



Control Assistant

**Using Control Assistant and SOS Software in
place of Watch Window & Servlink Software**



General Precautions

Read this entire manual and all other publications pertaining to the work to be performed before installing, operating, or servicing this equipment.

Practice all plant and safety instructions and precautions.

Failure to follow instructions can cause personal injury and/or property damage.



Revisions

This publication may have been revised or updated since this copy was produced. To verify that you have the latest revision, check manual **26311**, *Revision Status & Distribution Restrictions of Woodward Technical Publications*, on the *publications page* of the Woodward website:

www.woodward.com/publications

The latest version of most publications is available on the *publications page*. If your publication is not there, please contact your customer service representative to get the latest copy.



Proper Use

Any unauthorized modifications to or use of this equipment outside its specified mechanical, electrical, or other operating limits may cause personal injury and/or property damage, including damage to the equipment. Any such unauthorized modifications: (i) constitute "misuse" and/or "negligence" within the meaning of the product warranty thereby excluding warranty coverage for any resulting damage, and (ii) invalidate product certifications or listings.



Translated Publications

If the cover of this publication states "Translation of the Original Instructions" please note:

The original source of this publication may have been updated since this translation was made. Be sure to check manual **26311**, *Revision Status & Distribution Restrictions of Woodward Technical Publications*, to verify whether this translation is up to date. Out-of-date translations are marked with . Always compare with the original for technical specifications and for proper and safe installation and operation procedures.

Woodward reserves the right to update any portion of this publication at any time. Information provided by Woodward is believed to be correct and reliable. However, no responsibility is assumed by Woodward unless otherwise expressly undertaken.

Contents

WARNINGS AND NOTICES	2
ELECTROSTATIC DISCHARGE AWARENESS	3
CHAPTER 1. GENERAL INFORMATION.....	4
Scope of Manual.....	4
Control Assistant Features	4
System Requirements	4
Acquiring Control Assistant and SOS Servlink OPC Server Software	5
CHAPTER 2. GETTING CONNECTED AND USING THE SOFTWARE	7
Introduction.....	7
Getting Connected.....	7
CHAPTER 3. TRANSFERRING AN APPLICATION FILE.....	16
Introduction.....	16
Getting Connected.....	16
CHAPTER 4. TRANSFERRING A CONFIGURATION FILE	19
Introduction.....	19
Retrieving and Saving the Configuration File (Tunable List).....	19
CHAPTER 5. CONVERTING A .CFG FILE TYPE	23
Introduction.....	23
CHAPTER 6. TRENDING	28
Introduction.....	28
Authorizing a License	28
CHAPTER 7. SERVICE OPTIONS	31
Product Service Options.....	31
Woodward Factory Servicing Options	32
Returning Equipment for Repair.....	32
Replacement Parts	33
Engineering Services.....	33
How to Contact Woodward.....	34
Technical Assistance.....	34

The following are trademarks of Woodward, Inc.:
Woodward

The following are trademarks of their respective companies:
Pentium (Intel Corporation)
Windows, Windows NT, Windows Vista (Microsoft Corporation)

Warnings and Notices

Important Definitions



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

- **DANGER**—Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING**—Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION**—Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE**—Indicates a hazard that could result in property damage only (including damage to the control).
- **IMPORTANT**—Designates an operating tip or maintenance suggestion.

WARNING

Overspeed / Overtemperature / Overpressure

The engine, turbine, or other type of prime mover should be equipped with an overspeed shutdown device to protect against runaway or damage to the prime mover with possible personal injury, loss of life, or property damage.

The overspeed shutdown device must be totally independent of the prime mover control system. An overtemperature or overpressure shutdown device may also be needed for safety, as appropriate.

WARNING

Personal Protective Equipment

The products described in this publication may present risks that could lead to personal injury, loss of life, or property damage. Always wear the appropriate personal protective equipment (PPE) for the job at hand. Equipment that should be considered includes but is not limited to:

- Eye Protection
- Hearing Protection
- Hard Hat
- Gloves
- Safety Boots
- Respirator

Always read the proper Material Safety Data Sheet (MSDS) for any working fluid(s) and comply with recommended safety equipment.

WARNING

Start-up

Be prepared to make an emergency shutdown when starting the engine, turbine, or other type of prime mover, to protect against runaway or overspeed with possible personal injury, loss of life, or property damage.

WARNING

Automotive Applications

On- and off-highway Mobile Applications: Unless Woodward's control functions as the supervisory control, customer should install a system totally independent of the prime mover control system that monitors for supervisory control of engine (and takes appropriate action if supervisory control is lost) to protect against loss of engine control with possible personal injury, loss of life, or property damage.

Electrostatic Discharge Awareness

NOTICE

Electrostatic Precautions

Electronic controls contain static-sensitive parts. Observe the following precautions to prevent damage to these parts:

- Discharge body static before handling the control (with power to the control turned off, contact a grounded surface and maintain contact while handling the control).
- Avoid all plastic, vinyl, and Styrofoam (except antistatic versions) around printed circuit boards.
- Do not touch the components or conductors on a printed circuit board with your hands or with conductive devices.

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual **82715**, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules*.

Follow these precautions when working with or near the control.

1. Avoid the build-up of static electricity on your body by not wearing clothing made of synthetic materials. Wear cotton or cotton-blend materials as much as possible because these do not store static electric charges as much as synthetics.
2. Do not remove the printed circuit board (PCB) from the control cabinet unless absolutely necessary. If you must remove the PCB from the control cabinet, follow these precautions:
 - Do not touch any part of the PCB except the edges.
 - Do not touch the electrical conductors, the connectors, or the components with conductive devices or with your hands.
 - When replacing a PCB, keep the new PCB in the plastic antistatic protective bag it comes in until you are ready to install it. Immediately after removing the old PCB from the control cabinet, place it in the antistatic protective bag.

Chapter 1.

General Information

Scope of Manual

Many Woodward controls, including the 2301D, 2301D-ST, 2301D-GT, Atlas Smart Core, EGCP-3, 723PLUS, and 828, use the Watch Window / Servlink software to service and tune variables. Watch Window Standard is still available for these controls. However, Watch Window Professional is not compatible with PCs with 64-bit processors, so Woodward recommends that users with such PCs who use Watch Window Professional should instead use Control Assistant and the SOS Servlink OPC Server. Control Assistant performs the same functions as Watch Window and is compatible with 64-bit PCs. This manual provides the information necessary to use the Control Assistant and SOS software in place of the Watch Window / Servlink software.

Control Assistant Features

Control Assistant is a utility designed to communicate with Woodward controls over serial or Ethernet connections.

The following features are supported:

- Live parameter monitoring and tuning
- Tunable maintenance (captures, editing, comparing and transferring files)
- Alarms and Events viewing from SOS servers/controls with AE support

Graphing and trending features (license required—part number 8928-5014) include:

- Live parameter trending
- Off-line trending (datalogs and archived trend data)
- X-Y plots
- User definable calculation pens
- First-order filtering for calculation pens
- User-definable triggers for event logging and buffer saving (live data)
- Data export and import to and from .CSV files
- Editor for dynamic datalog configuration files
- Support for continuous datalogs

System Requirements

- Pentium 200 MHz PC
- 128 MB of RAM
- Windows XP, Vista, 7
- Microsoft .NET 4.0 Framework

Acquiring Control Assistant and SOS Servlink OPC Server Software

The Control Assistant software is available from the Woodward website at: www.woodward.com/software. Type "Control Assistant" into the first search engine and click on Search. Click on Download to retrieve the Control Assistant software.

Search and Download Software Products

Enter a search term – for example a product or software name – and click on the "Search" button to view and download software, software descriptions, or service packs for your system.

Use the optional "Software Type" and "Product Category" fields and click on the "Search" button to narrow your search results.

Control Assistant

Service Tool

Select a Product Category

Search Clear

Software Search Results

Product		
Control Assistant 4.06b	Download	More Info
SOS Servlink OPC Server 4.06a	Download	More Info

1. The revision level (4.06b) might be different from what is current on the website. Download the latest version.
2. After acquiring this file, run it and follow the instructions on the setup dialogs. NOTE: If you do not have the Microsoft .NET Framework 4.0 already installed on your PC, install it from the Microsoft web site.
3. To emulate the Watch Window / Servlink software, no software license is required. For full functionality, including graphing and trending, obtain a software license through your authorized Woodward dealer, run the program, and select *Authorize...* from the License menu.
4. If you are running Control Assistant on XP SP2, you may need to make some security changes for Control Assistant communication with embedded OPC Servers or remote SOS servers to work properly.

Control Assistant uses the SOS Servlink OPC Server to communicate with the hardware platform. To acquire the SOS Servlink OPC Server software, type SOS into the search engine of the software site and click on *Search*. Click on *Download* to retrieve the software.

Search and Download Software Products

Enter a search term – for example a product or software name – and click on the “Search” button to view and download software, software descriptions, or service packs for your system.

Use the optional “Software Type” and “Product Category” fields and click on the “Search” button to narrow your search results.

SOS

Service Tool

Select a Product Category

Search Clear

Software Search Results

Product		
SOS Servlink OPC Server 4.06a	Download	More Info
Control Assistant 4.06b	Download	More Info

1. The revision level (4.06a) might be different from what is current on the website. Download the latest version.
2. After acquiring this file, run it and follow the instructions on the setup dialogs.
NOTE: If you do not have the Microsoft .NET Framework 4.0 already installed on your PC, install it from the Microsoft web site.

Chapter 2. Getting Connected and Using the Software

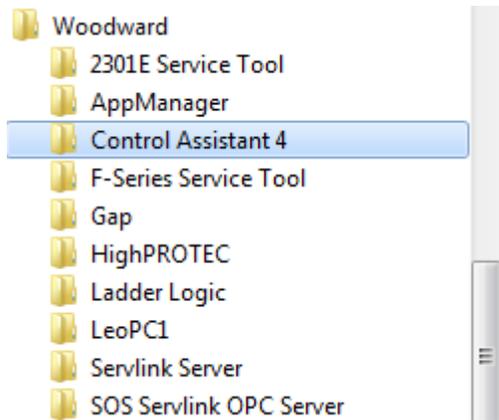
Introduction

This chapter provides steps for getting connected to the control and using the software.

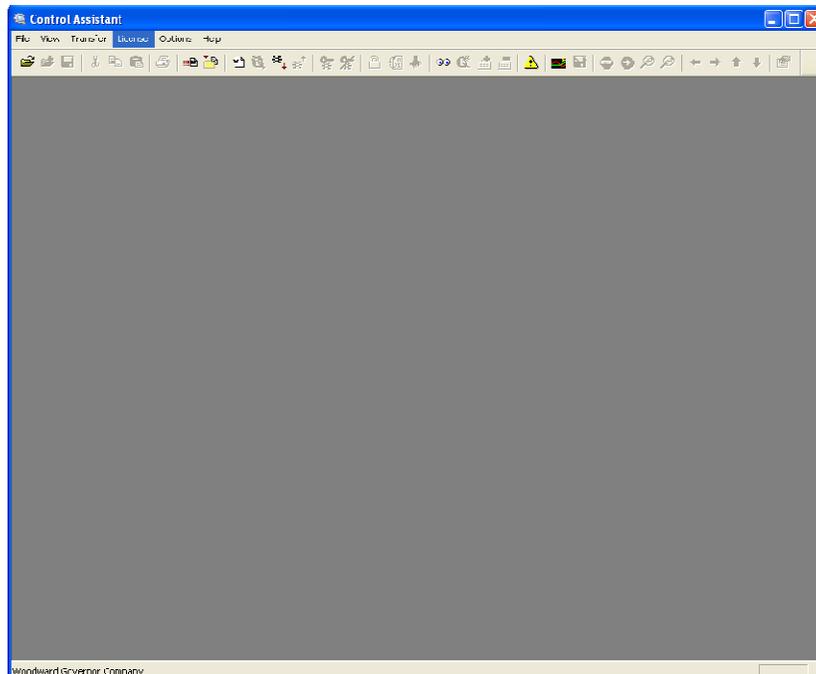
Getting Connected

Step 1:

Go to Start \ Programs \ Woodward \ Control Assistant \ Control Assistant 4 to start the software.

