



# **INSTRUCTION MANUAL INSERT**

**Ethernet / IP™ Communications**

**STEADYWEB™ 6**

**DOC 801-2570 R1**

This document to be used  
in conjunction with the  
**SW6 CONTROLLER**  
**TECHNICAL REFERENCE OR**  
**OPERATORS MANUAL**

**5 YEAR WARRANTY**



**307 Pickering Road**

**Rochester, NH 03867- 4630 U.S.A.**

For assistance, please call:

**TECHNICAL SERVICE** - Installations, Start-Up, Troubleshooting, Repairs, Field Service, Returns: [techsupport@dfc.com](mailto:techsupport@dfc.com) call **603-332-6150** and ask for **Technical Support** or email to us at [techsupport@dfc.com](mailto:techsupport@dfc.com)

**CUSTOMER SERVICE** - Replacement Parts, Individual Products, Questions about Orders, Manuals: [customerservice@dfc.com](mailto:customerservice@dfc.com) call **603-332-6150** and ask for **Customer Service** or email to us at [customerservice@dfc.com](mailto:customerservice@dfc.com)

**SALES** - Product Information, Systems Application Questions, and placing orders for standard products and special systems. Please call 603-332-6150 and ask for Sales or email to us at [sales@dfc.com](mailto:sales@dfc.com)

Telephone: (603) 332-6150 Fax: (603) 332-3758

E-mail: [info@dfc.com](mailto:info@dfc.com) Internet: [www.dfc.com](http://www.dfc.com)

