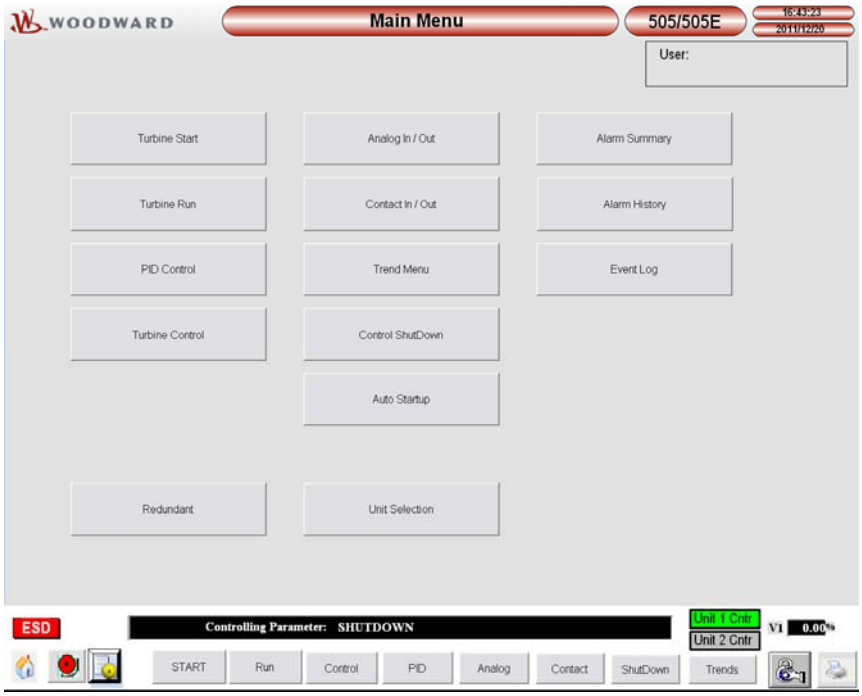
WOODWARD

Product Manual 26648
(Revision NEW)
Original Instructions



505View Operator Interface for Woodward 505, 505E, & 505 Enhanced Controls

5418-6155, 5418-6156, 5418-6179, 8928-1301

Installation and Operation Manual

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 Out-of-date translations are marked with ⚠.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.

Revisions—Changes in this publication since the last revision are indicated by a black line alongside the text.

Contents

Contents

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.

NOTICE

Battery Charging Device

To prevent damage to a control system that uses an alternator or battery-charging device, make sure the charging device is turned off before disconnecting the battery from the system.

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*.

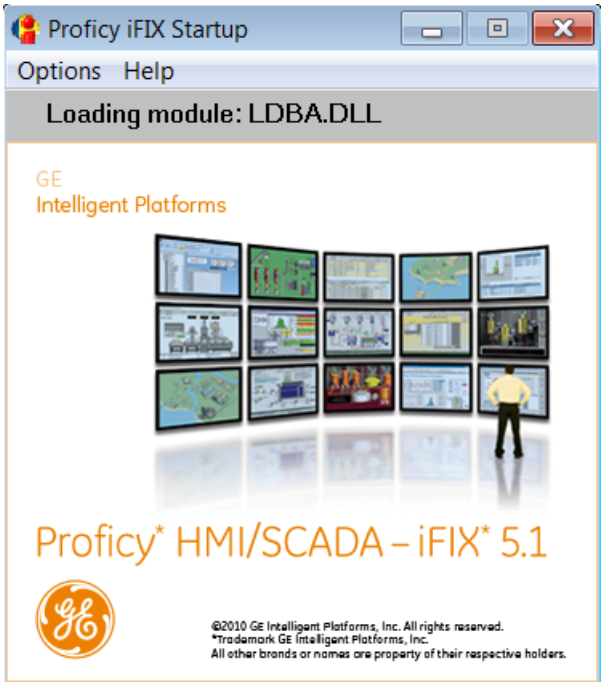
Follow these precautions when working with or near the control.

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

Introduction

This document is to provide technical assistance when using or setting-up the 505View software in conjunction with a 505 control. Refer also to the 505 system manuals for details on port setup and configuration as well as details on the Modbus options available.



505View Features

The 505View is an unbundled, Proficy HMI/SCADA - iFIX-based software package that runs on a PC (hardware can be optionally purchased) configured to communicate via Modbus protocol with either a 505 or 505E Woodward steam turbine control.

The software offers the following features:

- Automatic screen generation based on control configuration
- Security with multiple user levels
- Remote access capability via web client
- Real-time and historical trending
- Alarm/trip status indication
- Alarm/trip log with time tagging and first-out indication
- I/O and system troubleshooting
- Graphic system control screens
- Event status logging and history

Ten different screens are available to allow operators the flexibility of viewing. These screens display the following information:

- Controlling parameter information
- Start sequence information
- Turbine and/or generator information
- Speed, aux, cascade, and limiter information
- Analog input and output levels
- Contact input and relay output states
- Alarm and shutdown log

The 505View can interface with the 505 through serial RS-232, RS-422, or RS-485 communications. By using RS-422 or RS-485 communications, the HMI can be located up to 1220 m (4000 ft) from the 505 digital control.

Application

The 505View is an annunciator and operator control panel for Woodward's 505 and 505E controls. This workstation allows an operator to remotely view operating inputs, vary control setpoints, and issue run mode commands. The program can be set up to be monitored or controlled remotely through a web server. This standard program has self-generating screens based on the configuration of the 505/505E. No field configuration is necessary; however, site modifications/customization can be made by qualified personnel.

The 505View automatically configures its screens to match the control's programmed application. If the control is not configured to accept Modbus commands, the 505View will function as a system monitor only. If the control is programmed to accept Modbus commands, all run mode operations can be monitored and performed through the 505View (start, stop, enable/disable, raise/lower).

iFIX SCADA provides process information for plant supervisors and operators in the form of display screens, archived data, alarms, messages, and statistical charts. The source of this information is process hardware: the controllers, sensors, valves, etc. iFIX reads process information from the controller and saves it in process databases residing on the SCADA servers.

Hardware Requirements

Recommended minimum hardware requirements for Proficy HMI/SCADA - iFIX computers are:

- 2 GHz dual-core CPU
- Minimum of 2 GB RAM
- Minimum of 2 GB of free hard drive space
- 1 serial port or 2 ports (if redundant 505s will be used)
- Free direct-connect USB port
- The screen resolution settings must be set to 1024x768 for the 505View to be displayed properly.
- Two-button mouse or compatible pointing device (such as a touch screen)
- Installation requires a DVD drive, USB DVD drive, or USB memory stick. (**NOTE**: To use the USB stick option, the install files will have to be transferred onto a USB memory stick, which is not provided by Woodward).

Operation System

505View iFIX 5.1 SP1 supports:

- Windows 7 32-bit, Windows XP Professional, Service Pack 3 or greater
- Microsoft Windows Server 2003, Service Pack 2 or greater (Standard or Enterprise Edition)
- Windows Vista, Service Pack 2, Business, Enterprise, or Ultimate Edition
- Windows Server 2008 (32-bit only), Service Pack 2, Standard or Enterprise Edition

NOTE: 32-bit ONLY for ALL listed; 64-bit O/S not supported

Remote access iFIX WebSpace supports:

- Microsoft Windows XP Professional, Service Pack 3 or greater
- Microsoft Windows Server 2003, Service Pack 2 or greater, Standard or Enterprise Edition
- Microsoft Windows Server 2008, Standard or Enterprise Edition

Notes

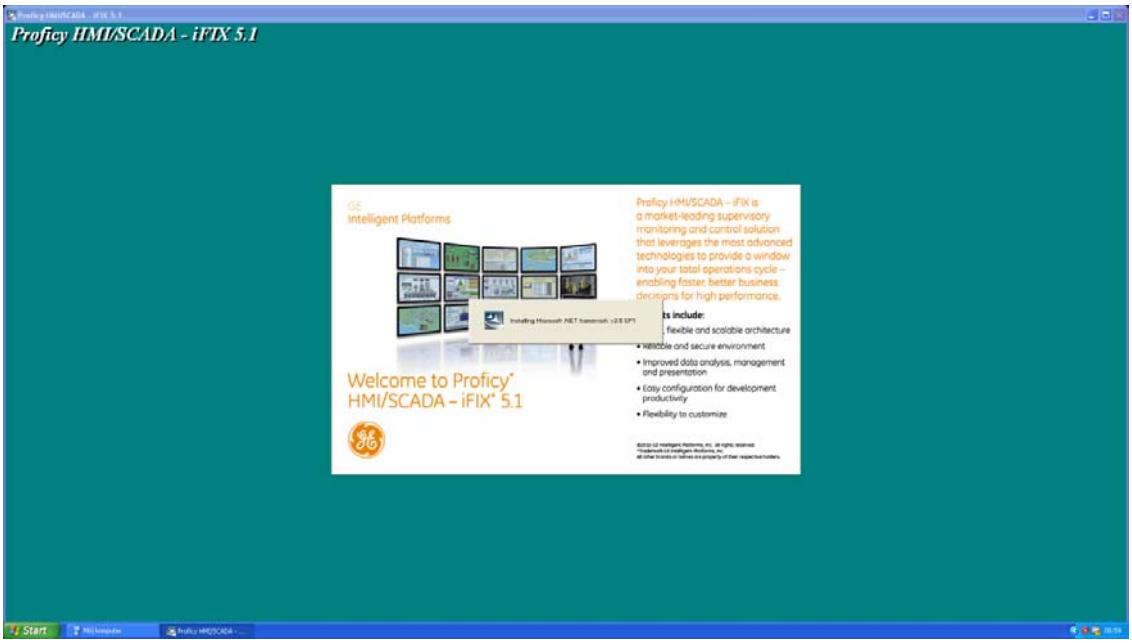
Proficy iFIX WebSpace sessions (clients) can log in from operating systems in other languages. However, for this to work, the input language must be added to the iFIX WebSpace server, and keyboard layout for client in that locale must be set. For more information, refer to the Configuring Multiple Input Locales section.

The iFIX WebSpace can only run on native 32-bit operating systems. You cannot install the iFIX WebSpace on a 64-bit operating system using the Windows 32-bit emulation mode.

Chapter 2. Installation

iFIX 5.1 Installation

505View works on the Proficy HMI/SCADA - iFIX 5.1 platform. Proficy standard installation wizard was modified and adapted to install all required components and settings. To run the installation, insert the “505View Proficy HMI/SCADA - iFIX 5.1” installation DVD into the DVD player. If the DVD does not auto play, open the File Folder and run **Setup.exe**. This can also be done using a USB DVD drive or USB memory stick, if desired, by copying the files from the disc to a USB drive using another computer. The window “Proficy HMI/SCADA - iFIX Installation” program as shown below will appear:



The installation wizard will install all specified software components and settings as below:

- iFIX installation directory: **C:\Program Files\Proficy\Proficy iFIX**
- installation: Typical
- Node Name: **SCADA_1**
- Node Type: **SCADA**
- Connectivity: **StandAlone**
- iHistorian: not installed

Compatibility with Windows 7 SP1

For Windows 7 users, some Windows settings must be changed for compatibility. The following is a list of items that are needed for iFIX compatibility:

- iFIX 5.1 with SP 1 must be installed
- 7.42 version or later of the iFIX MB1 driver must be installed

Display compatibility requires modifying some of the default Windows settings. The default Windows 7 installation has Aero Themes add-ons. See the following steps on how to change the Windows 7 default display options for display compatibility:

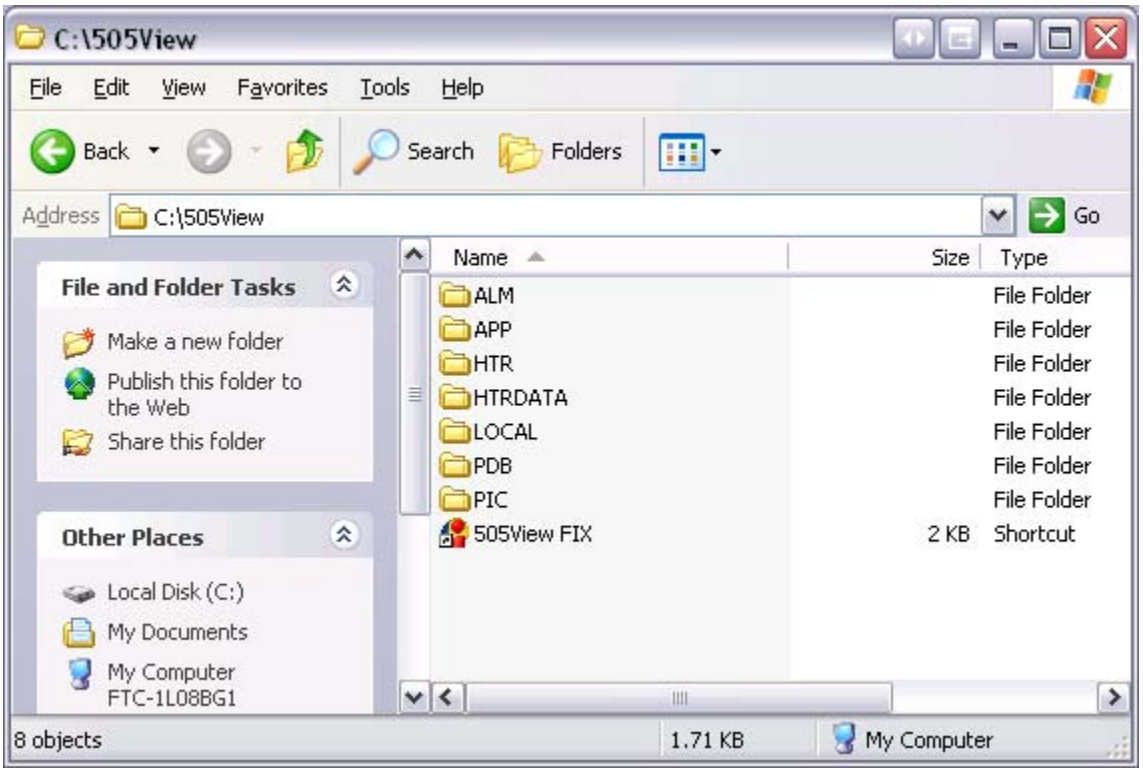
- Go to the Windows ‘Control Panel’
- Select "Personalization”
- In the "Basic and High Contrast Themes" select "Windows 7 Classic"
- Restart Workspace

Woodward Project Files

The Woodward project files need to be copied to the computer hard drive. Insert the Woodward project CD into the computer DVD drive or USB DVD drive. Again, if no disc drive is present, the appropriate files may be transferred or executed using a USB stick. Extract the ‘505View’ folder from the zip file with the appropriate part number to the ‘C:’ drive on the computer. There are two sets of HMI files depending on whether the HMI will be used with a 505/505 Enhanced or with a 505E (Extraction). See the following for information on which part number to use:

Type of 505	HMI Part Number
505	5418-6155
505E (Extraction)	5418-6156
505 Enhanced	5418-6179

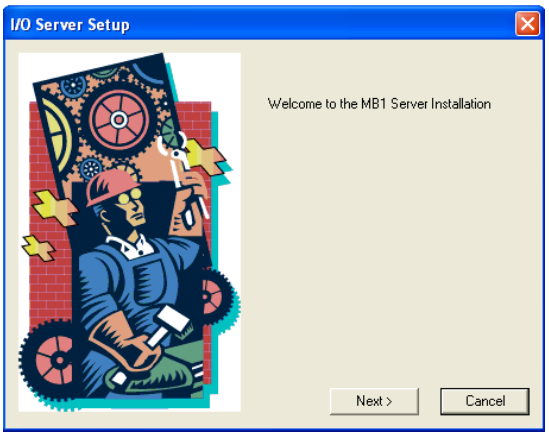
Extract the appropriate zip files to 'C:\505View\'. It should look like the following figure:



Installation of MB1 Communication Driver

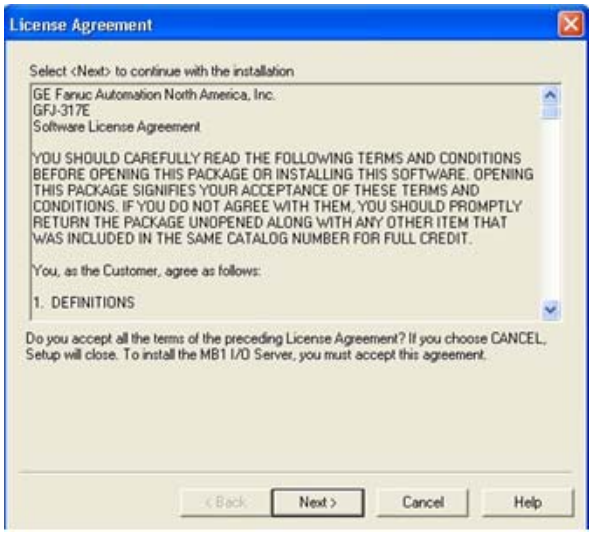
With iFIX 5.1 installed on your computer, the Modbus driver will have to be installed next.