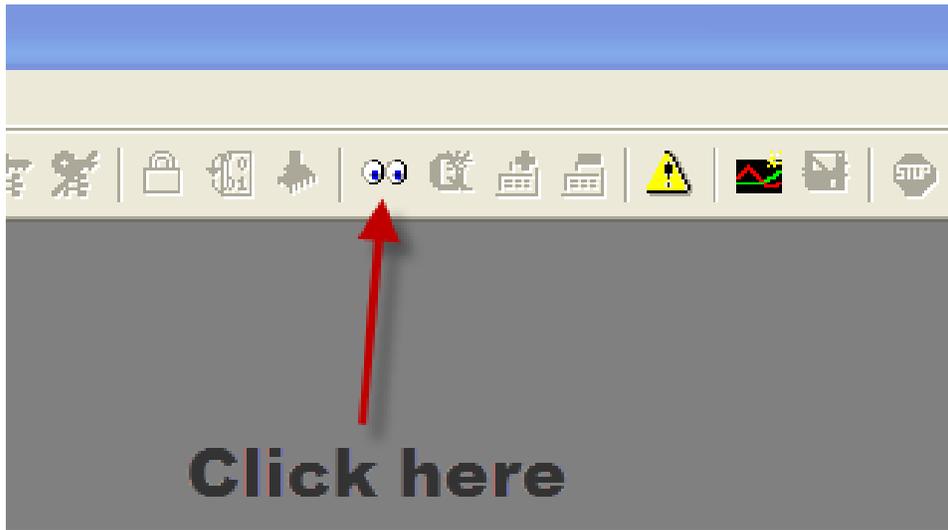


Click on the Control Assistant 4 link. This is what the window should look like:



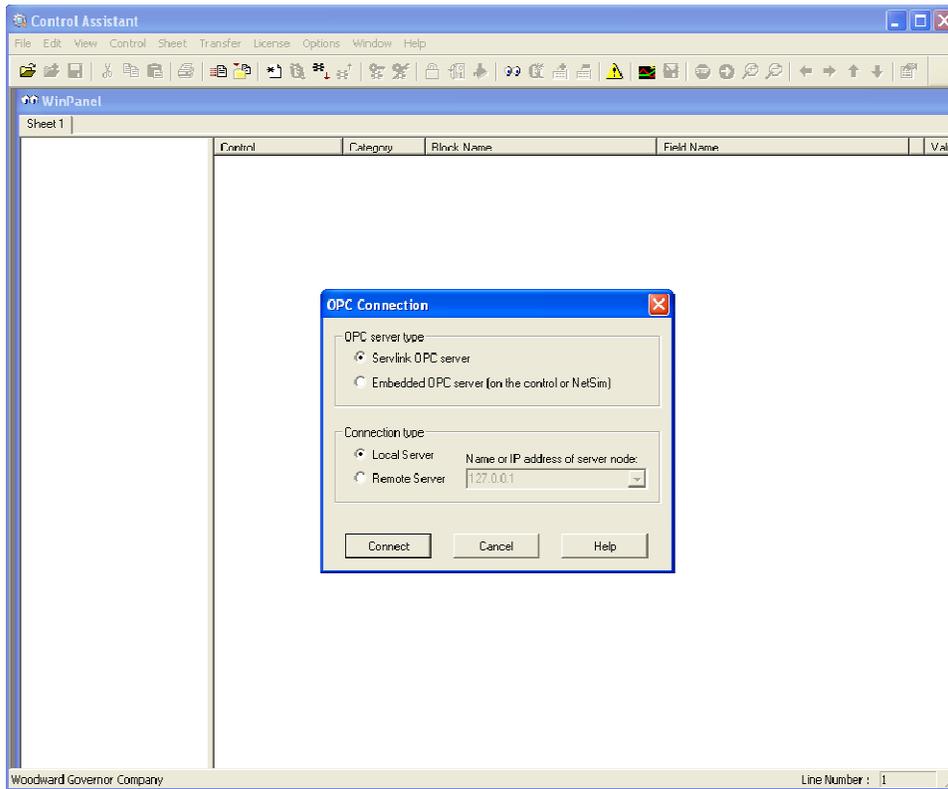
Step 2:

To start the communications link, click on the WinPanel button (). WinPanel functions like a Watch Window Inspector window.



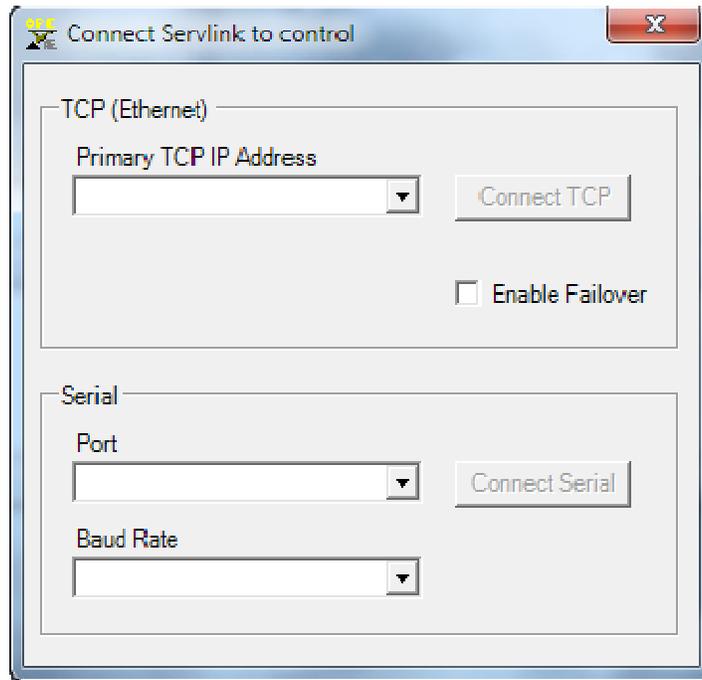
Step 3:

An OPC connection dialog will appear. Check the radio buttons as shown below and click on Connect.



Step 4:

The first time SOS Servlink OPC server is run, it will open a window like this:

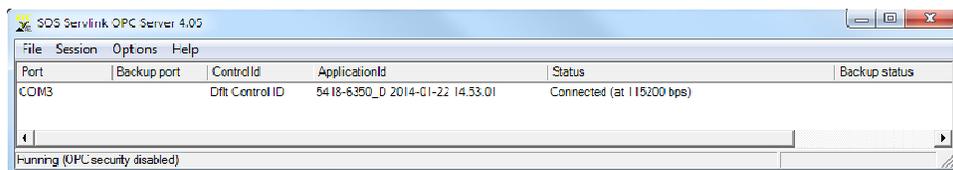


Use the *Port* pull-down list to select the correct serial port and the *Baud Rate* pull-down list to select *Automatically detect baud rate*. Press *Connect Serial*.

A Servlink connection will be made with the control.

Step 5:

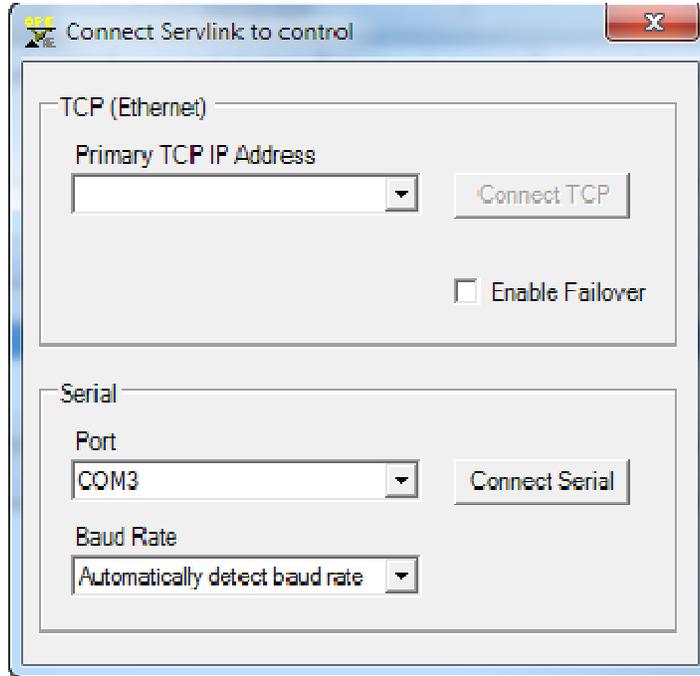
During the connection process, the SOS window will be shown, and progress can be monitored in the SOS progress bar and under the *Status* tab. Once connected, the display shows the Application Identifier under *ApplicationID* and the Connection Status under *Status*:



It will then automatically minimize. It can be re-opened by right-clicking on the  icon in your system tray and selecting *Show*.

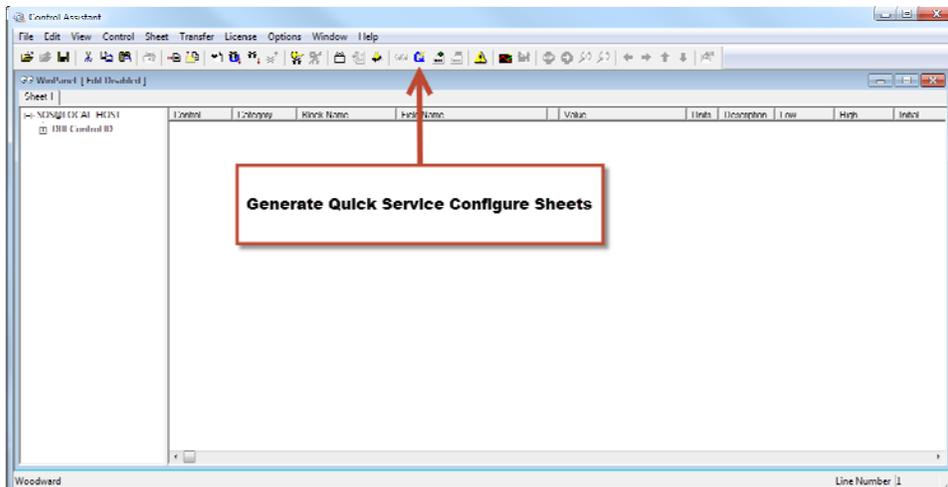
Step 6:

Should the control not connect, right-click on the  icon in your system tray and click on Show. From here, you can troubleshoot why the connection is not being made. Example: Possibly, it is trying to use the wrong serial port. Click on Modify Session and use the pull-down list to select the correct serial port. Leave the Baud Rate selected for “Automatically detect baud rate”.