# EtherNet/IP™ Communications for the SteadyWeb™ 6 Digital Tension Controller

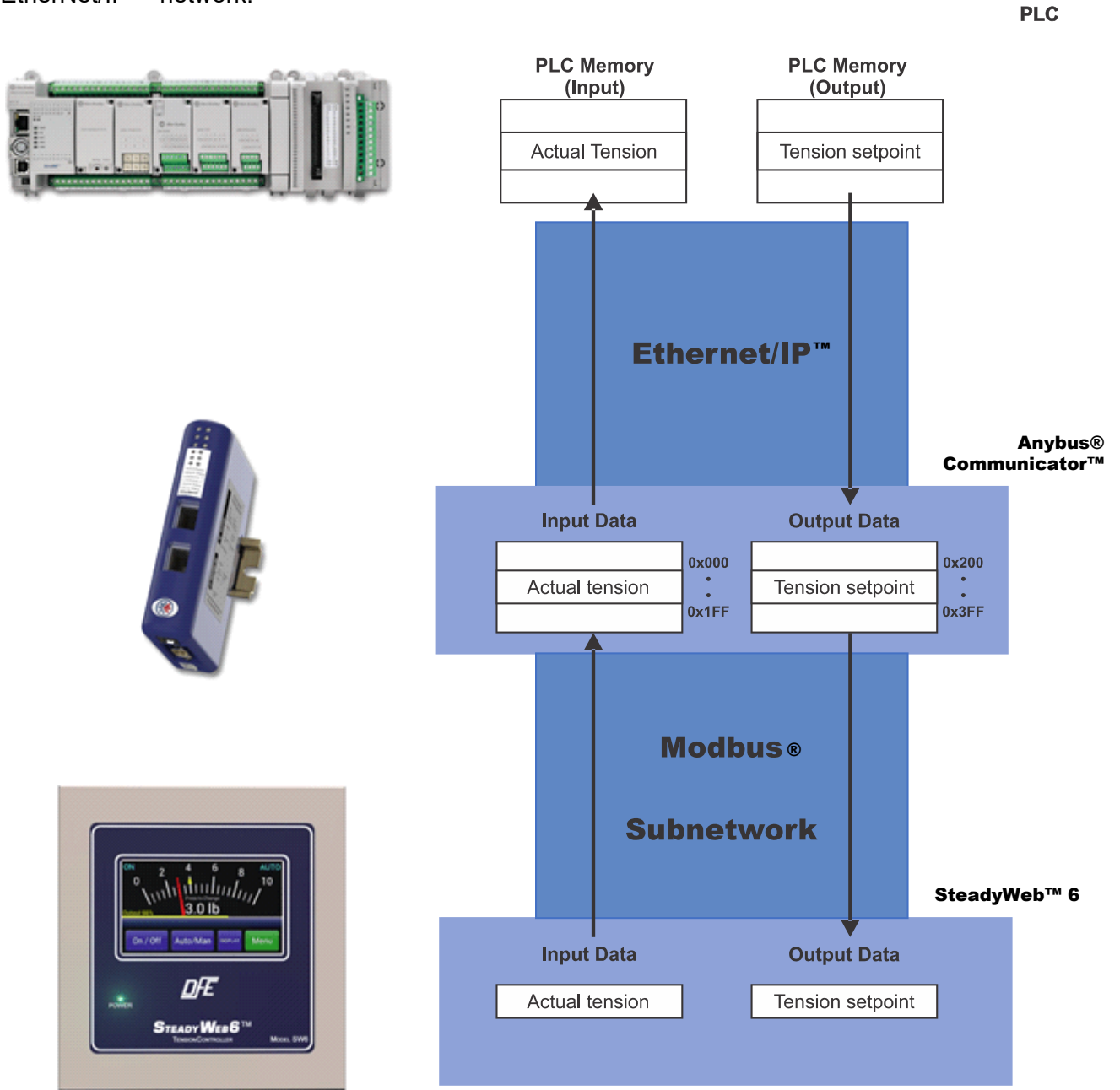
## Table of Contents

<a href="#">Overview</a> .....	<a href="#">1</a>
<a href="#">Physical Connection Requirements</a> .....	<a href="#">2</a>
<a href="#">Communication Settings SW6</a> .....	<a href="#">3</a>
<a href="#">Gateway Configuration</a> .....	<a href="#">4</a>
<a href="#">Essentials for a successful configuration</a> .....	<a href="#">4</a>
<a href="#">A few example transactions</a> .....	<a href="#">4</a>
<a href="#">Configuring the IP address of the Gateway</a> .....	<a href="#">10</a>
<a href="#">Testing out the Interface</a> .....	<a href="#">10</a>
<a href="#">Reading Data</a> .....	<a href="#">11</a>
<a href="#">Writing Data</a> .....	<a href="#">12</a>
<a href="#">Appendix</a> .....	<a href="#">14</a>



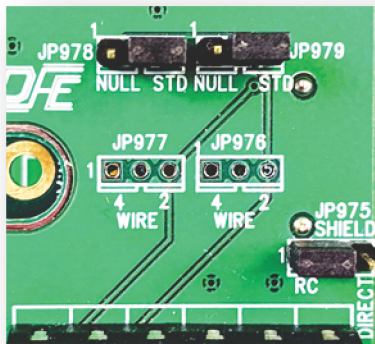
# 1. Overview:

The SteadyWeb™ 6 (SW6) supports EtherNet/IP™ by utilizing a gateway called the Anybus® Communicator™. This gateway sits between the SteadyWeb™ 6 Modbus® interface and an EtherNet/IP™-based network. A generic data exchange model is utilized to transfer data. The following shows a basic example of the data exchange between the SW6 and a PLC on the EtherNet/IP™ network.





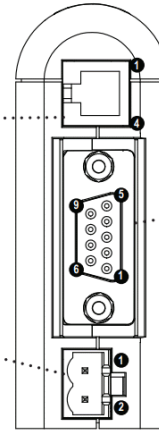
## 2. Physical Connection Requirements *continued...*



### Bottom View

PC Connector:

1. GND
2. GND
3. RS232 Rx
4. RS232 Tx



Power:

1. +24 V DC
2. GND

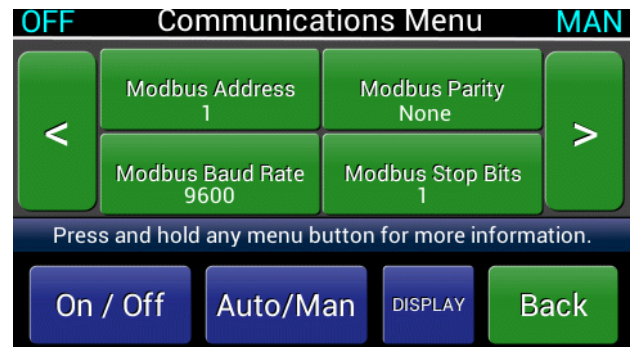
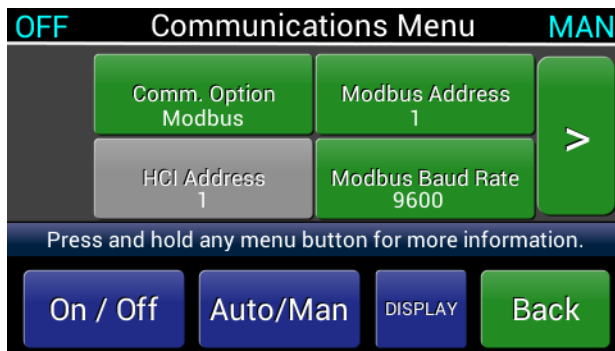
Subnetwork Connector

Pin no.	Description
1	+5V OUT
2	RS232 Rx
3	RS232 Tx
4	NC
5	Signal GND
6	RS422 Rx+
7	RS422 Rx-
8	RS485+ / RS422 Tx+
9	RS485- / RS422 Tx-

In addition to the electrical connections, the STD/NULL jumpers (JP978 and JP979) must be set. When using a connection specified above these jumpers should be left in the STD positions. (Pins 2 & 3) Verify the jumper positions on the 723-2808 Board installed on the SW6 are set correctly.

## 3. Communication Settings SW6

Once a Physical RS-232 connection is established between the SW6 and the Gateway the communication settings in the SW6 must be set correctly. Once these connection settings are established on the SW6 the device is ready to communicate with gateway.



