Setup Guide
GPX-32

Package Contents:

- GPX-32
- Power Cable
- GPX-32 Installation CD
- Setup Guide (this manual)

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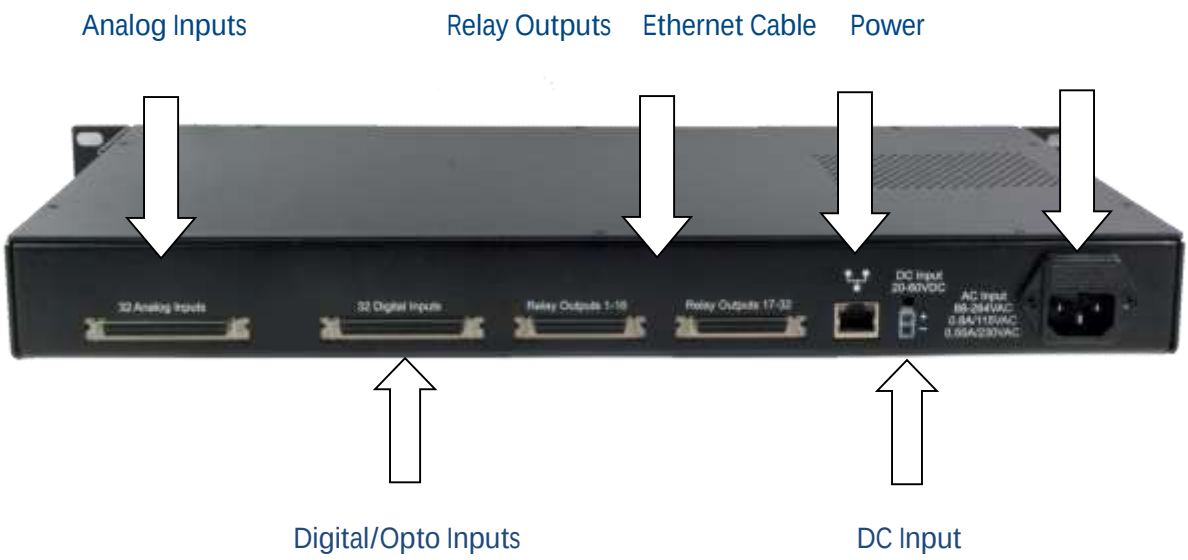
Back Panel Layout

Back Panel Layout



Installing Your GPX-32

Mount the GPX-32 into the desired location and connect the Ethernet and Power cables to the unit. The GPX-32 does not have a power switch and as such is always on, once power has been applied. The GPX-32 employs a switching power supply and will accept mains power from 110-220VAC.

If you are using a DC power source, in place of mains power, please connect this now, taking special care to correctly orientate the positive and negative inputs.

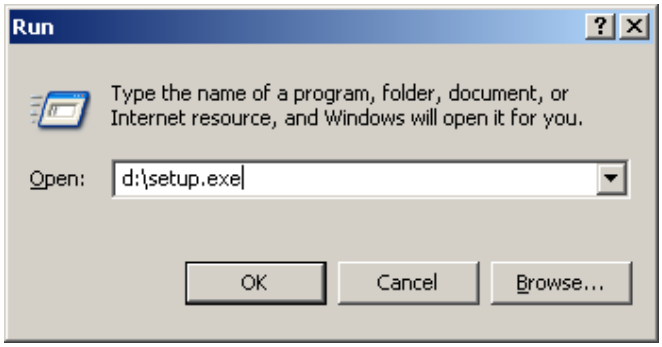
➲ Note: Incorrectly connecting the DC power source will void the unit warranty. In addition the DC power source should be certified with an available power output of less than 240 VA.

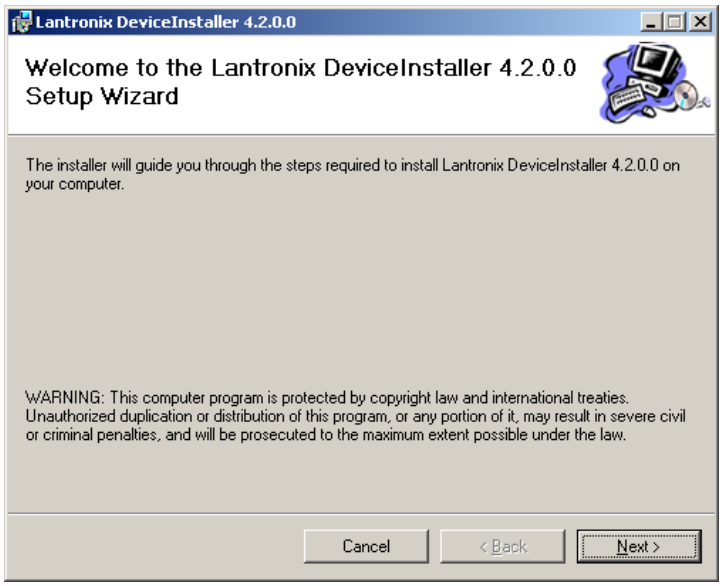
Check that both the Power LED on the front panel of the unit and the Ethernet link LED, on the rear of the unit are illuminated before proceeding. If either LED's are not lit please re-check your connections.

Installing the Configuration software

➲ Note: The DeviceInstaller software requires Microsoft's .NET Framework version 2.0. If you do not already have the .NET Framework installed, It can be installed by running dontnetfx.exe, from the GPX-32 Installation CD-ROM.

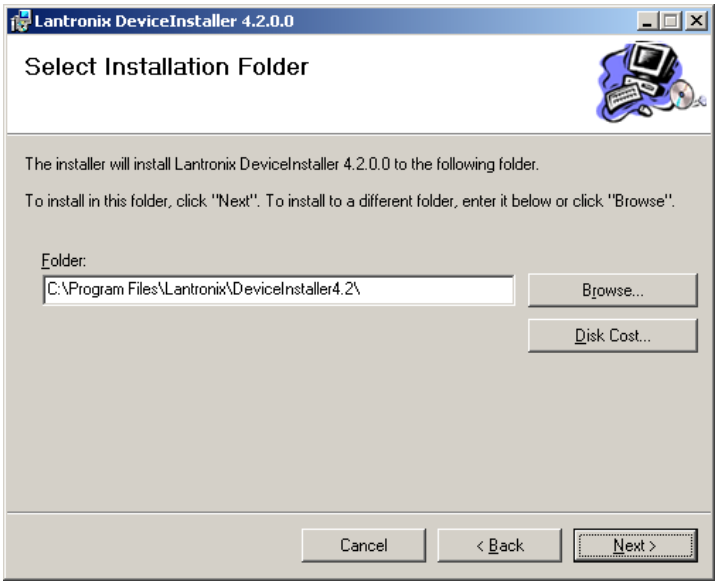
Insert the GPX-32 Installation CD-ROM into your computer's CD-ROM drive. If setup doesn't launch automatically, you can launch it manually by clicking Start, then *Run*… When the Run dialog opens, type d:\setup.exe (where "d" is the drive letter for your CD-ROM). Press *OK* to continue.





