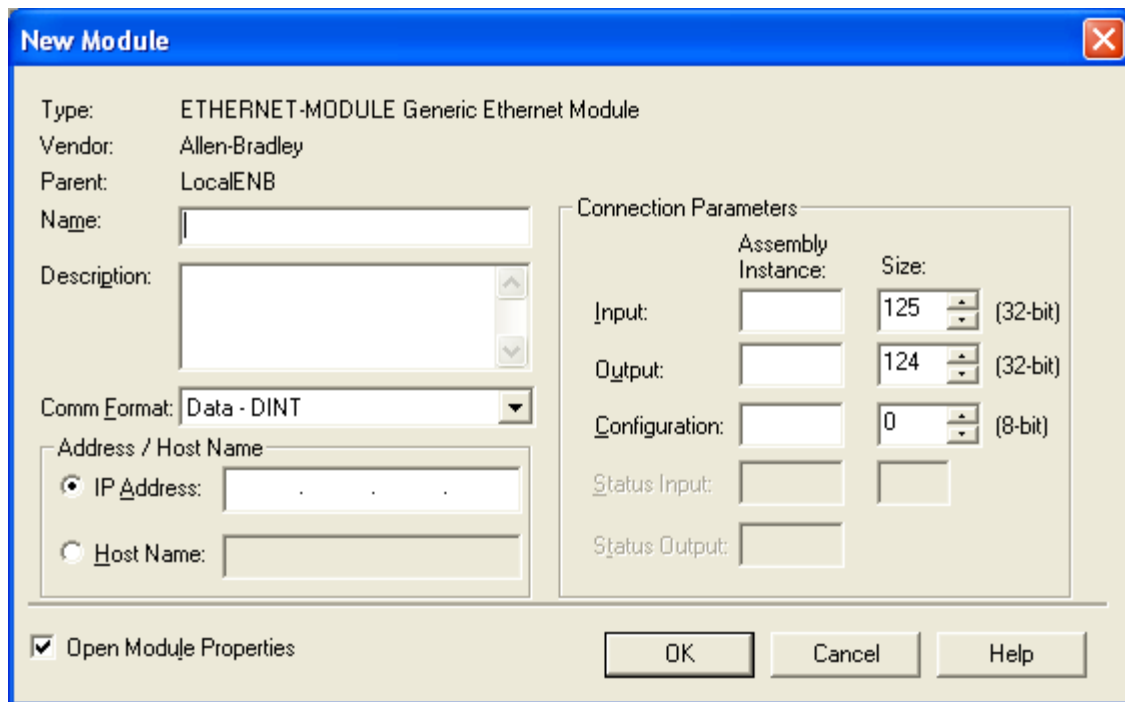
EU5C-SWD-EIP-MODTCP IP Address: 192.168.1.3  
 CompactLogix IP Address: 192.168.1.2

Both devices have a Subnet mask of: 255.255.255.0.

Take SWD-Assist offline. Start RSLogix 5000® by double clicking its icon on your desktop. Create a project, selecting the CompactLogix L23E as the controller.

On the left portion of the project screen in RSLogix 5000, under: I/O configuration/CompactLogix5323E-QB1 System/1769-L23E-QB1 Ethernet Port LocalENB right click on Ethernet and select New Module. Then, under Communications, select ETHERNET-MODULE Generic Ethernet Module. The following window will open:





Fill in the following:

Name: EIPSWD

Comm Format: Data-Sint

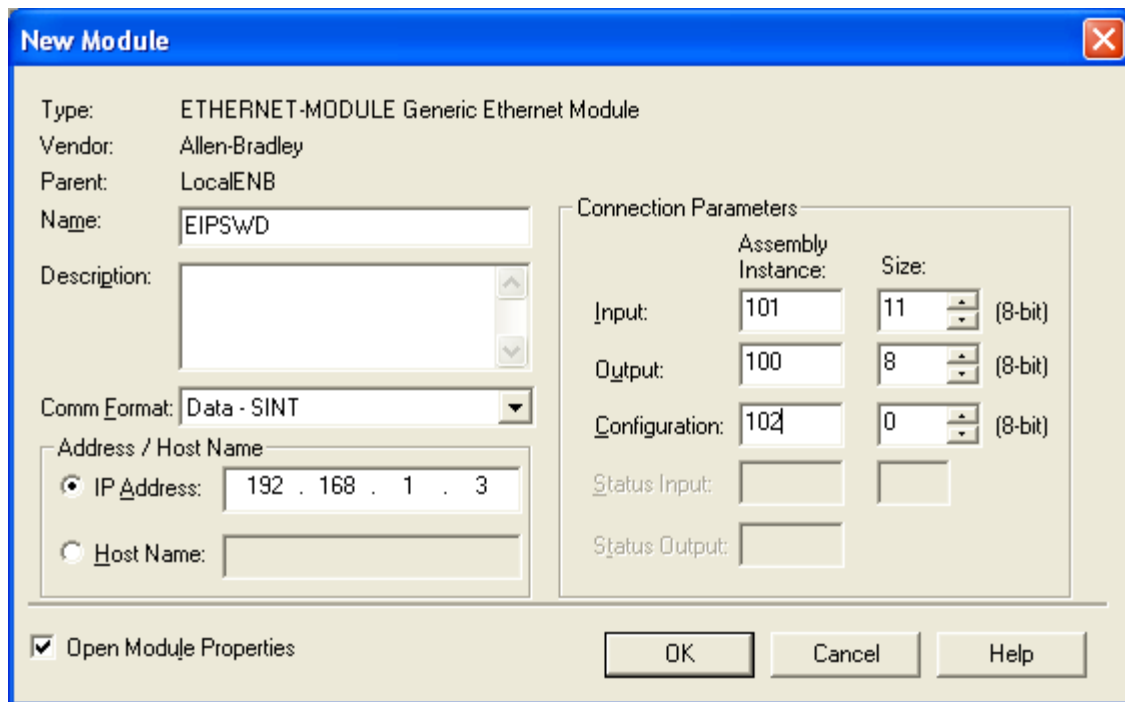
IP Address: 192.168.1.3

Input Assembly Instance: 101, Size: 11 bytes (8-bit)

Output Assembly Instance: 100, Size: 8 bytes (8-bit)

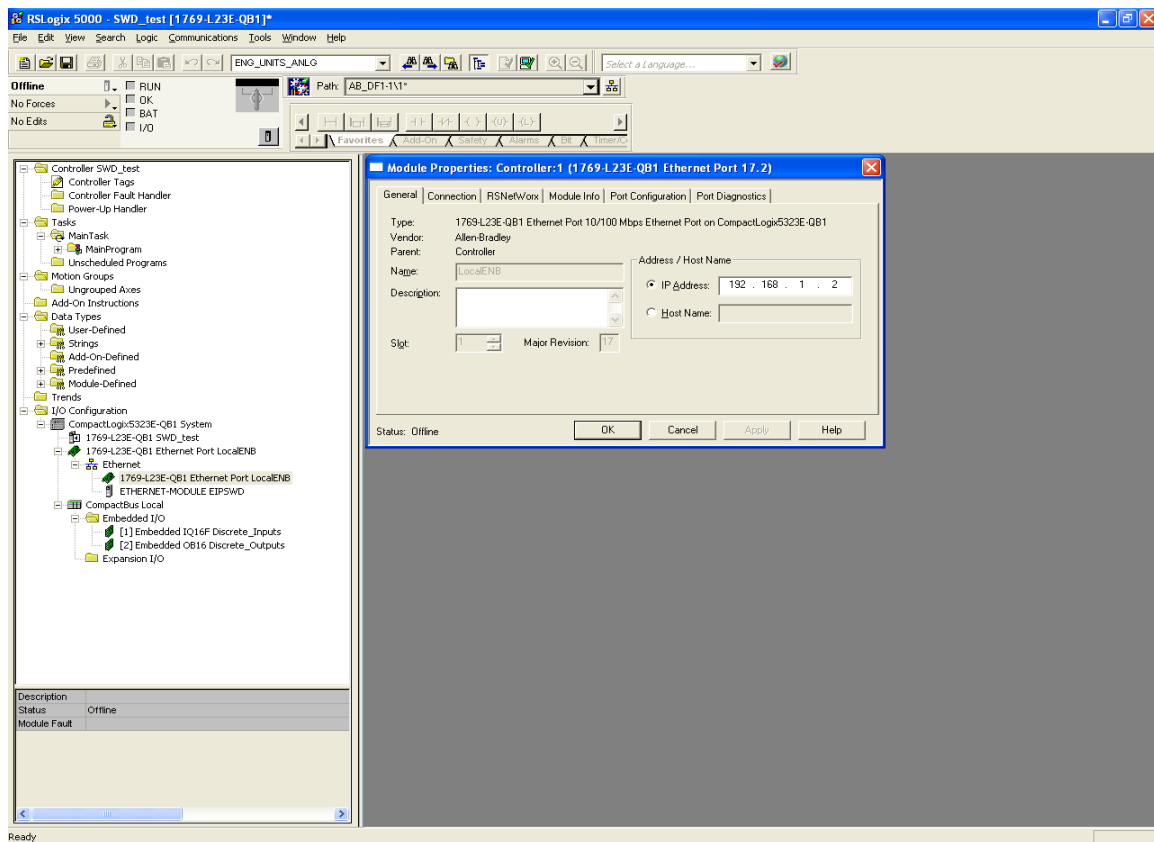
Configuration Assembly Instance: 102, Size: 0 bytes (8-bit)

The New Module window should look like the following:



Click OK to save this configuration for the EU5C-SWD-EIP-MODTCP module.

Then double click the 1769-L23E-QB1 Ethernet Port LocalENB also under Ethernet to open the EtherNet/IP master port's Property Pages. On the General Tab, enter the IP address for the CompactLogix Ethernet port: 192.168.1.2 and click Apply, then OK. This tab should like the following:



Download this project to the CompactLogix controller. The software will be online with the controller when the download is complete. The I/O LED on the controller should be on solid, not flashing. This indicates that the controller is properly polling the SmartWire-DT gateway, with no errors. If the I/O LED is flashing, double click the 1769-L23E-QB1 Ethernet Port LocalENB and confirm that the online Ethernet parameters on the Port Configuration tab are correct, i.e. that they match the offline parameters. If not, change them and click the SET button.