**Comm Option: Modbus**  
**Modbus Address: 1**  
**Modbus Baud Rate: 9600**  
**Modbus Parity: None**  
**Modbus Stop Bits: 1**

## 4. Gateway Configuration:

The gateway configuration is extremely flexible. In this example a pre-loaded configuration is provided by DFE and pre-loaded on the gateway if the gateway was purchased through DFE. This configuration is called Standard Data SW6.cfg. The Gateway configuration can be re-loaded, modified, or altered to fit specific customer needs or to add commands and/or data requests not included in the 'Standard Data SW6' configuration. If you need to obtain the Standard Data SW6.cfg file please contact DFE. To load a new configuration or view the current configuration of the gateway a tool from HMS networks must be used called the 'Anybus® Configuration™ Manager – Communicator' which can be downloaded from <https://www.anybus.com>. An independent serial connection must also be established with the gateway located at the bottom of the unit. This PC connection used for programming the device will connect with the Anybus Configuration Manage software. It is also strongly advised to read and understand the User Manual for the Anybus® Communicator™ for EtherNet/IP™ / Modbus-TCP

### 1. Essentials for a successful configuration:

#### Fieldbus Configuration:

<input type="checkbox"/> <b>Address mode</b>	
ModbusTCP address mode	Enabled
<input type="checkbox"/> <b>Ethernet TCP/IP configuration</b>	
TCP/IP Settings	Disabled
<input type="checkbox"/> <b>Fieldbus</b>	
Fieldbus Type	EtherNet/IP & Modbus-TCP 2-Port
<input type="checkbox"/> <b>IO Sizes</b>	
Exact IO match	Disabled
IO Sizes	Automatic
<input type="checkbox"/> <b>Online/Offline trigger</b>	
EtherNet/IP Run/Idle Header	Disabled

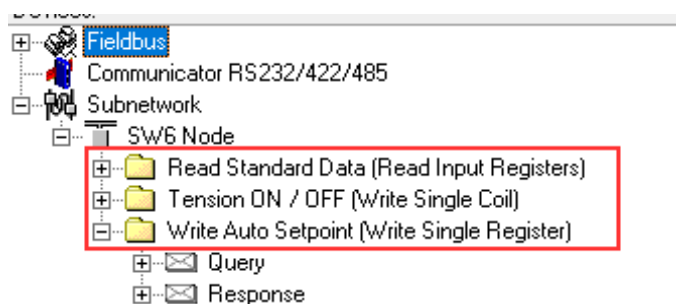
#### Subnet Configuration:

<input type="checkbox"/> <b>Communication</b>	
Bitrate (bits/s)	9600
Data bits	8
Parity	None
Physical standard	RS232
Stop bits	1
<input type="checkbox"/> <b>Timing</b>	
Message delimiter (10ms)	0

**Node Configuration:** Slave Address: 1 (or set to the slave address in your SW6 menu settings)

### 2. Example Transactions:

These transactions will setup the gateway to read a standard data packet and place that in memory of the gateway in the 'In Area' Location. Other transactions such as Tension ON/OFF and Write Auto Setpoint will allow us to turn the tension on and off and adjust a setpoint.





## 2. Example Transactions: continued...

### 1. Transaction: Read Standard Data (Read Input Registers)

This transaction is setup as shown:

Communicator RS232/422/485 - Master Mode - SW6 SD Rev 1

Devices:

- Fieldbus
  - Communicator RS232/422/485
    - Subnetwork
      - SW6 Node
        - Read Standard Data (Read Input Registers)
          - Query
          - Response
        - Tension DN / OFF (Write Single Coil)
          - Query
          - Response
        - Write Auto Setpoint (Write Single Register)
          - Query
          - Response

Configuration:

Alphabetic | Categorized

<b>General</b>	
Offline options for fieldbus	Clear
Offline options for sub-network	Clear
Update mode	Cyclically
<b>Timing</b>	
Minimum time between broadcasts (10ms)	20
Reconnect time (10ms)	1000
Retries	3
Timeout time (10ms)	10
Update time (10ms)	10
<b>Trigger</b>	
Trigger byte address	0x05FF

- **Query:**
  - **Slave Address: 0x01**
  - **Function: 0x04**
  - **Starting Address: 0x0100**
  - **Quantity of Input Registers: 0x0010**

<b>General</b>	
Error check start byte	0x0000
Error check type	CRC
Error check type combined with Representation	None
	Binary

- **Checksum:**
- **Response:**
  - **Slave Address: 0x01**
  - **Function: 0x04**
  - **Byte Count: 0x20**

<b>General</b>	
Data length	0x0020
Data location	0x0000
<b>Operations</b>	
Byte swap	No swapping

- **Input Registers:**

<b>General</b>	
Error check start byte	0x0000
Error check type	CRC
Error check type combined with Representation	None
	Binary

- **Checksum:**

## 2. Example Transactions: continued...

### Read Standard Data Transaction Summary:

This transaction sets the gateway to perform a polling update of the 'Standard Data' Modbus® command. The Standard Data Command (04) is used to read a packet of 16 registers of data starting with register 256. The following data is procured and re stored into the 'In Area' of the Gateway device. Each register that is read from the SW6 takes up two bytes starting at 0x0000.