- On the Woodward CD, go to the 'iFIX MB1Driver\7x\MB1' folder and run 'setup.exe'.
- The following window will appear:

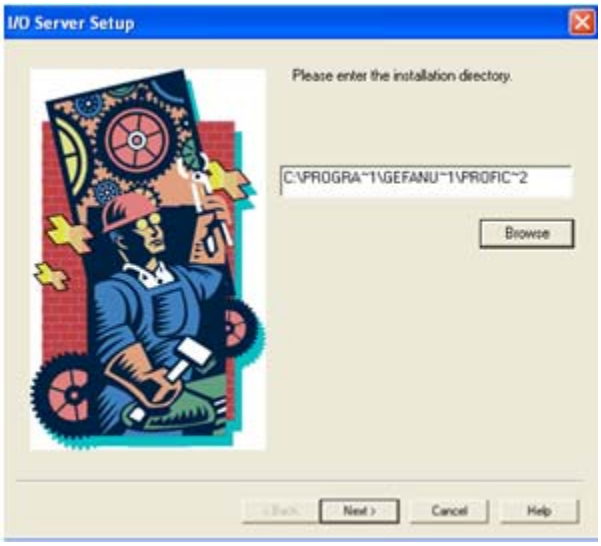


- Press Next button to continue installation.

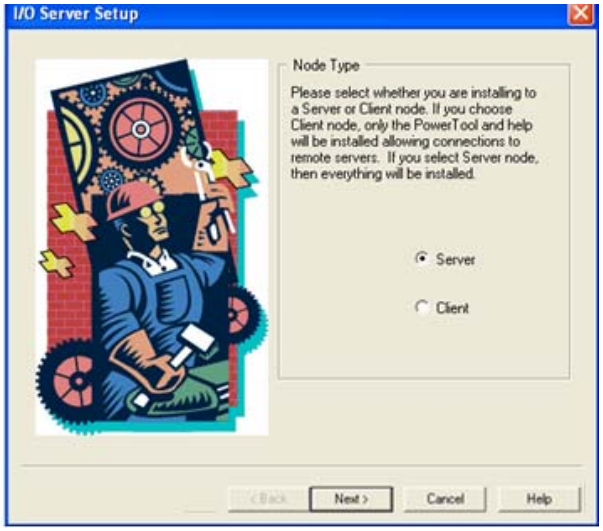
- Subsequently, the system will show you the license agreement. Press the Next button to continue:



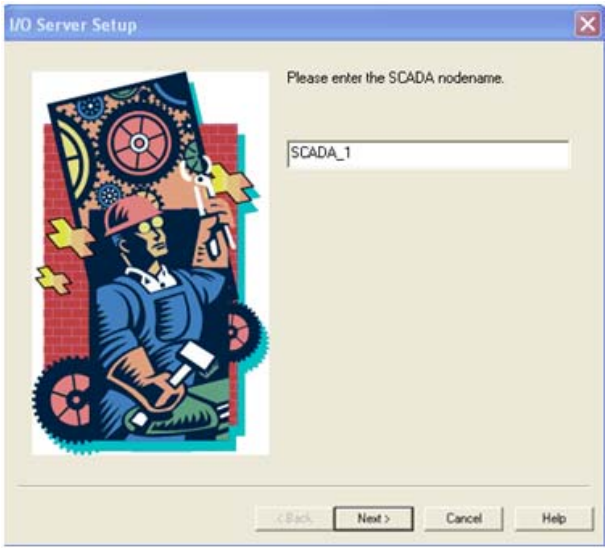
- Select as installation directory “C:\Program Files\Proficy\Proficy iFIX” and press the Next button to continue.



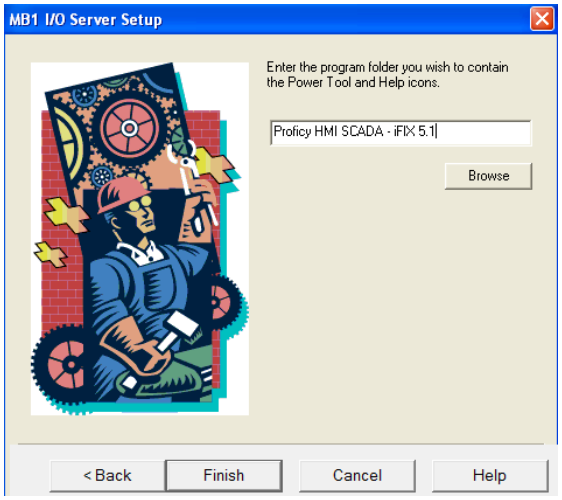
- Select Node Type: Server



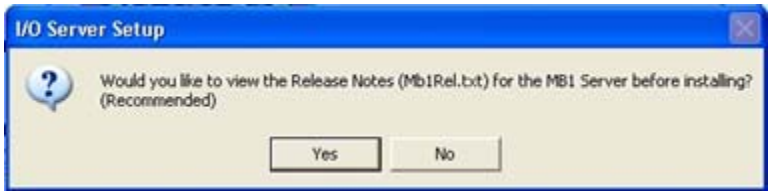
- Put as SCADA node name: SCADA_1



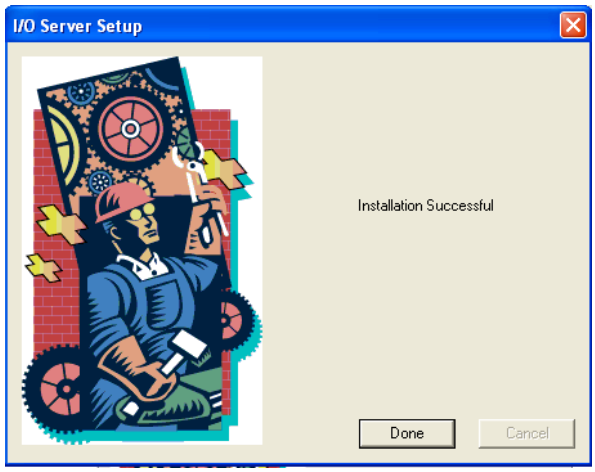
- Enter the program folder you wish to contain the Power Tool and help Icon: Proficy HMI SCADA _ iFIX5.1.



- Subsequently, the wizard will ask “Would you like to view the Release Notes for the MB1 Server before installing?.” Press the No button to skip viewing the Release notes.

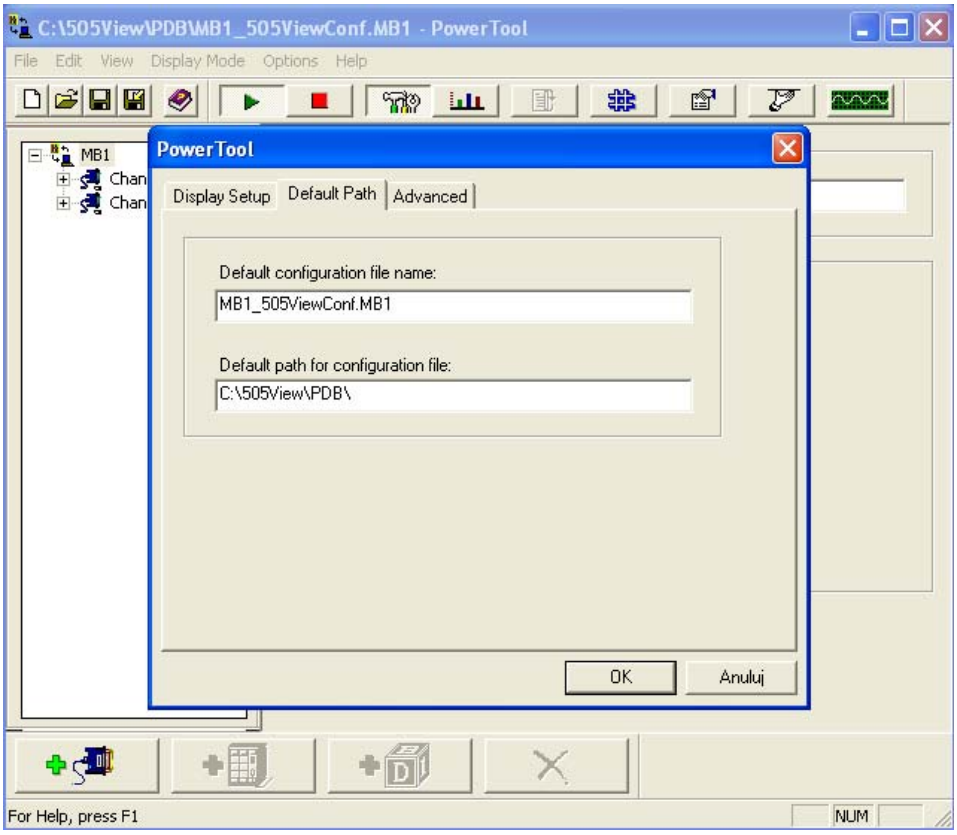


- The system will start installing the MB1 driver on your computer. Wait until the popup window, as shown below, will appear and press the DONE button to finalize the installation.



- Go to Programs / Proficy HMI SCADA / MB1 Power Tool

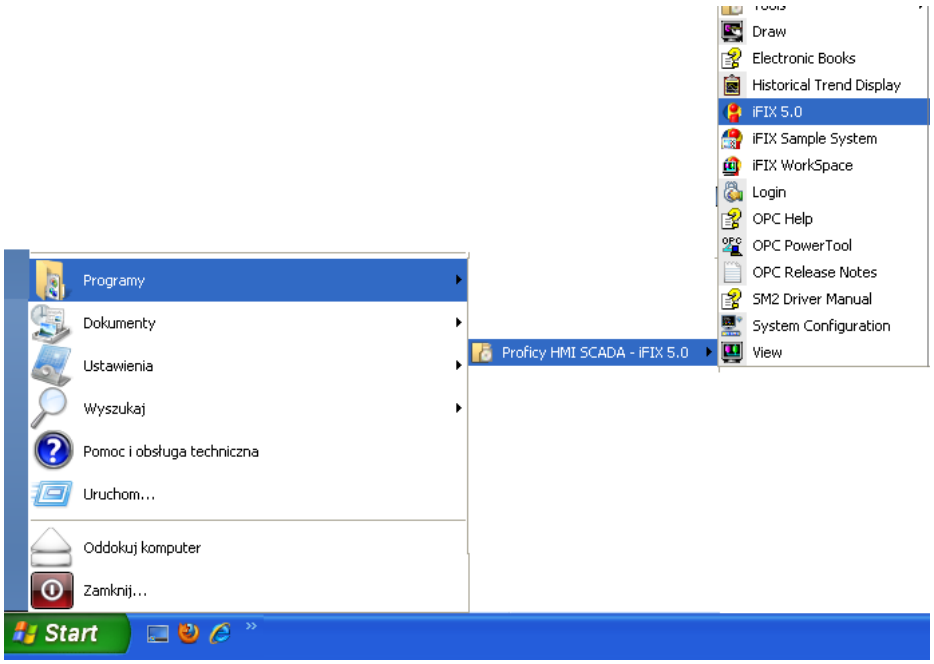
- Go to menu Options / Setup/ Default Path and enter the following settings:
  - Default configuration file name: **MB1_505ViewConf.MB1**
  - Default path for configuration file: **C:\505View\PDB**



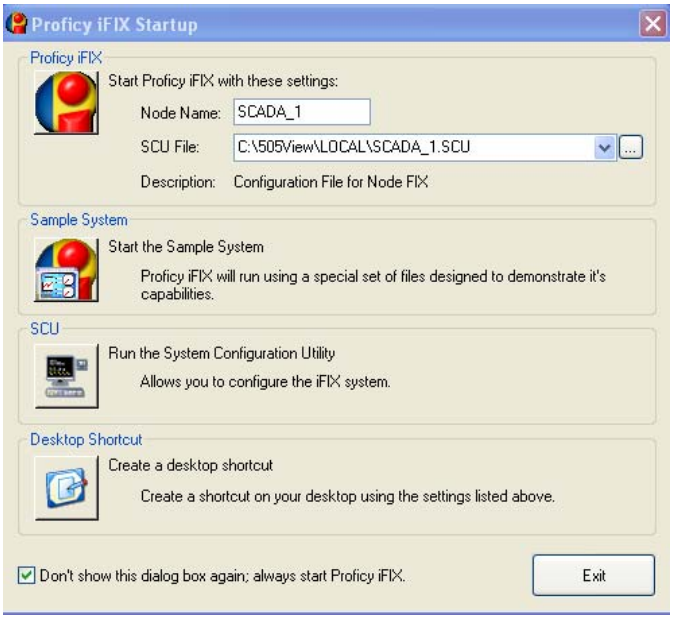
- Press the OK button to confirm. Close Power Tool driver configuration software and restart iFIX.

Running the 505View Software

The 505View HMI software can be run from the START menu button (under Proficy iFIX HMI/SCADA / iFIX 5.1)

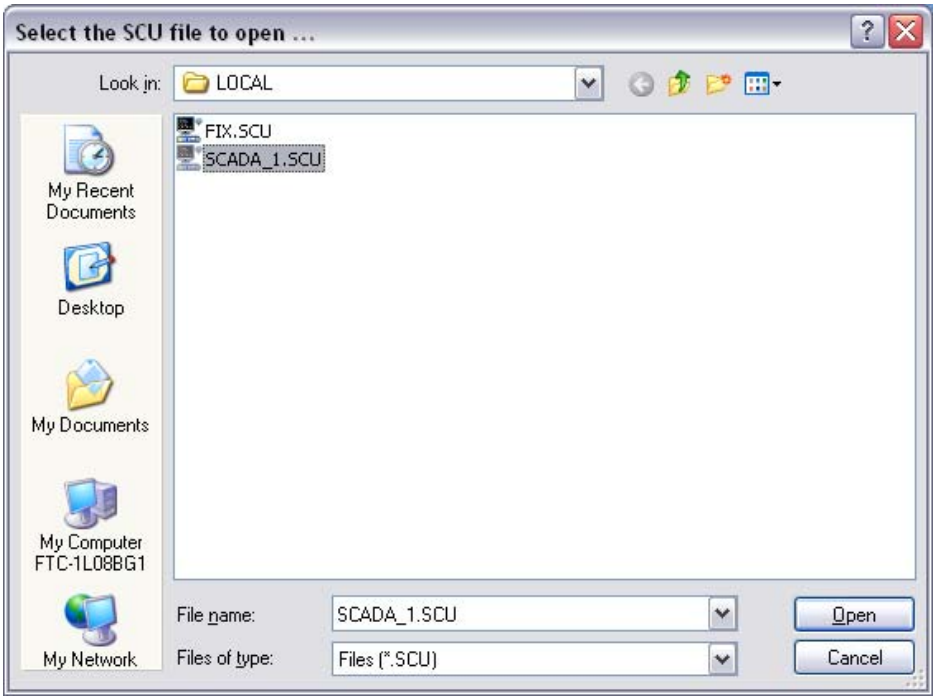


Then select Node Name: “SCADA_1”, SCU file: “C:\505View\LOCAL\SCADA_1.SCU”. Now iFIX or the System Configuration Utility can be run.