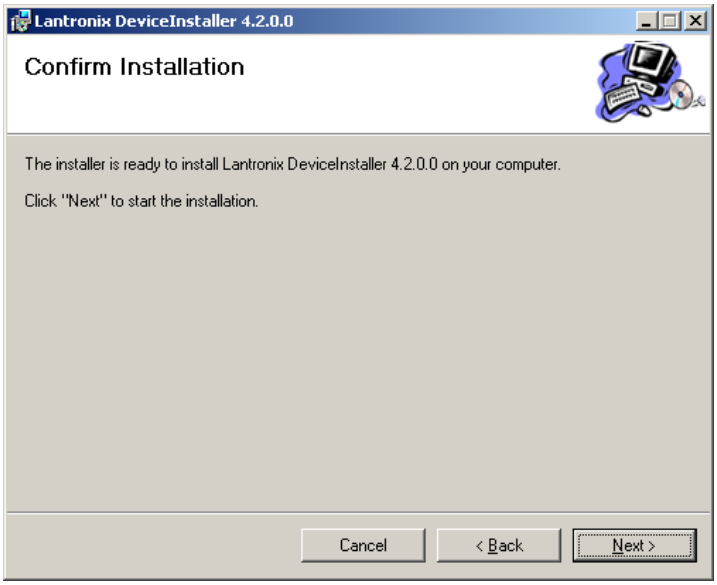
Press *Next* on this screen to start the install process.

Change the path to where you would like the software to be installed, or leave as default and press *Next* to continue.



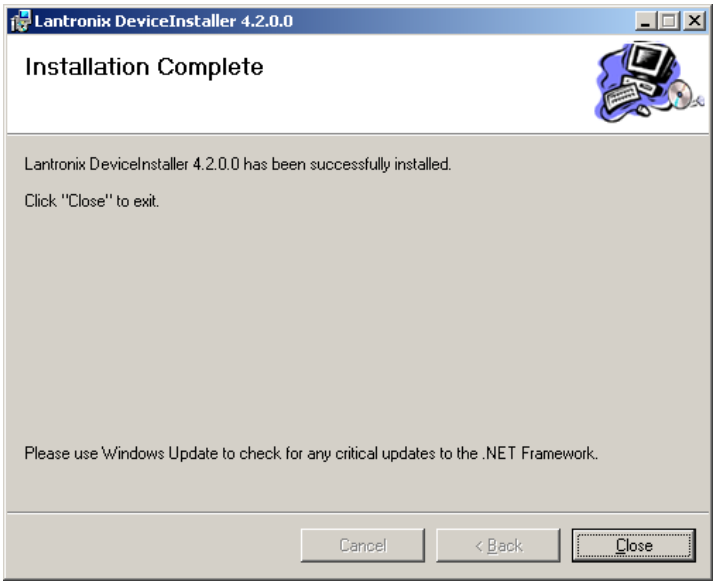
Setup Guide – GPX-32

Installing the Configuration Software



If you are ready to complete the installation press *Next* to proceed. You can press *Back* to change the location of the files or *Cancel* to stop the install.

When installation is complete, you may *Close* the installation window.



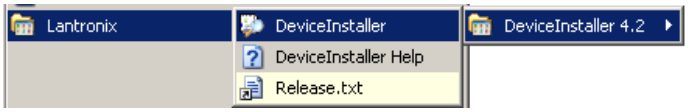
Assigning an IP address

Before you can use the GPX-32, you must first assign the unit a static IP address. This is done using the Configuration software installed in the previous section of this manual.

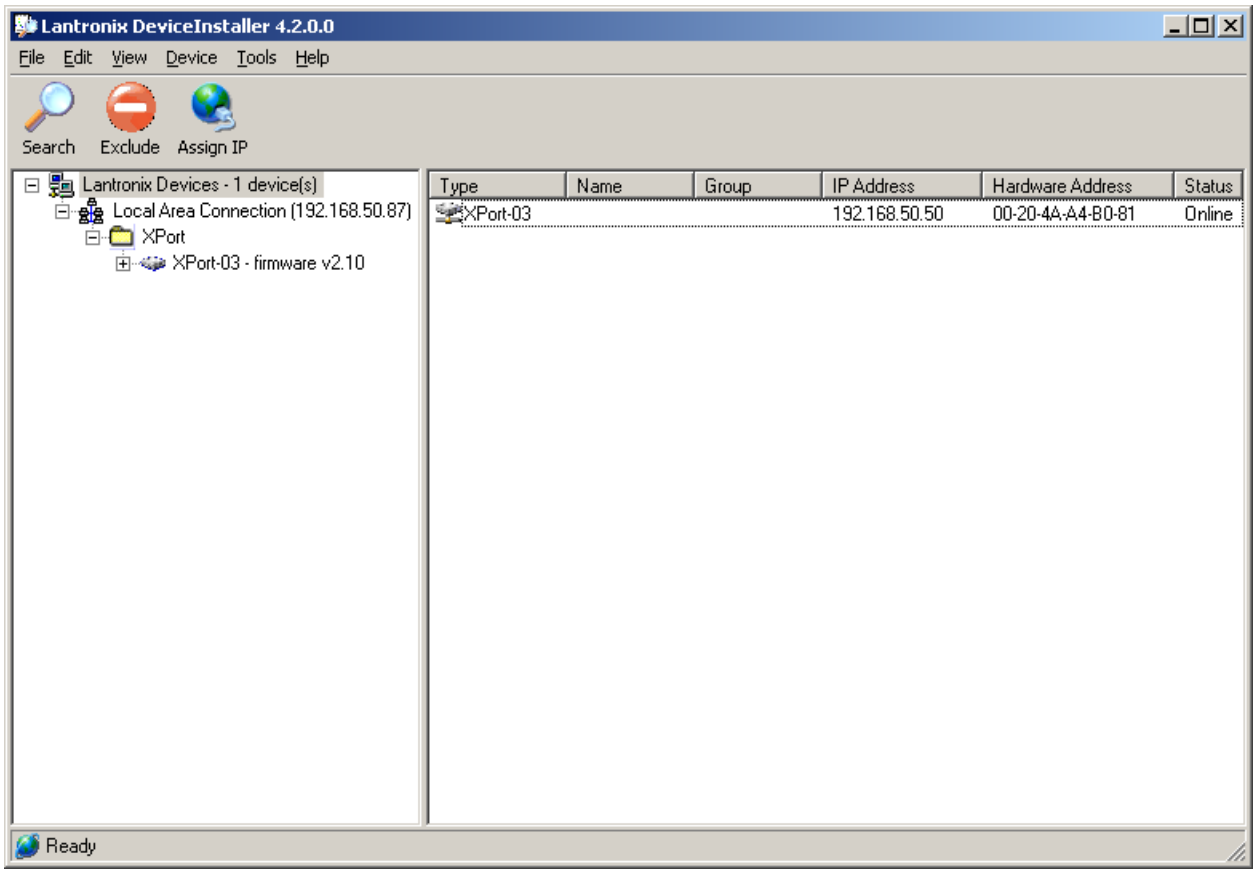
The GPX-32 must be on the same LAN segment, and IP subnet, as the PC you are going to run the Configuration software from.