#### Data format:

'In Area' location	Status Register	Data Type
0x0000	Register 0	Tension Percent / RTA*
0x0002	Register 1	Tension Sign
0x0004	Register 2	Output Percent
0x0006	Register 3	Output Sign
0x0008	Register 4	Line Signal Percent
0x000A	Register 5	Diameter Percent
0x000C	Register 6	Auto Setpoint Percentage
0x000E	Register 7	Manual Setpoint Percent
0x0010	Register 8	Status Alarm Bits
0x0012	Register 9	Tension Units
0x0014	Register 10	Max Line Speed
0x0016	Register 11	Line Speed Units
0x0018	Register 12	Max Full Roll Diameter
0x001A	Register 13	Core Diameter
0x001C	Register 14	Diameter Units
0x001E	Register 15	Tension Range

\* If Tension Source = Transducer: Register 0 = Transducer Tension Percent, Register 1 = Tension Sign  
 If Tension Source = RTA1: Register 0 = RTA1 Signal Percent, Register 1 = 0  
 If Tension Source = RTA2: Register 0 = RTA2 Signal Percent, Register 1 = 0

*The format of each Data Type is documented in the OPTION INSERT RS232 / RS485 SERIAL INTERFACE STEADYWEB™ 6 documentation.*

When running data can be viewed using the node monitor which is a tool within the Anybus® Configuration Manager. Using this tool, we can see the standard data packet has arrived and was loaded into memory at the specified location.

The screenshot shows the 'Monitor - SW6 Node' window. It displays a Modbus transaction with the following details:

- Read Coils Query:** Slave Address: 0x01, Function: 0x01, Starting Address (Hi.Lo): 0x0000, Quantity Of Outputs (Hi.Lo): 0x0000, Checksum: CRC, Error check start byte: 0x0000, Error ch: None.
- Read Coils Response:** Slave Address: (empty), Function: (empty), Byte count: (empty), Coil Status: (empty), Checksum: (empty).
- In Area 36 bytes (512):** A table showing the received data in hexadecimal. The first four bytes are highlighted in red: 0000 D AD 0 0 0 D 9C 0 0.
- Out Area 4 bytes (512):** A table showing the output data in hexadecimal: 0200 FF 0 D AC.
- General Area 0 bytes (984):** A table showing the general area data in hexadecimal, starting with 0400.

## 2. Example Transactions: continued...

### 2. Transaction: Tension ON/OFF (Write Single Coil)

This transaction is setup as shown:

Communicator RS232/422/485 - Master Mode - SW6 SD Rev 1

Devices:	Configuration:																												
<ul style="list-style-type: none"> <li>Fieldbus           <ul style="list-style-type: none"> <li>Communicator RS232/422/485               <ul style="list-style-type: none"> <li>Subnetwork                   <ul style="list-style-type: none"> <li>SW6 Node                       <ul style="list-style-type: none"> <li>Read Standard Data (Read Input Registers)                           <ul style="list-style-type: none"> <li>Tension ON / OFF (Write Single Coil)                               <ul style="list-style-type: none"> <li>Query                                   <ul style="list-style-type: none"> <li>Slave Address</li> <li>Function</li> <li>Output Address</li> <li>Output Value</li> <li>Checksum</li> </ul> </li> <li>Response</li> </ul> </li> <li>Write Auto Setpoint (Write Single Register)                           <ul style="list-style-type: none"> <li>Query</li> <li>Response</li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ul>	<table border="1"> <thead> <tr> <th colspan="2">Configuration:</th> </tr> <tr> <th colspan="2">Alphabetic   Categorized</th> </tr> </thead> <tbody> <tr> <td colspan="2"><b>General</b></td> </tr> <tr> <td>Offline options for fieldbus</td> <td>Freeze</td> </tr> <tr> <td>Offline options for sub-network</td> <td>Freeze</td> </tr> <tr> <td>Update mode</td> <td>On data change</td> </tr> <tr> <td colspan="2"><b>Timing</b></td> </tr> <tr> <td>Minimum time between broadcasts (10ms)</td> <td>100</td> </tr> <tr> <td>Reconnect time (10ms)</td> <td>1000</td> </tr> <tr> <td>Retries</td> <td>3</td> </tr> <tr> <td>Timeout time (10ms)</td> <td>100</td> </tr> <tr> <td>Update time (10ms)</td> <td>100</td> </tr> <tr> <td colspan="2"><b>Trigger</b></td> </tr> <tr> <td>Trigger byte address</td> <td>0x05FF</td> </tr> </tbody> </table>	Configuration:		Alphabetic   Categorized		<b>General</b>		Offline options for fieldbus	Freeze	Offline options for sub-network	Freeze	Update mode	On data change	<b>Timing</b>		Minimum time between broadcasts (10ms)	100	Reconnect time (10ms)	1000	Retries	3	Timeout time (10ms)	100	Update time (10ms)	100	<b>Trigger</b>		Trigger byte address	0x05FF
Configuration:																													
Alphabetic   Categorized																													
<b>General</b>																													
Offline options for fieldbus	Freeze																												
Offline options for sub-network	Freeze																												
Update mode	On data change																												
<b>Timing</b>																													
Minimum time between broadcasts (10ms)	100																												
Reconnect time (10ms)	1000																												
Retries	3																												
Timeout time (10ms)	100																												
Update time (10ms)	100																												
<b>Trigger</b>																													
Trigger byte address	0x05FF																												

- **Query:**
  - **Slave Address: 0x01**
  - **Function: 0x05**
  - **Output Address: 0x000A**