SCU Configuration

Run the System Configuration Utility (SCU) and select ‘File’ and ‘Open’. Open the ‘SCADA_1.SCU’ file from the ‘C:\505View\LOCAL’ folder.



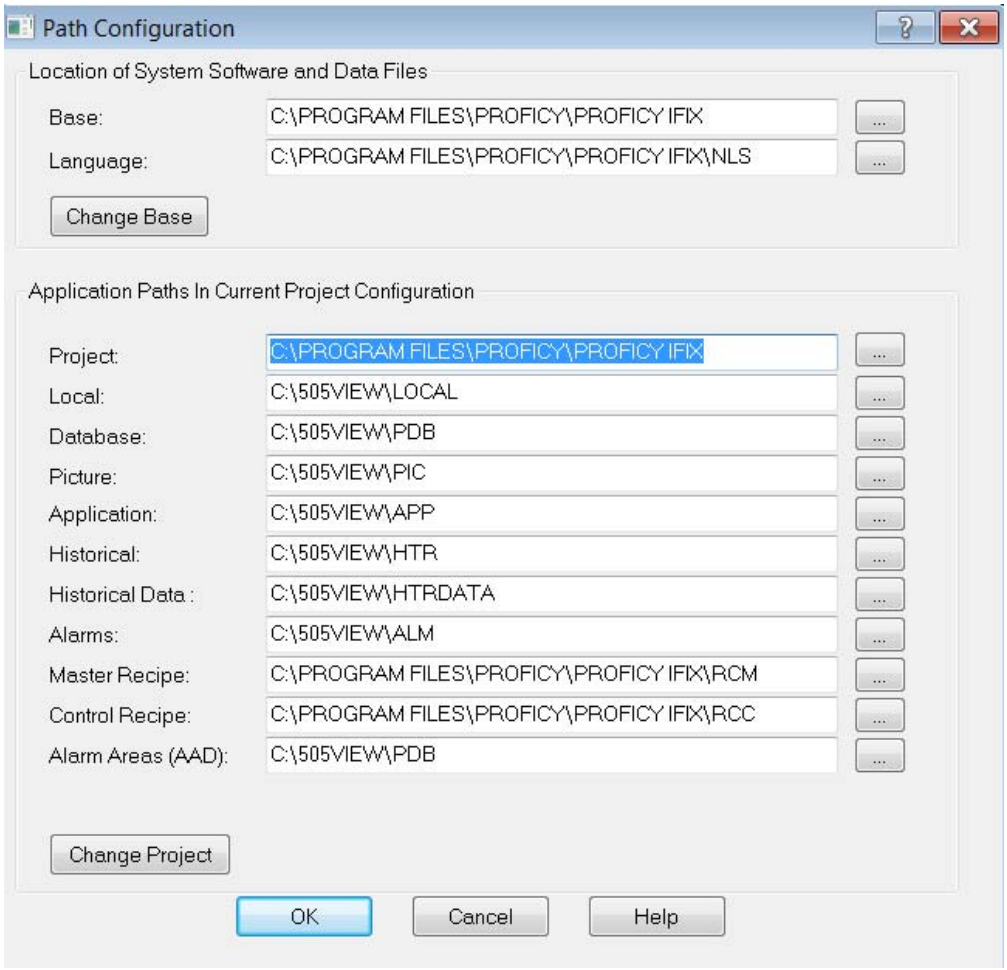
Select ‘Configure’ and ‘Paths’. The project path structure is as below:

Base: C:\Program Files\GE Fanuc\Proficy iFIX\

- Language: C:\PROGRAM FILES\PROFICY\PROFICY IFIX\NLS
- Project: C:\PROGRAM FILES\PROFICY\PROFICY IFIX\
- Local: C:\505View\Local
- Database: C:\505View\PDB
- Picture: C:\505View\PIC
- Application: C:\505View\APP
- Historical: C:\505View\HTR
- Historical data: C:\505View\HTRDATA
- Alarms: C:\505View\ALM
- Master Recipe: C:\PROGRAM FILES\PROFICY\PROFICY IFIX\RCM
- Control Recipe: C:\PROGRAM FILES\PROFICY\PROFICY IFIX\RCC
- Alarm Area: C:\505View\PDB

Base	All executable files. The Base path points to the main iFIX directory.
Language	The language files used to create dialog boxes and help files.
Local	Configuration files associated with the local computer, including SCU, recipe format, and system security files.
Database	Process database files, Database Manager configuration files, and I/O driver configuration files.
Picture	The pictures of the configuration and run-time environments.
Application	Data and configuration files for your iFIX applications. If you create your own applications, use this directory to store data files.
Historical	Historical Trending configuration files.
Historical Data	Historical data files. Historical Trending creates a unique subdirectory to this directory for each node that data is being collected from. The subdirectory uses the name of the node the data comes from.
Alarms	Alarm data files and event log.
Control Recipe	Control recipe, control recipe error, and control recipe report files
Alarm Areas	Primary Alarm Area Database files.

Path configuration screen is shown below:

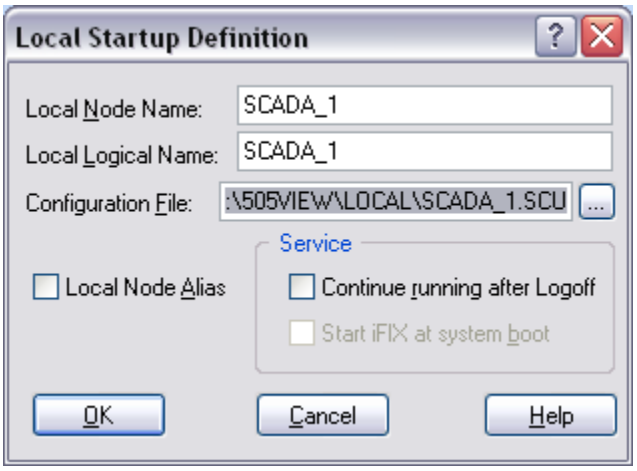


Click ‘OK’.

Double click on "NODE".

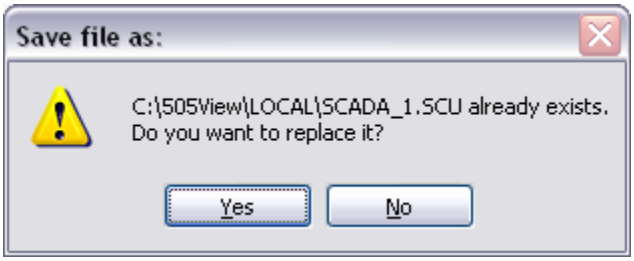
Verify the Local Node Name and the Local Logical Name.

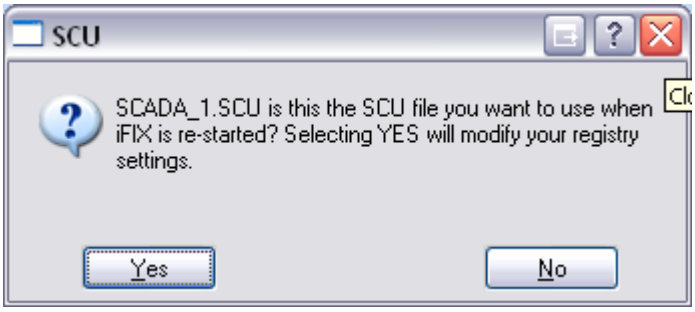
Verify that the Configuration File path is 'C:\505VIEW\LOCAL\SCADA_1.SCU'.



Make sure to Save the SCU file. Select ‘File’, ‘Save As’, and save over ‘C:\505VIEW\LOCAL\SCADA_1.SCU’.

Select ‘Yes’ to replace the file and, if prompted, ‘Yes’ to modify the registry settings.





Communication Settings

The 505 control must be configured to the same settings to communicate with the 505View. Refer to the 505 manual for instructions on wiring and port configuration/communication settings. The communication settings are defaulted in the 505View as follows:

- Protocol Type: RTU Modbus
- PC Port: COM1
- Baud Rate: 38 400
- Parity: none
- Stop Bits: 1
- Device Number: 1

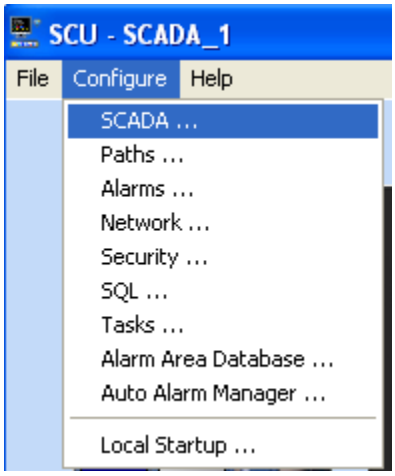
To change the default settings, open the System Configuration (SCU), select the Modbus Driver (MB1 icon in the control linked to the pc), select the 'setup' icon and change the settings.

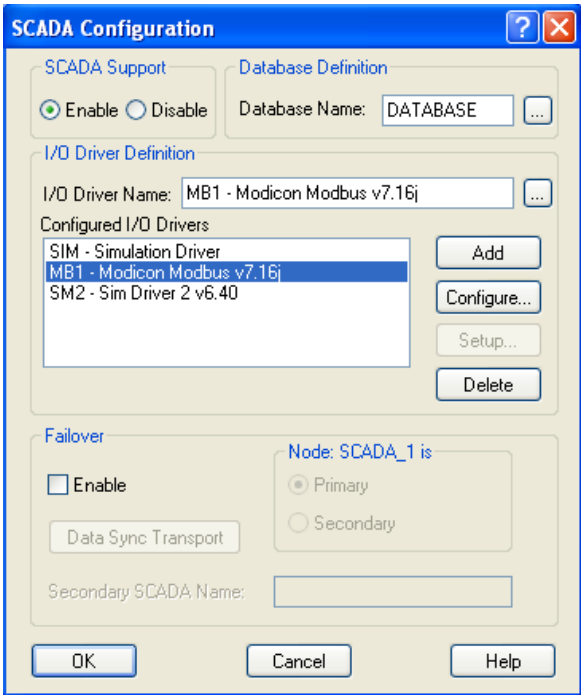
Step-by-step instructions to change/view communication settings:

1) Once the 505View is running, exit the View mode by selecting Ctrl and 'W' simultaneously. This will bring you to the Draw mode.

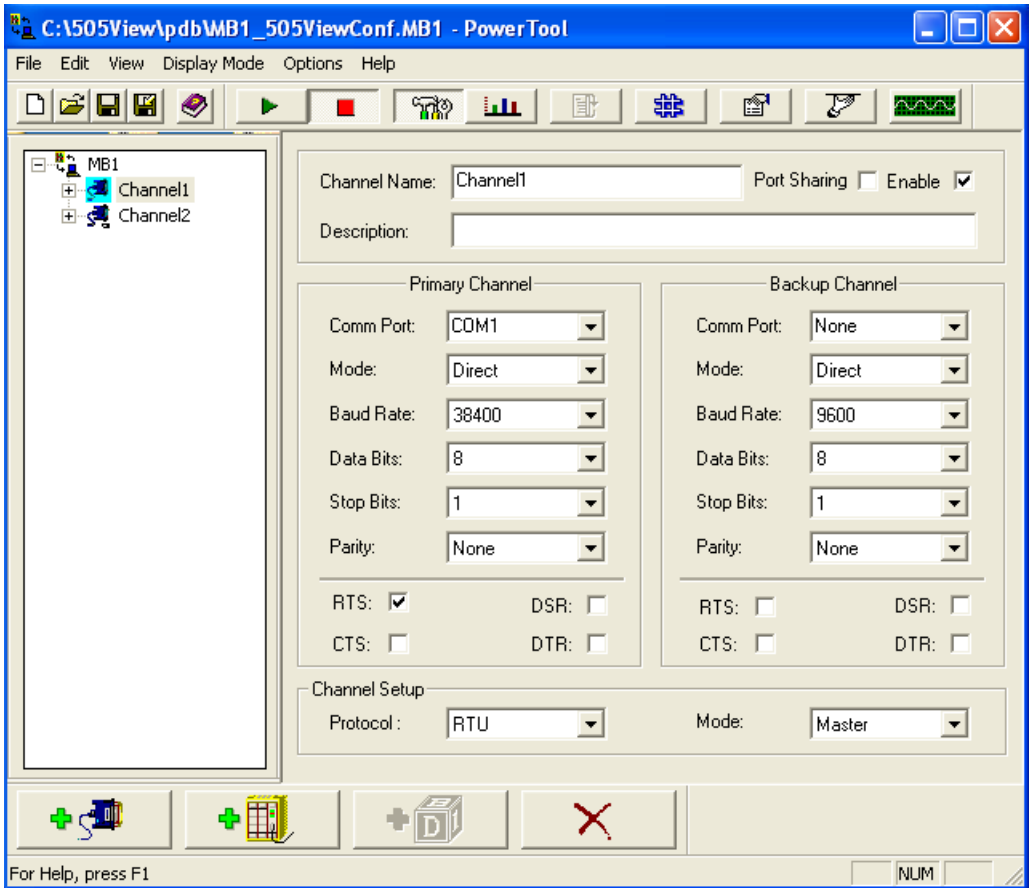
2) Select the System Configuration SCU under Applications heading. This launches the SCU program.

3) Select the SCADA Configuration under the Configure heading or click on the MB1 box.

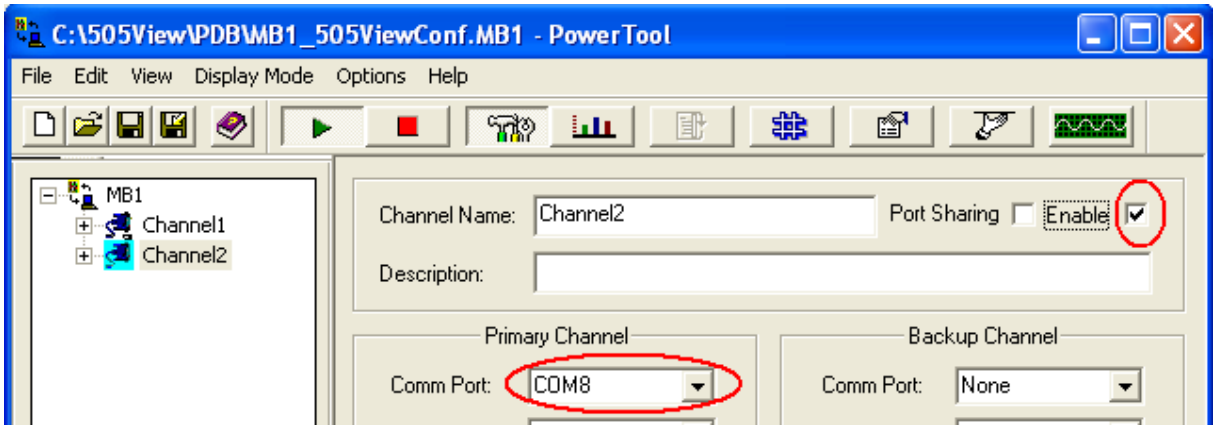




4) Select the MB1 - Modicon Modbus driver and select the 'Configure' button.