To start the software, press the Windows Start button and select device installer from:

All Programs->Lantronix->DeviceInstaller 4.2->DeviceInstaller



Once the application is running you will see a program window similar to the one shown here:



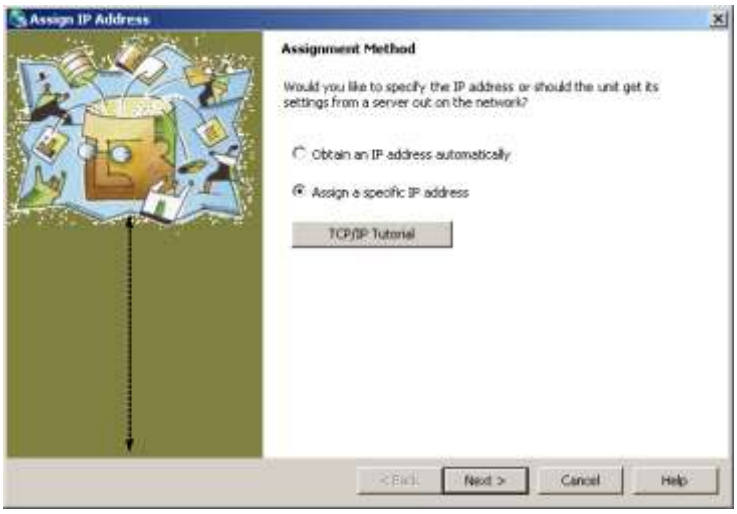
Assigning an IP Address

Assigning an IP Address

If the GPX-32 is connected correctly it will be listed as one of the found devices in the right hand pane of the screen. To identify the correct GPX-32, match the MAC address that is printed on the label found at the left side of the unit to one listed.

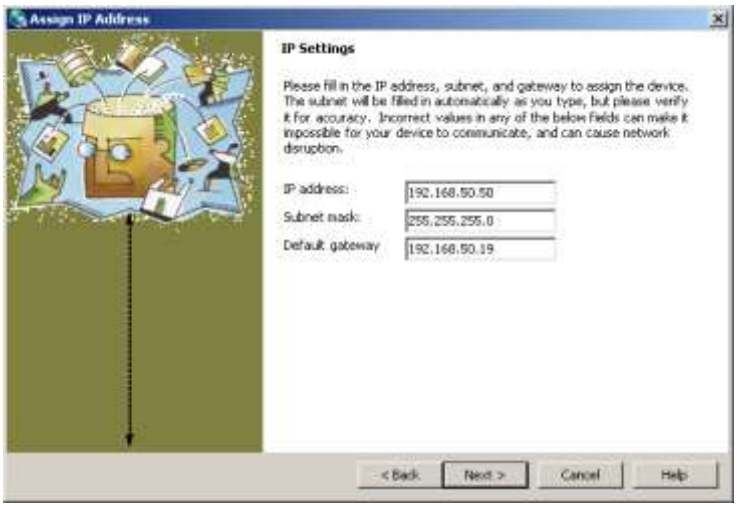
➲ Note: If the GPX-32 is connected to a Subnet that has a DHCP server it may have already been assigned a dynamic IP address automatically. SuiteLife Systems strongly recommends that a static IP address be assigned to all GPX-32 units.

Select the GPX-32 unit you wish to assign a static IP address and press the *Assign IP* icon button in the toolbar.



Select the *Assign a specific IP* radio button and press *Next*.

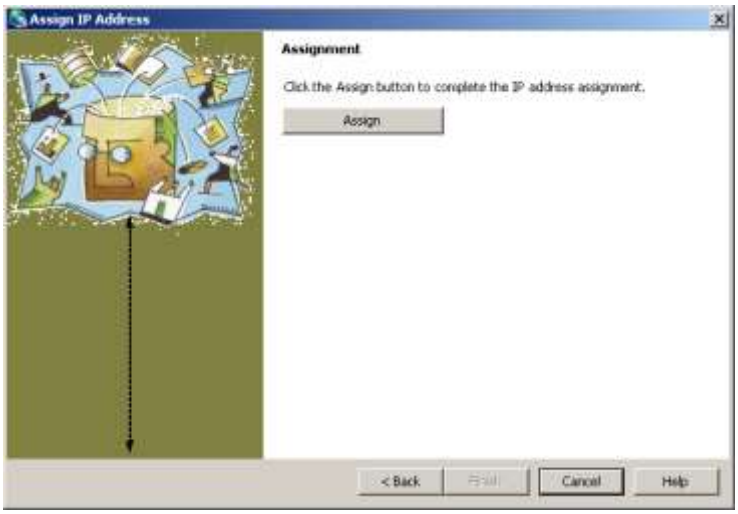
Enter the IP address, Subnet mask and Default gateway and press *Next*.



➲ Note: If you are unsure of any of these settings or their values please contact your system administrator for assistance. Having multiple devices with the same IP address on the same network will cause severe problems.

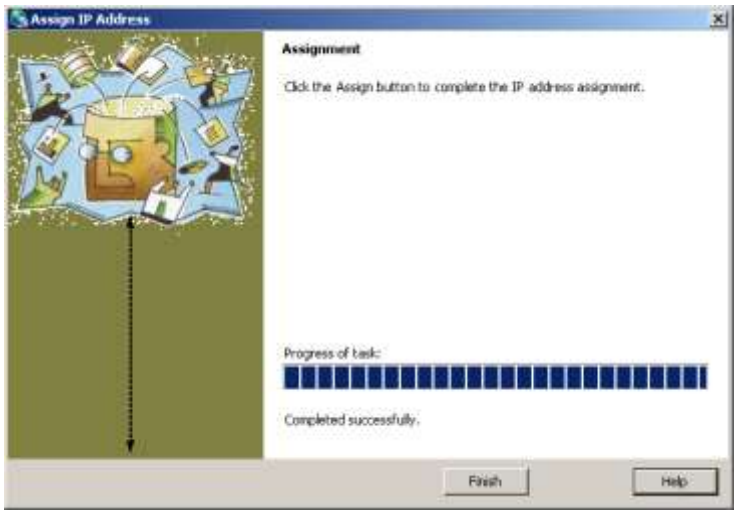
Setup Guide – GPX-32

Assigning an IP Address



Press the *Assign* button to complete the address assignment.

