Nalco 3D TRASAR®
Once Through Cooling Water Controller
Setup and Operating Manual

Operation Manual OM0202

Nalco Model Numbers:

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Version 3.0

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"Once Through" Controller Setup and Operations

Introduction

The Once Through Cooling Water Controller includes both a 3D TRASAR controller and a separate Once Through Cooling Water Controller. This manual covers only the setup and operation of the Once Through Cooling Water Controller, and those specific setting on the 3D TRASAR controller that must be set to insure the "Once Through" controller functions properly.

For complete instructions on the setup and use of the 3D TRASAR controller, including installation, piping, instrument calibration and software configuration, refer to the 3D TRASAR controller manual and the help file provided with the 3D TRASAR configurator software.

The touch screen display on the "Once Through" controller is the primary means for setting up and operating the "Once Through" system.

Initial Setup

When setting up the "Once Through" controller for the first time, setup should proceed through the following sequence of screens:

1. Product Selection
2. Water Chemistry
3. System Inputs
4. Scale Inputs
5. Scale Outputs
6. Pump Controls (1 to 4, depending on the number of treatment products specified in step 1.)
7. Temperature Offset
8. Set Clock
9. 3D TRASAR Controller Setup (via configurator software)

Following this sequence will minimize the chance of failing to provide all necessary information for the proper operation of the "Once Through" controller.

Main Panel

Below is a picture of the complete front panel of the "Nalco Once Through Controller" display, with the "Home" screen being displayed. The "Home" screen will appear in a few moments after the controller has been powered up. Below the panel display is a close up view of the actual "Home" screen display.

Panel Buttons

The button on the top left of the display screen (shown with a green square) is the “Home” screen button. Pressing this button will bring up the “Home” screen.

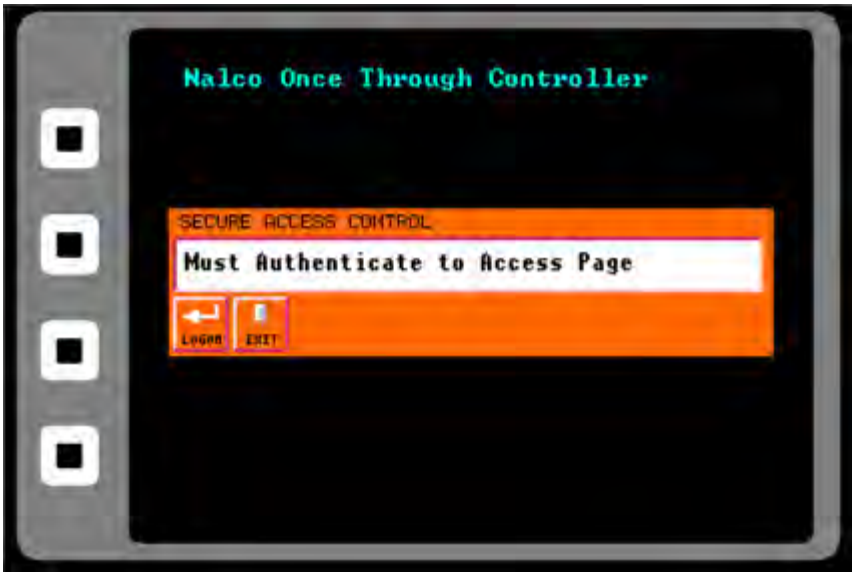
The MENU button (shown in blue) on the lower left of the display will bring up the “Main Menu” screen. Access to all the adjustments that can be made to the controller are reached by pressing one of the selection buttons on the “Main Menu” screen.

Screen Timeout

All of the display screens blanks out after 15 minutes of inactivity, to preserve the life of the screen backlights. To make the screen reappear, press one of the panel buttons.

User Login

To change of view setting for the controller, press the MENU button located on the lower left portion of the panel. When first bringing up this menu, you will be asked to log into the controller.



Press the LOGON button, and use the alphabetic keypad that appears to enter your username. The default username for the “Nalco Once Through Controller” is “nalco” (all in lower case). Press the ENTER key to have the controller accept the username.

After the username has been successfully entered, you will be prompted to enter the password for the controller. Press the SYMBOL key on the keypad to change the keypad from letters to numbers. The password for the “Once Through” controller is “3000”. Press the ENTER key to have the controller accept the password.

Once you have successfully logged in, the “Main Menu” screen will appear.

NOTE: After 15-minutes of inactivity, you will automatically be logged off the system, the screen will blank, and the “Home” screen will become the default screen. The next time you select the “Main Menu”, you will have to log in again.

Data Entry

For all of the screens shown below, touching one of the boxes outlined in grey containing numerical values will allow you to change the value in the box. The first touch of the box will turn the background of the data white, indicating that the box has been selected. The second touch will open up a numeric keypad, where the existing value can be changed. After changing the value on the keypad, press the ENTER key to accept the change. Pressing the EXIT key once cancels the change.

The user cannot directly change any values not displayed in a box outlined in gray.

Home Screen

The items which may appear on the “Home” screen will change based on the selections made on other screens. For example, if ‘Control Corrosion?’ has not been selected on the “Product Selection” screen, the ‘Corrosion Rate’ item will not appear on this screen. Similarly, if less than four pumps were selected on the “Product Selection” screen, fewer than four pumps will appear on this page.

The ‘Alarm’ indication in the upper right will only appear if the timeout alarms for one or more pumps have been configured (on the individual pump setup screens), and the alarm has actually been activated. When the button is being displayed, touching it will bring up the “Alarm” screen, where any active pump timeout alarms can be viewed and, if desired, cleared.

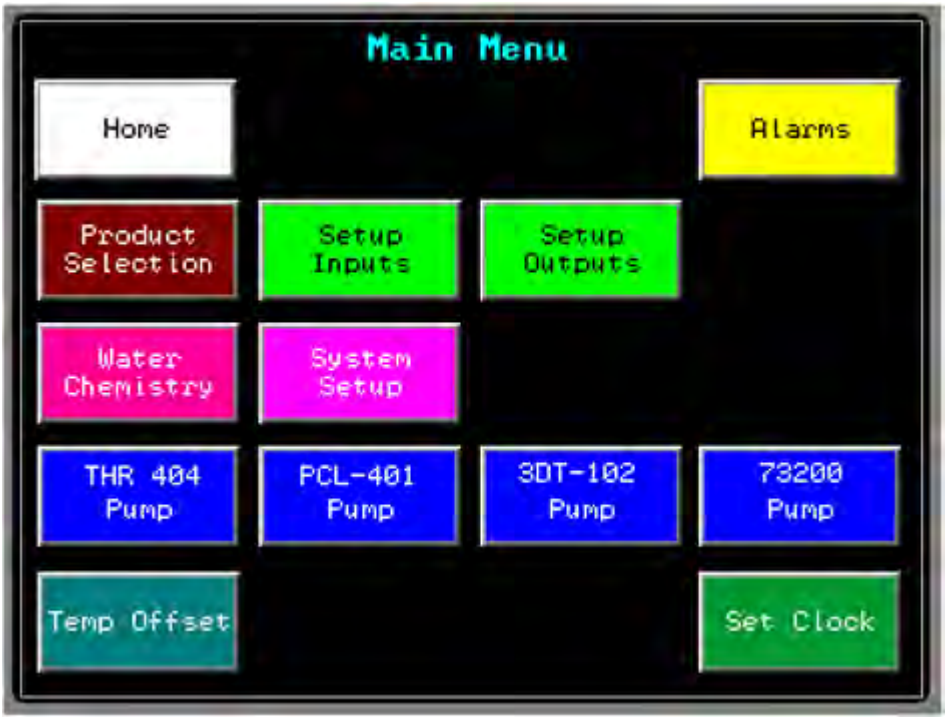
The ‘Bleach On’ indication will only appear if an external signal has been wired into the controller to signal when an external bleach pump is operating.

The green squares for each pump will show either an “A”, when the pump is in auto mode, or an “M”, when the pump is in manual mode.

Main Menu

The choices available on the “Main Menu” screen, like the items appearing on the “Home” screen, will change, based on selections made on the “Product Selection” screen. For example, if only two treatment products are chosen, the two pump buttons on the right side of the screen will not appear. The pump labels will change based on the treatment product selected.

All of the non-pump selection buttons will always be visible.



The ‘Home’ button returns to the “Home” screen described above, the other selections are described below.

Product Selection

The “Product Selection” screen is where the choices for the type of control the controller will perform is determined, as well as the treatment products that will be used.

Pressing the ‘Control Scale?’ and/or ‘Control Corrosion? buttons will toggle YES and NO selections that determine whether or not the scale control and corrosion control feed algorithms run. If you wish to control for one of both of these factors, make sure you set the toggle buttons to YES.

Choose the number of treatment products you wish the “Once Through” controller to control by pressing the pressing the ‘Number of Treatment Products’ button. Each press of the button will increment the number of products, up to a maximum of 4, at which time an additional press of the button will return the value to one.

The four product selection buttons that appear on the bottom portion of the screen will appear and disappear depending on the number of treatment product selected. Each press of one of these buttons will cause the product name displayed on the button face to change. Keep pressing the button until the desired product name appears. If the end of the list is reached, the list will start back at the beginning.

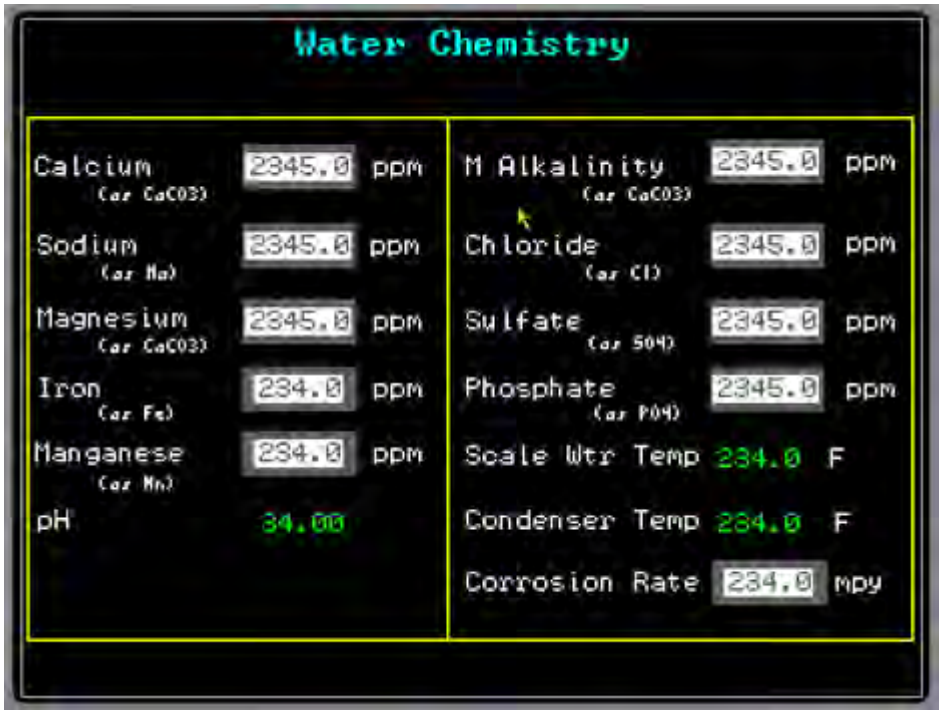
NOTE: While it is possible to choose the same product on more than one button, this will result in incorrect product dosage calculations. Each button should have a unique product selection.

After making the desired selections here, press the MENU button to return to the “Main Menu”, or press the HOME button to return to the “Home” screen.

Water Chemistry

The values entered on the “Water Chemistry” screen are used to calculate a Calcium Saturation Index, a Langelier Index, a corrosion rate, as well as the feed rates for all of the treatment products selected on the Product Selection screen.

If a value is entered for Iron and/or Manganese, an additional algorithm will run that will calculate the polymer required for performing FE/MN stabilization.