<b>General</b>	
Data length	0x0002
Data location	0x0200
<b>Operations</b>	
Byte swap	No swapping

- **Output Value:**

<b>General</b>	
Error check start byte	0x0000
Error check type	CRC
Error check type combined with	None
Representation	Binary

- **Checksum:**
- **Response:**
  - **Slave Address: 0x01**
  - **Function: 0x05**
  - **Output Address: 0x000a**

<b>General</b>	
Data length	0x0002
Data location	0x0020
<b>Operations</b>	
Byte swap	No swapping

- **Output Value**
- **Checksum: N/A Default**

## 2. Example Transactions: continued...

### 2. Transaction: Tension ON/OFF (Write Single Coil) *continued...*

#### Tension On/Off Transaction Summary:

This transaction sets the gateway to reserve 2Bytes in the 'Out Area' of memory at the location of 0x200, which will be used to receive a value for the write coil command. By writing 0xFF00 to this location in memory a write coil command will be sent to the SW6 forcing the coil ON at Register 10 (Tension On/Off) thus forcing the tension ON. By writing 0x0000 to the same 0x200 location in memory the write single coil command will be sent to the SW6 forcing the Register 10 to OFF and thus forcing the tension OFF. You will notice this transaction is configured with an update mode set to "On data change" so a write coil command will only be sent when the data changes in the 0x200 location. This can be reconfigured if needed.

Out Area 4 bytes (512)			
0200	FF	0	D AC
0208			
0210			
0218			

In Area 36 bytes (512)									
0000	9	4	0	0	8	FC	0	0	
0008	0	0	0	0	D	AC	8	FC	
0010	0	8	0	0	0	6	0	7	
0018	0	F0	0	26	0	0	0	B	
0020	FF	0	D	AC					

When sending the write coils command the response from the SW6 Modbus® subnet is stored in the 'In Area' Data at the 0x0020 location. Reading this data can be used to verify if the command was accepted and acknowledged.

### 3. Transaction: Write Auto Setpoint (Write Single Register)

This transaction is setup as shown:

Communicator RS232/422/485 - Master Mode - SW6 SD Rev 1

Devices:	Configuration:																								
<ul style="list-style-type: none"> <li>Fieldbus               <ul style="list-style-type: none"> <li>Communicator RS232/422/485                   <ul style="list-style-type: none"> <li>Subnetwork                       <ul style="list-style-type: none"> <li>SW6 Node                           <ul style="list-style-type: none"> <li>Read Standard Data (Read Input Registers)</li> <li>Tension ON / OFF (Write Single Coil)</li> <li>Write Auto Setpoint (Write Single Register)</li> <li>Query</li> <li>Response</li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ul>	<div style="border-bottom: 1px solid gray; padding-bottom: 5px;"> <span>Alphabetic</span>   <span>Categorized</span> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left;">General</th> </tr> </thead> <tbody> <tr> <td>Offline options for fieldbus</td> <td>Freeze</td> </tr> <tr> <td>Offline options for sub-network</td> <td>Freeze</td> </tr> <tr> <td>Update mode</td> <td>On data change</td> </tr> <tr> <th colspan="2" style="text-align: left;">Timing</th> </tr> <tr> <td>Minimum time between broadcasts (10ms)</td> <td>100</td> </tr> <tr> <td>Reconnect time (10ms)</td> <td>1000</td> </tr> <tr> <td>Retries</td> <td>3</td> </tr> <tr> <td>Timeout time (10ms)</td> <td>100</td> </tr> <tr> <td>Update time (10ms)</td> <td>100</td> </tr> <tr> <th colspan="2" style="text-align: left;">Trigger</th> </tr> <tr> <td>Trigger byte address</td> <td>0x05FF</td> </tr> </tbody> </table>	General		Offline options for fieldbus	Freeze	Offline options for sub-network	Freeze	Update mode	On data change	Timing		Minimum time between broadcasts (10ms)	100	Reconnect time (10ms)	1000	Retries	3	Timeout time (10ms)	100	Update time (10ms)	100	Trigger		Trigger byte address	0x05FF
General																									
Offline options for fieldbus	Freeze																								
Offline options for sub-network	Freeze																								
Update mode	On data change																								
Timing																									
Minimum time between broadcasts (10ms)	100																								
Reconnect time (10ms)	1000																								
Retries	3																								
Timeout time (10ms)	100																								
Update time (10ms)	100																								
Trigger																									
Trigger byte address	0x05FF																								

- **Query:**

- **Slave Address: 0x01**
- **Function: 0x06**
- **Register Address: 0x0051**

<b>General</b>	
Data length	0x0002
Data location	0x0202
<b>Operations</b>	
Byte swap	No swapping

## 2. Example Transactions: continued...

### 3. Transaction: Write Auto Setpoint (Write Single Register) *continued...*

- **Register Value**

General	
Error check start byte	0x0000
Error check type	CRC
Error check type combined with	None
Representation	Binary

- **Checksum:**

- **Response:**

- **Slave Address: 0x01**

- **Function: 0x06**

- **Register Address: 0x0051**

General	
Data length	0x0002
Data location	0x0022
Operations	
Byte swap	No swapping

- **Register Value**

- **Checksum: N/A Default**

#### Write Auto Setpoint Transaction Summary:

This transaction sets the gateway to reserve 2Bytes in the 'Out Area' of memory at the location of 0x202, which will be used to receive a value for the Auto Setpoint Command. When data changes in this area of memory a Modbus command will be sent to the SW6 to modify the Auto Setpoint Register with the value that resides in 'Out Area' memory at location 0x202.