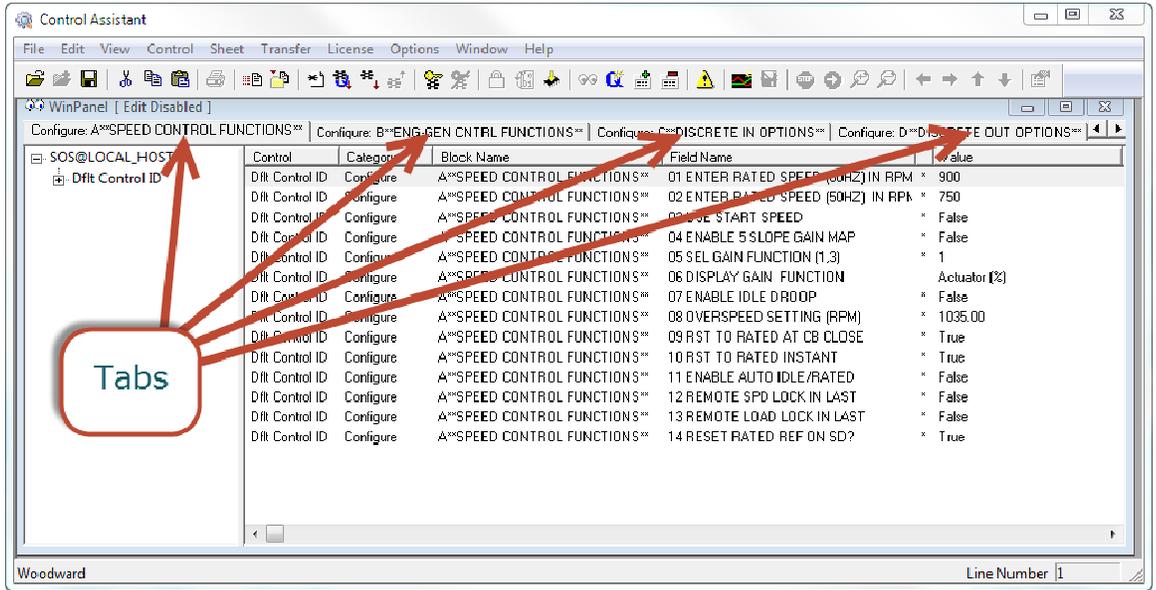
Step 7:

Click on the  button in the Main Window of Control Assistant. This will create a WinPanel window with all of the Service and Configure menu header tabs:



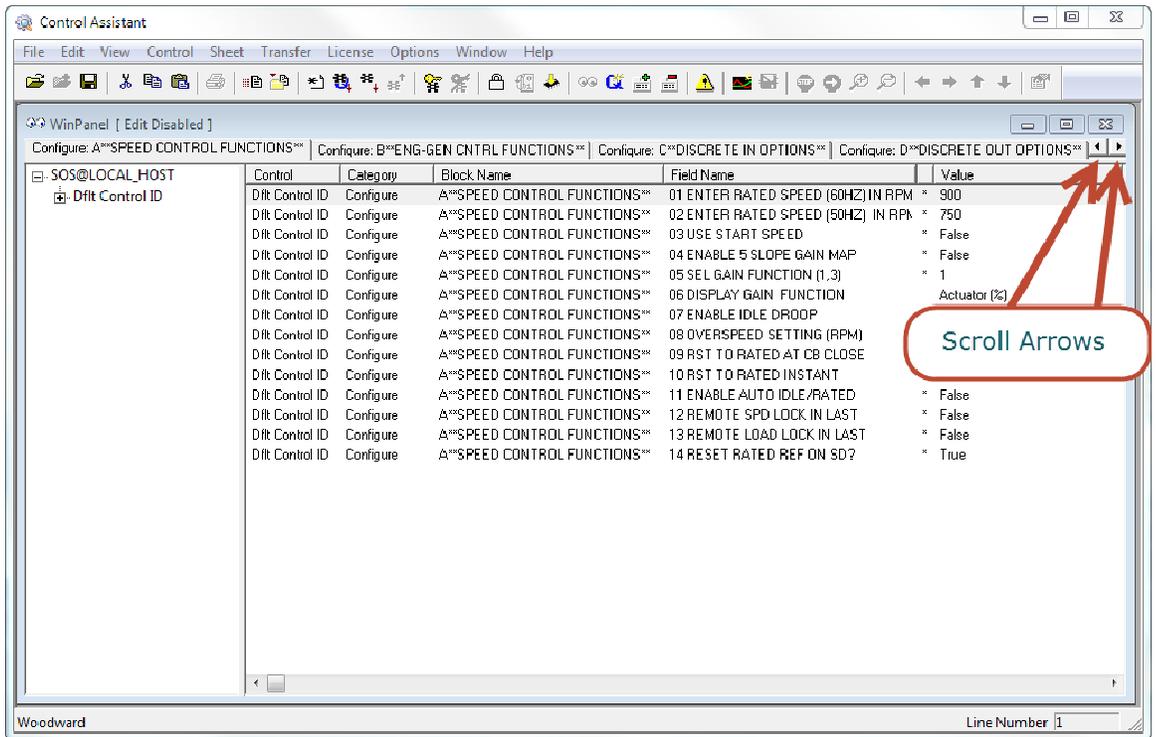
Step 8:

The Configure and Service Menu Tabs are located across the top, as shown:



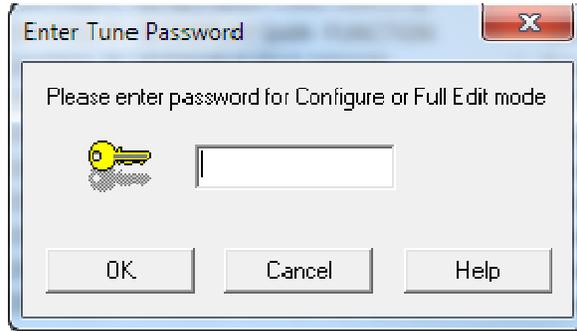
Step 9:

The Configure Tabs are located to the left of the menu structure; the Service Tabs are located to the right. Use the "Left" and "Right" arrows to scroll between the menus.



Step 10:

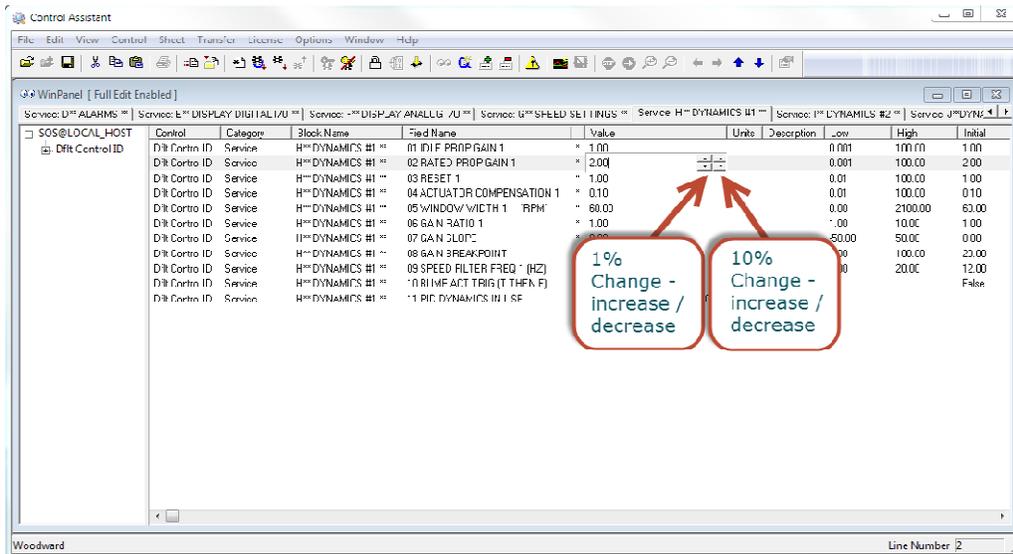
To tune a variable in the Service Mode (this allows the user to tune the control while the prime mover is operating), scroll to the correct menu. Click on the variable. A password is required to change values*:



The default password for Service Mode = 1111
 The default password for Configure Mode = 1113
 The default password for Debug (Full) Mode = 1112

*NOTE: The passwords may be changed or disabled in the Edit menu (*Set Tune Password...*). The Debug password may be used for all modes.

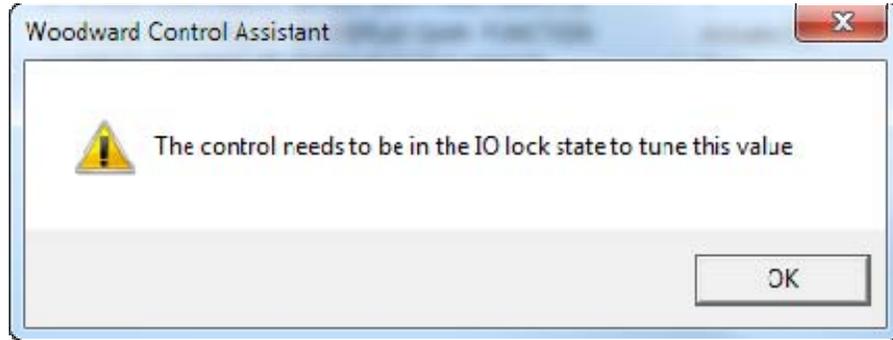
Once the tune mode has been enabled, the value may be changed. The four up/down arrows allow you to change the value. The left arrows change the value by 1%. The right arrows change the value by 10%.



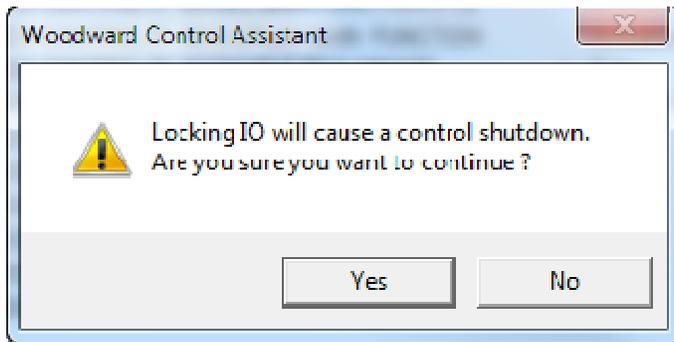
Another option to change the value is to swipe across the number and type in the value. Float values which are entered must be within 10% of the original number. A Boolean (True / False) value can be adjusted with any of the arrow buttons.

Step 11:

Configure Mode variables may only be modified if the prime mover is shut down. If a Configure Mode variable is selected while the prime mover is running, the following message will be displayed:

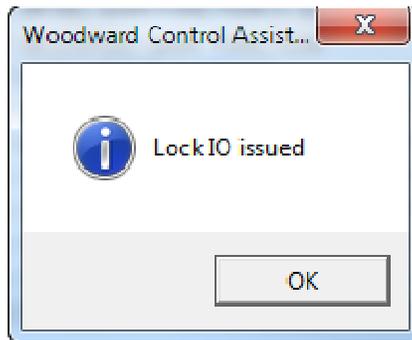


To put the control into an IO Lock State, click on the Lock IO button . Clicking on the Lock IO button will bring up this warning message:



Make sure that your prime mover is shut down before clicking YES to this question. If your prime mover is running, click on NO and shut the prime mover down before proceeding.