Note that different water chemistry values are entered using different units:

- Calcium as $CaCO_3$
- Sodium as Na
- Magnesium as $CaCO_3$
- Iron as Fe
- Manganese as Mn
- N Alkalinity as $CaCO_3$
- Chloride as Cl
- Sulfate as SO_4
- Phosphate as PO_4
- Corrosion Rate as mpy

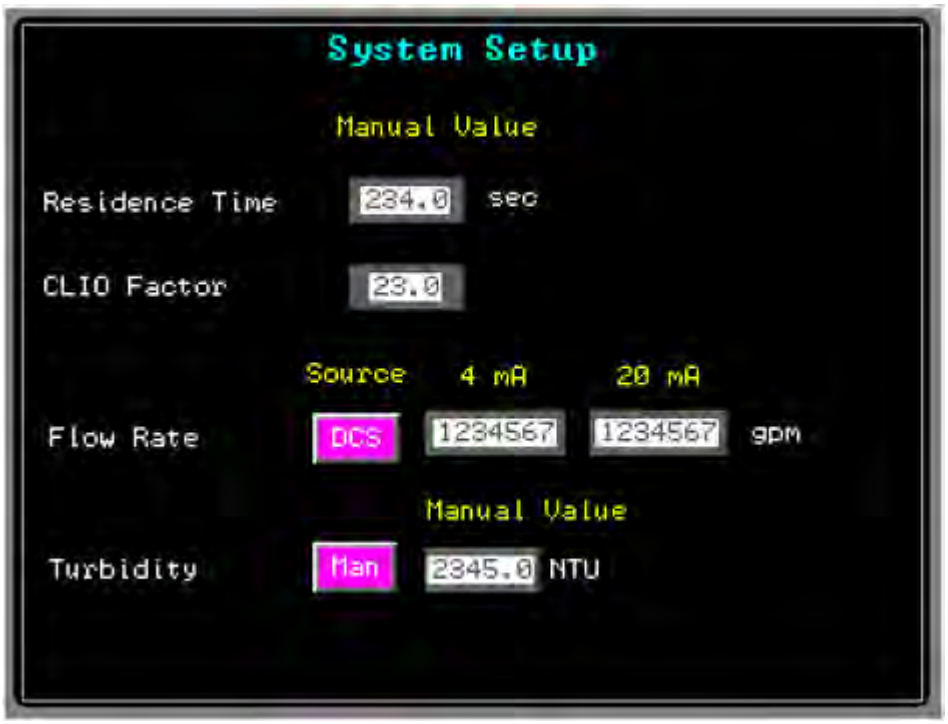
Any time values for the parameters here change, based on tests run on water samples, this page should be updated.

The more accurate the values are that are entered here, the better the “Once Through” controller will perform in feeding products to control scale, corrosion, silt, and Fe/Mn stabilization.

System Setup

In order for the controller to correctly calculate the required pump feed rates and control the treatment pump speed properly, the system Residence Time and system Flow Rate values *must* be entered on this screen.

If applicable, the ‘CLIO Factor’ should be entered, to allow the system to account for the effect it has on required treatment dosages.



‘Flow Rate’ and ‘Turbidity’ values may either be entered manually or scaled from a 4-20 mA signal provided to the controller from an external source. Pressing the ‘Source’ buttons for these two items will toggle between “Man” (manual) and DCS as the source for these. If external signals are being provided, 1 and 20 mA scaling factors must be provided so that the signals can be interpreted properly.

Refer to the section “Wiring Diagram for 4-20 mA and Discrete I/O” (page 23) for details on how to wire in external flow and/or turbidity signals.

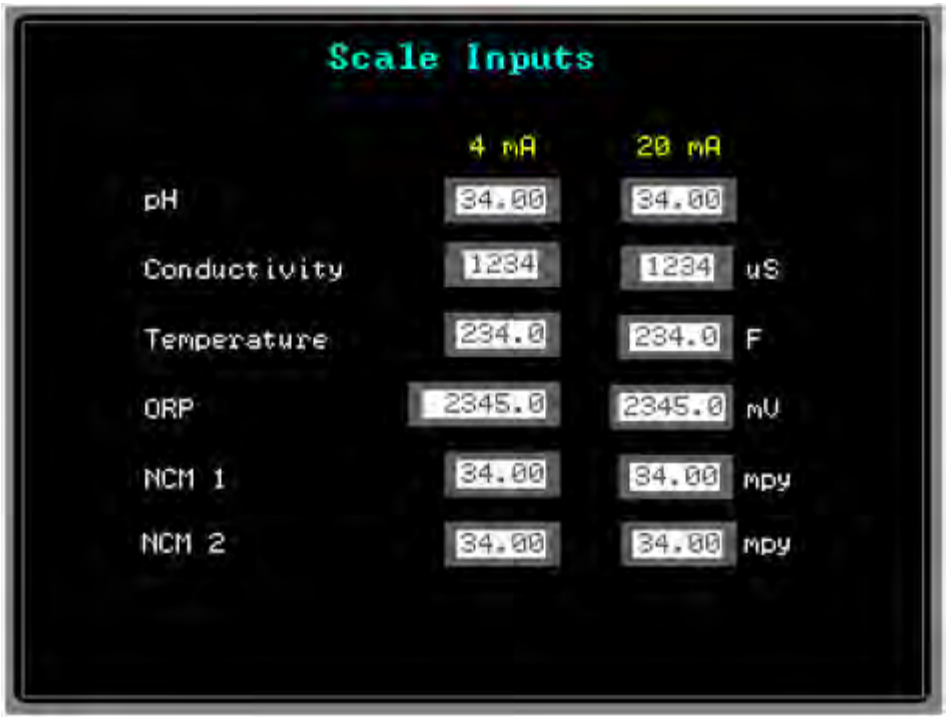
Scale Inputs

The Scale Inputs screen is used to adjust signal scaling for the input values of the controller so that incoming signals are interpreted correctly. The 3D TRASAR controller is sending a series of six values to the “Once Through” controller.

- pH
- Conductivity
- Sample Temperature
- ORP
- NCM 1 Corrosion
- NCM 2 Corrosion

These signals are sent as 4-20 mA analog currents. The “Once Through” controller must be told what value is represented by 4 mA and by 20 mA so that it can linearly scale the signal to the correct value.

NOTE: The scaling factors entered on this screen must be the same as those entered on the “4-20 mA Outputs” screen in the 3D TRASAR configurator program.

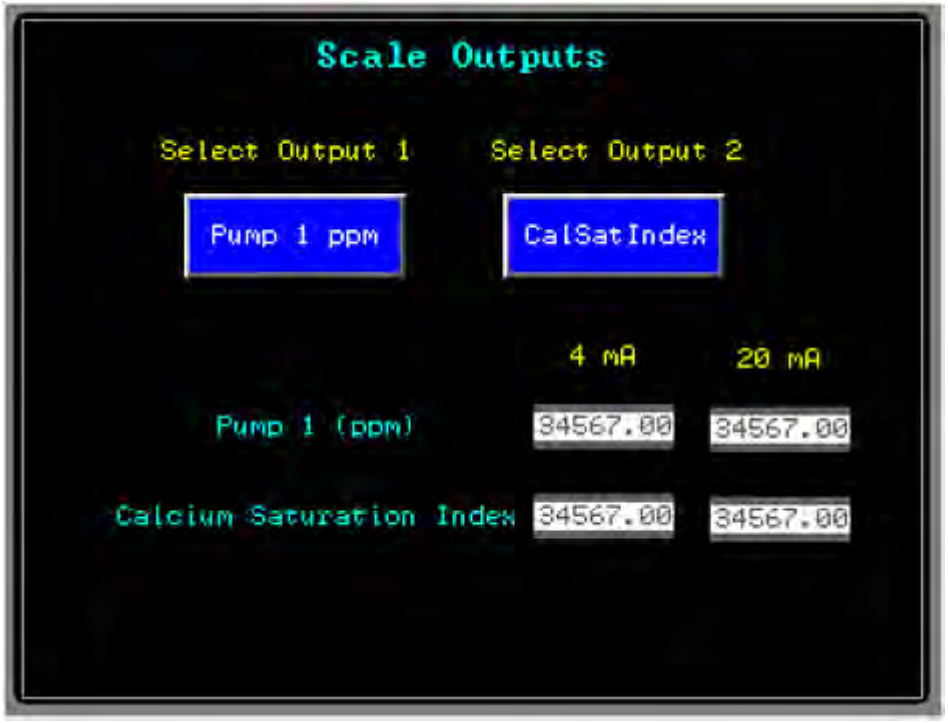


After making the required entries here, press the MENU button to return to the “Main Menu”, or the HOME button to return to the “Home” screen.

Scale Outputs

The “Once Through” controller is capable of sending up to two 4-20 mA signals back to the 3D TRASAR controller for data logging purposes. This screen allows you to select the values to be sent. The possible choices are:

- Pump 1 feed ppm
- Pump 2 feed ppm
- Pump 3 feed ppm
- Pump 4 feed ppm
- Calcium Saturation Index
- Langelier Index



NOTE: It is possible to choose the same value on both buttons. Under normal circumstances, this should never be done, but if you wish to send a particular signal to both the 3D TRASAR unit for logging and to a customer DCS or chart recorder, this is one way to do it without the need for a 4-20 mA signal splitter. (It could also be done through the 3D TRASAR unit by means of the “4-20 mA Outputs” screen in the 3D TRASAR configurator program.

Scale Pumps

Each treatment product specified will have its own pump control setup screen. These screens allow the user to select the pump mode, set the pumping rate when the pump is in Manual mode, and specify the maximum pumping rate.

When the pump is in MANUAL mode, it will feed at the constant rate, determined by the "Manual Pump Output" setting. When in AUTO mode, the pump will modulate its feed based on the water chemistry and dosage calculations the controller makes.

The 'Pump Output at 100%' setting tells the controller the feed rate of the pump when it is running at 100% output. This is normally determined by performing a draw down test on the pump. The controller assumes that the pump will be off when the output signal is at 0% and will start pumping as soon as the value goes above 0%. A linear scaling is done between 0 ml/min feed at 0% output and the 'Pump Output at 100%' feed rate at 100% output. If the pump is not set up this way, the dosage control will not be able to feed the correct amount of treatment product.

NOTE: If the pump stroke rate is changed, a new draw down test should be performed on the pump, so the feed rate calculations stay accurate.

The 'Alarm On Time' and 'Alarm On Percent' settings are used to setup a timeout alarm for each pump. If the 'Alarm On Time' value is set to zero (0), the timeout alarm for the pump will be disabled.

No timeout alarm will ever occur if the pump is in Manual mode.

When both values are present, and the pump has been pumping at more than the ‘Alarm On Percent’ setting for more minutes than the ‘Alarm On Time’ setting, the alarm will be tripped. If the alarm is on for any of the pumps, the alarm indicator on the “Home” screen will be visible.

If the alarm is on and the pump output falls below the ‘Alarm On Percent’, the alarm will automatically clear by itself. To clear the alarm manually, press the appropriate ‘Clear Alarm’ button on the “Pump Timeout Alarms” screen (see below).

Pump Timeout Alarms

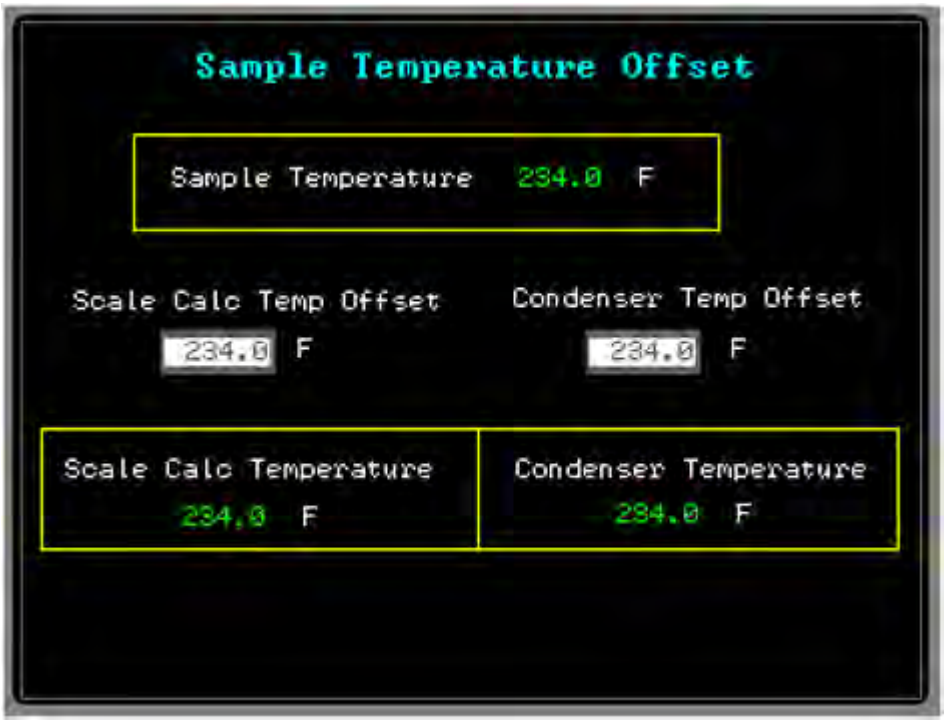
The screen below shows which, if any, pump time out alarms have been tripped. If no pumps are in alarm, this screen will appear blank,

If any pumps are in alarm, a red box will appear with the name of the pump in alarm showing.