$0 = 0.00\%$

$10000 = 100.00\%$

*Example: A value of 5000 represents an Auto Setpoint of 50.00% the full range tension.*

*Example: A value of 0x0DAC represents an Auto Setpoint of 35.00% the full range tension.*

When sending the write address command the response from the SW6 Modbus subnet is stored in the 'In Area' Data at the 0x0022 location. Reading this data can be used to verify if the command was accepted and acknowledged.

Out Area 4 bytes (512)			
0200	FF	0	D AC
0208			
0210			
0218			

In Area 36 bytes (512)								
0000	9	4	0	0	8	FC	0	0
0008	0	0	0	0	D	AC	8	FC
0010	0	8	0	0	0	6	0	7
0018	0	F0	0	26	0	0	0	B
0020	FF	0	D	AC				
0028								

## 4. Gateway Configuration *continued...*

### 3. Configuring the IP address of the Gateway

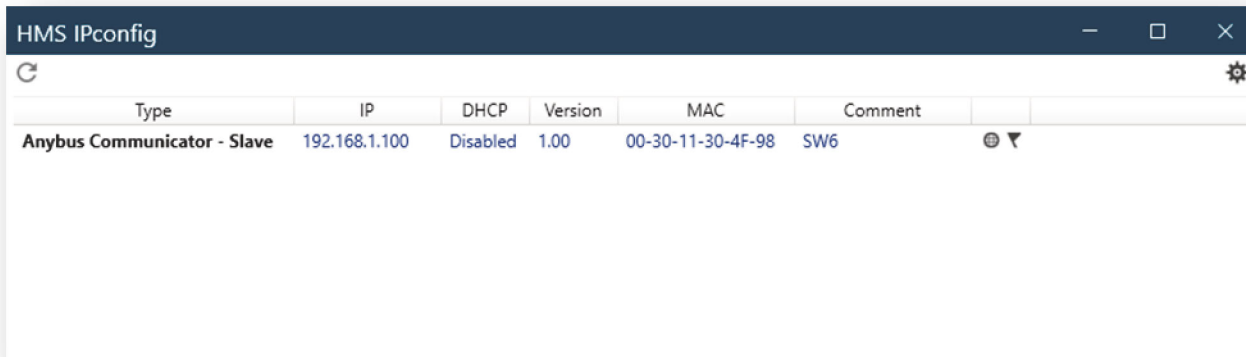
The default IP is set to 192.168.1.100.

IP and DNS settings can be configured manually or dynamically using DHCP. To configure the gateway it is recommended to use the HMS Ipconfig tool.

1. Download HMS IPconfig from [www.anybus.com/support](http://www.anybus.com/support).
2. Unpack the contents of the zip archive and run the installer program.

When HMS IPconfig is started it will automatically scan for compatible and active HMS devices.

To change the IP configuration for a device, click on the device in the list and edit the device configuration values. If more help is needed on this topic refer to the HMS Ipconfig User manual.



## 5 Testing out the Interface.

With the SteadyWeb™ 6 and the Gateway powered and connected check to be sure that the subnet status light displays solid green to indicate there are no troubles with the Subnet interface.

If the subnet status light is red:

- Check the serial cable connections to the SW6
- Be sure a valid configuration is loaded to the gateway
- Be sure that the MODBUS® configurations are set correctly in the SW6 If the subnet Status is Green proceed to the EtherNet/IP™ Interface and attempt to communicate with the gateway.

In this example we have utilized an Allen-Bradley® Micro850® series PLC with a PV800 Graphics terminal to demonstrate the operation of displaying and setting tension. Reading Data

With a valid ethernet connection from the controller to the gateway established data can be read from the gateway at the pre-configured locations. A MSG\_CIPGENERIC instruction block is configured to read the data in the 'In Area' of the gateway cyclically at a period of 500ms set in the CtrlCfg.TriggerType variable. The Class and Instance as well as other critical configurations parameters are found below. Keep in mind the IP Address much match your target gateway.

## 5. Testing out the Interface *continued...*

### 1. Reading Data

Request the standard data Packet

CtrlCfg		
CtrlCfg.Cancel		<input type="checkbox"/>
CtrlCfg.TriggerType	500	
CtrlCfg.StrMode	0	

AppCFG		
AppCFG.Service	14	
AppCFG.Class	4	
AppCFG.Instance	100	
AppCFG.Attribute	3	
AppCFG.MemberCnt	0	
+ AppCFG.MemberId	...	

TargetCfg		
TargetCfg.Path	4,192.168.1.100	
TargetCfg.CipConnM	1	
TargetCfg.UcmmTim	1000	
TargetCfg.ConnMsg	1000	
TargetCfg.ConnClose	<input type="checkbox"/>	

Successfully Generic Messaging should produce a resulting 36 Byte result which is stored to memory in the PLC. Below is a few critical locations for this example. Keep in mind if the gateway configuration is altered the data format may be different.