Once the address assignment is complete press *Finish* to close the 'Assign IP Address' dialog.



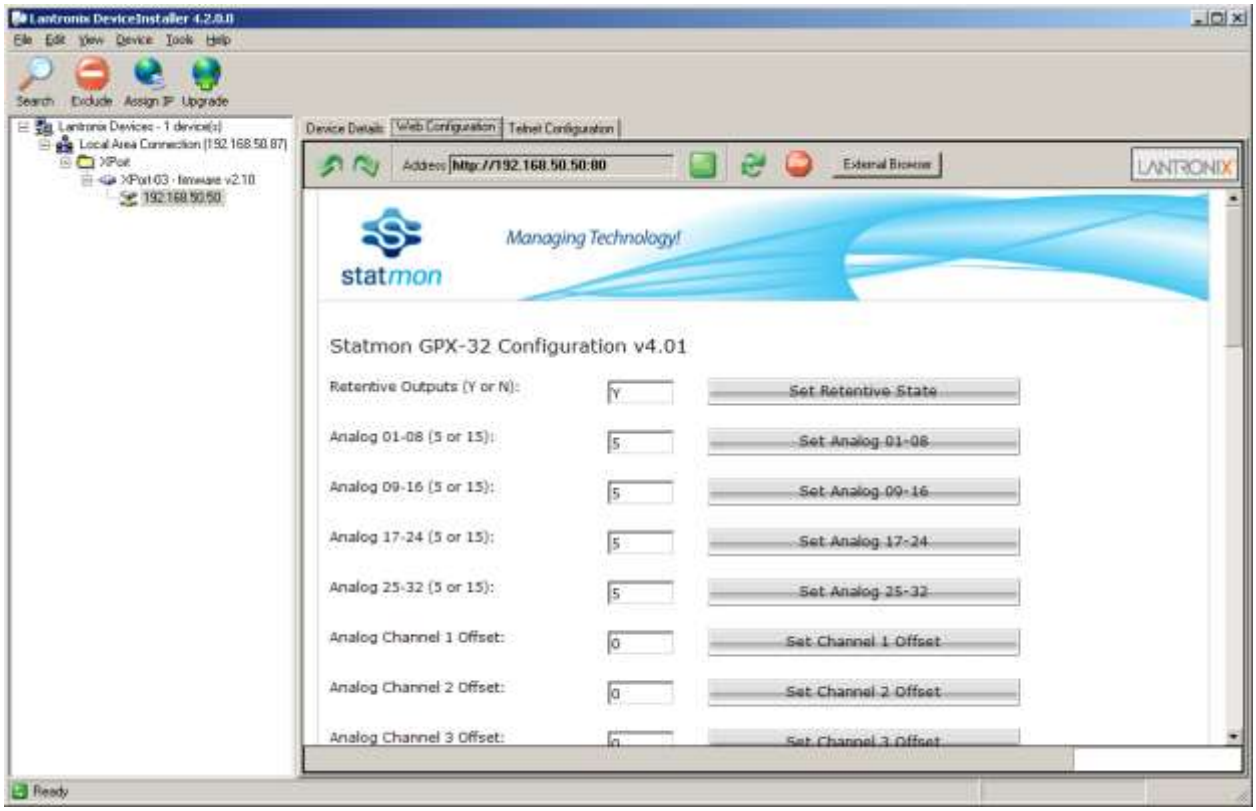
Configuring the GPX-32

➲ Note: Web Configuration errors will occur if the GPX-32 is connected to another software application, i.e. *Axess*, at the same time you are attempting to change settings.
Please close any applications that are using the GPX-32 before proceeding.

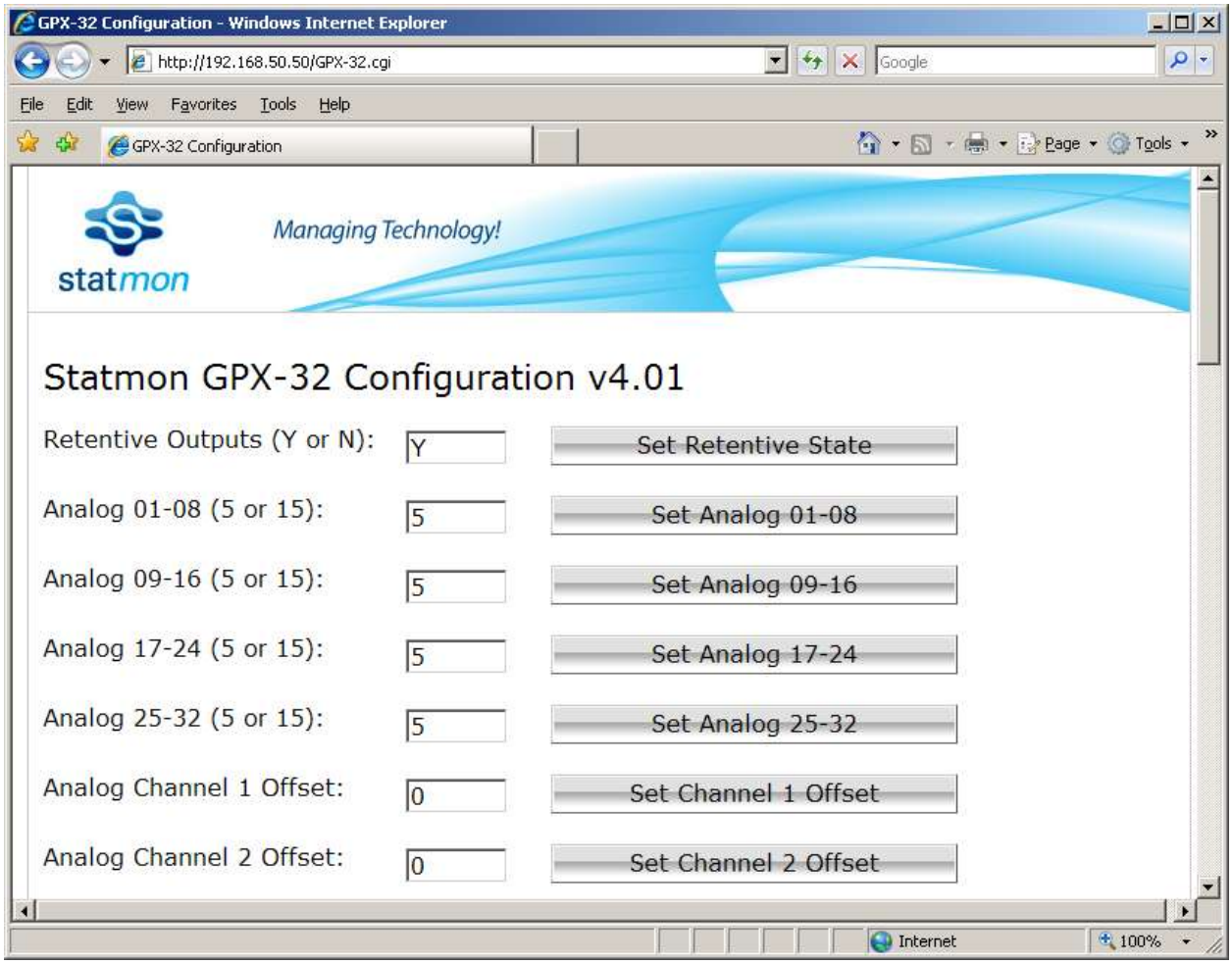
There are several settings for the GPX-32 that are user selectable, that affect the voltage ranges and offsets for the Analog input groups and the retention of relay states when power is removed and restored.