Pressing the “Clear Alarm” button will reset the alarm for that pump, set the alarm tier back to zero, and turn off the discrete signal being sent to the discrete output terminal on the controller. (Refer to the “Wiring Diagram for 4-20mA and Discrete I/O” Section on page 23 for details.)

Temp Offset

The “Once Through” controller receives one sample temperature from the 3D TRASAR controller. In some cases, the sample temperature will not be the same as the actual water temperature at the location where scale formation is being measured nor at the condenser where the corrosion rate is being measured.

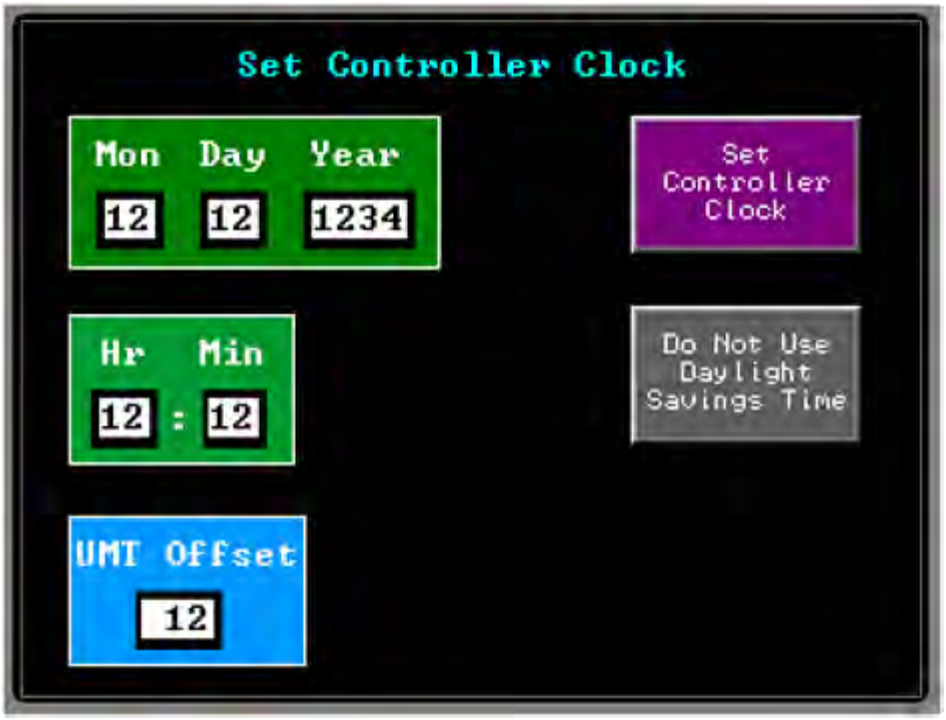


The “Sample Temperature Offset” allows you to independently adjust the two temperatures used in the control equations from the single temperature signal that the controller receives. The ‘Offset’ values entered will be added (or subtracted) from the ‘Sample Temperature’ to arrive at the actual temperature values used in the scale and corrosion calculations.

NOTE: An offset is not required. An offset value set at zero means the actual sample temperature will be used in the corresponding calculation.

Set Clock

The “Set Controller Clock” screen is used to adjust the time on the “Once Through” controller. Note that this time is only used for the internal data log kept by the controller. It does not affect the data log kept on the 3D TRASAR controller that is sent to the 3D TRASAR website, nor does it affect the time stamp on the alarm emails that the 3D TRASAR controller sends.



3D TRASAR Controller Configurator Setup

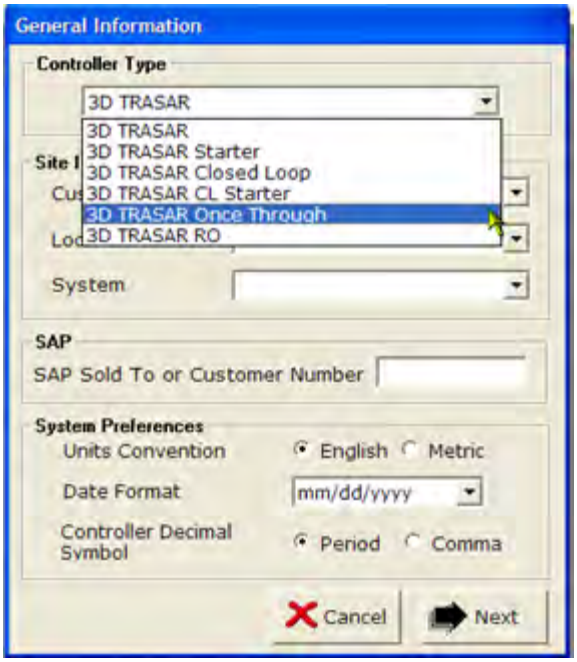
Introduction

Follow the normal configuration procedure for a new 3D TRASAR controller, with the exception of those items detailed below, which are specific to the 3D TRASAR controller used in a “Once Through” system.

See the help file for the 3D TRASAR configurator software for detailed information on how to use the configurator software and the 3D TRASAR Installation and User Manual for instruction on the installation, setup, and operation of the 3D TRASAR controller.

3D TRASAR Configurator Controller Model

When initially configuring the 3D TRASAR controller, be sure to select ‘3D TRASAR Once Through’ as the controller model on the on the “General Information” screen.

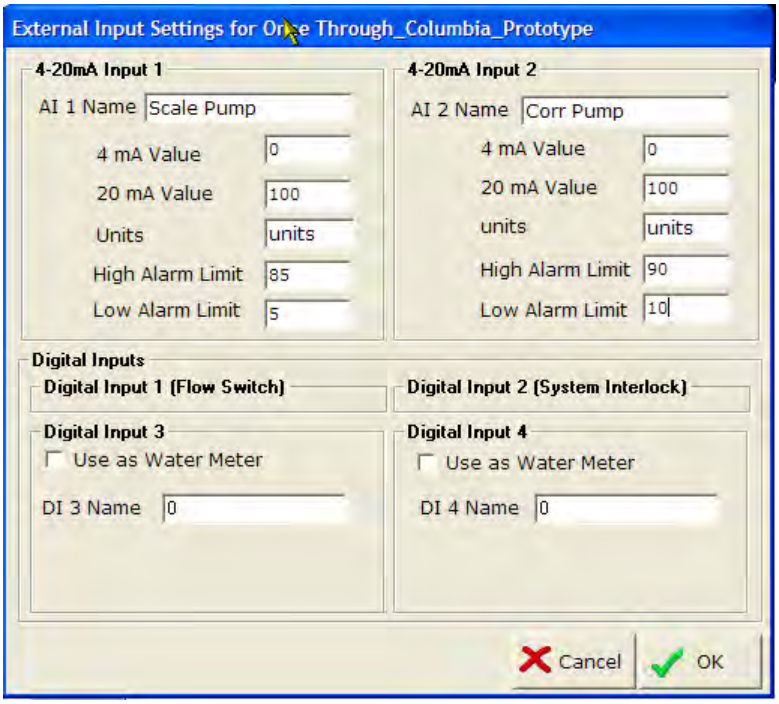


This will insure that data sent to the 3D TRASAR website is handled properly.

3D TRASAR Configurator I/O Scaling

The “Once Through” controller send two 4-20 mA analog output signals to the 3D TRASAR controller for logging and alarming and receives six 4-20 mA input signals from the 3D TRASAR controller for use in its pump feed rate calculations.

The 3D TRASAR configurator software is used to specify the setting for these values inside the 3D TRASAR controller.

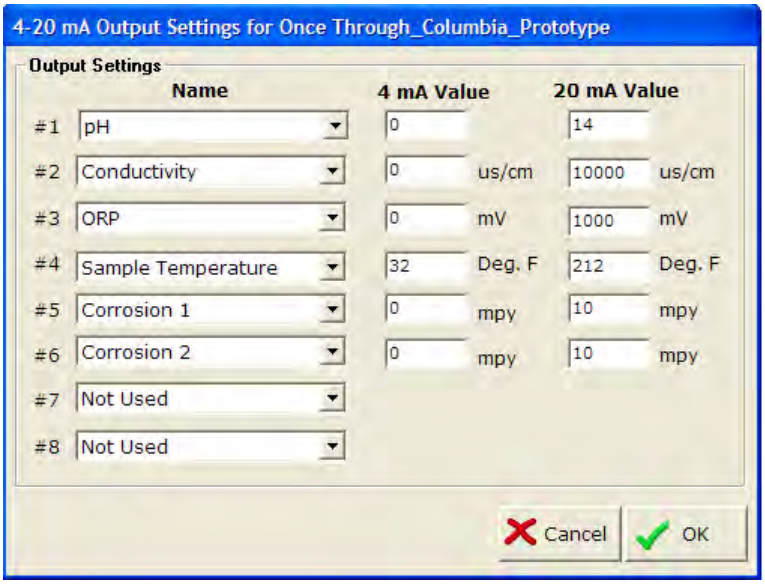


The External Input Settings form in the configurator software is used to configure the measurement signals being set from the “Once Through” controller to the 3D TRASAR unit. The 4-20 mA Input 1 signal is always set to the ‘Scale Pump’ feed rate, while the 4-20 mA Input 2 signal is always set to the corrosion (‘Corr Pump’) feed rate.

The ‘4 mA Value’ and ‘20 mA Value’ scaling factors used on the form *must* match those entered in the Outputs section of the “Once Through” controller’s IO Scaling screen. The units should be set to “pct”. The ‘High Alarm Limit’ and the ‘Low Alarm Limit’ are the pump rate values above or below which the 3D TRASAR controller will generate an alarm. Enter a blank value in these boxes if you do not wish to generate alarms based on pump outputs.

The “Once Through” controller does not use the ‘Digital Inputs’

The “4-20 mA Output Settings for Once Through_Columbia_Prototype” form in the configurator is used to configure the measurement signals being set from the 3D TRASAR unit to the “Once Through” controller.



Set the output type by selecting it from the drop down lists next to each output number. The type of signal to be sent on each channel is fixed and must be set as follows for the “Once Through” controller to operate properly:

Channel 1:	pH
Channel 2:	Conductivity
Channel 3:	ORP
Channel 4:	Sample Temperature
Channel 5:	Corrosion 1
Channel 6:	Corrosion 2
Channel 7:	Not Used
Channel 8:	Not Used

The 4 and 20 mA scaling factors used on this form *must* match those entered in the Inputs section and of “Once Through” controllers I/O scaling screen.

Electrical Connections

Wiring Diagram for 4-20 mA and Discrete I/O

The “Once Through” controller has provisions for bringing in signals from external devices, as well as sending discrete (alarm) signals to an external device such as a DCS or alarm annunciator. The wiring diagrams below illustrate how external analog and discrete signals can be wired.