EIP_Rdata		
EIP_Rdata[1]	13	Tension Percent <b>35.01</b>
EIP_Rdata[2]	173	
EIP_Rdata[3]	0	
EIP_Rdata[4]	0	Output Percent <b>34.83</b>
EIP_Rdata[5]	13	
EIP_Rdata[6]	155	
EIP_Rdata[7]	0	Manual Setpoint Percent <b>35.00</b>
EIP_Rdata[8]	0	
EIP_Rdata[9]	0	
EIP_Rdata[10]	0	
EIP_Rdata[11]	0	
EIP_Rdata[12]	0	
EIP_Rdata[13]	13	
EIP_Rdata[14]	172	
EIP_Rdata[15]	7	

### 2. Writing Data

To write basic commands and data to the SW6 via the gateway the MSG\_CIPGENERIC instruction block is configured to write data to the 'Out Area' of the gateway. A command to set the SW6 Tension ON/OFF is presented below as an example.

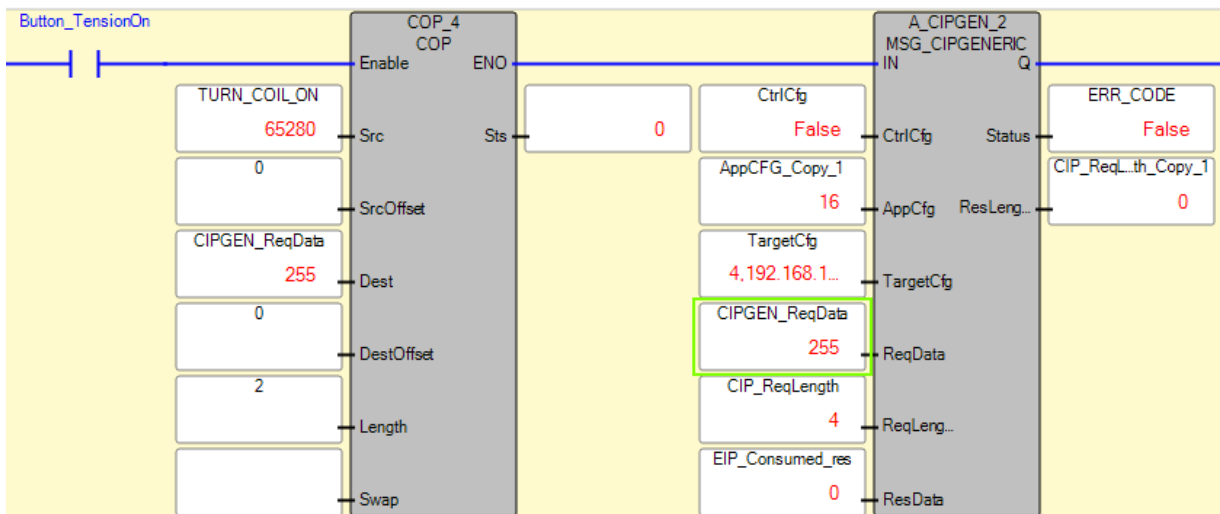
## 5. Testing out the Interface *continued...*

### 2. Writing Data *continued...*

As described above we have configured the gateway to send a write Coil command to transition the tension ON when we write 0xFF00 to the location 0x200 in the 'out Area' of the gateway.

Out Area 4 bytes (512)			
0200	FF	0	D AC
0208			
0210			
0218			

Below are the configurations of the MSG\_CIPGENERIC instruction. We are also utilizing a COP instruction block to modify a portion of the memory we wish to modify. The Class and Instance as well as other critical configurations parameters are found below. Keep in mind the IP Address much match your target gateway. Similar COP instructions can be utilized to copy in Setpoint Data to the memory and then sent with a MSG\_CIPGENERIC instruction.



AppCFG_Copy_1		
AppCFG_Copy_1.Service		16
AppCFG_Copy_1.Class		4
AppCFG_Copy_1.Instance		150
AppCFG_Copy_1.Attribute		3
AppCFG_Copy_1.MemberCnt		0
AppCFG_Copy_1.MemberId		...

CIPGEN_ReqData		
CIPGEN_ReqData[1]	255	
CIPGEN_ReqData[2]	0	
CIPGEN_ReqData[3]	13	
CIPGEN_ReqData[4]	172	

**Tension ON/OFF**

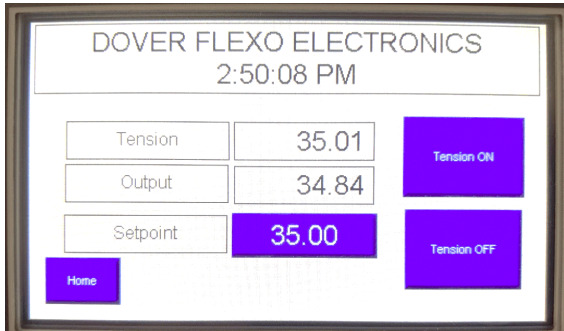
**SETPOINT**



## 5. Testing out the Interface *continued...*

### 2. Writing Data *continued...*

Below is the GUI for the basic example shown next to the SW6 which is responding to commands and sending back live tension data to the gateway and ultimately the PLC. This is a simple example intended to demonstrate the architecture and some basic configuration parameters for an EIP connected communications infrastructure.