After clicking on Yes, the following message will be displayed.

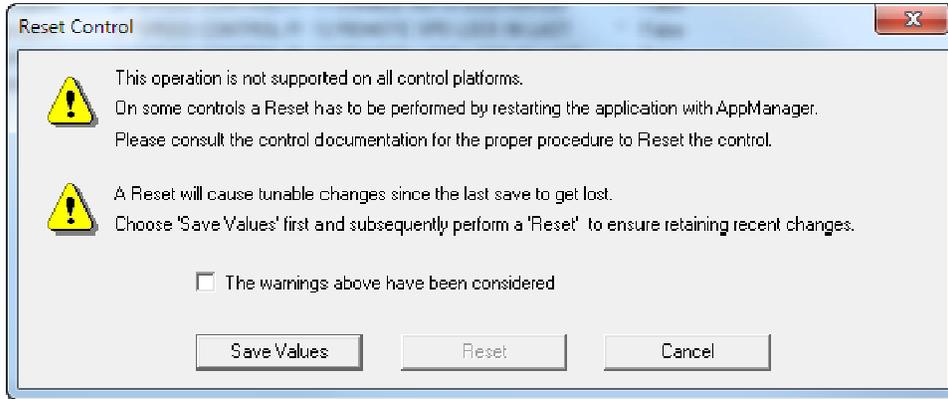


Once the I/O is locked, the  IO Lock button will be grayed out .

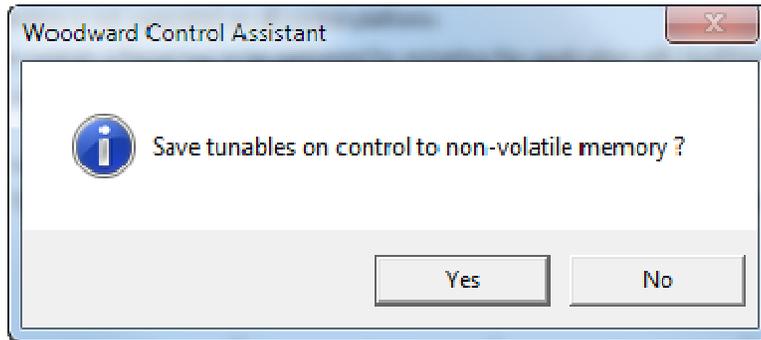
The variables in the Configure Menu can now be changed. The 10% change limit is not active while the control is in IO Lock, therefore you can make a change greater than 10%.

To reset the control back into normal operating mode, click on the Reset button

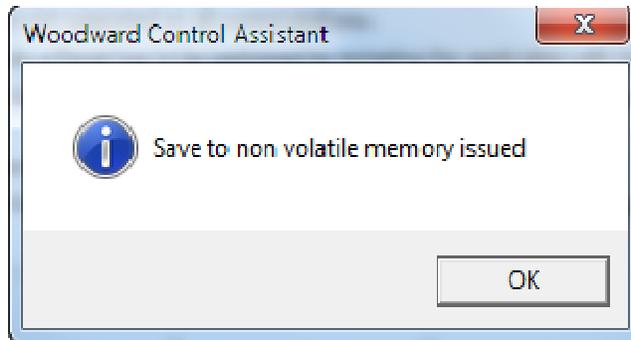
. A message will appear asking you to verify the values that were changed while in the Configure Mode. Click on the checkbox that states “The warnings above have been considered”. Click on Save Values.



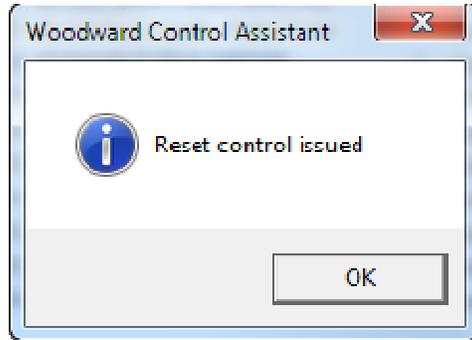
This message will appear. Select Yes.



This message will appear. Select OK.



This message will appear. Select OK.



The control will perform a re-boot.

The above steps demonstrate how to tune the control using the Configure and Service menus. The following chapters explain other features of SOS and Control Assistant.

Chapter 3.

Transferring an Application File

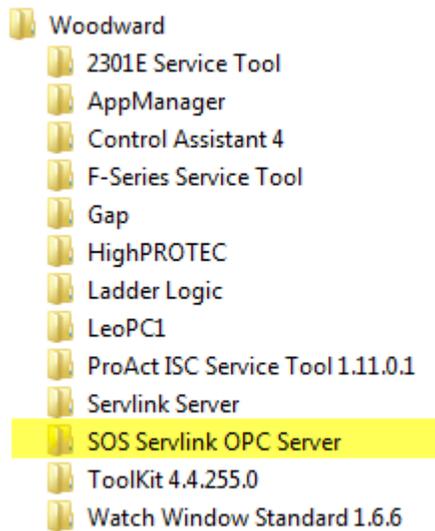
Introduction

This chapter describes the basic operating principles of transferring an application file (*.scp) to a control using the SOS Servlink OPC Server program.

Getting Connected

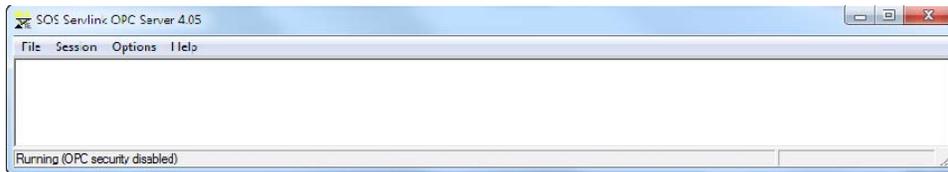
Step 1:

Go to Start \ Programs \ Woodward \ SOS Servlink OPC Server to start the software.



Step 2:

The software will display like this:



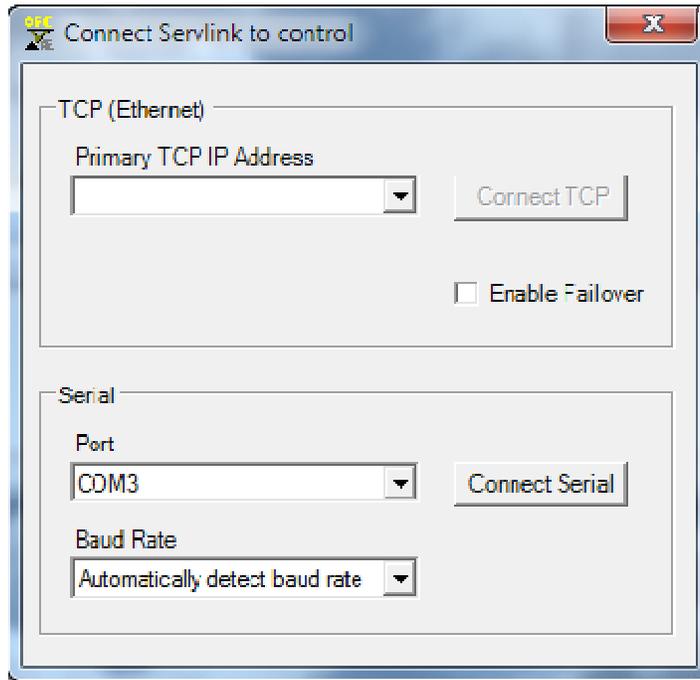
Step 3:

Select on Session and select New Session:



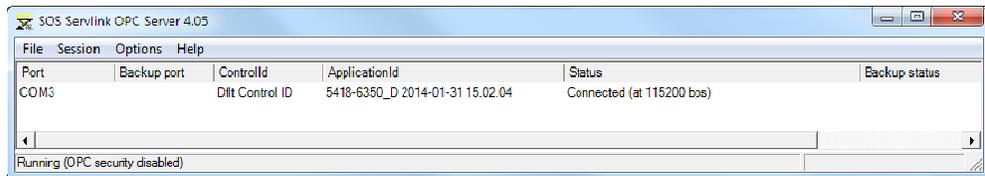
Step 4:

Select the serial port from the *Port* pull-down list and select *Automatically detect baud rate* from the *Baud Rate* pull-down list. Then click on *Connect Serial*.



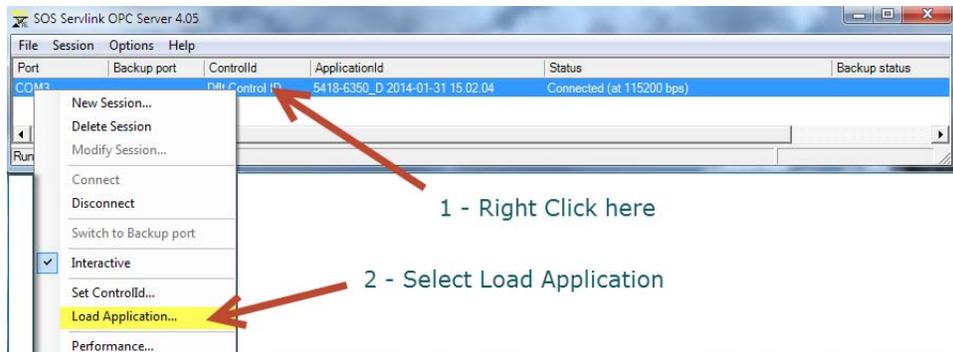
Step 5:

Once connected, the screen should look like this. The Application ID value identifies the current software in the control.



Step 6:

Right-click on the session item to pull up the list of options:



Step 7:

The prime mover must be shutdown in order to load a new application file. Verify that it is in a safe shutdown state before proceeding.

Once the prime mover is shutdown, press OK.

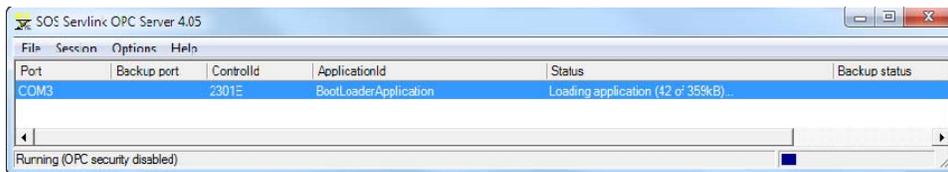


Step 8:

An explorer window will pop up, allowing the user to select the new application file to be downloaded. The file extension of the application file will be ".scp". Select the file and click on Open.

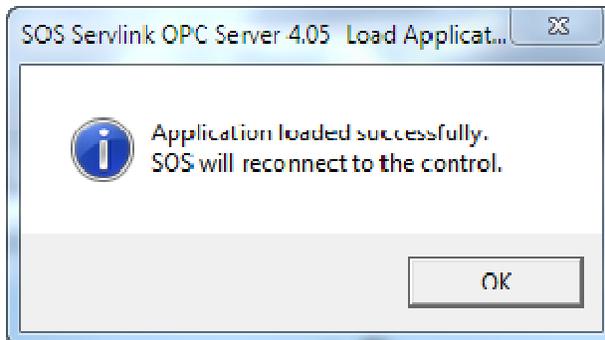
Step 9:

The application will load into the control.



Step 10:

This pop-up window will display once the file is successfully loaded:



The SOS Servlink OPC Server will re-connect to establish communications.

Chapter 4.