Certain terminals on the controller are dedicated to specific tanks. The input and output signals to and from the 3D TRASAR controller are pre-wired as follows:

AI 1: pH	Terminal 9
AI 2: Conductivity	Terminal 39
AI 3: ORP	Terminal 10
AI 4: Sample Temperature	Terminal 40
AI 5: Corrosion 1	Terminal 11
AI 6: Corrosion 2	Terminal 41

If external flow and/or turbidity signals are available, they should be wired as follows:

AI 7: Turbidity	Terminal 12
AI 8: Flow	Terminal 42

The analog outputs being sent to the 3D TRASAR unit are wired as follows:

AO 1: User Selected	Terminal 13
AO 2: User Selected	Terminal 43

Terminals have been provided which allow up to four feed pumps to be controlled by the “Once Through” system. The terminal connections are dedicated to specific pumps, depending on the system configuration. Control signals should be wired to the pump terminals as follows:

AO 1: First Product Feed Pump
AO 2: Second Product Feed Pump
AO 3: Third Product Feed Pump
AO 4: Fourth Control Pump

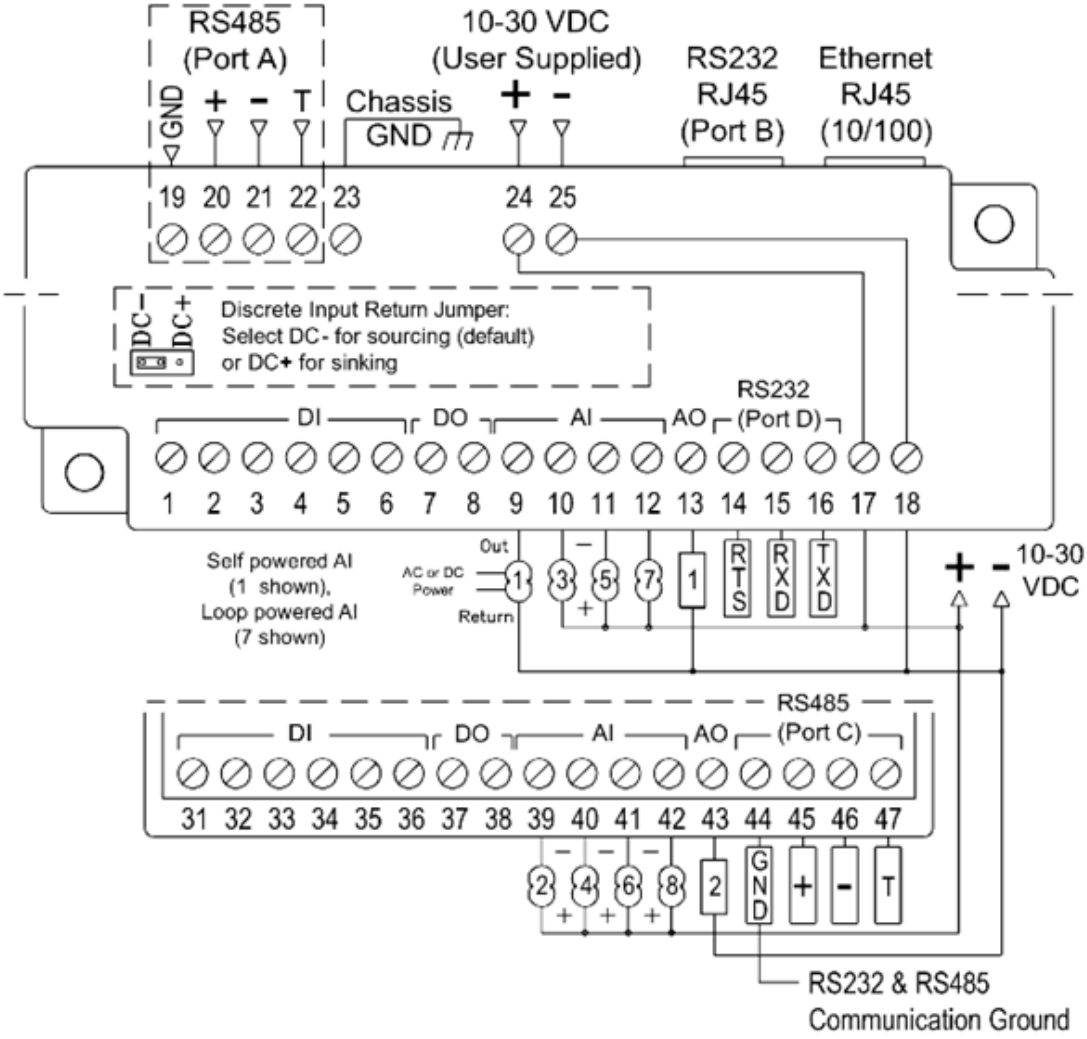
NOTE: The “Once Through” controller *does not* provide the pump power, only the speed control signal.

If an external Bleach Pump signal is available, it should be connected as foolows:

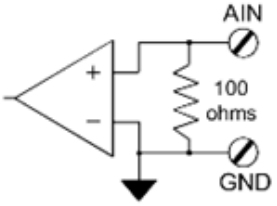
DO 1: Pump 1 Timeout Alarm	Terminal 1

Four discrete outputs can be used to signal timeout alarms for up to four treatment pumps. If you wish to sue these signals, they should be wired as follows:

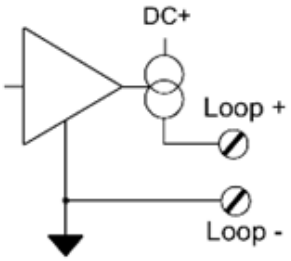
DO 1:	Pump 1 Timeout Alarm	Terminal 7
DO 2:	Pump 2 Timeout Alarm	Terminal 37
DO 3:	Pump 3 Timeout Alarm	Terminal 8
DO 4:	Pump 4 Timeout Alarm	Terminal 38

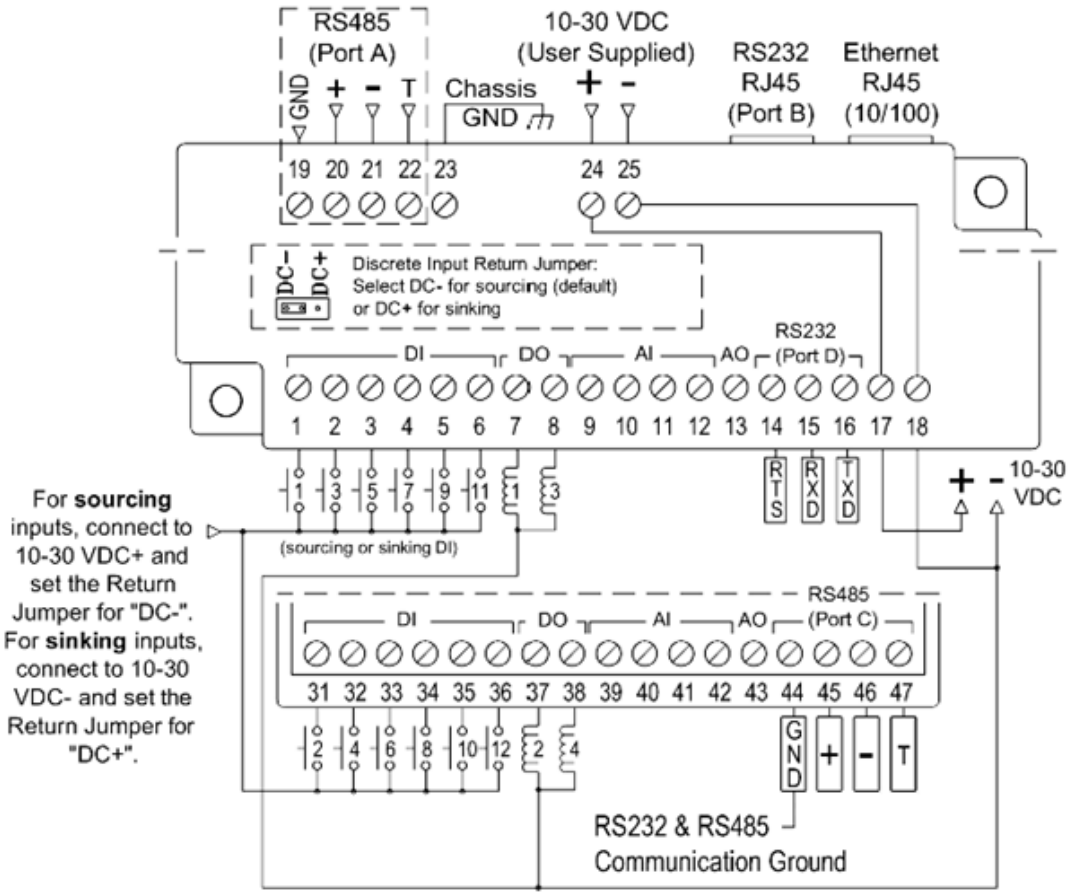


Equivalent Analog (4-20 mA) Input Circuit

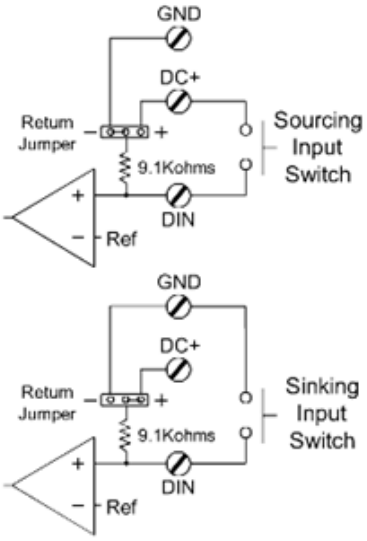


Equivalent Analog (4-20 mA) Output Circuit

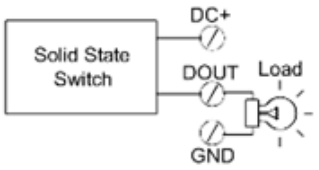




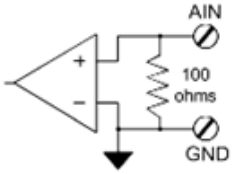
Equivalent DC Input Circuits



Equivalent DC Output Circuit
(sourcing only)



Equivalent Analog (4-20 mA) Input Circuit



Downloading Sixnet Controller Data

The Sixnet controller along with the 3D TRASAR controller is housed in the “Once Through” controller box. The separate internal data log in the Sixnet controller is sent directly to the 3D TRASAR website. This log is primarily designed to capture data for diagnostic and troubleshooting purposes, though the data can also be used for other purposes if desired.

NOTE: This data file is **not** the same as the one that is coolected by the 3D TRASAR controller and sent to the 3D TRASAR website. This data log records information every 30 minutes and will hold approximately 90 days worth of data.

Data items logged consist of:

- Date and Timestamp
- Residence Time
- Flow Rate
- Calcium
- Sodium
- Magnesium
- Manganese
- Iron
- M Alkalinity
- Sulfate
- Chloride
- Phosphate
- Turbidity
- CLIO Factor
- Langelier Index
- Calcite Saturation Level
- Corrosion Rate
- Pump 1 Product Feed Rate (ml/min)
- Pump 2 Product Feed Rate (ml/min)
- Pump 3 Product Feed Rate (ml/min)
- Pump 4 Product Feed Rate (ml/min)

The data log file can be downloaded by using special software and a crossover Ethernet cable.

The following software application will be required to download the data file from the “Once Through” controller.

- Sixnet IO Toolkit, verson 3.1 with SP1 or later

This software may be obtained via SMS by obtaining and filling out a Global Software Request form from the Nalco Global Software Applications website. Note that the software is classified as restricted, which means that presenting a business justification and obtaining a manager’s approval is necessary to acquire the software.

Use “Need to download data from Sixnet controller in the 3D TRASAR Once Through controller” as the business need for the request.

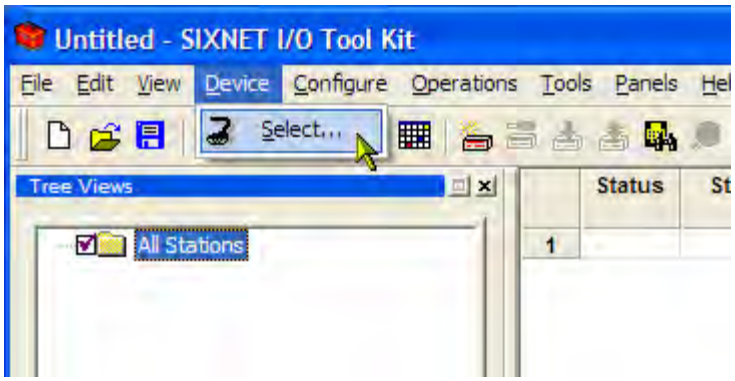
Downloading the Sixnet Data File for the First Time

NOTE: The following describes the steps necessary to download the data file for the first time. After the first time, a number of the steps described will no longer be necessary.

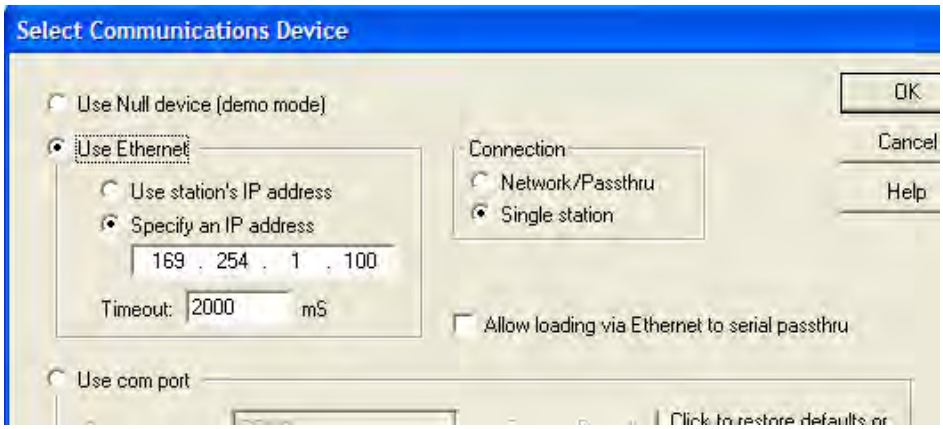
Once the software has been installed, the data can be downloaded as follows:

1. Connect the Ethernet crossover cable from the Ethernet port on the PC to the Ethernet port on the top of the Sixnet controller. Note that the Ethernet port is on the far right side of the controller. Be sure you do not plug the cable into the RS-232 Port B right next to it, which also uses an RJ-45 connector.