Settings are changed via the unit Web Configuration interface, this can be accessed either via a standard Web Browser or using the Configuration software installed at the start of this manual.

If using the configuration software, select the GPX-32 you wish to configure on the tree at the left side of the screen, this will change the right pane to display the *Device Details* tab. Select the *Web Configuration* Tab and press the *Go* button to display the Web Configuration page as shown here.



To access the Web Configuration from a Web browser, enter the IP address for the GPX-32 into the Address bar of the browser.



Settings are changed by entering the new value in the correct box and pressing the corresponding Set button.

Retentive Outputs (Y or N) – Enables the GPX-32 to remember the relay states prior to power being removed from the unit. Once power is restored the relays are reset to their previous states. (Default 'Y')

Analog 01-08 (5 or 15) – Changes the Analog input range to either +/- 5VDC or +/- 15VDC. This setting affects all eight inputs in the bank. There are four banks of eight. (Default '5').

Analog Channel 1 Offset – Applies a +/- offset to the value being read from the ADC output for this channel. There are a total of 32 channels. (Default '0')

Configuring *Axess* for the GPX-32

Now that the GPX-32 has been assigned a static IP address it is ready to be connected to *Axess*.

To use the GPX-32 with *Axess* you first must load the STC_MODEDP.DLL plug-in, if you have already loaded this plug-in for another device previously, please skip to step 2.

Step 1 – Loading Device Plug-in

Close *Axess* and *StcBase*, if they are running, and start the *PlugIns Manager* from:

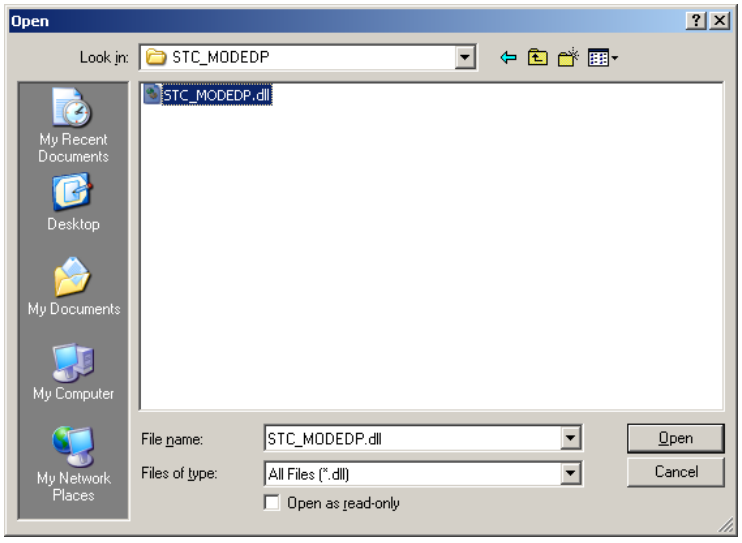
Start->All Programs->Axess

Select Device on the Tree and press *Load Plug*.

Browse to the location where the STC_MODEDP.DLL has been installed, normally this would be:

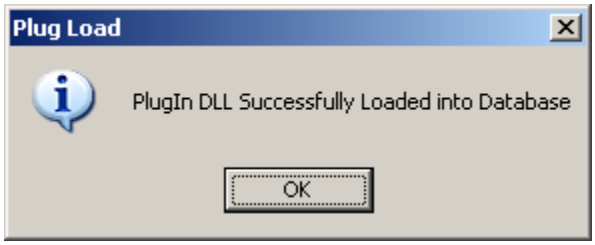
C:\Program Files\Axess\DevicePlugins\STC_MODEDP

Double click the *STC_MODEDP.DLL* file, or press *Open*.