In the Controller Tag data base, the following tags will have been created:

Input Tags: EIPSWD:I.Data(0) through EIPSWD:I.Data(10)

Output Tags: EIPSWD:O.Data(0) through EIPSWD:O.Data(7)

The first 2 input bytes contain status information from the SmartWire-DT gateway. The next 9 input bytes are for the 9 SmartWire-DT devices connected to the Ethernet SmartWire-DT gateway. In SWD-Assist, either online or offline, click any of the SmartWire-DT devices and under that devices Device Information tab will be displayed the meaning of each input and output bit for that device. If you named your SmartWire-DT gateway EIPSWD in RSLogix 5000, the tags created by RSLogix 5000 based on the Ethernet configuration will be as follows:

The screenshot displays the RSLogix 5000 software interface. The main window shows the I/O Configuration table for the controller. The table lists various data points for EIPSWD-I and EIPSWD-O modules, including their values, styles, data types, and descriptions.

Name	Value	Style	Data Type	Description
+ Bits	(...)	Decimal	BOOL[64]	
+ Local:1:C	(...)		AB:Embedded_IQ...	
+ Local:1:I	(...)		AB:Embedded_IQ...	
+ Local:2:C	(...)		AB:Embedded_D...	
+ Local:2:I	(...)		AB:Embedded_D...	
+ Local:2:O	(...)		AB:Embedded_D...	
+ EIPSWD:C	(...)		AB:ETHERNET_...	
- EIPSWD:I	(...)		AB:ETHERNET_...	
- EIPSWD:I.Data	(...)	Decimal	SINT[11]	
+ EIPSWD:I.Data[0]	0	Decimal	SINT	EI9C-SWD-EIP-MODTCP Ethernet adapter Status
+ EIPSWD:I.Data[1]	0	Decimal	SINT	EI9C-SWD-EIP-MODTCP Ethernet adapter Status
+ EIPSWD:I.Data[2]	65	Decimal	SINT	DIL-SWD-32-002 with contactor DILM7-9, DILA
+ EIPSWD:I.Data[3]	64	Decimal	SINT	DIL-SWD-32-002 with contactor DILM7-9, DILA
+ EIPSWD:I.Data[4]	64	Decimal	SINT	DIL-SWD-32-002 with contactor DILM7-9, DILA
+ EIPSWD:I.Data[5]	64	Decimal	SINT	M22-SWD-LED-R
+ EIPSWD:I.Data[6]	69	Decimal	SINT	M22-SWD-K22LED-W
+ EIPSWD:I.Data[7]	69	Decimal	SINT	M22-SWD-K22LED-G
+ EIPSWD:I.Data[8]	65	Decimal	SINT	M22-SWD-K11LEDC-W
+ EIPSWD:I.Data[9]	65	Decimal	SINT	M22-SWD-KC11
+ EIPSWD:I.Data[10]	65	Decimal	SINT	M22-SWD-K11LEDC-W
- EIPSWD:O	(...)		AB:ETHERNET_...	
- EIPSWD:O.Data	(...)	Decimal	SINT[8]	
+ EIPSWD:O.Data[0]	1	Decimal	SINT	DIL-SWD-32-002 with contactor DILM7-9, DILA
+ EIPSWD:O.Data[1]	0	Decimal	SINT	DIL-SWD-32-002 with contactor DILM7-9, DILA
+ EIPSWD:O.Data[2]	0	Decimal	SINT	DIL-SWD-32-002 with contactor DILM7-9, DILA
+ EIPSWD:O.Data[3]	0	Decimal	SINT	M22-SWD-LED-R
+ EIPSWD:O.Data[4]	1	Decimal	SINT	M22-SWD-K22LED-W
+ EIPSWD:O.Data[5]	1	Decimal	SINT	M22-SWD-K22LED-G
+ EIPSWD:O.Data[6]	1	Decimal	SINT	M22-SWD-K11LEDC-W
+ EIPSWD:O.Data[7]	1	Decimal	SINT	M22-SWD-K11LEDC-W
+ Timer	(...)		TIMER[10]	

With this information, the CompactLogix controller program can be written to control and monitor these SmartWire-DT devices via EtherNet/IP.

## Supporting Documentation

Manual	Reference Number
ELC Programming Manual	MN05003003E
ELC Operations Manual	MN05003006E
ELC-COENETM Manual	MN05006001E
SmartWire-DT Gateway Manual	MN05013002Z

## Additional Help

In the event additional help is needed, please contact the Technical Resource Center at 1-877-ETN-CARE or 1-877-326-2273.

All other supporting documentation is located on the Eaton web site at [www.eaton.com/plc](http://www.eaton.com/plc) or [www.eaton.com/smartwiredt](http://www.eaton.com/smartwiredt)

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