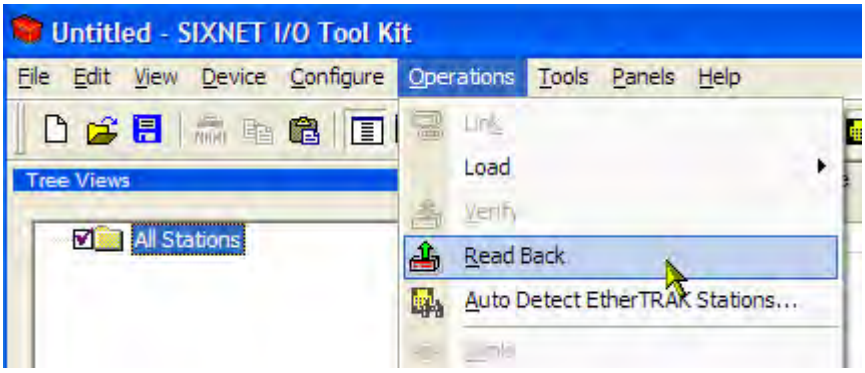
2. Start up the Sixnet I/O Toolkit software; and from the main menu, choose Device-Select…



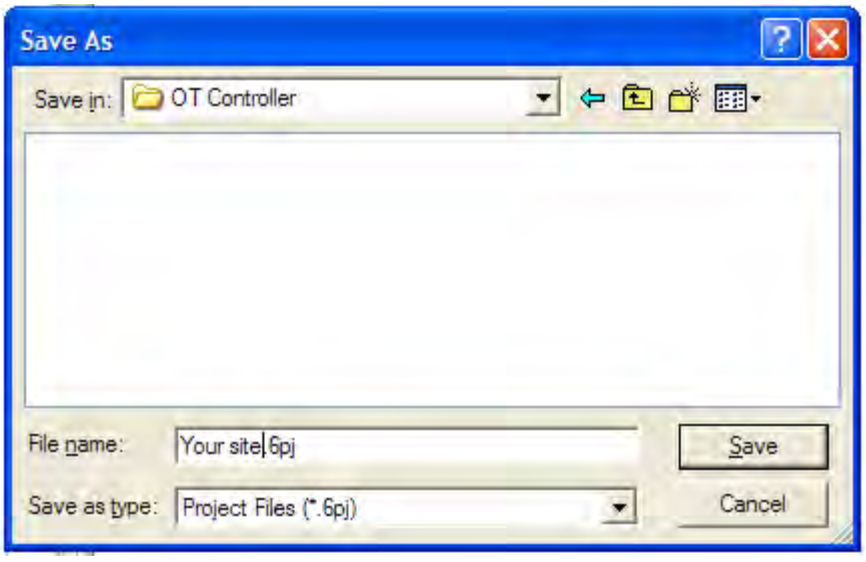
3. In the dialog box that appears, select “Use Ethernet”, “Specify an IP address” and “Single station”, with an address of 169.254.1.100, then click OK.



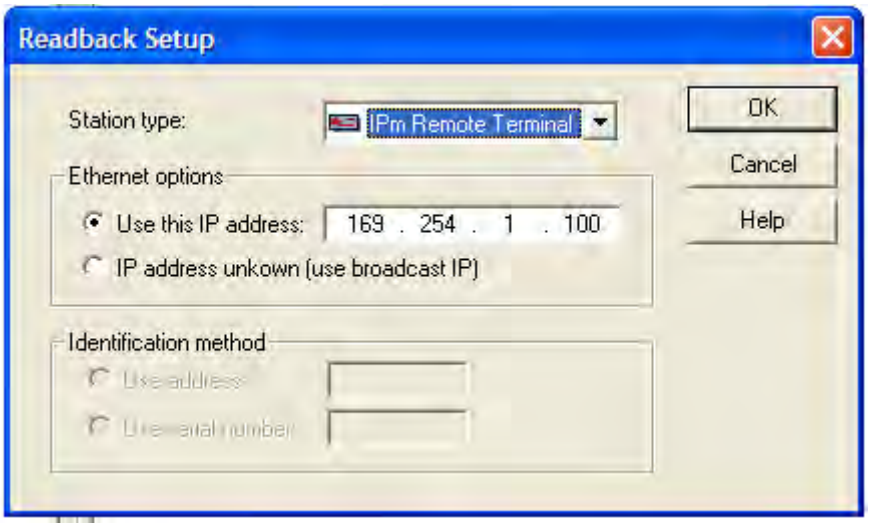
4. From the main menu, select Operation–Read Back…



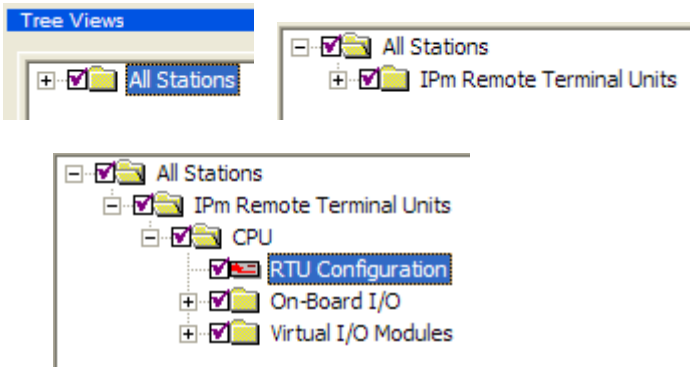
5. Select a location to save the project file you will be reading from the controller. It is recommended that you use a descriptive folder name. You can also use this folder to save the data files you will download. Click Save to accept.



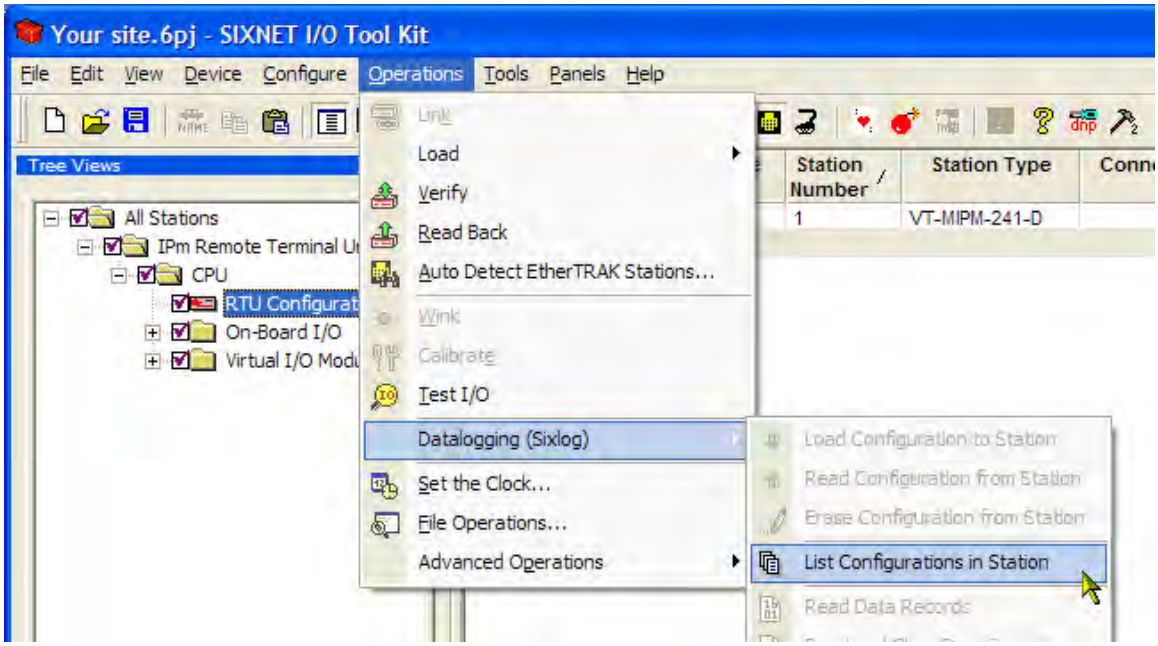
6. In the Readback Setup dialog box which appears, choose “IPm Remote Terminal” for the Station Type, and “Use this IP address” with an IP address of 169.254.1.100 in the Ethernet Options. Click OK to accept and start the file read back.



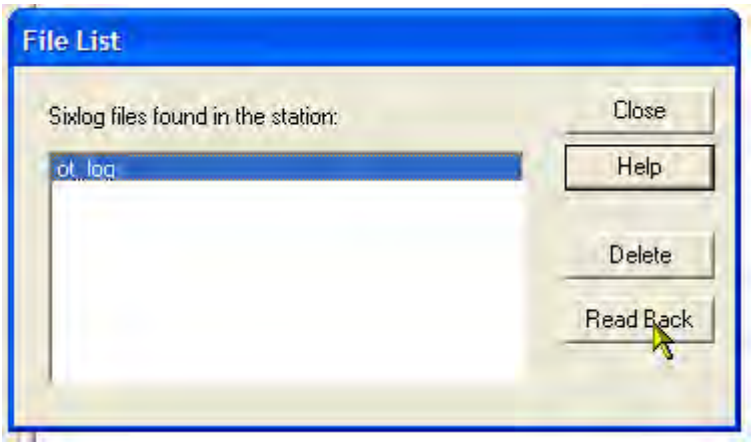
7. After the file has been read back, you will notice that the name you specified in Step 5 now appears in the program title bar. In the Tree View, click on the “+” until “RTU Configuration” is visible, then click on it to highlight.



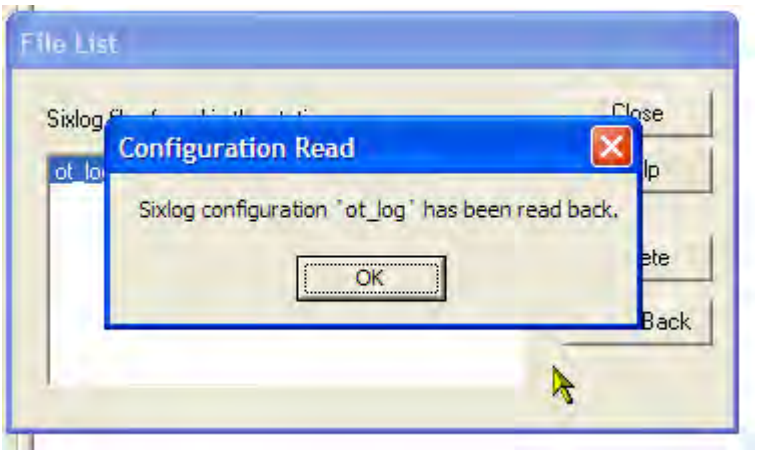
8. From the main menu, select Operations-Datalogging (Sixlog) – List Configurations in Station.



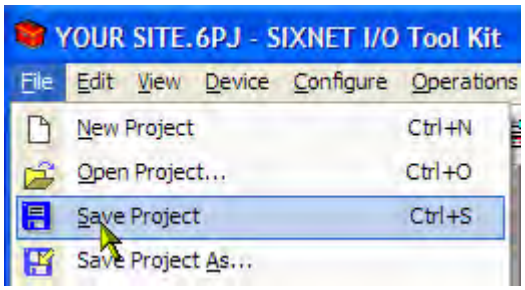
9. A dialog box will appear listing the data files in the controller. Normally, only one, “ot_log”, will appear. Click on it to select it, (it will appear highlighted) and then click on “Read Back”.