5) Channel 1 is primary channel. Chanel 2 is used as redundant channel if 505View uses the redundant channel with a pair of 505 Enhanced units. Select the check box Enable and set communication port for the Channel 2.



6) After changes are made, Save and close the Communications Settings.

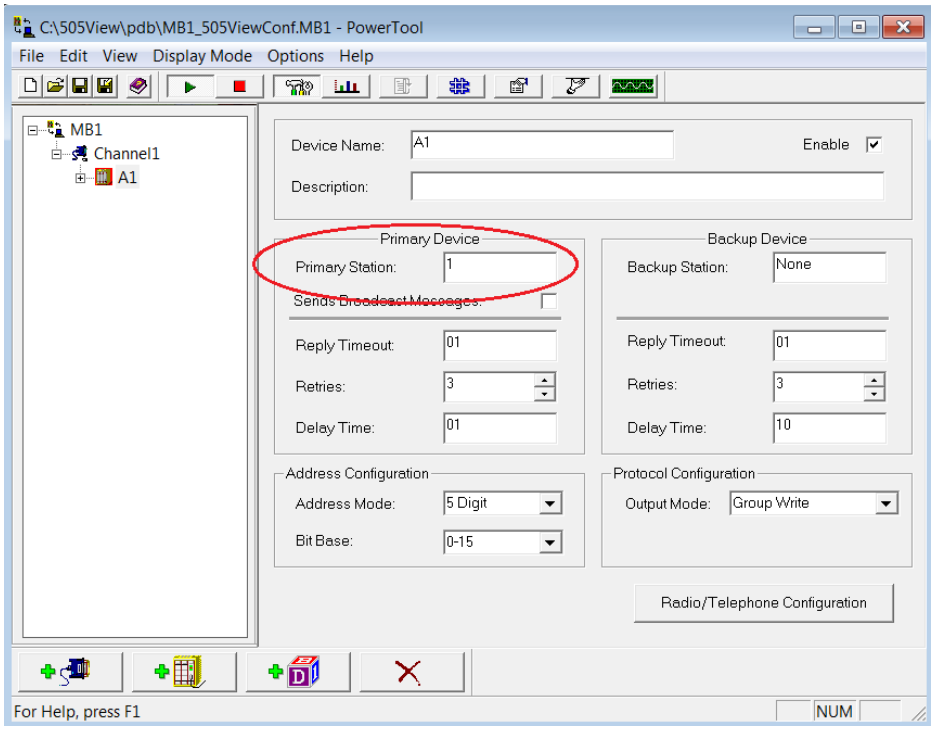
7) Save the SCU Settings by selecting File/Save.

8) Exit the SCU mode by selecting File/Exit.

iFIX is now ready to run the 505View software.

Device Channel

Note that the default primary station ID number is 1. It can be modified in the Power Tool: MB1/Channel1/A1/Primary Device/Primary Station.



Chapter 3.
Detailed Screen Definitions

General Operating Procedures

This chapter describes all the options and features that are available after the 505View is installed and communicating with a 505 control. This should not be used as an operational manual for the control. Refer to the manual that was included with the control for more information on the operation and different control functions of the 505 or 505E control.

All normal control operations can be performed through the 505View, however, for safety reasons overspeed testing and valve (actuator) calibration cannot be performed through the 505View. For a detailed description of the control functions refer to the manual that came with the 505 control.

Screens Overviews

The following provides a brief description of the screens available in the 505View. There are nine or ten (for redundant configuration) basic control screens available:

- **Main Menu**
  The Main Menu screen will be the first screen that appears when the application is launched.
- **Turbine Start Screen**
  The 505View has three separate turbine start screens for the different start modes of the 505 control, Idle/Rated, Min Governor, and Auto Start Sequence. The operator has complete control of the start sequence.
- **Controlled Shutdown Screen**
  The Controller Shutdown screen provides the operator with control and monitoring of the 505 controlled shutdown sequence.
- **Turbine Run Screen**
  The Turbine Run screen allows the operator complete control of the turbine under normal operating conditions. This gives the operator control of the set-points for speed and the other control functions that are configured. If the control is configured for a generator, breaker status, and information needed for synchronization and or load sharing is displayed on this screen. The number of hours the turbine has been running since the last shutdown is also shown.
- **Turbine Control Screen**
  The Turbine Control screen has information concerning the setpoint and process of the control parameters that are configured. Enabling and disabling the various control functions and the remote setpoint for the different controlling functions can be performed from this screen. Direct entry of a setpoint is available from the Turbine Control screen.
- **PID Control Screen**
  The PID Control screen shows all 505/505E PID outputs. The setpoints of the configured functions can be raised and lowered. Enabling and disabling the control function(s) can be accomplished from this screen. The PID Control screen also shows the valve demand or KW signal and percentage of load if configured as a generator.

- **Extraction/Admission Control Screen (505E only)**
  When the 505View is used with the 505E, there will be an additional screen for Extraction Control. This screen displays the HP and LP valve demands and allows pressure or speed priority selection. The extraction setpoint can be raised or lowered from this screen and extraction control can be enabled or disabled.
- **Analog Input / Output Screen**
  The Analog Input / Output screen displays each of the six analog inputs, six analog outputs and what they are configured for. This screen shows the actual value of the input or output in mA and in percentage.
- **Contact Input / Output Screen**
  The Contact Input / Output screen shows the status of all contact inputs and outputs. The configuration of the 12 configurable contact inputs and six configurable relays are displayed on this page. Additionally, this screen shows the status of the pre-configured inputs and outputs.
- **Modbus Relay Screen**
  From the Modbus Relay Control screen 505/505E relays that are configured for Modbus control can be energized and de-energized. The status of the Modbus relays is shown.
- **Alarm Screen**
  The Alarm Screen lists alarm and trip indications with the time of the event. The Alarm screen lists time of an alarm or trip acknowledgement. Last trip indication is also displayed on this screen. Alarm acknowledgement is performed through this screen also.
- **Trend Screen**
  The Trend Screen provides access to all available configured trends. Trends are available in 1-minute, 15-minute, 30-minute, 1-hour, 6-hour, 12-hour, 1-day, and 1-week windows.
- **Redundant**
  Two redundant screens show the communication status and gives option to select unit to display.

Footer and Navigation

Status Bar Features

The status bar is displayed on the bottom of all screens and contains the Controlling parameter, ESD (emergency trip- if configured in the 505), Local/Remote status, and valve demands.

Local / Remote

The status bar also displays the Local/Remote status, when programmed in the 505/505E, and the Local and Remote control selections.

Navigation Bar

The navigation bar, found on the bottom of each screen, is used to move from screen to screen within the 505View.

The Home button opens the Main Menu and is found on all screens.

The Alarm button will, when pressed, open the alarm screen. In addition, the button's color changes depending on the state of the 505 control. When an alarm occurs, the color changes from green to flashing red. The button will continue to flash until an acknowledge command is issued; this is done from the Alarm Screen. Once acknowledged, the button will stop flashing and remain a solid red color. Once the control is reset and all alarms have gone away the button will return to a green color .If another alarm occurs after the previous alarm(s) has been acknowledged, the button will once again flash.

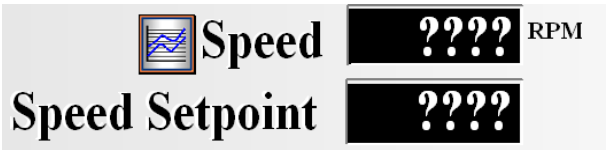
This button will run the Alarm History program.

The Security or Lock button will open the Login Command window and allow the user to access different levels of security within the 505View system.

The Print button will print the current screen.

Loss of Communication

When the 505View is started and communications is not working, the 505View screen values will display question marks as shown below.



Main Menu

The Main Menu screen will be the first screen that appears after the program is initialized. The Main Menu lets the operator have a choice of selecting any of the different screens. The screens are Turbine Start, Controlled Shutdown, Turbine Run, Turbine Control, PID Control, Analog In/Out, Contact In/Out, Alarm Log, Modbus Controlled Relays and Extraction Control (if 505E) plus the Trend. In addition, the Event Monitor can be opened from the Menu screen only.

Alarm/Trip Status

The alarm or trip status is located at the bottom of each screen next to the controlling parameter message. The alarm indication (bell symbol) will flash/blink until the alarm is acknowledged. If another alarm condition happens, the alarm indication will start flashing again until acknowledged.

Scaling Factors

The 505View can use the Modbus scaling factor of the 505 control to provide decimal places on predefined analog values or to keep the analog values between -32767 and 32767, a Modbus limitation. The scaling factor depends upon the value sent across the Modbus link. The scaling factors used are 0.1, 1, 10, and 100. A scale factor of 10 will automatically provide one decimal place for that value, scale factor of 100 provides two decimal places.

The scaling factor is defaulted to 1 for the 505/505E controls. The scaling factor can be changed using the Service Mode of the 505/505E control. Refer to Volume 2 of the 505/505E manual for detailed information concerning changing the scaling factors.

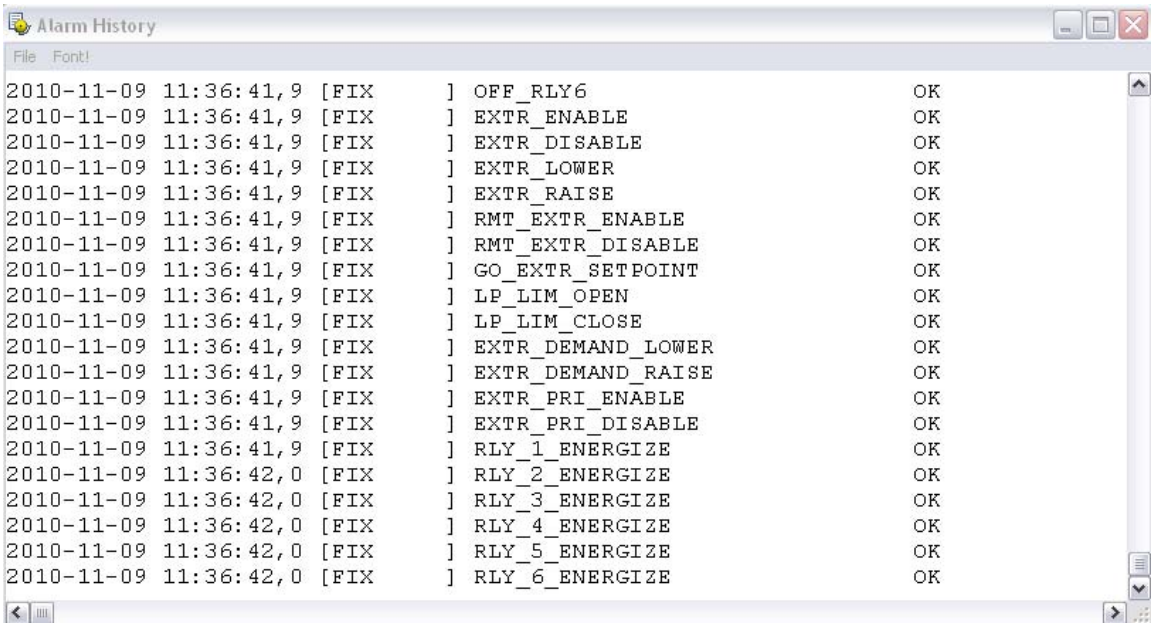
Units

The 505View will display the units of measure for the control functions configured when this option is configured in the 505 control.

Event Monitor

The following icon, found only on the Menu, opens the Event Monitor.

Selecting the Event Monitor icon will open the Alarm History screen shown below. This shows the events that have occurred since you started the application or since you closed the file last. It starts over with a blank screen/file every time the history is closed.



Status Bar

The Local/Remote function is explained in volume 2 of the 505 or 505E manual. This function of the 505 control is used to allow the operator to lock out inputs from contact inputs and the Modbus ports. The 505 will not accept commands from the 505View if the control is in the Local Mode. The 505View will display LOCAL on all screens and all setpoint raise/lower, enable/disable, reset buttons, and shutdown button will no longer be visible.

Alarm Summary Screen

The Alarm Status is always available on the status bar. Clicking on the Alarm Status bell will open the Alarm Screen.

The Alarm Summary screen displays all current alarms and unacknowledged alarms, how many there are, their state and priority. Acknowledge and Reset commands can be issued from this screen.

The Alarm Summary state is defined as follows:

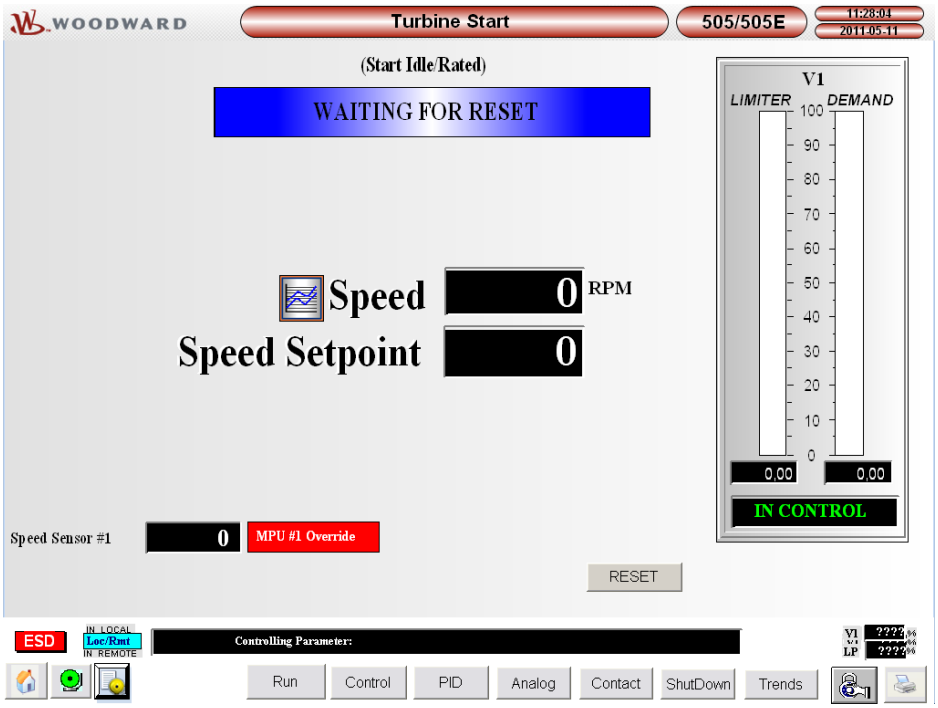
- Active alarms are yellow.
- Acknowledged alarms are white.
- Acknowledged and Cleared alarms are green (this happens momentarily and then they disappear).

The Alarm Summary display can be modified using Filtering (by priority or area—select the 'Filter' button), Sort Control (Sort button), and Column Format (Columns button) options found on the screen.