**Implementation and Flexibility:** The basic example provided provides the guidelines and roadmap for an EIP connected interface to the SW6. If more commands are needed or required by the system designer they can be added to the configuration on the gateway. In theory, any SW6 supported MODBUS® command could be implemented to satisfy the designers needs.

**Limitations:** The EIP interface via the gateway is ultimately limited in operation by primary 2 factors:

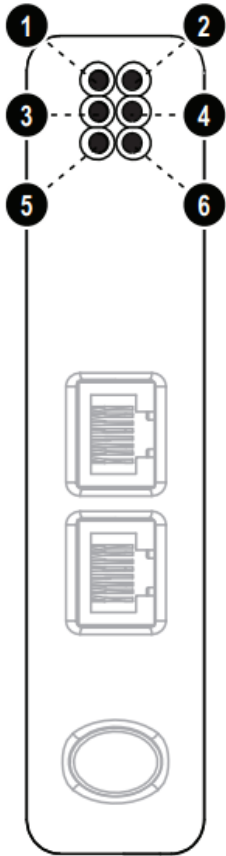
- The SW6 Modbus® Interface – Only command which are supported by the Serial MODBUS® interface will be able to accessed through the gateway, thus the Option Insert Manual for the RS232 / RS485 SERIAL INTERFACE SW6 serves as a great guild for remote command capability.
- Gateway Data Size Input Output Restrictions – Input data and output data are each limited to 512 Bytes. This serves as ample space but should be considered when determining the operational configuration for the gateway, especially if more than one Node is present on the subnetwork.

#### **Practical Use for SteadyWeb™ 6 EIP Interface:**

- Recipe control at the PLC level
- System Monitoring of Actual Tension for Inspection or Quality Assurance
- Improved Plant Connectivity

## APPENDIX:

### LED Indicators



LED	Indication	Description
1 (Module Status)	Off	No power
	Green	Controlled by a scanner in run state
	Flashing Green	Not configured, or scanner in idle state
	Flashing Red	Minor fault (recoverable)
2 (Network Status)	Red	Major fault (unrecoverable)
	Flashing Green/Red	Self-test in progress
	Off	No IP address, or no power
	Green	Online, one or more EtherNet/IP connections established
	Flashing Green	Online, no connections established
	Red	Duplicate IP address detected. Fatal error.
3 (Link)	Flashing Red	One or more connections timed out
	Flashing Green/Red	Self-test in progress
3 (Link)	Off	No link
4 (Activity)	Green	Connected to an Ethernet network
	Flashing Green	No Ethernet activity
5 (Subnet Status)	Off	Activity, receiving/transmitting Ethernet packets
	Flashing green	Running, but one or more transaction errors
	Green	Running
6 (Device Status)	Red	Transaction error/timeout or subnet stopped
	Off	Power off
	Alternating red/green	Invalid or missing configuration
	Green	Initializing
	Flashing green	Running
	Red	Bootloader mode
Flashing red	Note the flash sequence pattern and contact HMS support	

#### References:

TECHNICAL REFERENCE MANUAL Digital Tension Controller STEADYWEB™ 6

<https://dfe.com/products/tension-controllers/steadyweb-6-tension-controller/>

OPTION INSERT RS232 / RS485 SERIAL INTERFACE STEADYWEB™ 6

<https://dfe.com/products/tension-controllers/steadyweb-6-tension-controller/>

User Manual Anybus® Communicator™ for EtherNet/IP™ / Modbus®-TCP (2-port version)

[https://www.anybus.com/docs/librariesprovider7/default-document-library/manuals-design-guides/hms-hmsi-27-316.pdf?sfvrsn=2319aed6\\_8](https://www.anybus.com/docs/librariesprovider7/default-document-library/manuals-design-guides/hms-hmsi-27-316.pdf?sfvrsn=2319aed6_8)

User manual HMS IPconfig

[https://www.anybus.com/docs/librariesprovider7/default-document-library/manuals-design-guides/hms-scm-1202-141.pdf?sfvrsn=ba254fd7\\_6](https://www.anybus.com/docs/librariesprovider7/default-document-library/manuals-design-guides/hms-scm-1202-141.pdf?sfvrsn=ba254fd7_6)

Micro800 Programmable Controllers: Getting Started with CIP Client Messaging

[https://literature.rockwellautomation.com/idc/groups/literature/documents/qs/2080-qs002\\_-en-e.pdf](https://literature.rockwellautomation.com/idc/groups/literature/documents/qs/2080-qs002_-en-e.pdf)

# NOTES

---



307 PICKERING ROAD  
ROCHESTER, NEW HAMPSHIRE 03867-4630 U.S.A  
TEL: 603-332-6150  
FAX: 603-332-3758  
E-mail: [info@dfc.com](mailto:info@dfc.com) Internet: [www.dfc.com](http://www.dfc.com)

CANADA

MEXICO

UNITED KINGDOM

INDIA

CHINA

TAIWAN

KOREA

AUSTRALIA

SOUTH AFRICA