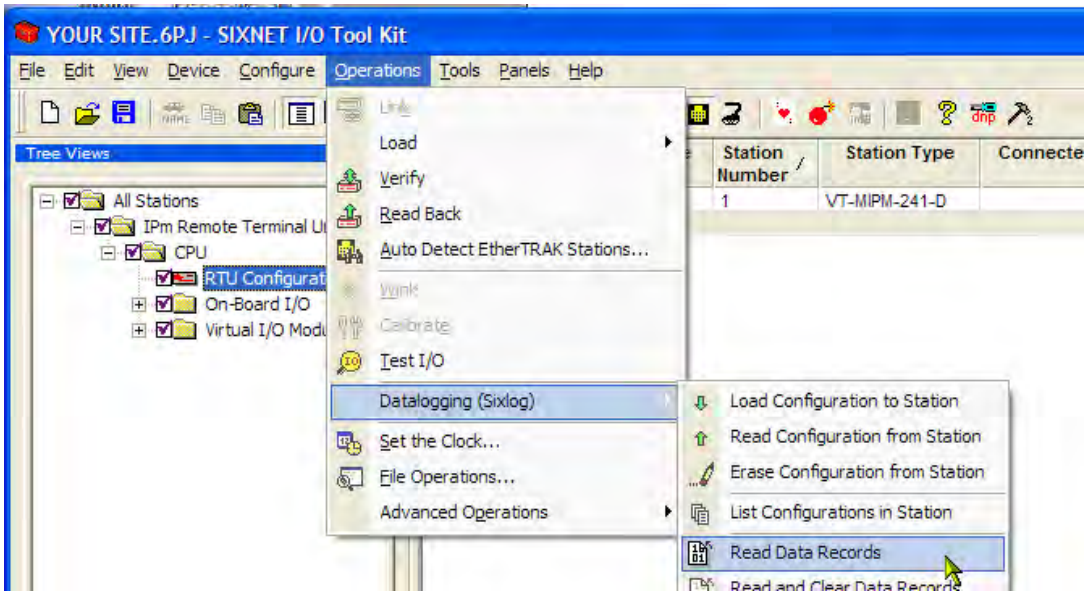
10. A dialog box will appear notifying you that the data file has been successfully read and back. Click OK at acknowledge it and clear the box.



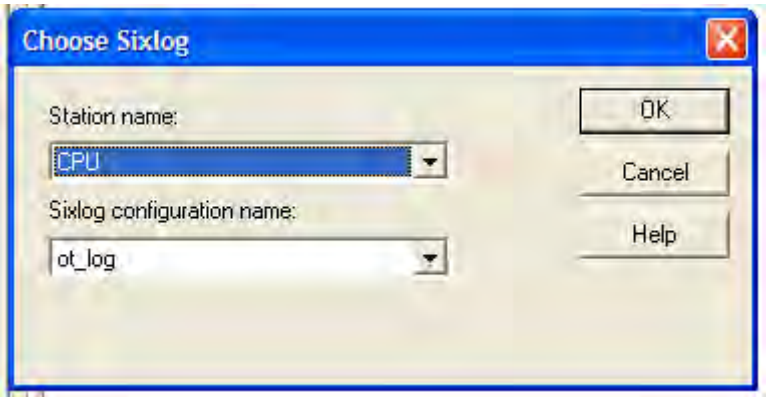
11. From the main menu, select File-Save, to save the Sixlog data file configuration to the project file.



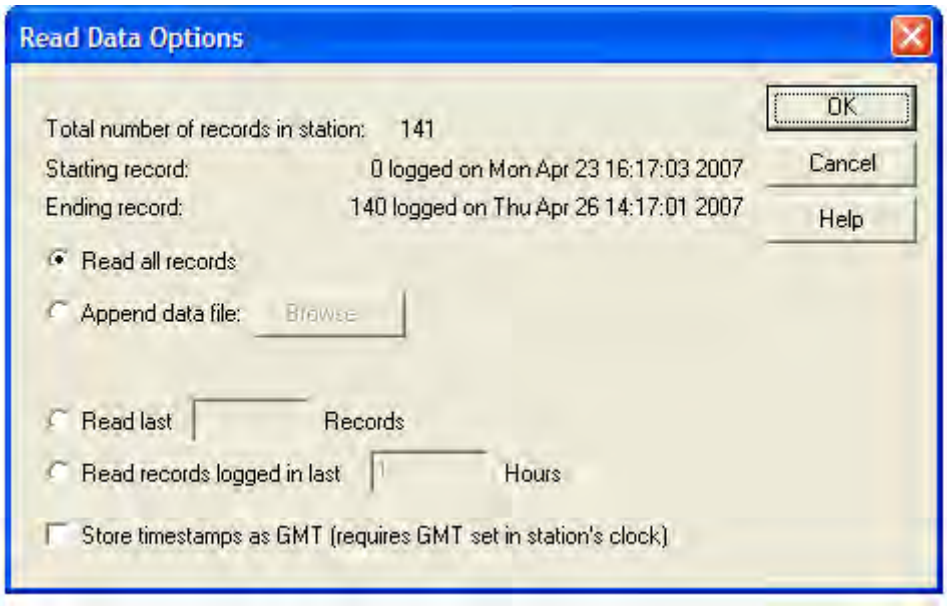
12. From the main menu, select Operations-Datalogging-Read Data Records.



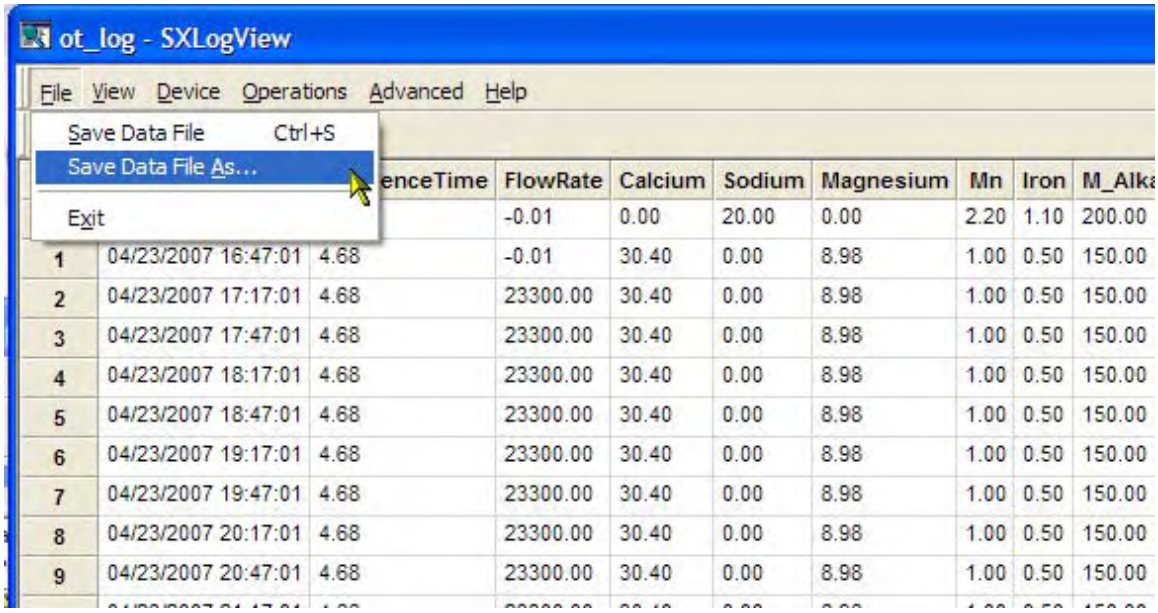
13. In the dialog box that appears, make sure the Station name is “CPU” and the configuration name is “ot_log”. Click OK.



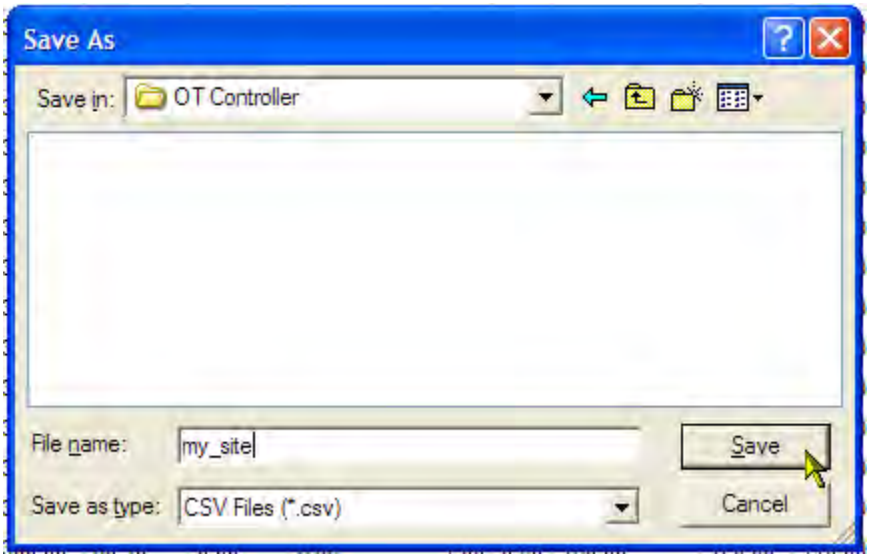
14. From the dialog box that appears, choose the number of records you wish to download and decide if you want to append the data records to an existing file. When you click OK, the data records will be downloaded from the controller.



15. Once the records have been downloaded, you may save the data as a .csv file by selecting File-Save data File As…and specify the name and location of the file.



	enceTime	FlowRate	Calcium	Sodium	Magnesium	Mn	Iron	M_Alk
		-0.01	0.00	20.00	0.00	2.20	1.10	200.00
1	04/23/2007 16:47:01	4.68	-0.01	30.40	0.00	8.98	1.00	0.50	150.00
2	04/23/2007 17:17:01	4.68	23300.00	30.40	0.00	8.98	1.00	0.50	150.00
3	04/23/2007 17:47:01	4.68	23300.00	30.40	0.00	8.98	1.00	0.50	150.00
4	04/23/2007 18:17:01	4.68	23300.00	30.40	0.00	8.98	1.00	0.50	150.00
5	04/23/2007 18:47:01	4.68	23300.00	30.40	0.00	8.98	1.00	0.50	150.00
6	04/23/2007 19:17:01	4.68	23300.00	30.40	0.00	8.98	1.00	0.50	150.00
7	04/23/2007 19:47:01	4.68	23300.00	30.40	0.00	8.98	1.00	0.50	150.00
8	04/23/2007 20:17:01	4.68	23300.00	30.40	0.00	8.98	1.00	0.50	150.00
9	04/23/2007 20:47:01	4.68	23300.00	30.40	0.00	8.98	1.00	0.50	150.00



Downloading the Sixnet Data File After the First Time

Once the Sixnet project has been downloaded, it will no longer be necessary to repeat all the above steps to download data on subsequent occasions. To download data after the project and the data configurations have been read back from the controller and saved, perform the following steps:

1. Connect the Ethernet crossover cable for the Ethernet port on the PC to the Ethernet port on the top of the Sixnet controller.

2. Start up the Sixnet I/O Toolkit software. From the main menu, choose File-Open Project and select the project file you saved above (the project file will have a .6pj extension).

3. In the Tree View, click on the "+" until "RTU Configuration" is visible. Click on the "RTU Configuration" to highlight.

4. From the main menu, select Operations-Datalogging-Read Data Records.

5. In the dialog box that appears, make sure the Station name is "CPU" and the configuration name is "ot_log". Click "OK".

6. From the dialog box that appears, choose the number of records you wish to download and decide if you wish to append the data records to an existing file. When you click "OK", the data records will be downloaded from the controller.

7. Once the records have been downloaded, you may save the data as a .csv file by selecting File-Save data File As…and specifying the name and location of the file.

Upgrading the Once Through Software

Hardware Required

Depending on which software is to be upgraded on the “Once Through” controller, the following cables may be required:

- Standard USB ‘A’ to ‘B’ extension cable
  Similar to Belkin Pro Series Hi-Speed USB 2.0 Cable, 6 ft. (Belkin Part # F3U133-06) or Dynex™ 6’5” USB 2.0 A/B USB Cable (Dynex Model # TE-USB 2AB 2.0 SBG).

- Standard or crossover Cat5/6 Ethernet cable (*port is auto-sensing*)

Application Software Required

The following software applications will be required to upgrade the application software on the “Once Through” controller. Both can be acquired via SMS using a Nalco Global Software request form:

- Sixnet IO Toolkit, version 3.1 with SP1 or later.

- Red Lion Crimson 2.0, Build 2.0.0.324 or later.