Turbine Start Screen

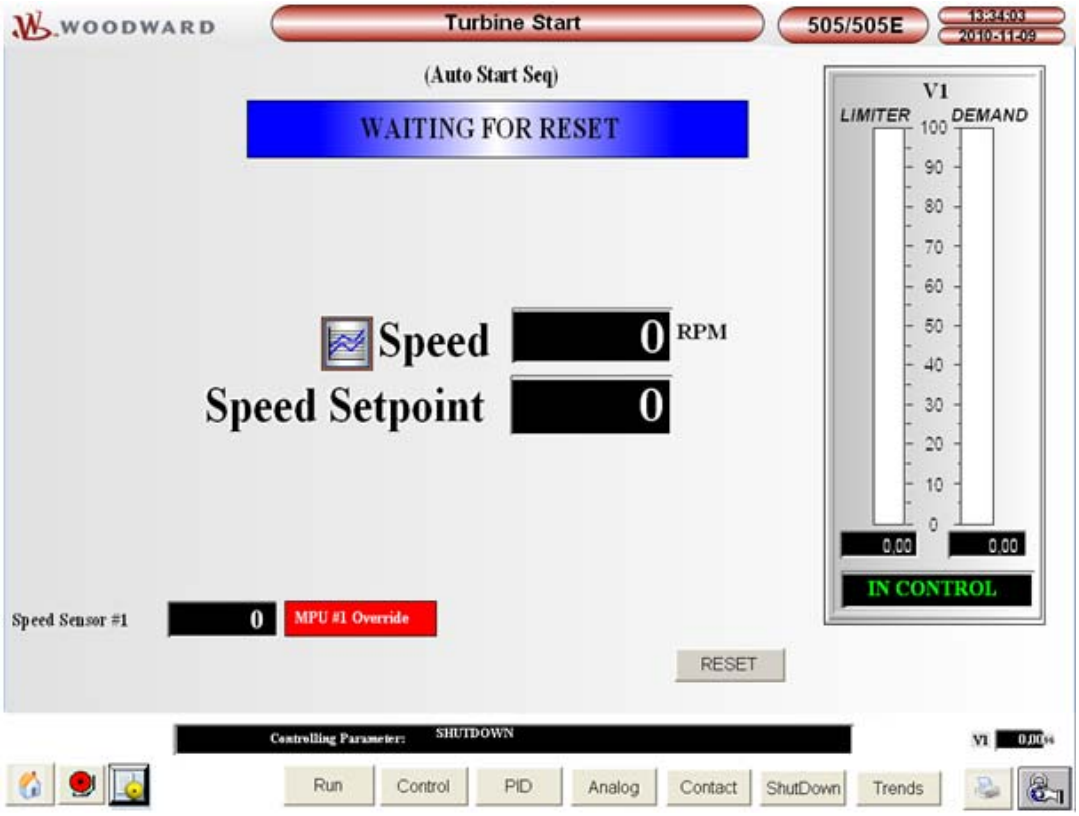
The Turbine Start screen displayed will be different depending upon the start sequence configured in the 505 or 505E control. All screens give the user complete control over the start sequence selected. Each start mode gives the user control of the valve limiter and the speed setpoint. Speed, speed setpoint, and setpoint raise and lower commands are available from the start screen.

Valve demand and valve limiter position are shown in bar graph form. Valve limiter raise and lower commands can be entered from the start screens. All of the start screens have Reset and Run buttons which allow starting the turbine when all shutdowns have been cleared. The following figure shows an example of the Turbine Start screen.



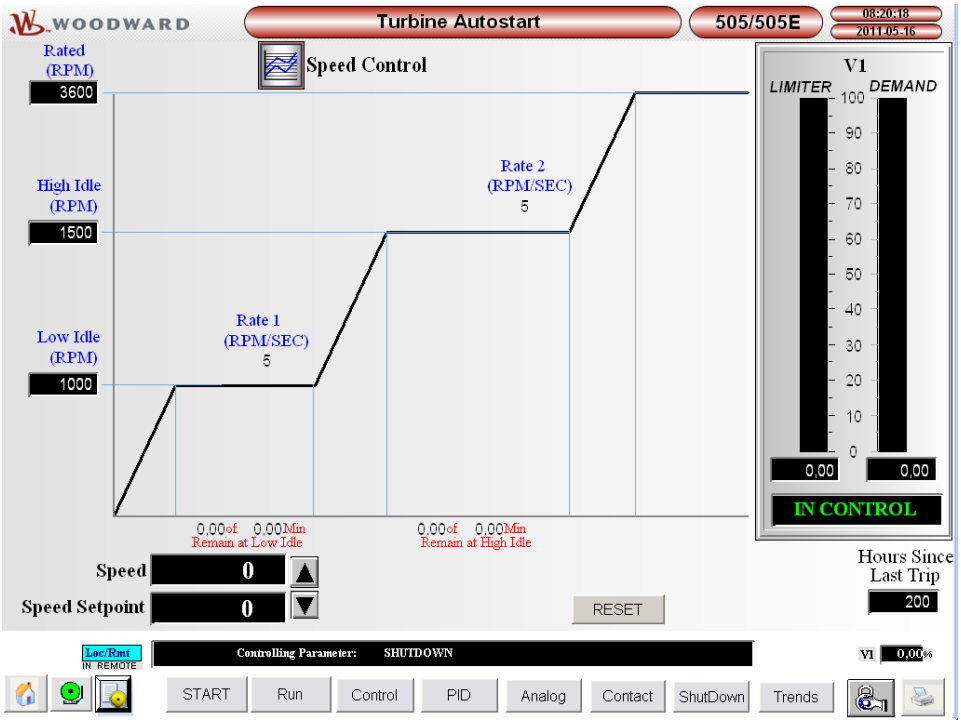
Auto Start Sequence

The auto start sequence has two separate screens that will display different information to a user concerning the start sequence. Status messages indicate where the control is in the sequence. The sequence may be halted at any time. If halted, the sequence can be resumed. The Auto Seq. graphic button allows an operator to select the other Auto Start Sequence screen. The following figure shows an example of the Auto Seq. Cntrl screen.



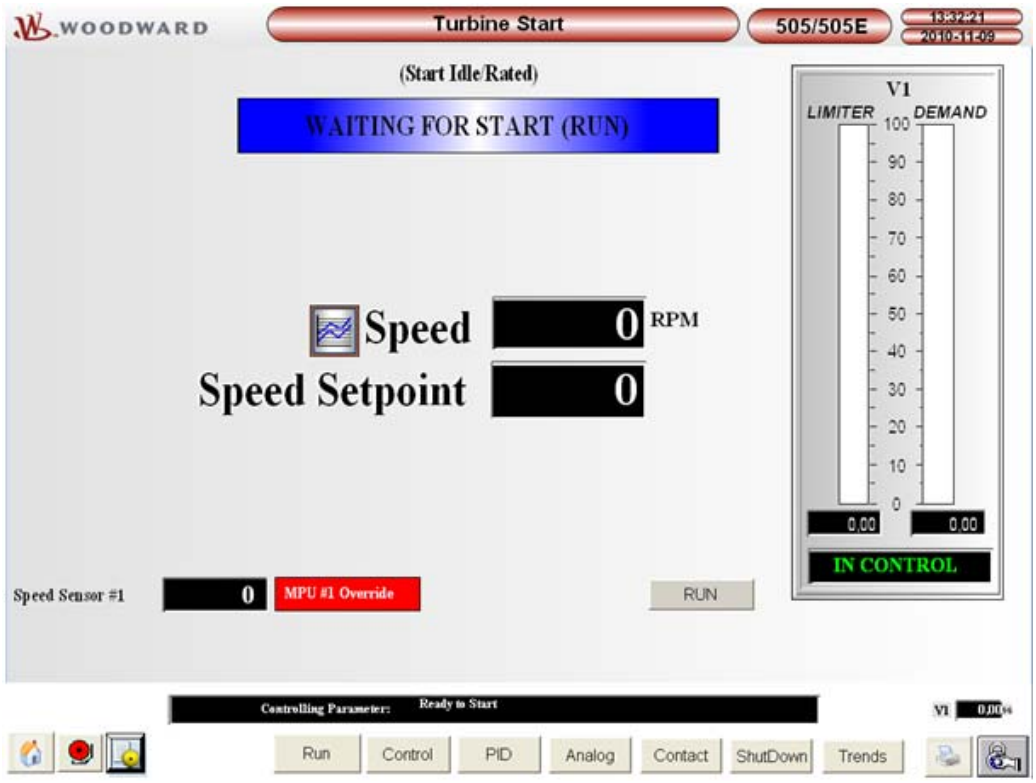
The Auto Seq Graphic screen of the auto start sequence displays a graph of the start sequence. The low idle, high idle, and rated setpoints are displayed. The hold times at high and low idle are shown in minutes. The rate of acceleration from low idle to high idle and from high idle to rated is displayed in RPM/SEC. Speed, speed setpoint, valve limiter setpoint, and the valve demand values are displayed. The user can go to the first Auto Sequence Screen with the Auto Seq Cntrl button.

The figure below shows an example of the Auto Seq Graphic screen.



Idle / Rated Start

The idle/rated start allows the user to start the turbine and choose between idle speed or rated speed. Refer to the 505 control manual for the full functionality of the Idle / Rated start sequence. The figure below shows the Idle/Rated start screen for the 505E with two speed sensors configured.



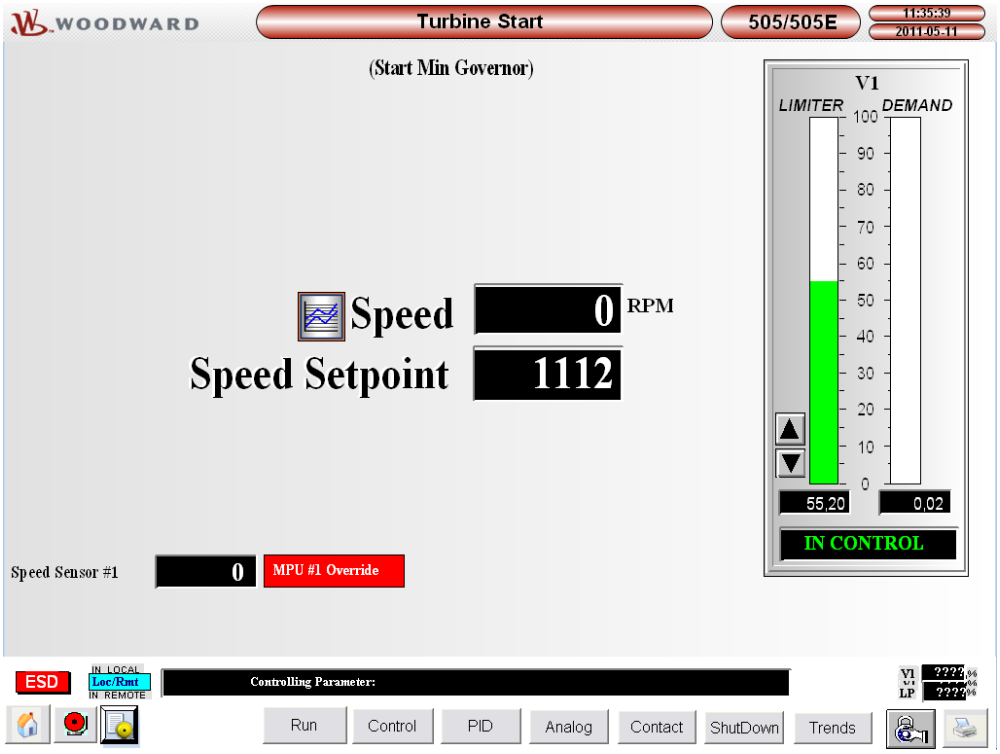
When ready, press the Run button to initiate the start sequence. After the turbine has reached idle speed, pressing the Go to Rated button will raise the turbine speed to the rated setpoint. The Go To Idle button will ramp the speed setpoint to the Idle speed. When the speed setpoint is ramping to the idle setpoint or to the rated speed setpoint, the message 'MOVING TO IDLE' or 'MOVING TO RATED' will appear above the speed readout. If the control has been configured to use the critical speed band(s) the message 'TURBINE IN CRITICAL SPEED BAND USING CRITICAL RATE' will appear above the speed readout when the speed is in the critical band.

The speed setpoint can be raised or lowered with the up arrow and down arrow keys. Using the Raise/Lower keys will cause the idle/rated start sequence to be aborted. The setpoint can be moved to idle or rated by using the Idle or Rated buttons. The Speed Sensor Failure Override indication will go off when turbine speed is above the failed speed level, which was set when configuring the 505 control. The valve limiter is displayed using a bar graph with the value displayed under the bar graph. The limiter setpoint can be moved with the Open and Close buttons. The valve demand is displayed using a bar graph with the value displayed under the bar graph. This is the value output to the low signal select bus.

Start Min Governor

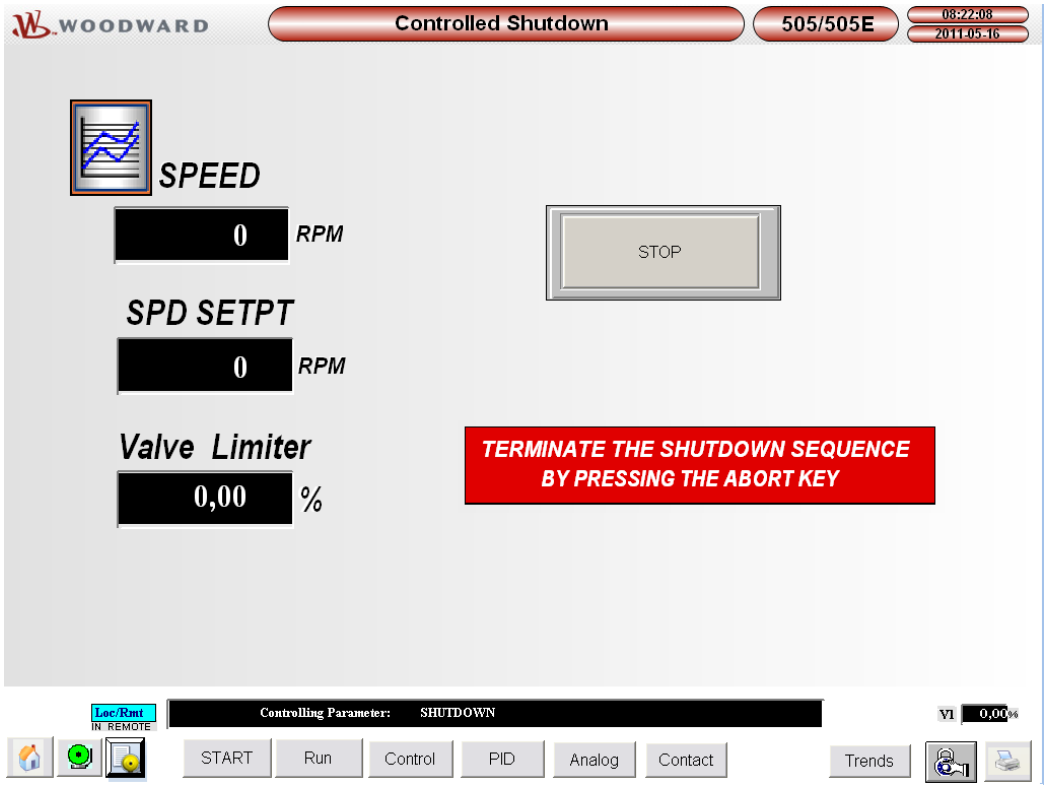
When ready to start the control, pressing the Run button will initiate the start sequence. The valve limiter ramps to 100% and the speed setpoint will ramp to Min Governor. An operator can use the up arrow and down arrow keys to raise and lower the speed set-point between Min and Max Governor speeds. The Speed Sensor Failure Override indication will go off when the turbine speed is above the failed speed level, which was set when configuring the 505 control.

The valve limiter is displayed using a bar graph with the value displayed under the bar graph. The limiter setpoint can be moved with the Open and Close buttons. The valve demand is displayed using a bar graph with the value displayed under the bar graph. This is the value output to the low signal select bus.



Controlled Shutdown Screen

A controlled shutdown can be initiated by pressing the Stop button. During the shutdown sequence, pressing the Abort button will abort the shutdown sequence. When the controlled shutdown is in progress, a message appears under the Abort button informing an operator that pressing the abort key will stop the shutdown sequence.



Turbine Run Screen

The Turbine Run screen will display different options depending on the configuration of the 505 control. Features which are always available include the percentage the valve(s) are open, speed and the speed setpoint, and speed control status message. The hours run since the last shutdown are displayed in the upper left hand corner of the screen. The display readout will change to days after 120 hours. If there is a shutdown condition, the number of hours since the shutdown is displayed in the upper left hand corner of the screen.