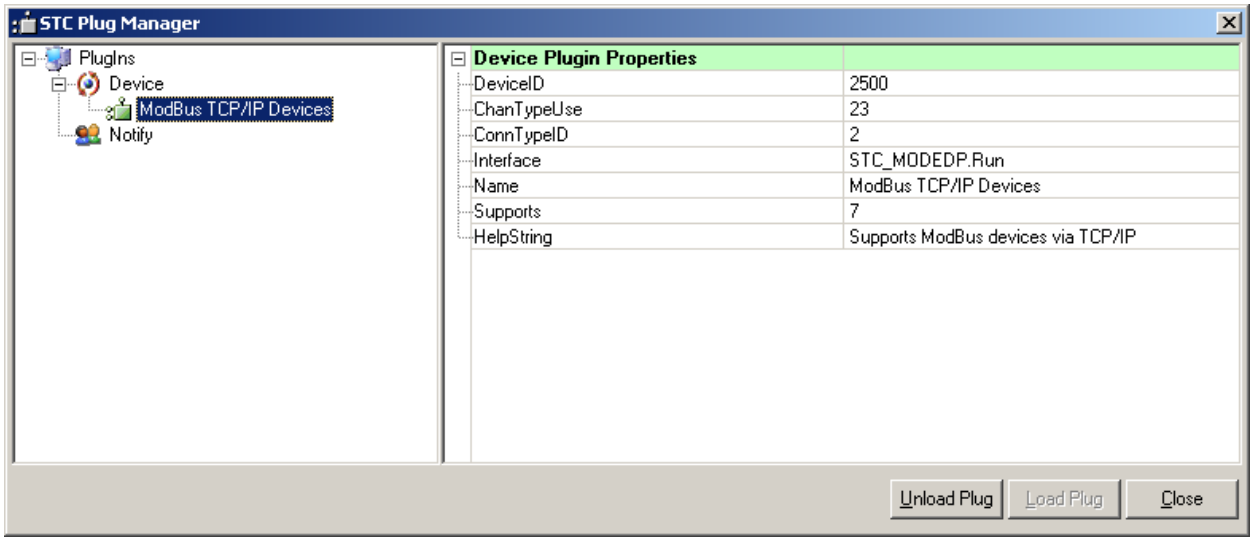
Setup Guide – GPX-32

*Configuring **Axess** for the GPX-32*



Press *OK* to continue

Select the '*ModBus TCP/IP Devices*' to display its properties.

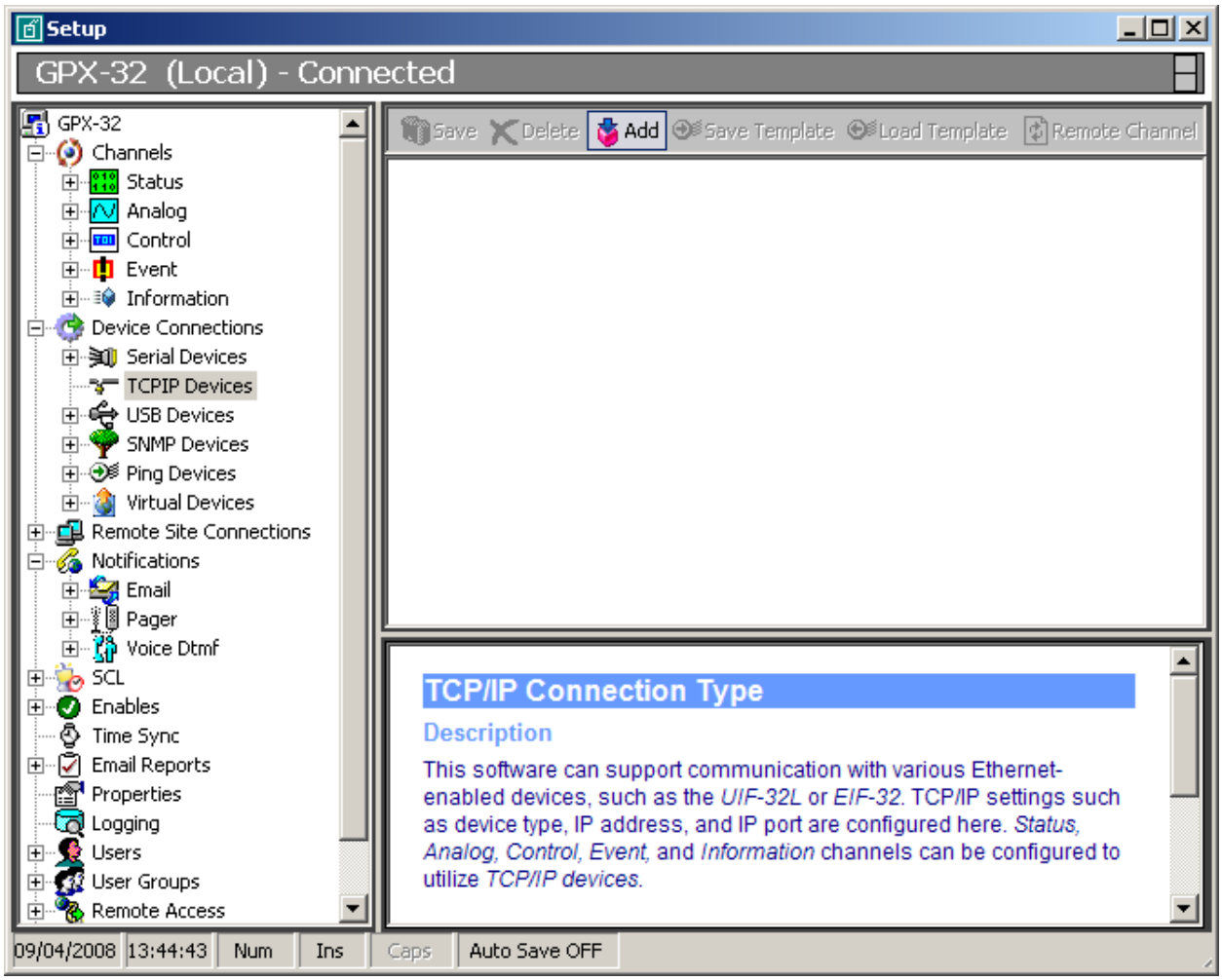


Press *Close* to exit the application.

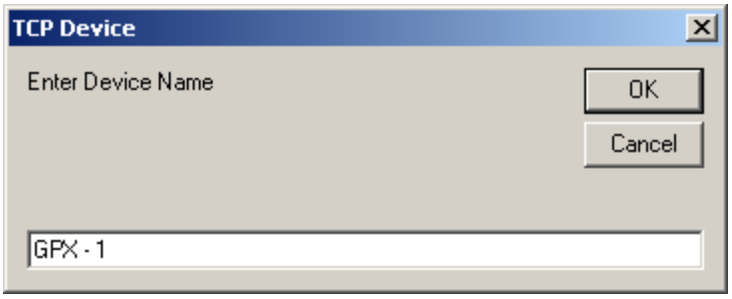
Step 2 – Adding a TCPIP Device Connection

Start *Axess* from: Start->All Programs->Axess.

Once *Axess* is running, open Setup then select '*TCPIP Devices*' from the setup tree.



Press the *Add* button in the toolbar and enter a descriptive name for the new GPX-32 and press *OK*.



Setup Guide – GPX-32

*Configuring **Axess** for the GPX-32*

Fill out the *Properties* as displayed below, taking note to change the IP Address to the correct value as assigned previously.

➲ Note: Before enabling the device, the ModBus Device XML file, '*GPX-32EndDevice.xml*', will need to be copied from the root of the GPX-32 Installation CD to:

C:\Program Files\Axess\DevicePlugins\STC_MODEDP

If this is not done the GPX-32 will not function correctly.