Project Files

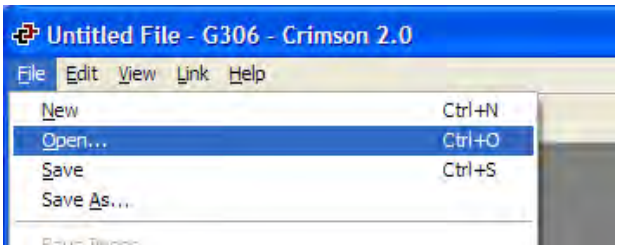
One or more of the following configuration files may be required to complete the upgrade of the “Once Through” controller:

OT_Release.cd2	Red Lion display configuration file
OT_Release.6pj	Sixnet controller configuration file
appli.X6M	IsaGraf executable file for Sixnet controller

Upgrading the Crimson Display Configuration File

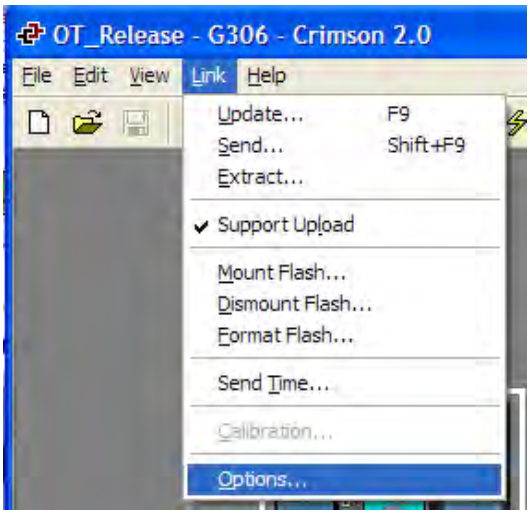
- Connect the USB cable from a USB port on the PC to the USB port on the underside of the Red Lion display
- Start the Crimson 2.0 software

- Select File-Open from the main menu:

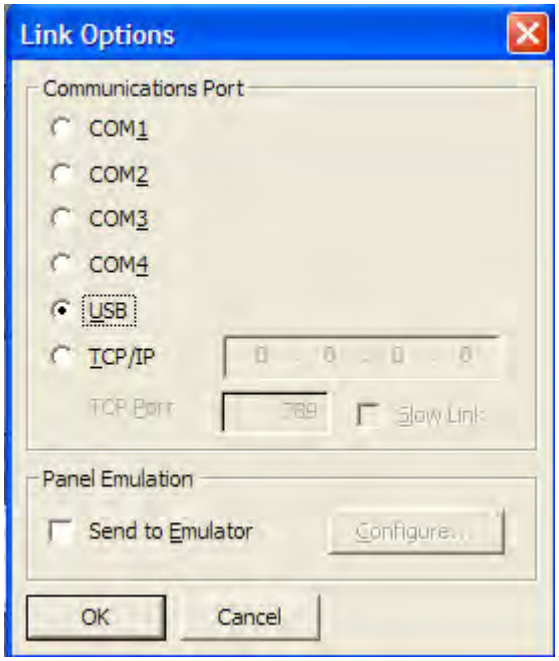


- Browse to the location of the provided OT_Release.cd2 file and select it.

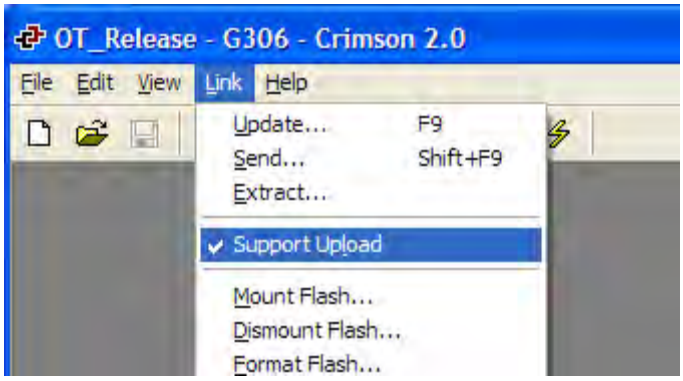
- After the file has been loaded into the Crimson application, select Link-Options from the main menu:



- Select USB from the Communication Port options. Make sure “Send to Emulator” is **not** checked. Click “OK”:



- Select “Link” from the main menu and make sure “Support Upload” is checked.

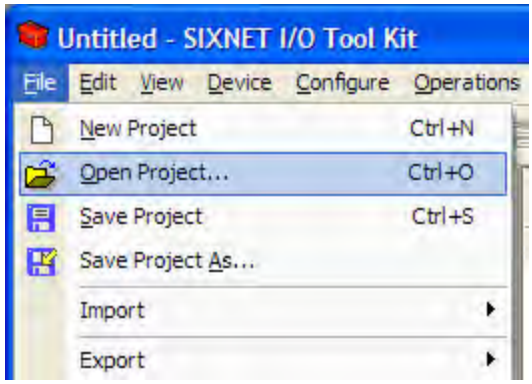


Once the upgrade file has been sent, the Crimson application can be closed; and the USB cable can be disconnected.

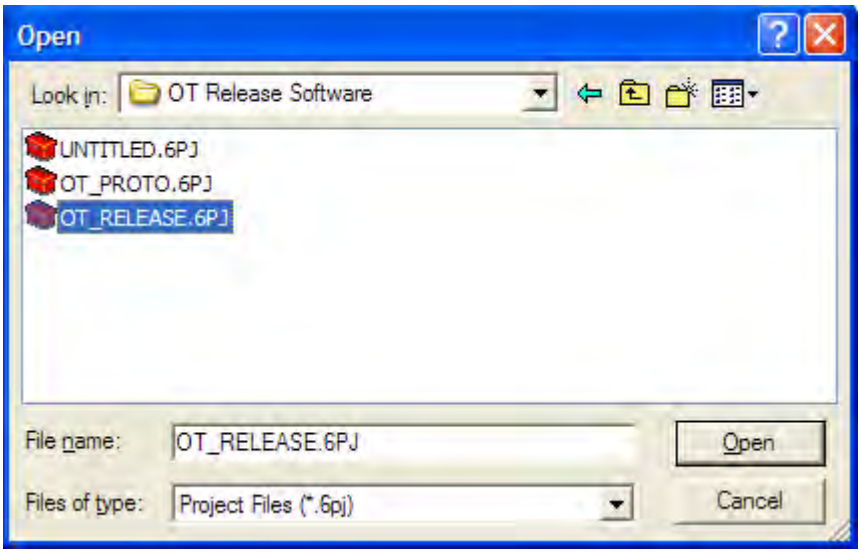
Upgrading the Sixnet Controller Configuration Files

- Connect the Ethernet crossover cable from the Ethernet port on the PC to the Ethernet port on the top of the Sixnet controller. Note that the Ethernet port is on the far right side of the controller. Be sure you do not plug the cable into the RS-232 Port B right next to it, which also uses an RJ-45 connector.

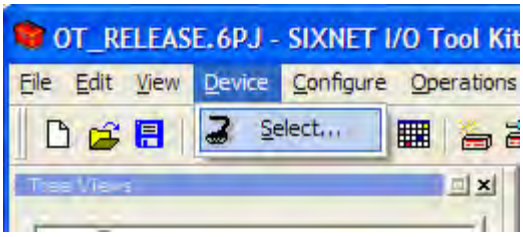
- Start the Sixnet IO Toolkit software.



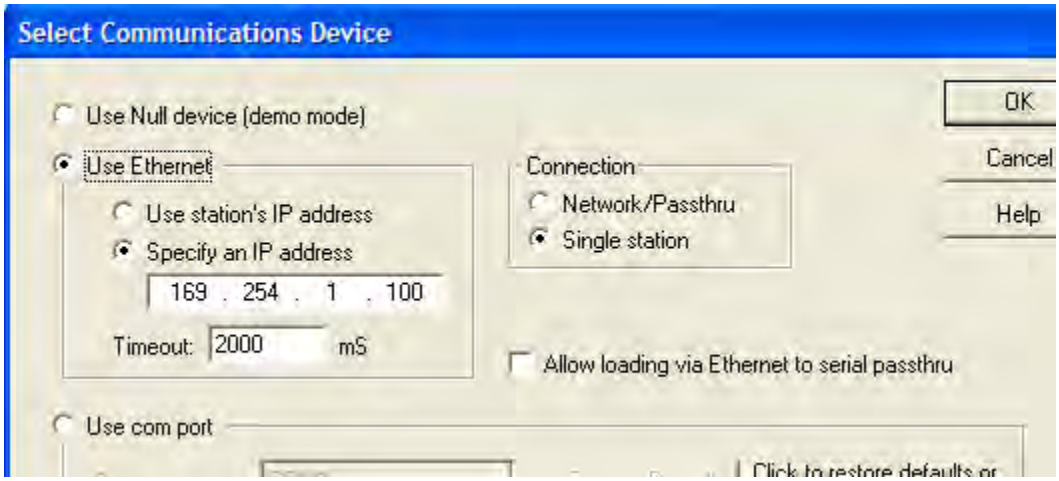
- Browse to and open the new “OT_Release.6pj project file provided.



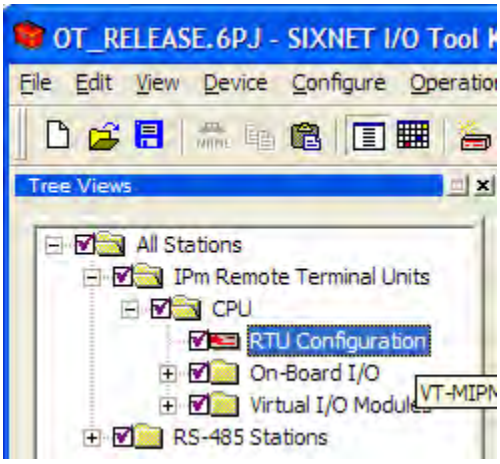
- Set up the communications link by selecting “Device-Select” from the main menu.



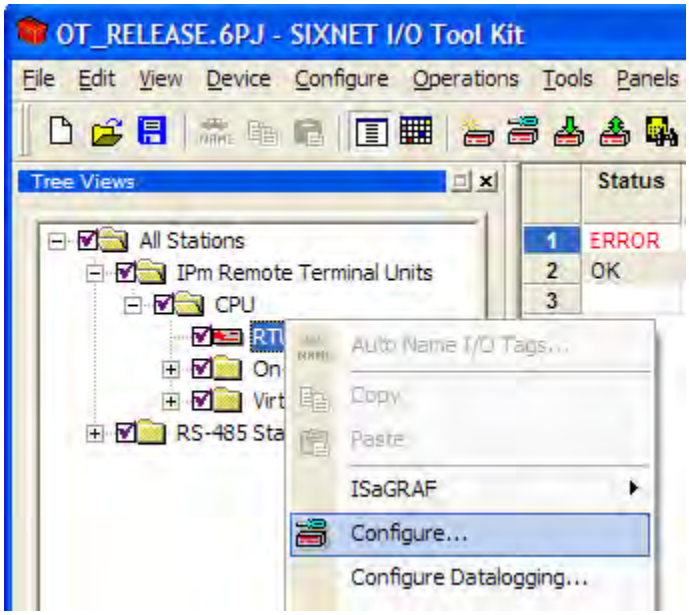
- In the dialog box that appears, select “Use Ethernet”, “Specify an IP address” and “Single station”, with an address of 169.254.1.100. Click “OK”.



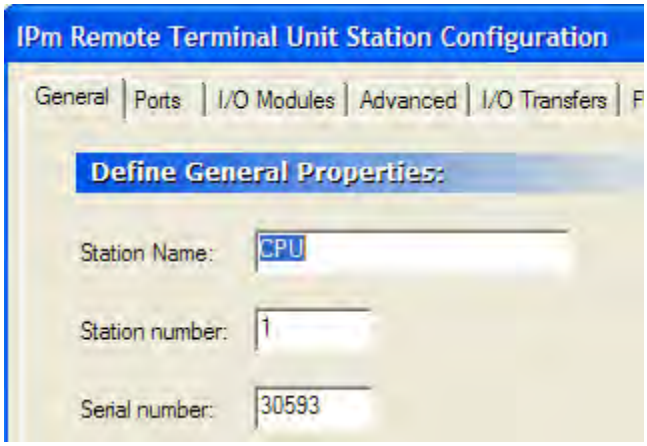
- In the Tree View of the program screen, click on the “+” until the “RTU Configuration” item is visible. Click once on “RTU Configuration” to highlight.