For each function configured, the screen will display the actual input, the setpoint with Raise and Lower buttons, and Enable/Disable buttons. There is a status message indicating whether the function is enabled, active, in control, or in remote setpoint control. If a function is always enabled, such as the Auxiliary Control configured as a limiter, the enable/disable button for that function will not appear on the screen.

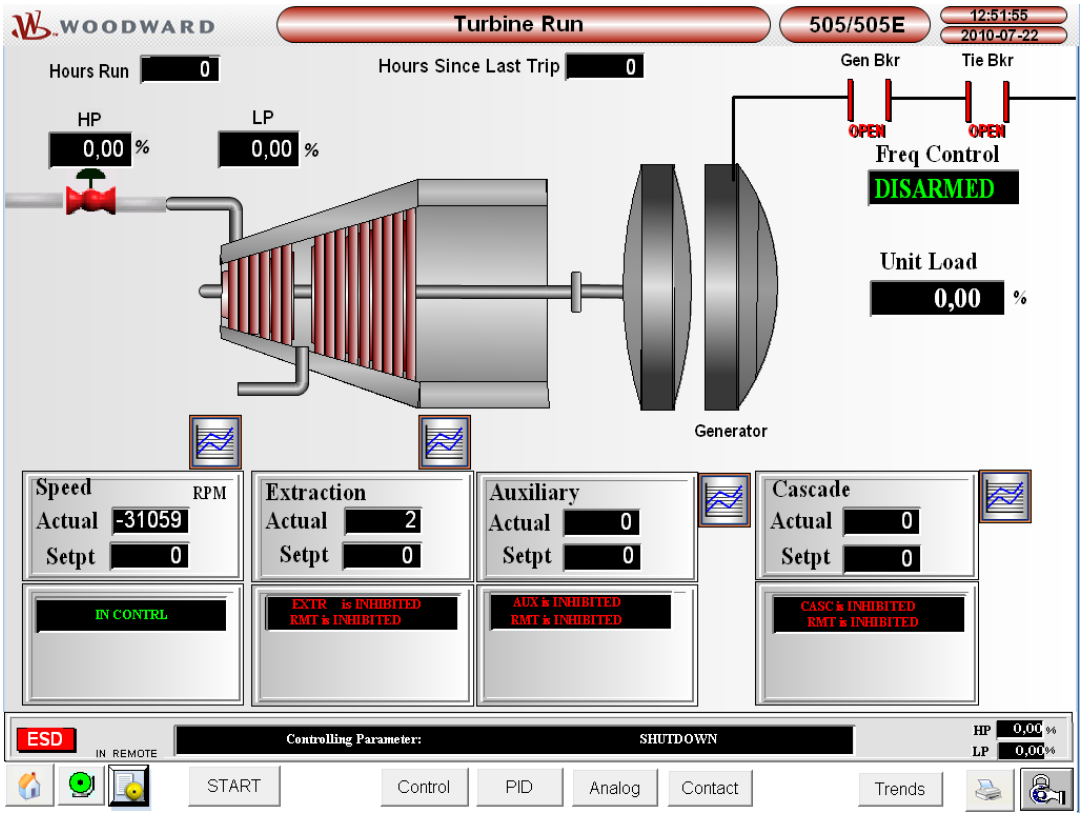
The Setpoint Raise/Lower buttons will not be displayed on the screen if the setpoint is tracking the input until the function is enabled or if the remote setpoint control is enabled.

If the control is configured for a generator application, the status of the breakers is shown. When configured for a Unit Load signal the load value is displayed as the Unit Load input on the turbine run screen. If the Load signal fails, the displayed value will be the load percentage based on the valve position. The turbine graphic will change from a drawing of a turbine and generator to a drawing of a turbine and load depending on the configuration of the 505 control. If the 505 is configured for two actuators the second valve will appear on the screen. For 505E (extraction and/or admission) units the HP and LP valves are displayed.

If the sync or sync/loadshare function is configured in the 505 control, a readout showing the value of the input will be displayed on the turbine run screen. There will be an enable/disable button under the readout to allow for synchronizing before breaker closure. After the utility and the gen breakers are closed, synchronizing will be inhibited and the enable/disable button will disappear. A Frequency Control Arm/Disarm button will appear on the turbine run screen if this option is configured in the 505 control. Refer to 'Frequency Arm/Disarm' in the 505 manual for more details on this option.

When the 505 control is configured for a compressor application and one of the control's analog inputs is configured for first-stage pressure, the Turbine Run screen will have a readout showing the value of the analog input.

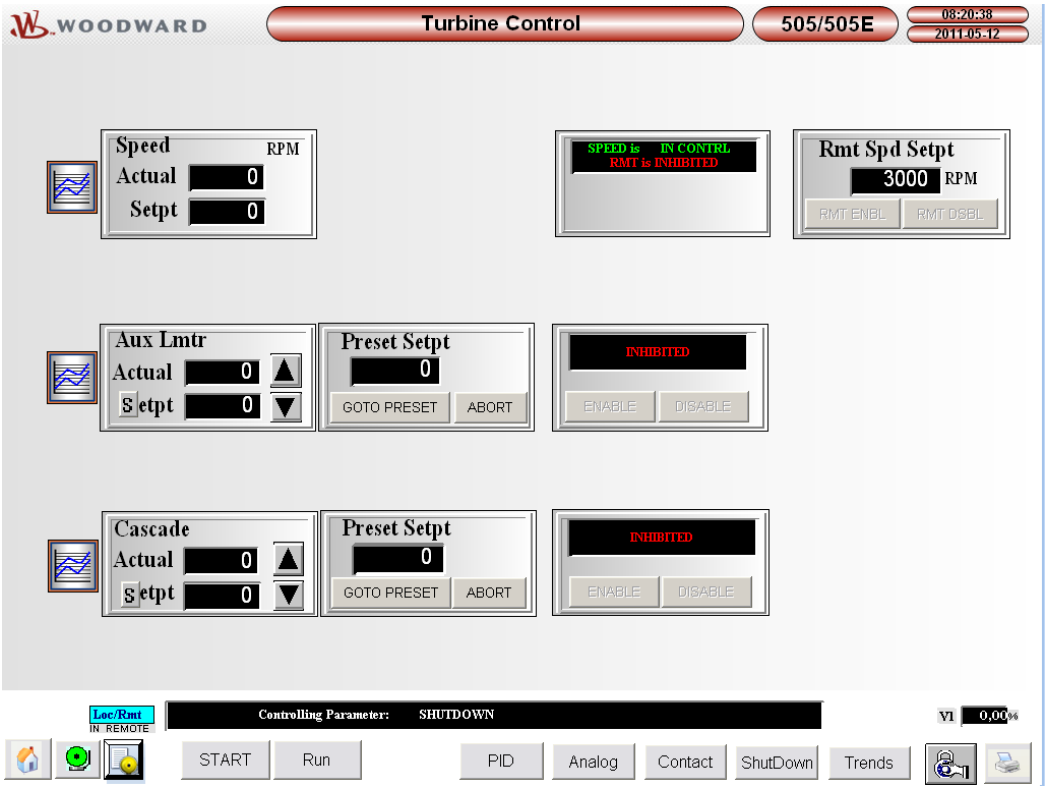
The figure below shows an example of a Turbine Run screen for a 505E control that is configured for Speed, Aux, and Cascade control. The 505 is in speed control. The Cascade setpoint is tracking the input value, so the Raise/Lower setpoint buttons will not appear until the function has been enabled. The Aux PID is programmed as a controller (not a limiter) so once again, the Raise/Lower setpoint buttons will not appear until the function has been enabled. The units of measure configured in the 505 control are displayed beside the input and setpoint values.



Turbine Control Screen

For each function configured this screen will display the actual input, setpoint with Raise and Lower buttons, and Enable/Disable buttons. There is a status message indicating if the function is enabled, active, in control, or in remote setpoint control. When the 505 control is configured for remote setpoint control. The value of the remote input will be shown and Enable and Disable buttons will be displayed on the turbine control screen. The Turbine Control screen is the only screen that gives the operator control of enabling and disabling the remote setpoint for each controlling function of the 505 control.

The figure below is an example of the Turbine Control screen for a 505E control with Auxiliary, and Cascade configured.

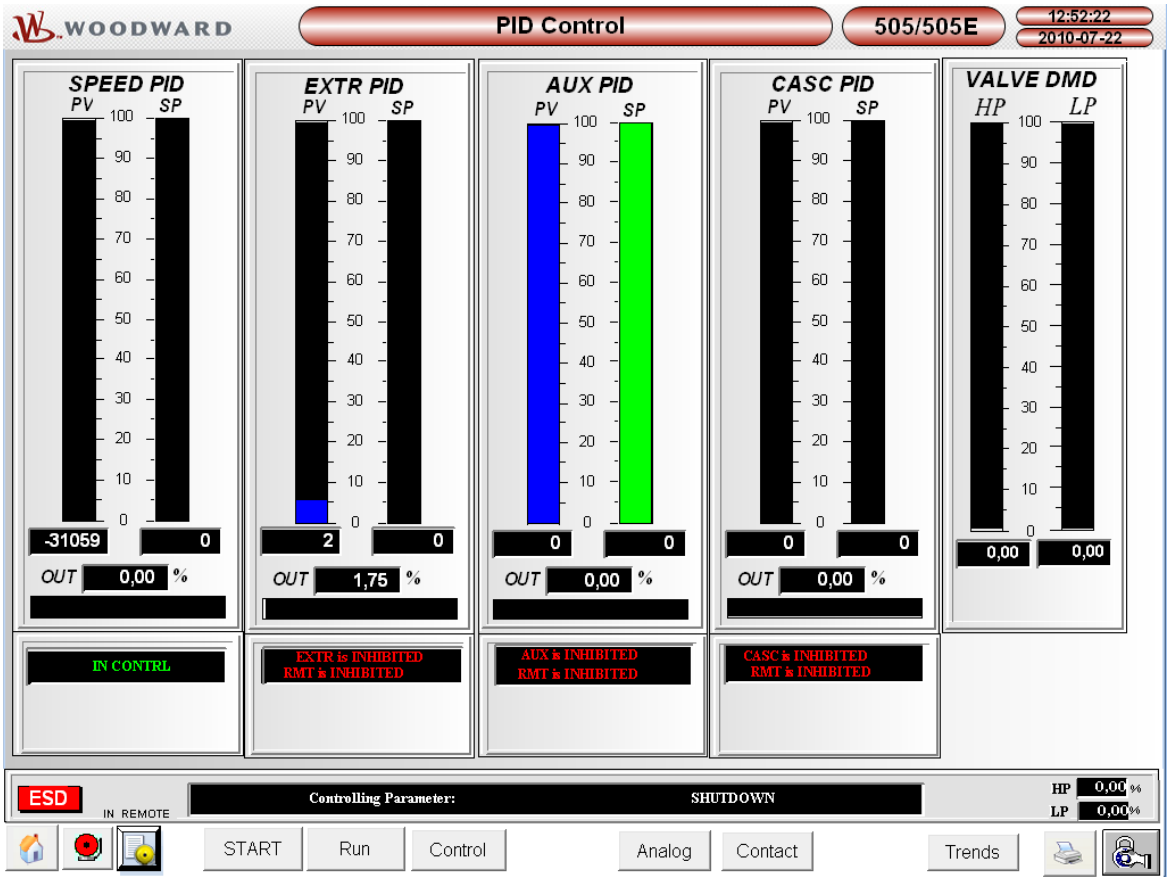


An operator can directly enter the setpoint values for any of the controlling parameters. To be able to directly enter a setpoint value the parameter must be enabled or in control and not in remote setpoint control. Pressing the Set button will cause a pop up key pad to be displayed which can be used to enter the desired setpoint. Pressing the Enter button will set the entered value into the control. The setpoint will then go to the value entered after the 505 has checked the validity of the entry. The value next to the Set button will show the last entered value or the min value that can be entered if no values have been entered since the control and 505View where powered up.

The Go To Preset button will cause the setpoint to move to the last entered setpoint which is displayed in the window above the button. The operator can press the Go To Preset button instead of entering the setpoint when the value next to the set button is the setpoint desired. This value will initialize to the min value for that setpoint. The value will hold to the last value entered until the unit is reinitialized.

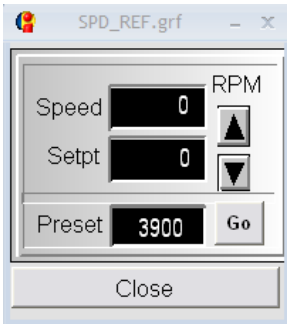
PID Control Screen

The PID screen displays the programmed control loops that drive the valve output(s). The inputs and setpoints are scaled from zero to one hundred percent and shown using bar graphs. There are three values under the bar graph that show actual input, setpoint, and PID controller output. The Raise/Lower buttons are not displayed on the screen if the function is in remote setpoint control or the setpoint is tracking the input and the function is not enabled.



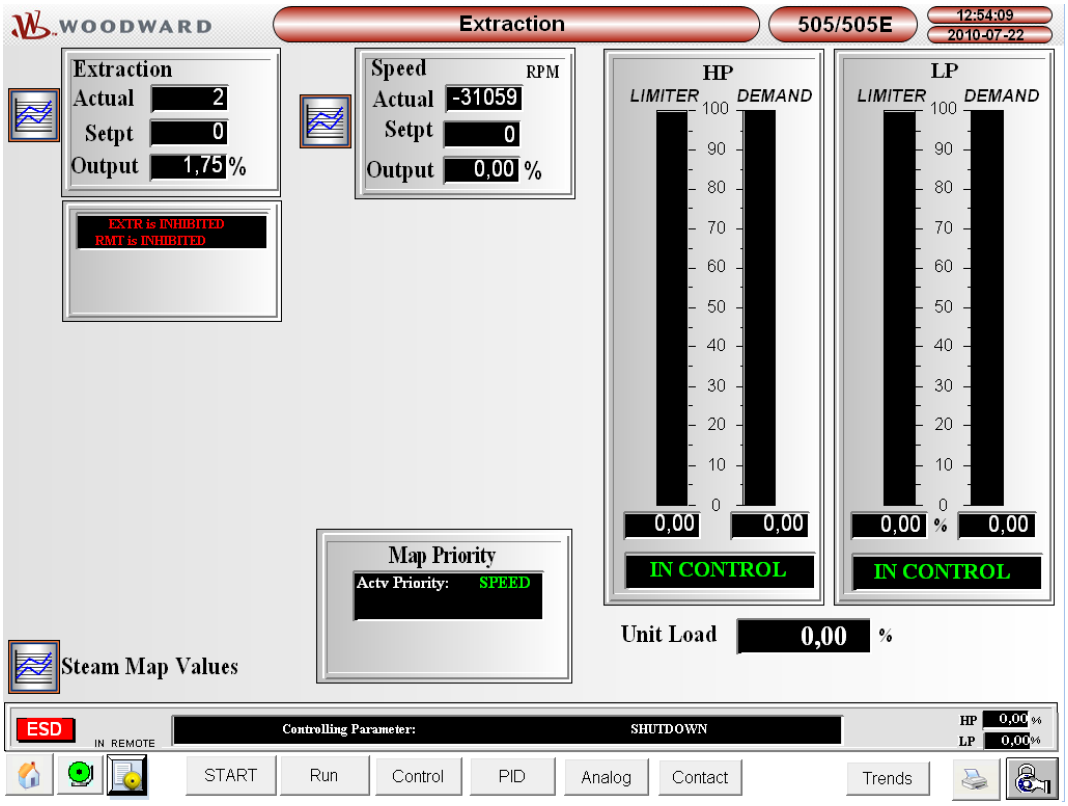
With this screen, Auxiliary and Extraction PIDs are the controlling parameters. The bar graphs show inputs and setpoints. Buttons to raise and lower the setpoints are visible when the parameter is in control or enabled (i.e. anytime the setpoint can be adjusted).