Properties	
IP Address or FQDN	192.168.50.50
TCP Port	502
Polling Interval (ms)	500
Minimum Time Between Valid Data (ms)	5000
ModBus Device Protocols XML	C:\Program Files\Axess\DevicePlugins\STC_MODEDP\EndDeviceProtocols.xml
ModBus Device XML	C:\Program Files\Axess\DevicePlugins\STC_MODEDP\GPX-32EndDevice.xml
Ignore Device Timeouts	False
Enabled	True

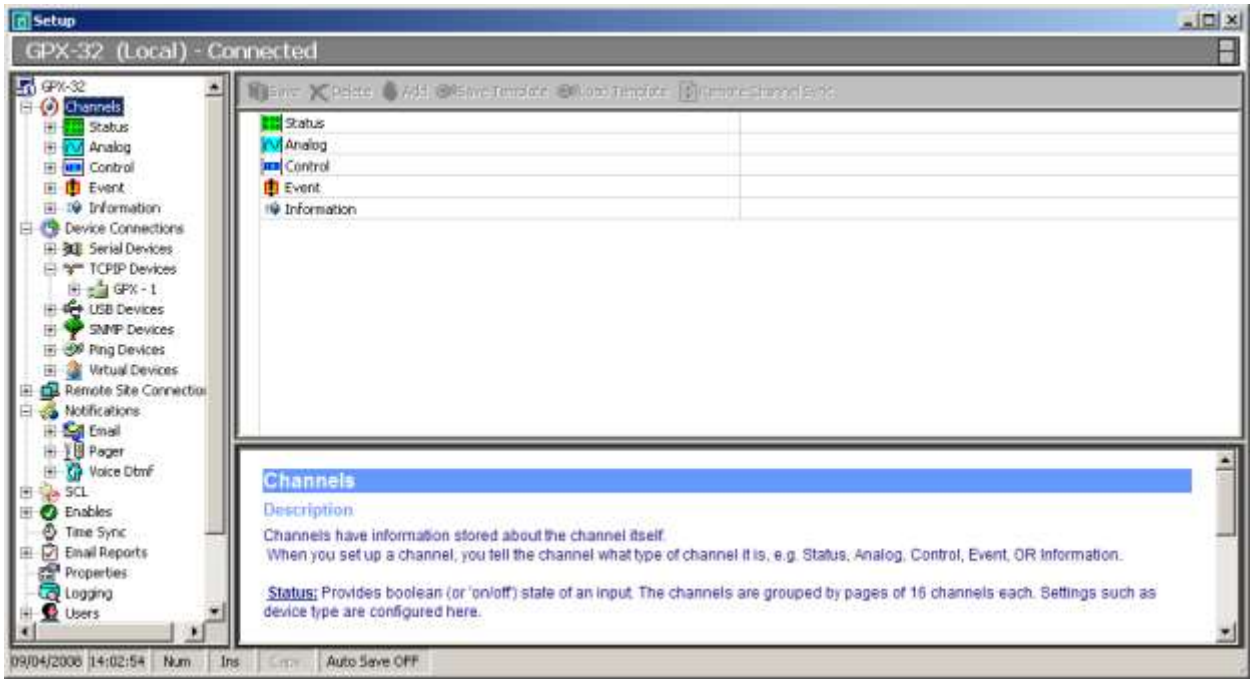
You are now ready to start configuring channels for the GPX-32.

Step 3 – Configuring Axess Channels

The GPX-32 has three channel types, *Status/Opto*, *Analog* and *Control/Relay*. Each of these channel types are represented in *Axess* by the same names.

Although the basic setup of a GPX-32 channel for each type is the same, the Analog configuration requires the most attention and as such we will concentrate on this in the following steps.

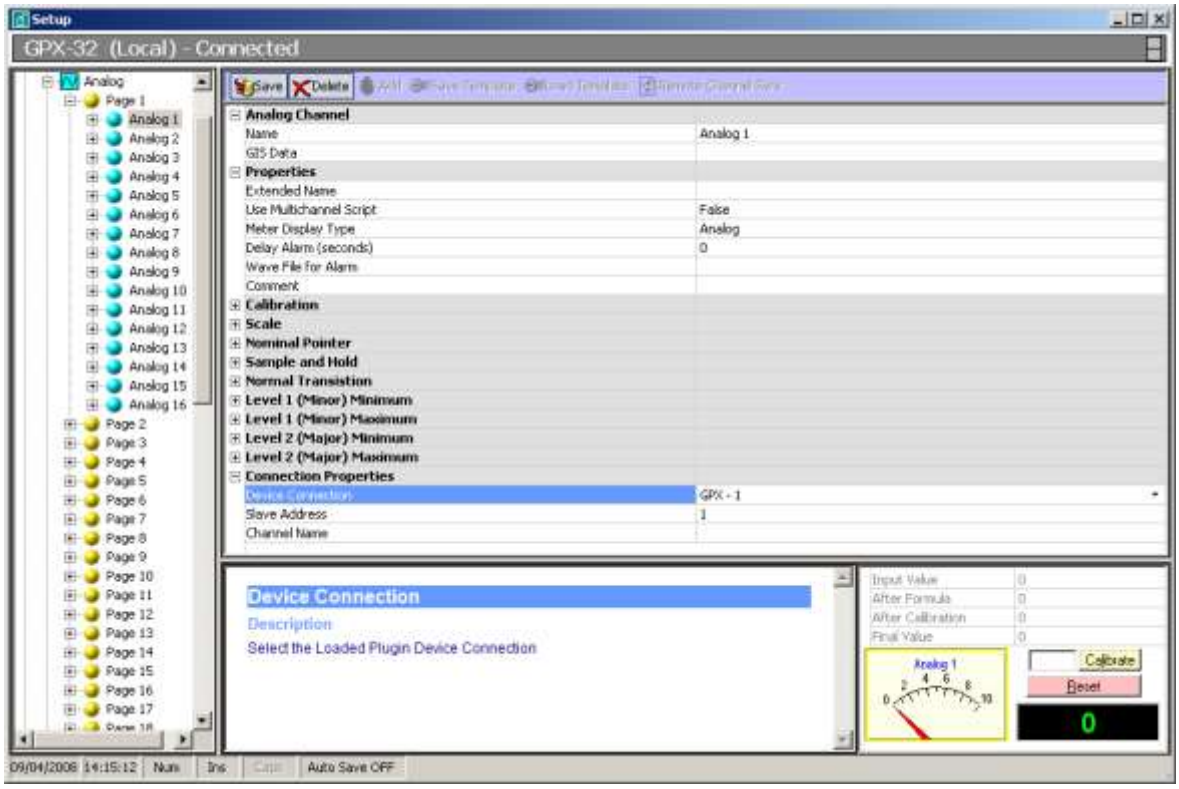
From Setup select *Channels* in the setup tree.