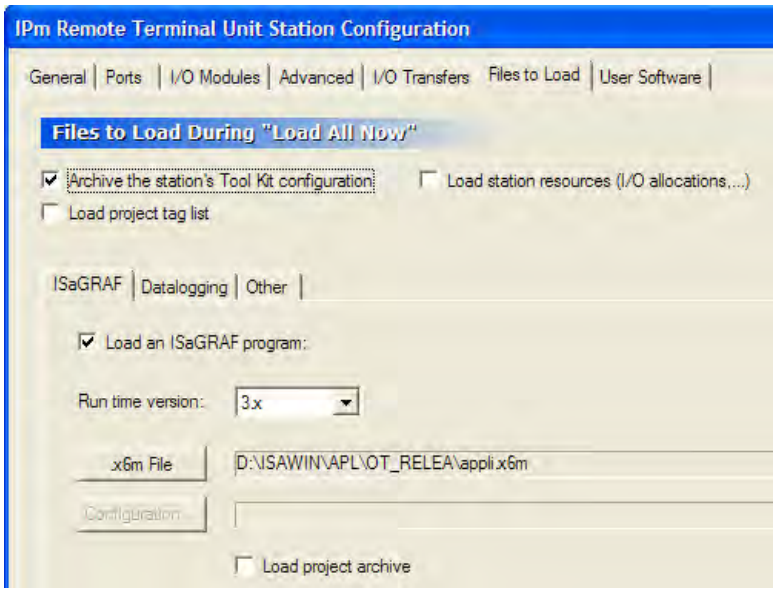
- Right click on the highlighted item, and choose “Configure…” from the drop down menu that appears.



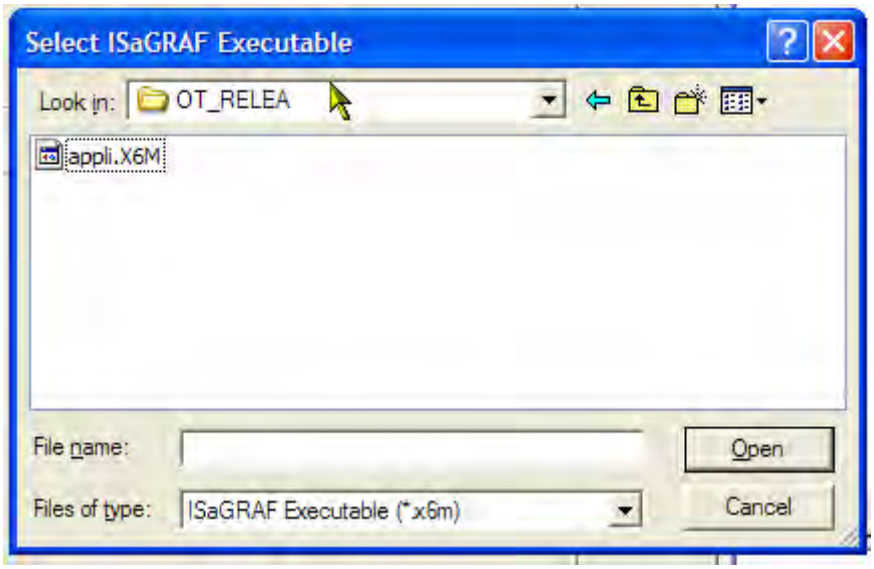
- The configuration dialog box appears. Change the Serial Number on the "General" tab to match the serial number printed on the base of the CPU model in the controller.



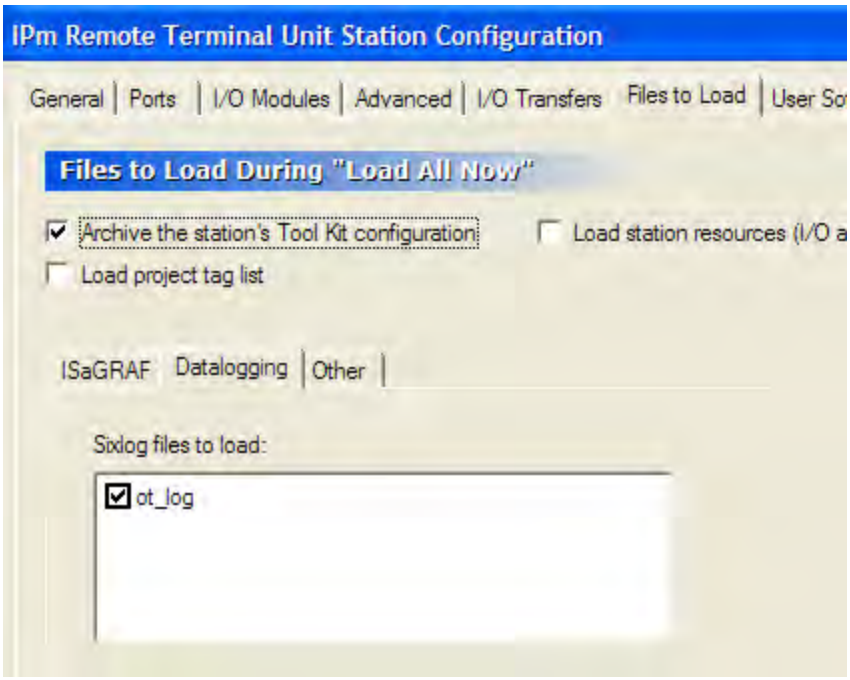
- Click on the "Files to Load" tab of the dialog box.
  1. Make sure the "Archive the station's Tool Kit configuration" box is checked.
  2. "Load station resources (I/O allocations…)" and "Load project tag list" should **not** be checked.
  3. On the ISaGRAF tab, make sure "Load an ISaGRAF program" **is** checked.
  4. "Load project archive", at the bottom of tab, should **not** be checked.
  5. The "Run time version" box should show "3.x".



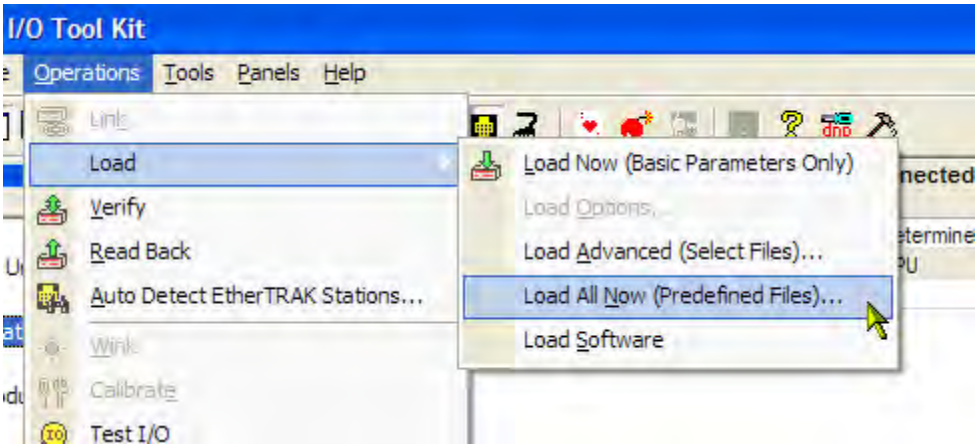
- Click the “x6m File” box and browse to the location of the “appli.X6m” file that was provided. Select it and click “Open”.



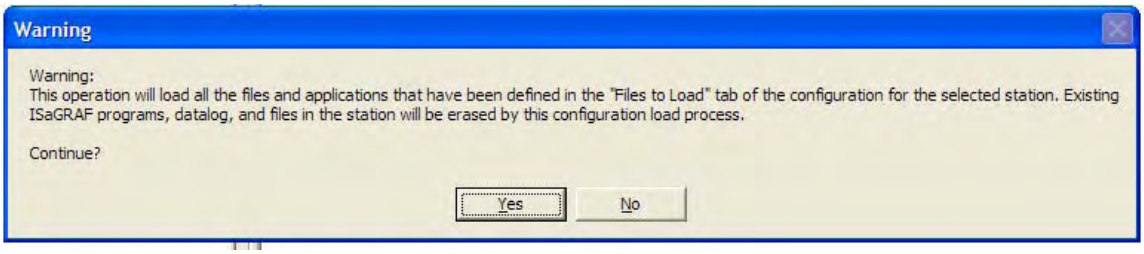
- Click the “Datalogging” tab and make sure that the “ot_log” file has a check mark next to it. Click “OK”.



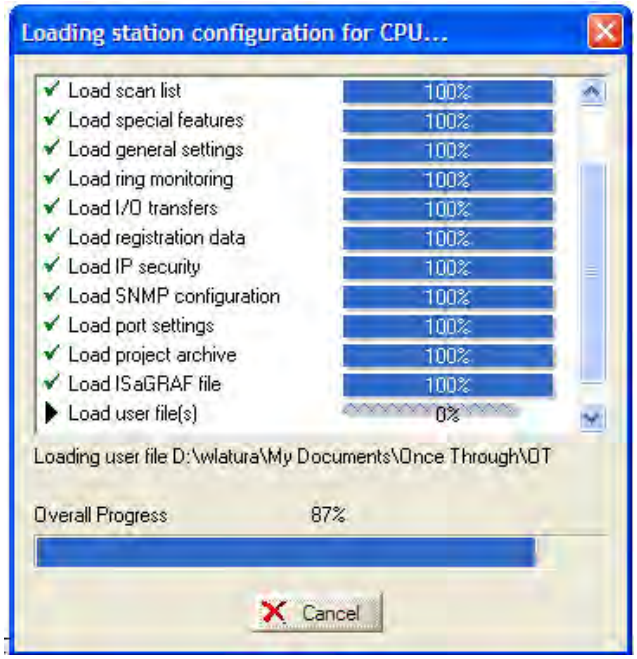
- From the main menu, choose Operations/Load/Load All Now (Predefined Files).



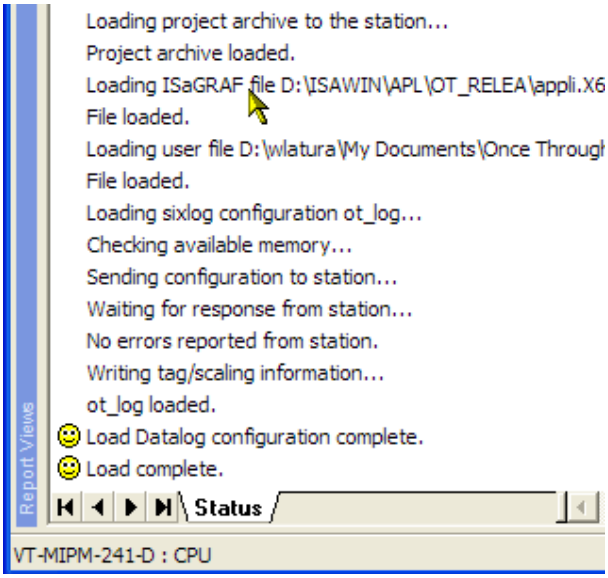
- A warning box will appear. Click “Yes” to continue.



- A dialog box will appear showing the progress of the configuration upload.



- When the upload is complete, the status box will indicate that the upload was successful.



The Upgrade is now complete, and all cables and connectors can be removed.

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WARRANTY POLICY

Nalco Global Equipment Solutions warrants its standard equipment and related installation services to the original purchaser to be free of defects in material or workmanship for one year from the date of shipment, unless otherwise specified.

Key Features Include:

- Simplified claims processing-warranty assistance is just a toll free call away. Most claims can be handled by making a single phone call
- 12-month coverage of all standard part-numbered Nalco equipment offerings (excepting consumable items and products with shelf lives of less than 12 months.

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- 12-month coverage of Nalco equipment installation.
- Repair and on-site warranty assistance now available in selected areas.

Limitations:

Warranty does not cover damage caused by misuse, neglect, accident (including a force majeure event), improper installation or improper maintenance or repair. Nalco's liability under this warranty is limited to repair or replacement of defective items, or, refund of or credit for the product price excluding shipping.

Nalco DISCLAIMS ALL OTHER WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. In no event shall Nalco be liable for any consequential or indirect damages.

Non-Warranty Equipment Returns

If you wish to return a standard, part-numbered Nalco Equipment Solutions product for credit or repair, please follow the guidelines below:

Credit: Products purchased from Equipment Solutions may be returned for credit within three (3) months of purchase if they have never been placed in service and they are returned in the original packaging complete with all accessories, component with all accessories, component parts, and manuals.

Repairs: Products eligible for billable repair include standard items that were purchased within the past five (5) years.

Responsibility for Safe Delivery

Nalco Company has done everything possible to protect this equipment from damage due to normal transportation hazards. After the product leaves the manufacturing site, the transportation company assumes the responsibility for safe handling and delivery of the equipment.

If the crated unit shows evidence of rough handling, you must request that the person making the delivery writes **"Received in Damaged Condition"** on the delivery receipt. If concealed damage is revealed after the shipment is unpacked, contact the transportation company and request a **"Damaged Good"** report be completed.

In either event, the transportation company should be notified immediately of any damage to the shipment to protect your rights of recovery.