Transferring a Configuration File

Introduction

This chapter describes the basic operating principles of retrieving and saving a configuration file and transferring the file to another control.

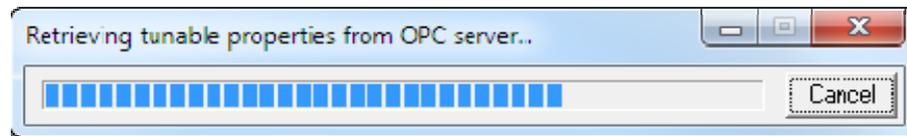
Retrieving and Saving the Configuration File (Tunable List)

It is useful to be able to retrieve the Configuration File from one control and to be able to transfer it into another control, especially if there are numerous controls of the same type and part number. Follow these steps to perform this action:

Step 1:

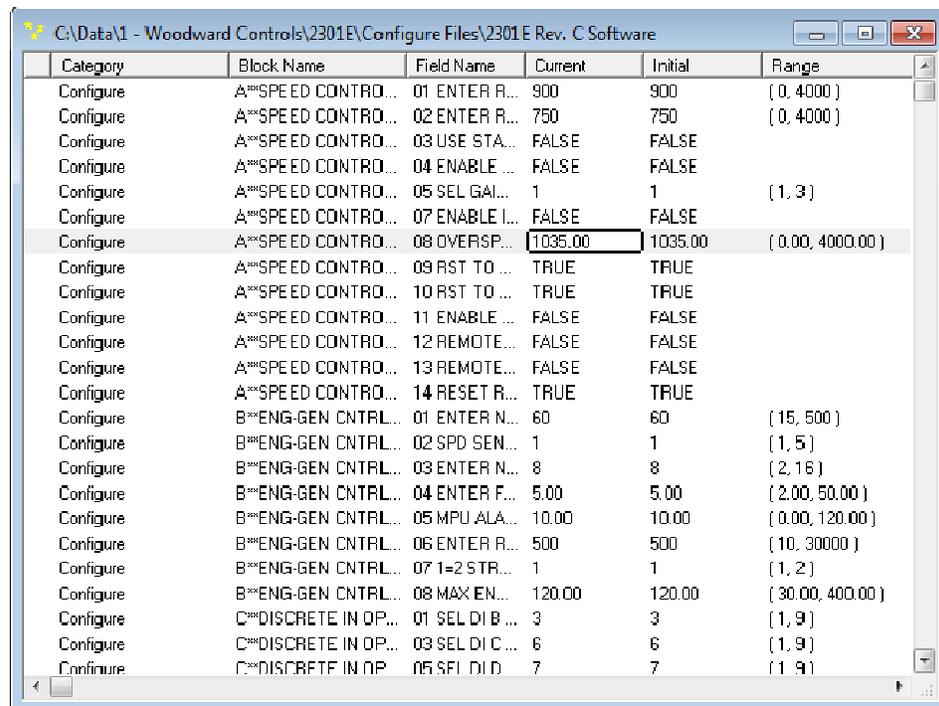
While running the WinPanel feature of Control Assistant, click on the Receive

Quick Service/Configure tunable list button (). A progress window like the following is displayed while receiving the file:



Save the tunable list to your computer in a known location.

The extension for the saved file is ".tc" (don't use an extra period in the name of the saved file). The file provides a way to keep a copy of the configuration in the control.

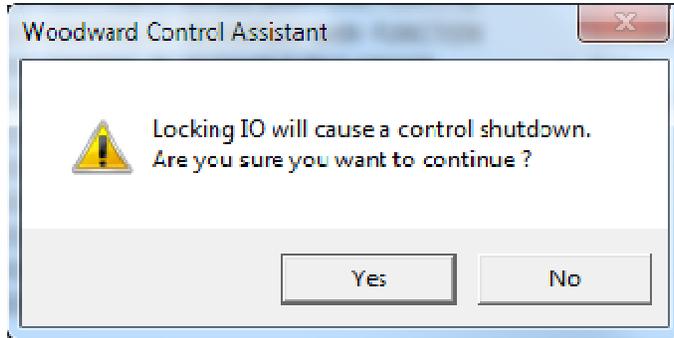


Category	Block Name	Field Name	Current	Initial	Range
Configure	A**SPEED CONTROL...	01 ENTER R...	900	900	(0, 4000)
Configure	A**SPEED CONTROL...	02 ENTER R...	750	750	(0, 4000)
Configure	A**SPEED CONTROL...	03 USE STA...	FALSE	FALSE	
Configure	A**SPEED CONTROL...	04 ENABLE ...	FALSE	FALSE	
Configure	A**SPEED CONTROL...	05 SEL GAL...	1	1	(1, 3)
Configure	A**SPEED CONTROL...	07 ENABLE I...	FALSE	FALSE	
Configure	A**SPEED CONTROL...	08 OVERSP...	1035.00	1035.00	(0.00, 4000.00)
Configure	A**SPEED CONTROL...	09 RST TO ...	TRUE	TRUE	
Configure	A**SPEED CONTROL...	10 RST TO ...	TRUE	TRUE	
Configure	A**SPEED CONTROL...	11 ENABLE ...	FALSE	FALSE	
Configure	A**SPEED CONTROL...	12 REMOTE...	FALSE	FALSE	
Configure	A**SPEED CONTROL...	13 REMOTE...	FALSE	FALSE	
Configure	A**SPEED CONTROL...	14 RESET R...	TRUE	TRUE	
Configure	B**ENG-GEN CNTRL...	01 ENTER N...	60	60	(15, 500)
Configure	B**ENG-GEN CNTRL...	02 SPD SEN...	1	1	(1, 5)
Configure	B**ENG-GEN CNTRL...	03 ENTER N...	8	8	(2, 16)
Configure	B**ENG-GEN CNTRL...	04 ENTER F...	5.00	5.00	(2.00, 50.00)
Configure	B**ENG-GEN CNTRL...	05 MPU ALA...	10.00	10.00	(0.00, 120.00)
Configure	B**ENG-GEN CNTRL...	06 ENTER R...	500	500	(10, 30000)
Configure	B**ENG-GEN CNTRL...	07 1=2 STR...	1	1	(1, 2)
Configure	B**ENG-GEN CNTRL...	08 MAX EN...	120.00	120.00	(30.00, 400.00)
Configure	C**DISCRETE IN OP...	01 SEL DI B ...	3	3	(1, 9)
Configure	C**DISCRETE IN OP...	03 SEL DI C ...	6	6	(1, 9)
Configure	C**DISCRETE IN OP...	05 SEL DI D ...	7	7	(1, 9)

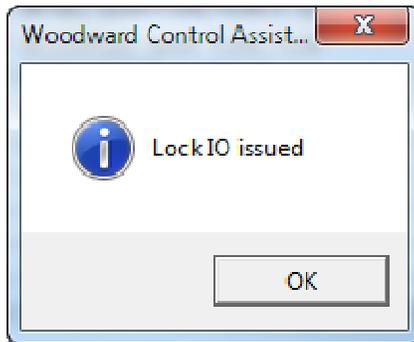
Step 2:

Ensure that the target control is in the IO Locked state before transferring the Tunable List file from the original control. To put the control into an IO Lock State,

click on the Lock IO button (). Clicking on this button will bring up this warning message:



After clicking on Yes, the following window will be displayed.

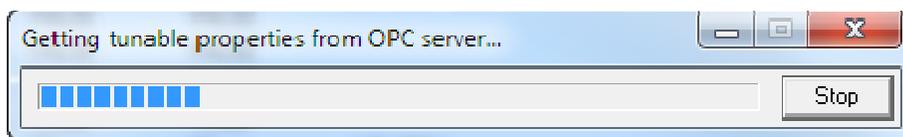


Select *OK* and wait for the shutdown.

Once the I/O is locked, the  IO Lock button will be grayed out .

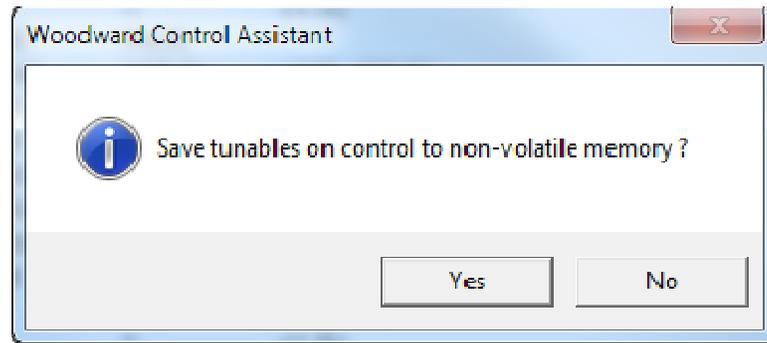
Open up the saved .tc file from the known location using *File / Open*.

Click on the Send Tunable list button () to transfer the Tunable List to the control.

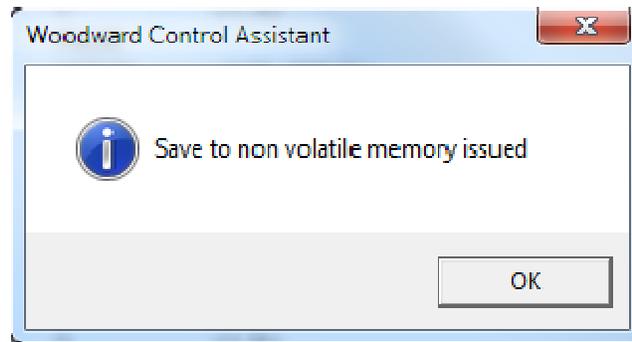


Once the tunable values have been transferred, you will be asked to confirm that you want to save them to non-volatile memory.

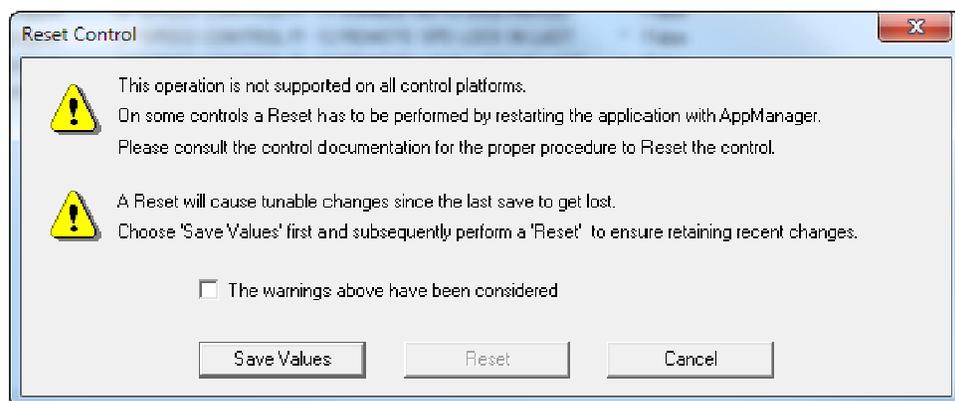
Select Yes.