The “Setpt” button: Setpt: for Speed, Extraction, Auxiliary, and Cascade can be selected, which opens the popup window shown below for the Speed Setpoint. Note that this window can be moved to another location on the screen or resized, if desired. This is similar for the 'Set' windows that appear for Aux, Cascade, and Extraction.



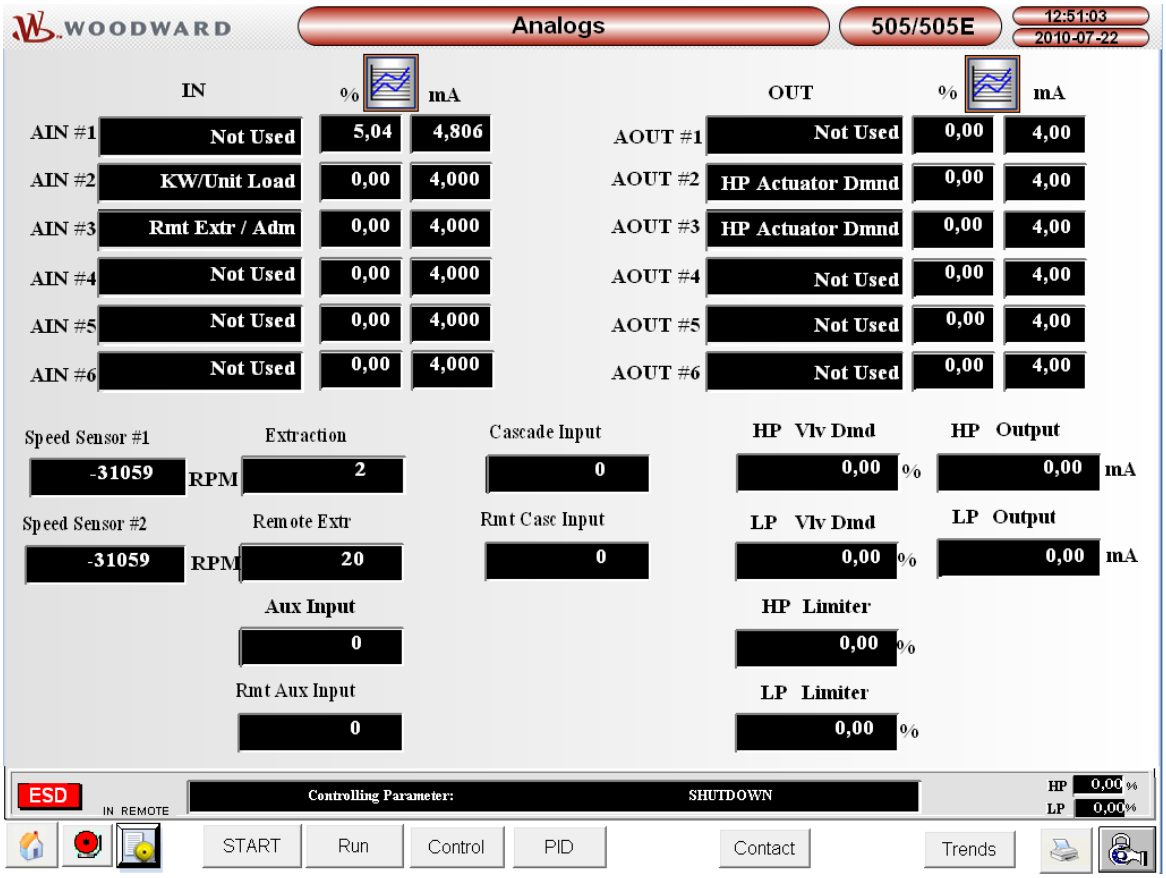
Extraction Control Screen

The Extraction Control screen displays HP and LP valve demands and the position of the LP limiter. It also allows the LP limiter to be raised and lowered. The Extraction Control screen displays the extraction input and setpoint, with Raise/Lower commands for the extraction setpoint. Extraction control enable/disable, along with the indication of extraction control, is displayed.



Analog In/Out Screen

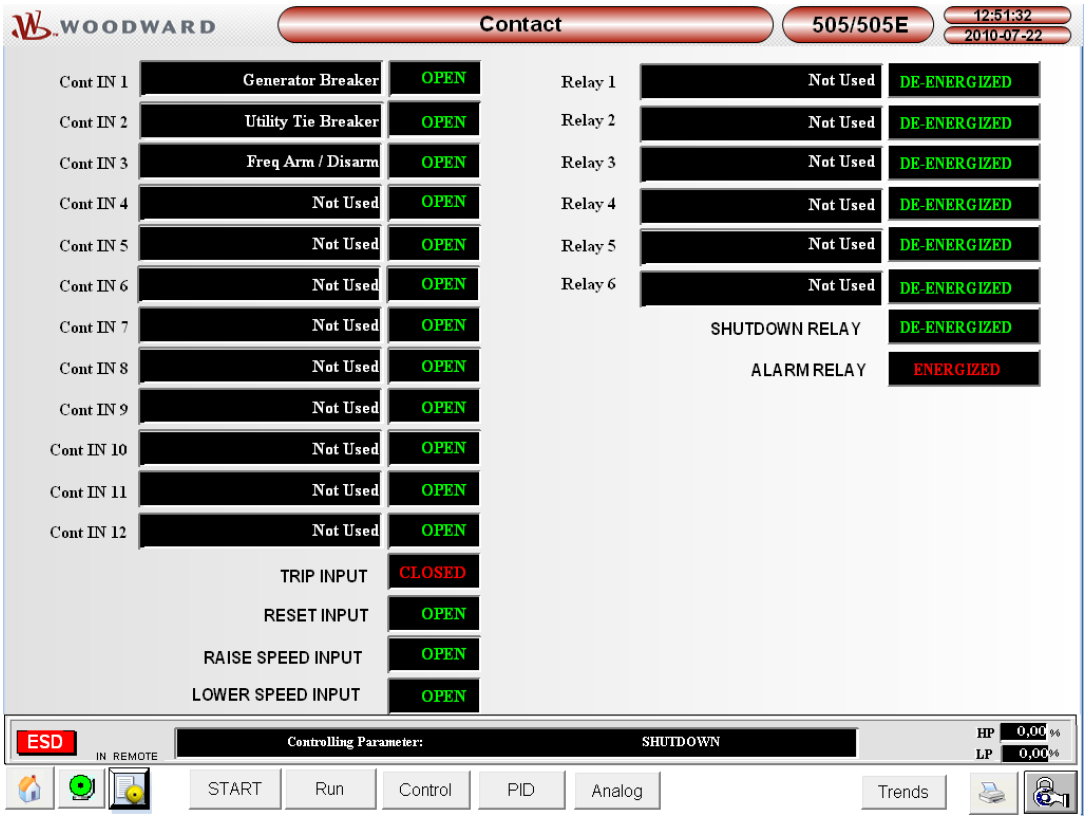
The configuration for each analog input and output is displayed on the Analog Input / Output screen. The value of the input or output is shown in percentage and milliamp values.



Analog inputs are displayed in the engineering units, based on the 505 configuration. Turbine speed and speed setpoint value are displayed. The actuator(s) output is displayed in mA. The valve demand and limiter position is displayed on this screen.

Contact In/Out Screen

The configuration and status of each 505 contact input and relay is displayed on the Contact Input / Output screen.



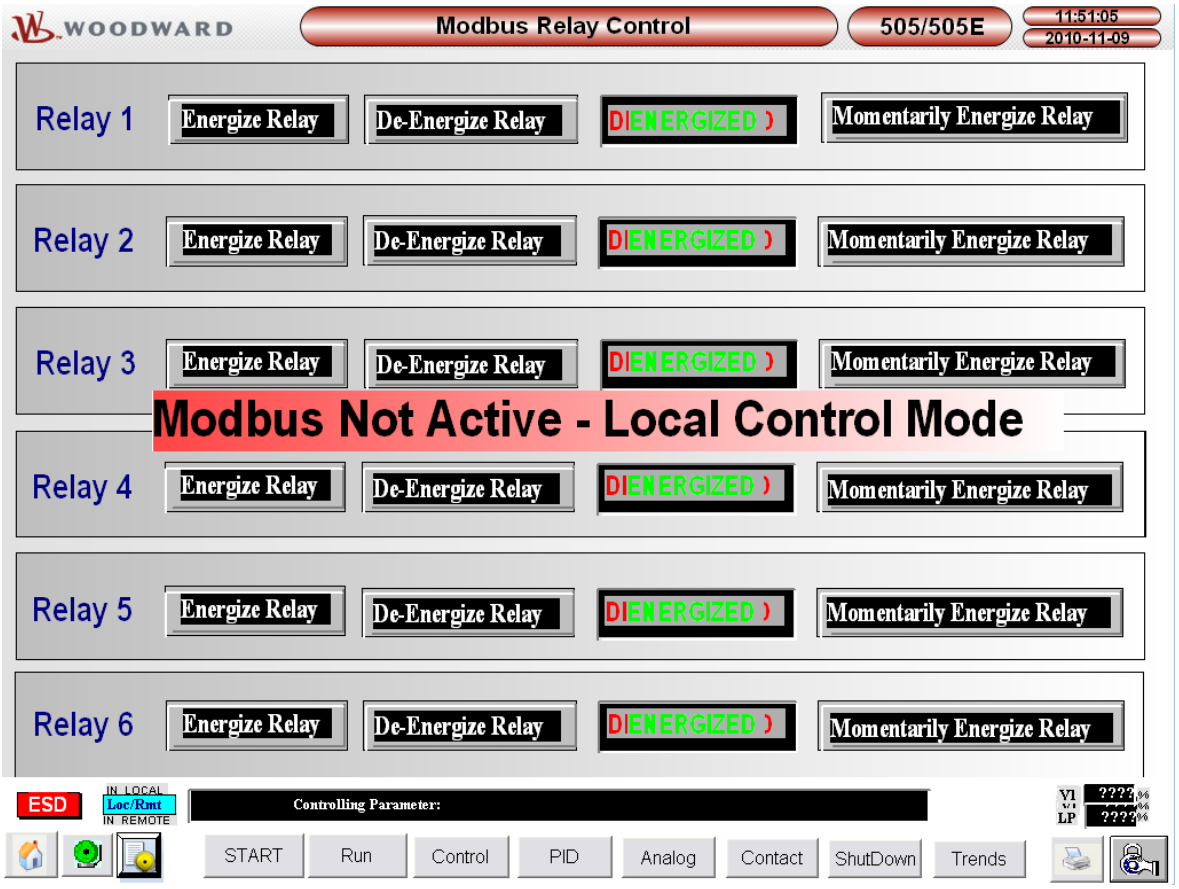
The configuration and status of the twelve configurable contact inputs is displayed on the left side of the screen. A CLOSED indication means that input of the 505 control is being held high or a logic 1. An OPEN indication means the input is being held low or a logic 0.

The configuration and status of the six configurable relays is displayed on the right side of the screen. A de-energized indication means the coil of the relay is de-energized and the contacts are in the de-energized state. An energized indication means the coil of the relay is energized and the contacts are in the energized state. Consult the 505 manual or the template on the back of the 505 control for more information on the relays of the 505 control.

The status of the two pre-configured contact outputs (shutdown and alarm), and the four pre-configured contact inputs (trip, reset, raise speed, and lower speed) are also displayed on this page.

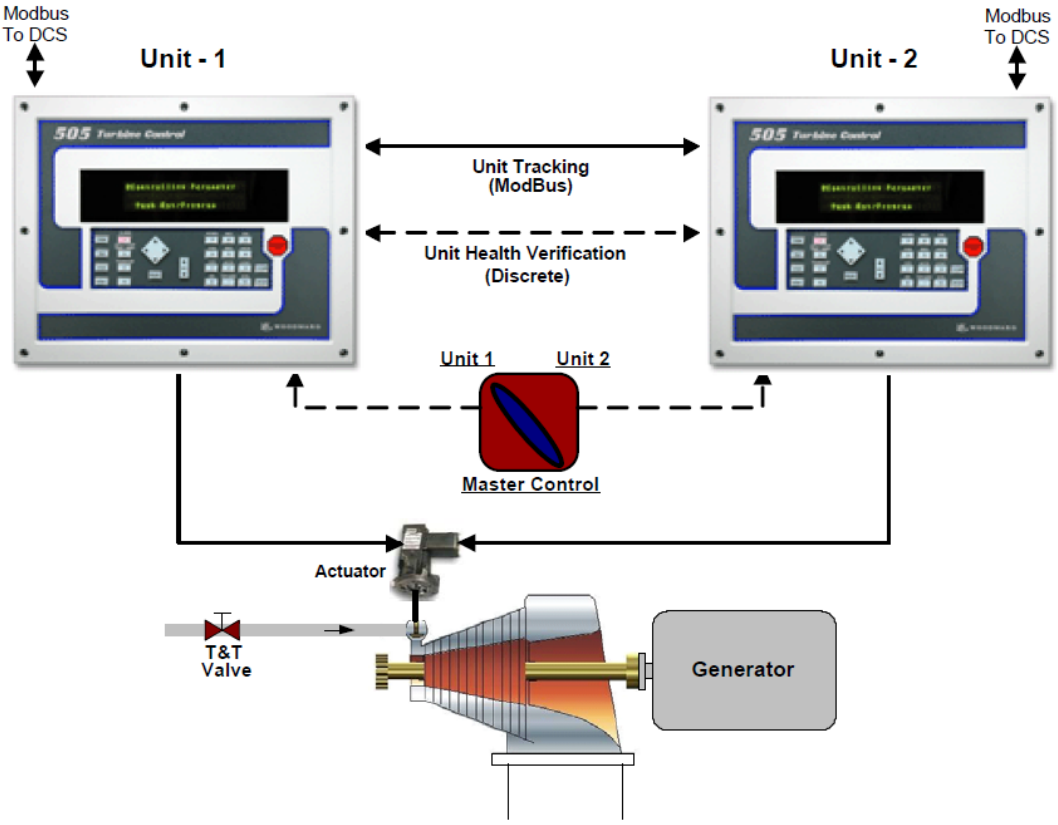
Modbus Controlled Relay Screen

If configured in the 505 control, this screen will appear and allow the operator to latch a Modbus controlled relay on or off or to momentarily energize the relay.



Redundant Control Screen

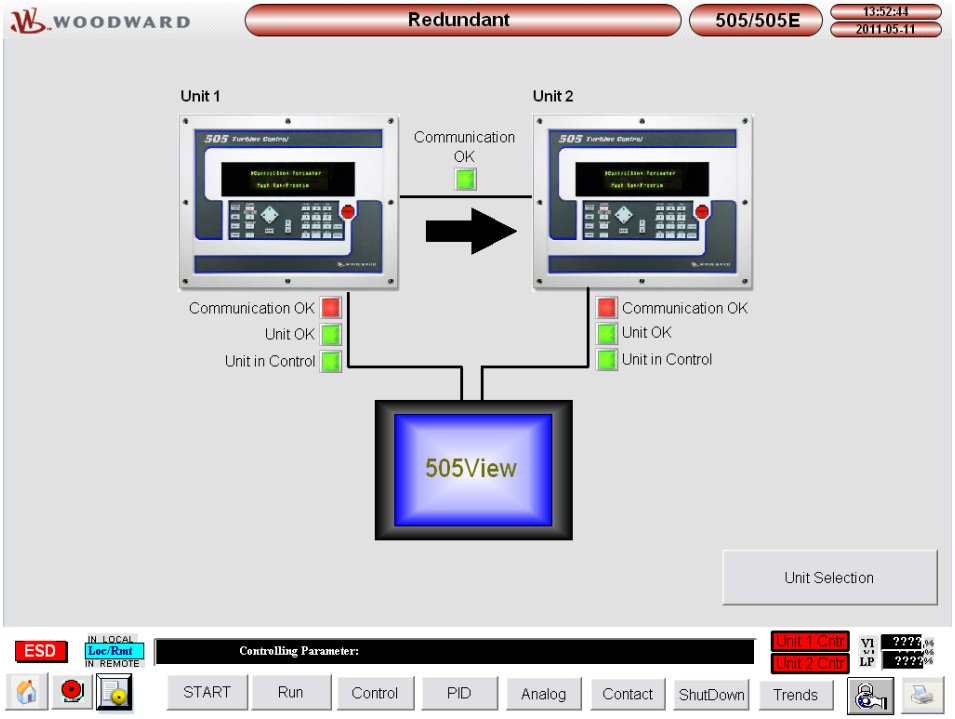
Optionally, two 505 controllers can be applied together and configured to function in a redundant manner to increase overall system reliability and availability. In such configurations, one 505 functions as the In-Control unit and controls all aspects of the turbine system. The second 505 functions as a Tracking unit and tracks the In-Control 505's operating parameters to ensure a smooth transfer if the In-Control 505 fails. Typical redundant 505 application configuration is shown below:



The statuses of each unit displayed on the redundant HMI page are the following:

- Communication with unit OK
- Unit OK / unit healthy
- Unit in control / tracking mode
- Communication between units OK

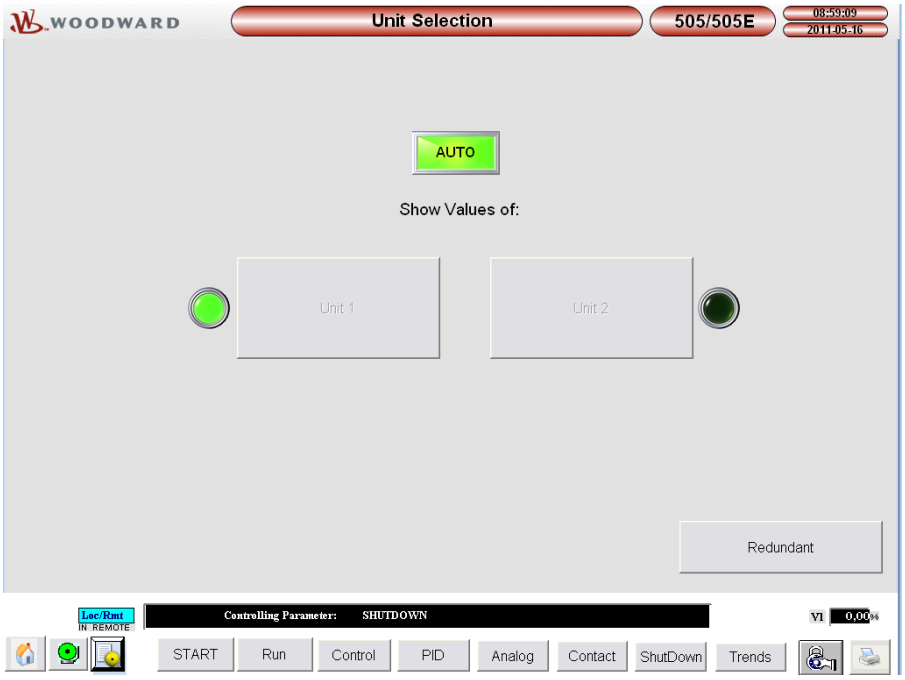
The figure below shows an example of the Redundant screen.



Unit Selection Screen

The HMI displays control data from the unit that is in control. If you would like to display data from the tracking unit, you may use the “Unit Selection” screen. In Auto mode, the unit is selected automatically, depending on which one is controlling the process. Manual mode gives the option to manually select which unit’s values are displayed on the HMI.

The following figure shows an example of the Unit Selection screen.

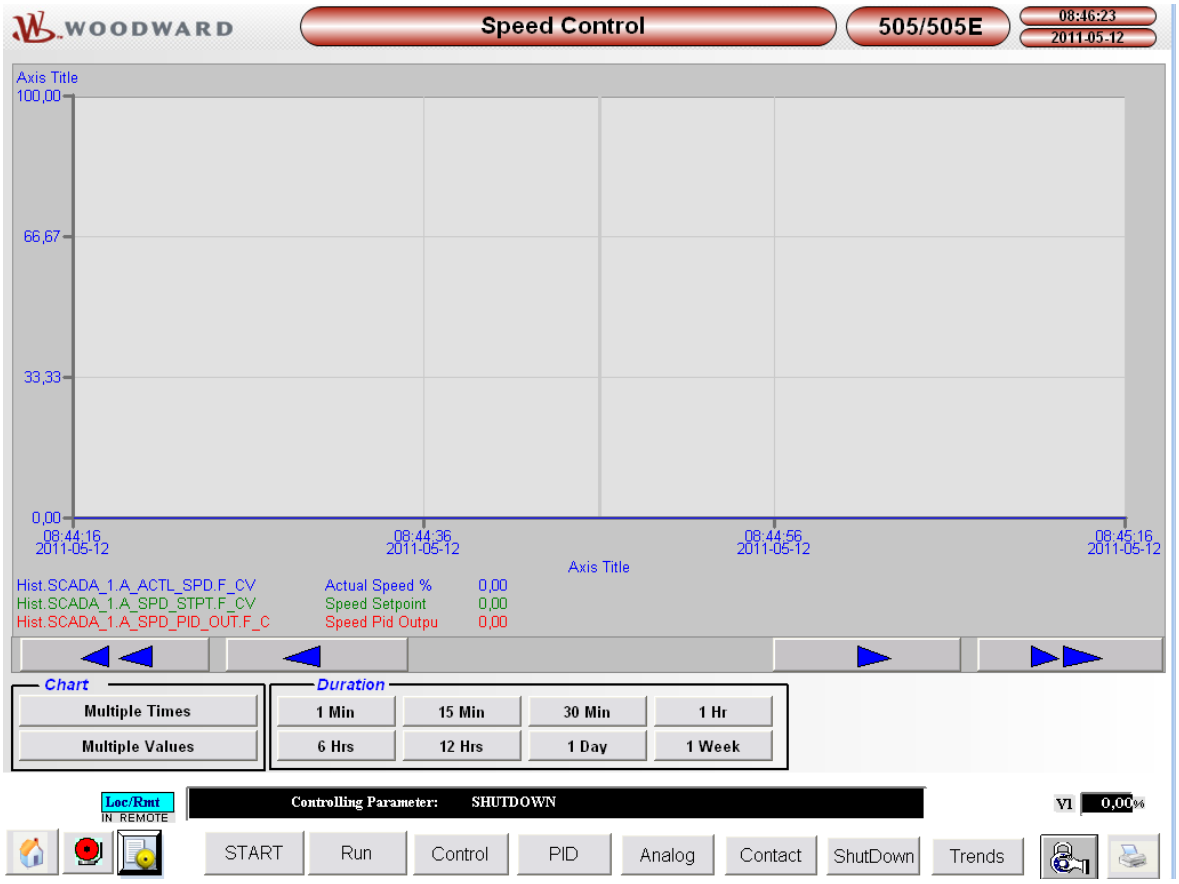


Trend Screen

This screen displays all the available trends.

Trending can be an important source of information for operating and maintaining equipment and processes. Not only is the immediate availability of real time trended information valuable for this purpose, but long-term historical data can provide valuable information also.

Below is an example of an historical trend screen:



Chapter 4.
iFIX Remote Access—WebSpace

Introduction

iFIX WebSpace extends your iFIX application viewing and control abilities right into a web browser. iFIX WebSpace enables full control and visualization capabilities via intranet or Internet system without the need to change or alter the iFIX application, and iFIX screens and functionality are delivered into a web browser without requiring any additional development effort.

Advantages

- Full-featured HMI/SCADA on the web
- Zero client configuration
- One-time SCADA server configuration
- No restrictions on secure containment of third-party controls
- No third-party software required

Easy to Extend: iFIX WebSpace extends your 505 HMI viewing and control abilities right into a web browser without compromising features, graphics or functionality.

Real Time Data Updates: The client is updated on changes directly from the SCADA so the user can react in real-time.

Multiple Sessions: Support for multi-tab browsers is provided.

Secure Containment: WebSpace accommodates third-party controls with the same ease as iFIX Workspace!

Animations: WebSpace supports iFIX displays with animations.

Control Elements; All control elements are operable in WebSpace and inherit the iFIX applications security setup.

Alarms and Warnings: View, acknowledge and silence just like a thick client.

Third-Party Apps: WebSpace launches third-party apps triggered from within your iFIX application.

To run the iFIX WebSpace when server is configured you only have to:

1. Start Internet Explorer.
2. In the Location box, type http:// followed by the server name and then iFIXWebSpace. For example:
   http://ServerName/iFIXWebSpace
   - A message box appears the first time you log on to this page.
3. Click Install. Trust the digitally signed ActiveX control.
4. When the Logon dialog appears, type the following information:
   - Your network user name in the User name field
   - Your network password in the Password field

Chapter 5.
iFIX Environment

Run Mode

The run-time environment is designed for operators. With this environment, operators can display pictures and monitor process. You can toggle between the two environments to test and run your pictures (Ctrl+W or  buttons).

Hardware Key

An unlimited hardware USB key is delivered with the project. iFIX runs in demo mode for two hours if the key is not installed or found.

1796-3075 - IFIX, UNLIMITED TAG R/T 5.1 STANDARD; USB KEY

iFIX System Configuration – SCU File

The SCU file contains all of the necessary information for iFIX to run. iFIX needs two things to successfully start up:

- An SCU file
- Local startup options

When you start iFIX, it looks for a file that tells it how to configure the local server. This file, known as the SCU file, contains specific information about programs and options unique to that particular server. iFIX only reads this file during startup.

The bottom of the SCU window contains a toolbox that includes all the tools you need to use the SCU.

These tools are accessed by clicking a button in the toolbox. The list below shows what each button does.

Path Configuration dialog box - Specify the location and names of your iFIX directories.

Alarm Configuration dialog box - Enable and configure alarm services.

Network Configuration dialog box - Configure network connections.

SCADA Configuration dialog box - Configure SCADA servers.

Task Configuration dialog box - Select tasks to run automatically in various start-up modes.

Security Configuration window - Configure security in your process environment.

SQL Accounts dialog box - Create a SQL login account and configure the SQL task.

Edit Alarm Area Database dialog box - Edit the Alarm Area Database.

To exit the SCU, select Exit from the File menu.

Chapter 6.
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.

Appendix A.
505 Modbus Lists

Introduction

See the appropriate 505, 505E (Extraction), or 505 Enhanced manual for information on the Modbus list used with each control.

505 Control Modbus Addresses

The Modbus communication ports in the 505 control are programmed for unique Modbus addresses. A complete listing of these addresses for your application is located at the end of this section. The Modbus address listing consists of Boolean Writes, Boolean Reads, Analog Reads, and Analog Writes. The Boolean reads and writes are also referred to as input and holding coils. The analog reads and writes are also referred to as input registers and holding registers.

All values that can be addressed by Modbus are considered to be discrete and numeric. The discrete values are a 1-bit binary, on or off value and the numeric values are 16-bit values. Discrete values are sometimes referred to as coils or digitals and numeric values are referred to as registers or analogs. All read/write registers are interpreted by the 505 assigned 16-bit integer values. Since Modbus can only handle integers, values that require a decimal point in the Modbus Master Device are multiplied by a scaling constant before being sent by 505.

Boolean Writes (Holding Coils)

Holding coils are logical signals that are both readable from and writable to the 505 control. An example of a Boolean write value would be Raise or Lower commands. A logical true denoted by the value 1 will cause the command listed in the description to be executed. For example, if a 1 is written to address 0:0010 and this corresponded to a speed raise command, the manual speed setpoint will increase until a 0 is written to address 0:0010. The 505 control supports function codes 1, 5, and 15. These correspond to reading selected holding coils, writing to a single holding coil, and writing to multiple holding coils, respectively.

Boolean Reads (Input Coils)

Input coils are logical signals that are readable from, but not writable to, the 505 control. An example of a Boolean read value would be a turbine trip status indication. The input coil will have the value 1 if the statement in the description column is true and a 0 if false.

Analog Reads (Input Registers)

Input registers are analog values that are readable from, but not writable to, the 505 control. An example of an analog read value would be turbine speed. The values of the input registers are stored internal to the control as floating point numbers representing engineering units (kPa or rpm). The values that are transmitted are integer values ranging from -32767 to +32767. Since Modbus can only handle integers, values that have a decimal point are multiplied by a constant before being sent by Modbus. For example, these input registers may be listed as the Modbus value `x100' or `x10' under the description heading to denote the value is multiplied by a scaling constant. This will allow transmission of decimal parts of a unit if this is necessary for better resolution.

Modbus List

For the Modbus list, see the appropriate manual for the control to be used with the HMI, i.e. 505, 505E, or 505 Enhanced.

Appendix B.
Advanced iFIX Features

Introduction

Some features are available in iFIX but require advanced user knowledge for configuration and setup.

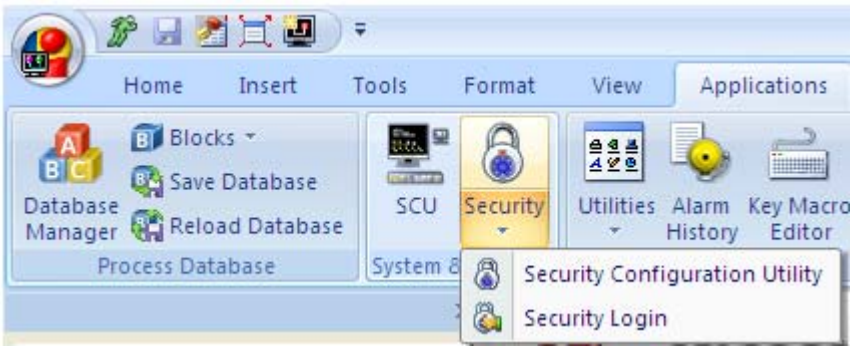
Security

At this point, iFIX is ready to run the 505View software. However, if security is desired, this section will cover the security setup.

The defaulted security mode is a "System Administrator." To change this and allow multiple user-levels of security, first launch or run iFIX. Then open the System Configuration program (SCU) and select the security icon. From the File menu (on top), select Save. Exit security and select Save again. Close the SCU program and shut down the iFIX application. Once the iFIX program is restarted, the security features will be activated.

Step-by-step instructions:

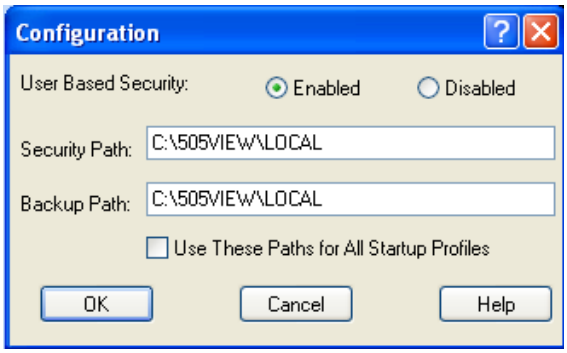
1. Once the 505View is running, exit the View mode by selecting Ctrl and 'W' simultaneously. This will bring you to the Draw mode.



2. Select the System Configuration under the Applications header heading. This launches the SCU program.

   The Security Configuration screen shown below appears.

3. Open the Security Configuration by clicking on the Key icon  . The following pop-up screen will appear; select OK to close it.



4. Save the security configuration by selecting File/Save.

5. Exit the Security Configuration mode by selecting File/Exit.

We appreciate your comments about the content of our publications.

Send comments to: icinfo@woodward.com

Please reference publication 26648.

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

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