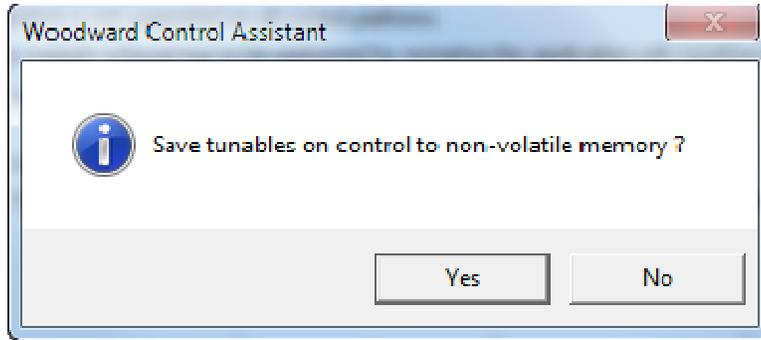
Select OK.



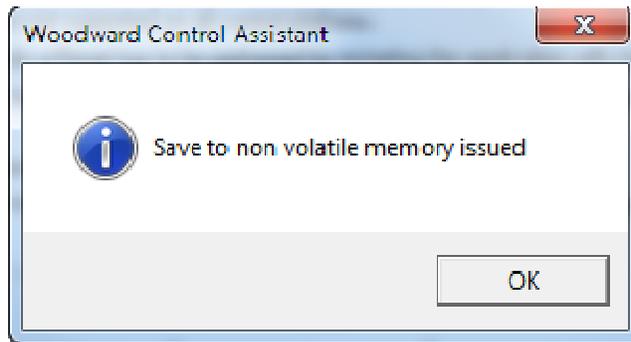
To reset the control back into normal operating mode, click on the Reset button . A message will appear asking you to verify the values that were changed while in the Configure Mode. Click on the checkbox that states "The warnings above have been considered". Click on Save Values.



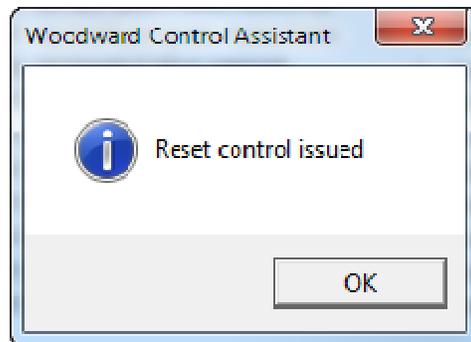
This message will appear. Select Yes.



This message will appear. Select OK.



This message will appear. Select OK.



The control will perform a re-boot.

Chapter 5.

Converting a .CFG File Type

Introduction

Watch Window stores control settings in files with the extension “.cfg”. Control Assistant stores control settings in files with the extension “.tc”. The Control Assistant settings file is similar to the Watch Window settings files, but there are two basic differences:

1. The Watch Window settings files (*.cfg) contain a list of name/value pairs. The Control Assistant settings files (*.tc) contain multiple ‘columns’ of information including names, data type, range, and initial value.
2. The Watch Window settings files contain a mixture of values from the Service, Configure, and Debug ‘modes’. Control Assistant requires that the Service and Configure values are stored in a file separate from the remaining (‘Debug’) values. This is because many Woodward controls contain values which are represented both in Service/Configure and in Debug, but with different names. Allowing duplicate values within the settings list can result in undesired overwriting of some values if the files are modified off-line.

As a result, it is necessary to convert “.cfg” files into one or two “.tc” files before loading settings from Control Assistant to a control. It is possible that the conversion process will report errors because of differences in application version. These errors must be considered before using these settings.



WARNING

The tunable settings in the control must be verified before starting the engine. Failure to do this could cause improper engine control or possibly overspeed with resulting damage to equipment or personal injury or death.

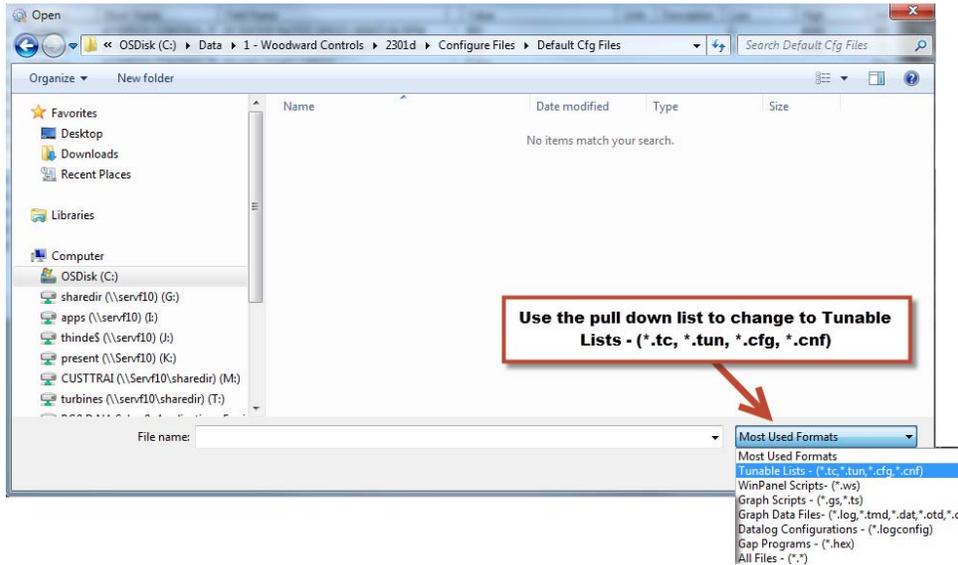
Use the following steps to convert from a .cfg file to one or more .tc files.

Step 1:

Follow the procedure in Chapter 2 to connect to the serial port of the control and open the WinPanel in Control Assistant. Connection to the control is required because the .tc file requires more information than is available in the .cfg file. Control Assistant retrieves this additional information from the control.

Step 2:

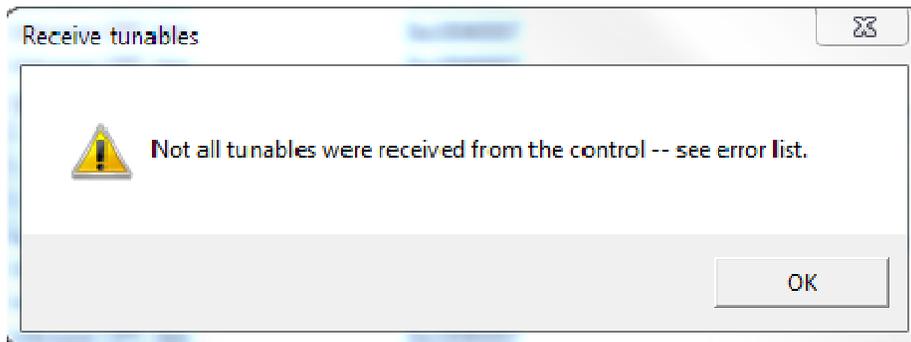
With a WinPanel open, open the .cfg file to be transferred using File / Open. Use the pull-down list to change to the Tunable Lists file type to view the .cfg file type.



It might take a few minutes to open this file.

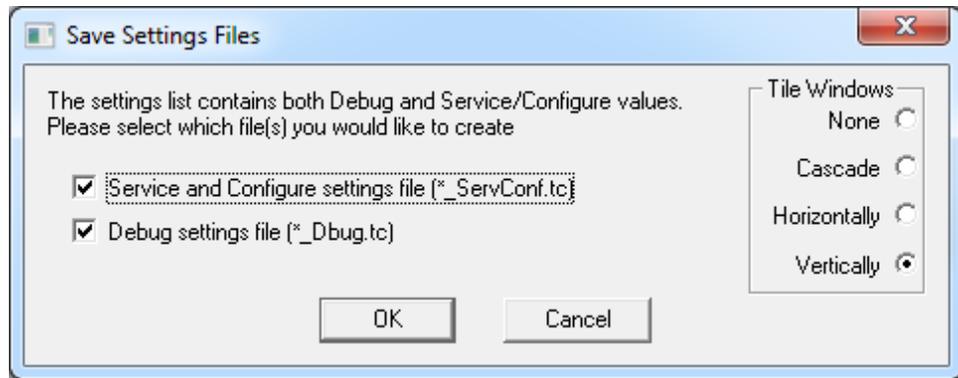
NOTE: Control Assistant may open several windows when it loads a Watch Window configuration file:

- **Error window:** If there are any unrecognized tags or poorly formatted values in the file, the following window will be shown and an error list window will be opened.



A receive tunables errors list displays the variables ('tunables') that did not get converted to the new format. This could be, for example, if the file was from a different version of the application. This list must be reviewed, corrected, and loaded manually using Control Assistant before starting the engine.

- **Debug and Service/Configure windows:** If the file contains both Debug and Service/Configure values, these will be split into two different tunable lists. This is because there are potential overlaps between the values represented in these lists which might result in arbitrary behaviors like a value being assigned two different values with the last one "winning" (new Woodward controls prevent this problem, but most applications which rely on Watch Window Professional are subject to it). You will be prompted with a dialog like the following, which allows you to tile the windows and choose which files to save:



This dialog suggests automatically saving the two tunable configurations with the specified filename extensions ("_ServConf.tc" and "_Dbug.tc"). It also suggests tiling windows according to the radio buttons on the right. This may help to understand what Control Assistant is doing to convert the Watch Window settings file to a safer Control Assistant format.

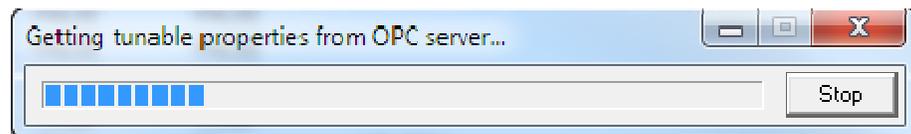
Step 3 (Repeat for each .tc file):

The control needs to be in the IO Locked state before transferring the new Tunable List file(s). If there are multiple ".tc" files, they may each be transferred as follows.

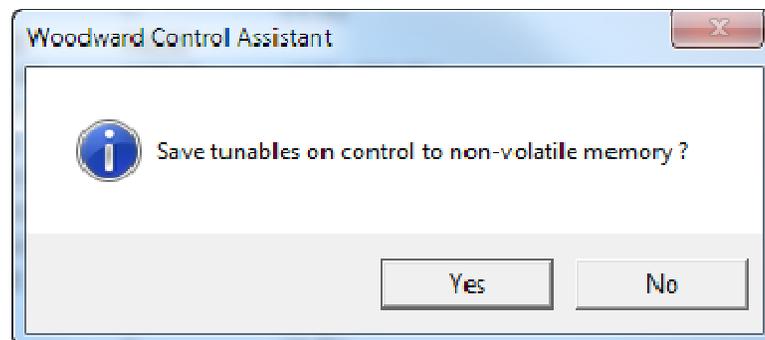
Ensure that the control is in the I/O Locked state by clicking on the IO Lock button  if it is enabled.

Open up the saved .tc file from the known location using *File / Open*.

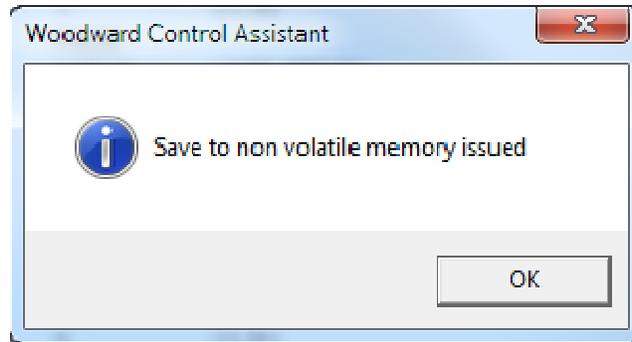
Click on the  button to transfer the Tunable List to the control.



Once the tunable values are transferred, you will be asked to confirm that you want to save the values to non-volatile memory.



Select Yes.

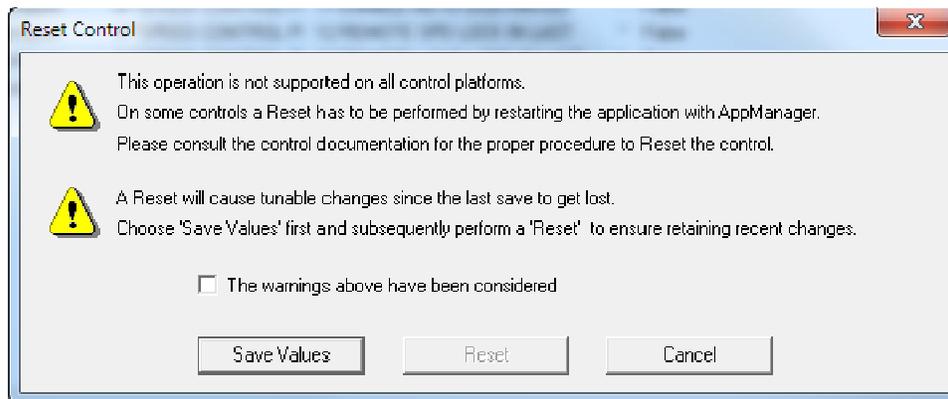


Select OK.

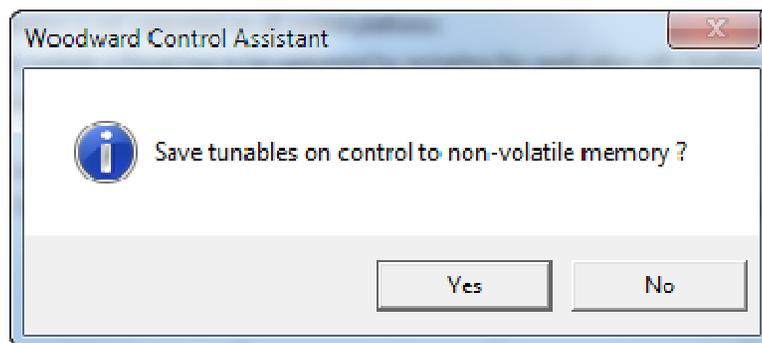
Step 4:

To put the control back into normal operating mode, click on the Reset button

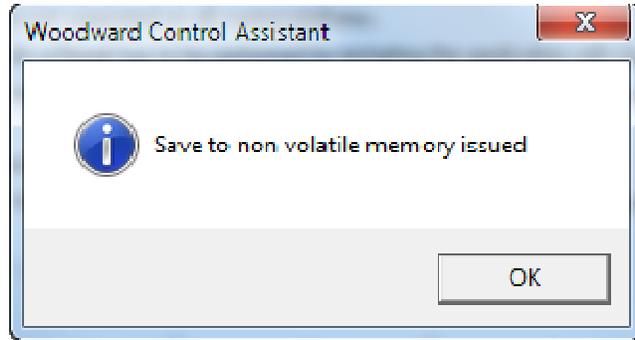
. A message will appear asking you to verify the values that were changed while in the Configure Mode. Click on the checkbox that states "The warnings above have been considered". Click on Save Values.



This message will appear. Check the warnings box and Select Yes.



This message will appear. Select OK.



This message will appear. Select OK.



The control will perform a re-boot.

Chapter 6. Trending

Introduction

The trending option requires a software license. The user must first purchase a license and then authorize it. Contact your local Woodward distributor to purchase the license. The part number for the license is 8928-5014. Without a license, the following limitations are invoked:

- Only one WinPanel sheet may be specified.
- WinPanel configuration scripts may not be saved.
- Only the most recent data samples may be viewed in a log file.
- Only 100 data samples will be collected for trending.

Authorizing a License

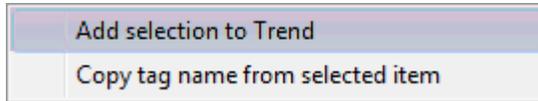
Follow these instructions to license the software for trending. You must have Internet access to authorize the license.

Step 1:

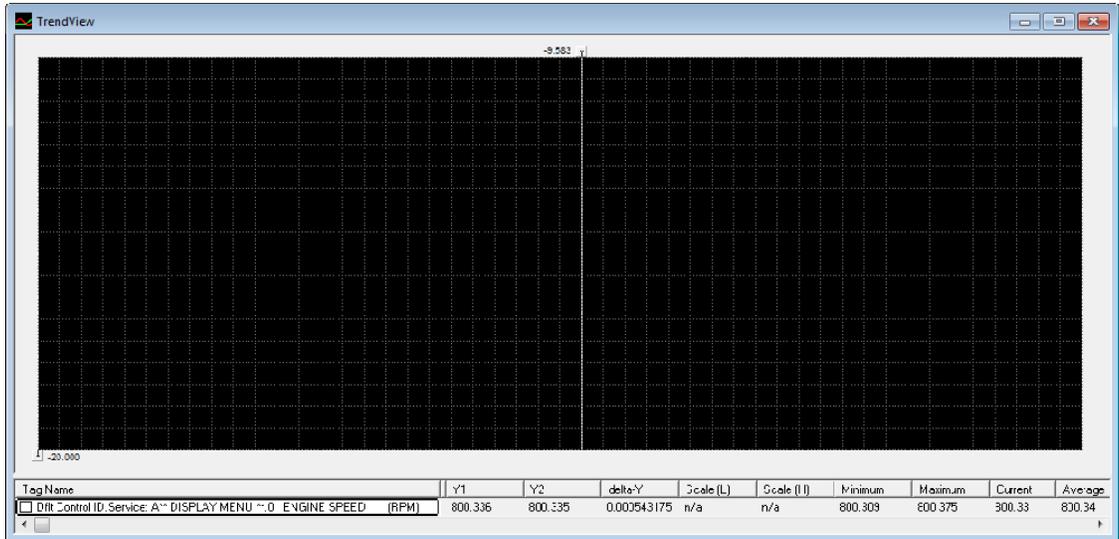
- a) The license number or serial number consists of an eight-digit number. With Control Assistant running, click on License, then Authorize. Select from the list of available drive locations (hard-disk – C: or USB memory device).
- b) The next dialog will show the site code for your license. The site code contains information about the type of license being requested and a unique identifier for the device which is being authorized. Select and copy this string.
- c) First log in (www.woodward.com/MemberLogin.aspx), then go to the Woodward website license authorization page. (<http://woodward.com/softwareauthorization.aspx>)
- d) Upon entering the License Software page, you will be prompted for some information required to ensure that you are informed of any product updates that may occur. After submitting this information, you will be prompted for the serial number of your license and the site code from the Authorization dialog of step b.
- e) The web site will verify that your serial number and site code are a valid combination and provide you with your license key. The license key is an encoded string that will be used to unlock your software product.
- f) Enter the license code in the license authorization dialog from step b. If the license has been successfully authorized, the Authorize menu item will be grayed and the functionality will be available.

Step 2:

There are two ways to start a new trend. The easiest method is to find the item that you want to trend in the WinPanel screen. Typical items to trend would be items like: Actual Engine Speed, Speed Reference, Fuel Demand, Speed Reference Bias, Analog Inputs. Right-click on the item to be trended and select *Add selection to Trend*.

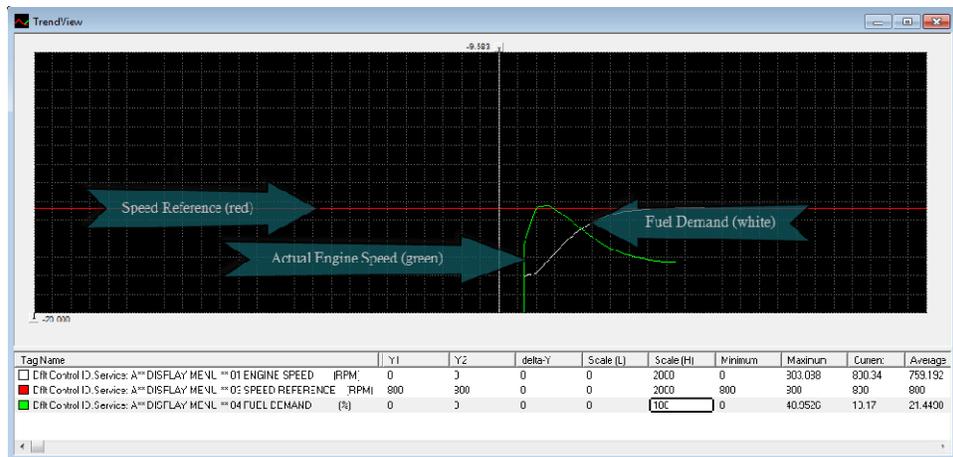


A TrendView window should appear as seen below:

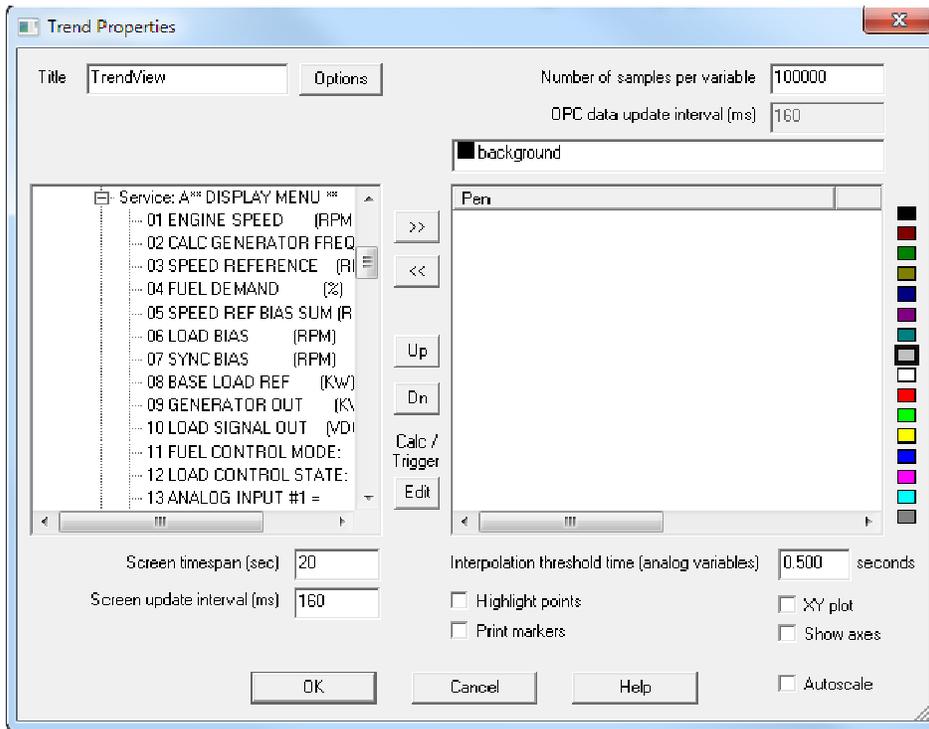


The Trend line will have to be set up. At the bottom of the trend, type into the box under the Scale (L), which is the Lower Scale Number, the appropriate scale for the variable that will be trended. For instance, if the trend is engine speed, set the Scale (L) to zero. Next, type into the box under the Scale (H), which is the Upper Scale Number. For instance if the rated engine speed is 900 rpm, type in 1000 for the Scale (H) number.

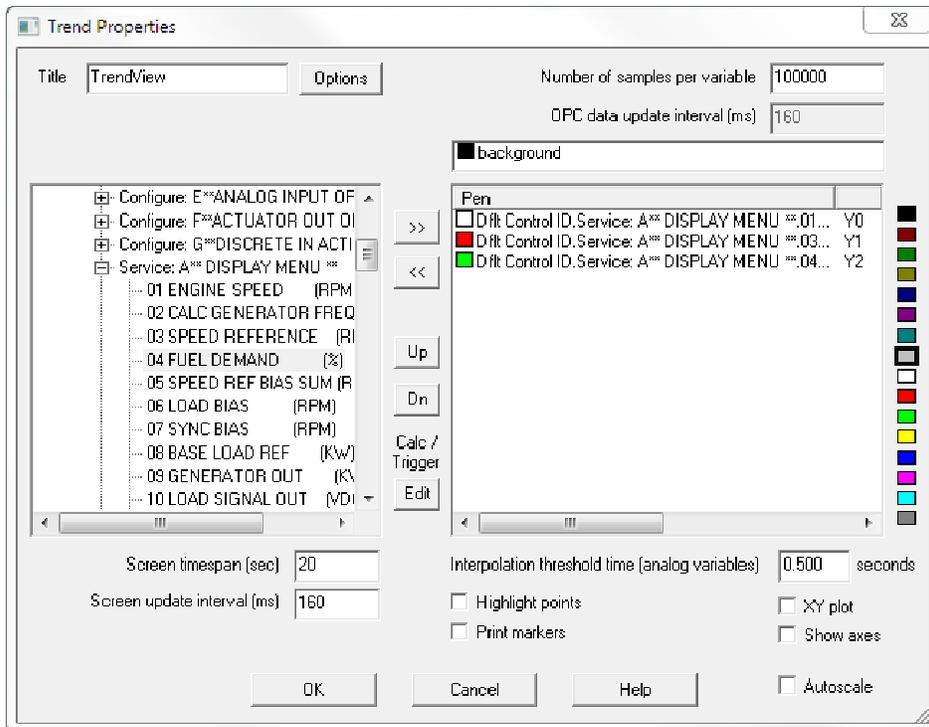
Here is an example of an engine start up with three variables being trended:



The second method to start a trend is to click on the “New Trend” button . This will bring up a Trend Properties window.



From this screen, the user can move selected items to be trended from the left list to the right list by click-dragging or using the right arrow button (“>>”).



Click OK when done. The dialog may be re-opened by right-clicking on the trend window.

For more explanation of these and other features, select *Help* in this window or select *Help* from the Control Assistant frame menu.

Chapter 7.

Service Options

Product Service Options

If you are experiencing problems with the installation, or unsatisfactory performance of a Woodward product, the following options are available:

- Consult the troubleshooting guide in the manual.
- Contact the manufacturer or packager of your system.
- Contact the Woodward Full Service Distributor serving your area.
- Contact Woodward technical assistance (see “How to Contact Woodward” later in this chapter) and discuss your problem. In many cases, your problem can be resolved over the phone. If not, you can select which course of action to pursue based on the available services listed in this chapter.

OEM and Packager Support: Many Woodward controls and control devices are installed into the equipment system and programmed by an Original Equipment Manufacturer (OEM) or Equipment Packager at their factory. In some cases, the programming is password-protected by the OEM or packager, and they are the best source for product service and support. Warranty service for Woodward products shipped with an equipment system should also be handled through the OEM or Packager. Please review your equipment system documentation for details.

Woodward Business Partner Support: Woodward works with and supports a global network of independent business partners whose mission is to serve the users of Woodward controls, as described here:

- A **Full Service Distributor** has the primary responsibility for sales, service, system integration solutions, technical desk support, and aftermarket marketing of standard Woodward products within a specific geographic area and market segment.
- An **Authorized Independent Service Facility (AISF)** provides authorized service that includes repairs, repair parts, and warranty service on Woodward's behalf. Service (not new unit sales) is an AISF's primary mission.
- A **Recognized Engine Retrofitter (RER)** is an independent company that does retrofits and upgrades on reciprocating gas engines and dual-fuel conversions, and can provide the full line of Woodward systems and components for the retrofits and overhauls, emission compliance upgrades, long term service contracts, emergency repairs, etc.
- A **Recognized Turbine Retrofitter (RTR)** is an independent company that does both steam and gas turbine control retrofits and upgrades globally, and can provide the full line of Woodward systems and components for the retrofits and overhauls, long term service contracts, emergency repairs, etc.

You can locate your nearest Woodward distributor, AISF, RER, or RTR on our website at:

www.woodward.com/directory

Woodward Factory Servicing Options

The following factory options for servicing Woodward products are available through your local Full-Service Distributor or the OEM or Packager of the equipment system, based on the standard Woodward Product and Service Warranty (5-01-1205) that is in effect at the time the product is originally shipped from Woodward or a service is performed:

- Replacement/Exchange (24-hour service)
- Flat Rate Repair
- Flat Rate Remanufacture

Replacement/Exchange: Replacement/Exchange is a premium program designed for the user who is in need of immediate service. It allows you to request and receive a like-new replacement unit in minimum time (usually within 24 hours of the request), providing a suitable unit is available at the time of the request, thereby minimizing costly downtime. This is a flat-rate program and includes the full standard Woodward product warranty (Woodward Product and Service Warranty 5-01-1205).

This option allows you to call your Full-Service Distributor in the event of an unexpected outage, or in advance of a scheduled outage, to request a replacement control unit. If the unit is available at the time of the call, it can usually be shipped out within 24 hours. You replace your field control unit with the like-new replacement and return the field unit to the Full-Service Distributor.

Charges for the Replacement/Exchange service are based on a flat rate plus shipping expenses. You are invoiced the flat rate replacement/exchange charge plus a core charge at the time the replacement unit is shipped. If the core (field unit) is returned within 60 days, a credit for the core charge will be issued.

Flat Rate Repair: Flat Rate Repair is available for the majority of standard products in the field. This program offers you repair service for your products with the advantage of knowing in advance what the cost will be. All repair work carries the standard Woodward service warranty (Woodward Product and Service Warranty 5-01-1205) on replaced parts and labor.

Flat Rate Remanufacture: Flat Rate Remanufacture is very similar to the Flat Rate Repair option with the exception that the unit will be returned to you in “like-new” condition and carry with it the full standard Woodward product warranty (Woodward Product and Service Warranty 5-01-1205). This option is applicable to mechanical products only.

Returning Equipment for Repair

If a control (or any part of an electronic control) is to be returned for repair, please contact your Full-Service Distributor in advance to obtain Return Authorization and shipping instructions.

When shipping the item(s), attach a tag with the following information:

- return authorization number;
- name and location where the control is installed;
- name and phone number of contact person;
- complete Woodward part number(s) and serial number(s);
- description of the problem;
- instructions describing the desired type of repair.

Packing a Control

Use the following materials when returning a complete control:

- protective caps on any connectors;
- antistatic protective bags on all electronic modules;
- packing materials that will not damage the surface of the unit;
- at least 100 mm (4 inches) of tightly packed, industry-approved packing material;
- a packing carton with double walls;
- a strong tape around the outside of the carton for increased strength.

NOTICE

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual 82715, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules.*

Replacement Parts

When ordering replacement parts for controls, include the following information:

- the part number(s) (XXXX-XXXX) that is on the enclosure nameplate;
- the unit serial number, which is also on the nameplate.

Engineering Services

Woodward offers various Engineering Services for our products. For these services, you can contact us by telephone, by email, or through the Woodward website.

- Technical Support
- Product Training
- Field Service

Technical Support is available from your equipment system supplier, your local Full-Service Distributor, or from many of Woodward's worldwide locations, depending upon the product and application. This service can assist you with technical questions or problem solving during the normal business hours of the Woodward location you contact. Emergency assistance is also available during non-business hours by phoning Woodward and stating the urgency of your problem.

Product Training is available as standard classes at many of our worldwide locations. We also offer customized classes, which can be tailored to your needs and can be held at one of our locations or at your site. This training, conducted by experienced personnel, will assure that you will be able to maintain system reliability and availability.

Field Service engineering on-site support is available, depending on the product and location, from many of our worldwide locations or from one of our Full-Service Distributors. The field engineers are experienced both on Woodward products as well as on much of the non-Woodward equipment with which our products interface.

For information on these services, please contact us via telephone, email us, or use our website: www.woodward.com.

How to Contact Woodward

For assistance, call one of the following Woodward facilities to obtain the address and phone number of the facility nearest your location where you will be able to get information and service.

Electrical Power Systems

Facility	Phone Number
Brazil	+55 (19) 3708 4800
China	+86 (512) 6762 6727
Germany	+49 (0) 21 52 14 51
India	+91 (129) 4097100
Japan	+81 (43) 213-2191
Korea	+82 (51) 636-7080
Poland	+48 12 295 13 00
United States	+1 (970) 482-5811

Engine Systems

Facility	Phone Number
Brazil	+55 (19) 3708 4800
China	+86 (512) 6762 6727
Germany	+49 (711) 78954-510
India	+91 (129) 4097100
Japan	+81 (43) 213-2191
Korea	+82 (51) 636-7080
The Netherlands	+31 (23) 5661111
United States	+1 (970) 482-5811

Turbine Systems

Facility	Phone Number
Brazil	+55 (19) 3708 4800
China	+86 (512) 6762 6727
India	+91 (129) 4097100
Japan	+81 (43) 213-2191
Korea	+82 (51) 636-7080
The Netherlands	+31 (23) 5661111
Poland	+48 12 295 13 00
United States	+1 (970) 482-5811

You can also locate your nearest Woodward distributor or service facility on our website at:

www.woodward.com/directory

Technical Assistance

If you need to telephone for technical assistance, you will need to provide the following information. Please write it down here before phoning:

Your Name _____

Site Location _____

Phone Number _____

Fax Number _____

Engine/Turbine Model Number _____

Manufacturer _____

Number of Cylinders (if applicable) _____

Type of Fuel (gas, gaseous, steam, etc) _____

Rating _____

Application _____

Control/Governor #1

Woodward Part Number & Rev. Letter _____

Control Description or Governor Type _____

Serial Number _____

Control/Governor #2

Woodward Part Number & Rev. Letter _____

Control Description or Governor Type _____

Serial Number _____

Control/Governor #3

Woodward Part Number & Rev. Letter _____

Control Description or Governor Type _____

Serial Number _____

If you have an electronic or programmable control, please have the adjustment setting positions or the menu settings written down and with you at the time of the call.

We appreciate your comments about the content of our publications.

Send comments to: icinfo@woodward.com

Please reference publication **26775A**.



B26775:A



PO Box 1519, Fort Collins CO 80522-1519, USA
1000 East Drake Road, Fort Collins CO 80525, USA
Phone +1 (970) 482-5811 • Fax +1 (970) 498-3058

Email and Website—www.woodward.com

Woodward has company-owned plants, subsidiaries, and branches, as well as authorized distributors and other authorized service and sales facilities throughout the world.

Complete address / phone / fax / email information for all locations is available on our website.