Setup Guide – GPX-32

*Configuring **Axess** for the GPX-32*

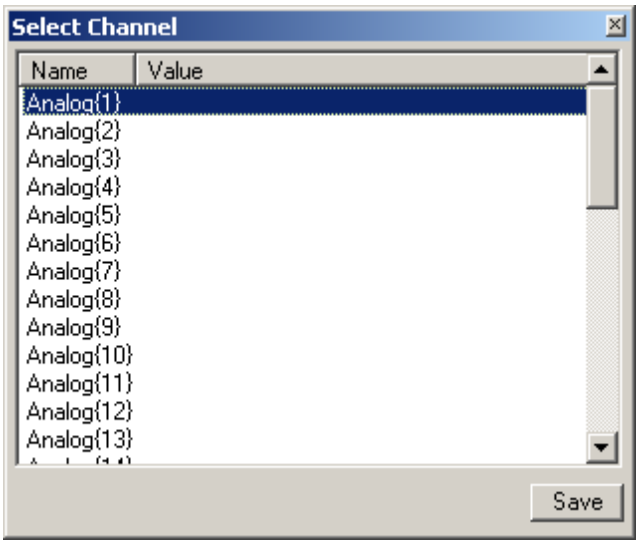
Select the location to which you wish to assign a GPX-32 channel, and in the Name property give the Channel a descriptive label. Then from the drop down box of the Device Connection property select the connection added in Step 2.



Once you have selected the GPX-32 *Device Connection*, two new fields are displayed:

Slave Address - This is ignored and should be left at 1. *Default is 1.*

Channel Name - Press the e*llipses* at the right end of the property field. A new window opens to display a selection of Channels. Once a selection is made, press *Save*.



➲ Note: This process is the same for *all* Channel types.

Values being sent by the GPX-32 for each Analog Input need to be calibrated by applying a formula. The formula applied is dependent on the Input Range selected during the GPX-32 Web Configuration.

➲ Note: By default the GPX-32 is set to a range of +/-5VDC for all Analog banks. To learn how to change this setting, please see the section on how to configure the GPX-32 above.

Calibration	
Make Input Positive	False
Scale Minimum	0
Scale Maximum	10
Decimal Places	2
Display Units	
Display Units Extended	
Formula	(x -32767) * (5 / 32767)
Average	False

➲ Note: Formula operators (i.e., +, -, /, *) must be surrounded by a space character, one before the operator and one following the operator.

Example: (x**<sp>-<sp>**32767)**<sp>*<sp>**(5**<sp>/<sp>**32767)

where <sp> is the space character

Analog Inputs 1 - 32

Analog Input Range	Formula to Apply
+/-5VDC	*(x - 32767) * (5 / 32767)*
+/-15VDC	*(x - 32767) * (15 / 32767)*

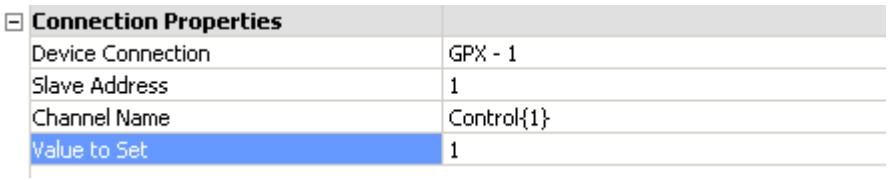
Analog inputs 33 – 36

Input	Description	Formula to Apply
33	Humidity	*((x * (3.6 / 57600)) / 3.6) * 100*
34	Temperature in Celsius	*Convert Celsius to Fahrenheit (1.8 * x) + 32*
35	DC Bus Voltage	*x * (15 / 56800)*
36	AC Voltage	*x * (260 / 56800)*

Setup Guide – GPX-32

*Configuring **Axess** for the GPX-32*

If configuring a Control Channel, the Connection Properties will display one extra field, as shown here.



Connection Properties	
Device Connection	GPX - 1
Slave Address	1
Channel Name	Control{1}
Value to Set	1

Value to Set

The value entered here effects the operation of the relays in the GPX-32. A value of:

0 - Will turn a Relay Off, if it is On and will have no effect if the Relay is already Off.

1 - Will turn a Relay On, if it is Off and will turn the Relay Off, if it is On.

Entering a value of '2' or greater will turn the Relay On for the entered value in milliseconds, for example, if you entered 3800 the Relay would be turned on for 3.8 seconds then turned Off. If the Relay was already latched On, the Relay will remain Latched for the value in milliseconds entered, and then turn Off. The longest On time available is 65.5 seconds entered as 65500.

➲ Note: By default the GPX-32 is set to retain relay states, if power is removed and then reapplied, the Relays will reset to their state before power was lost. Please see section on how to configure the GPX-32 above, to learn how to change this setting.

Loading the GPX-32 Template

Included, on the root of GPX-32 Installation CD, is a preconfigured template file for use with *Axess* named 'GPX-32.stc'.

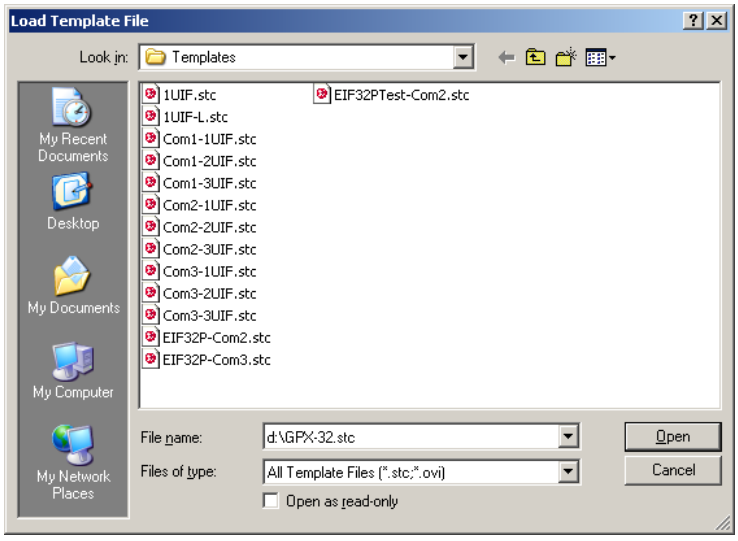
The template will load a pre configured TCPIP Device connection along with 32 Status, 32 Control and 36 Analog channels with formulas for an analog range setting of +/-5VDC.

➲ Note: The channels in the template were configured starting at channel one. If loading this template into an existing site, care must be taken to apply the correct channel offset so as to not overwrite existing channels.

Before loading the template the correct Device Plug-in is required to be loaded, please see Step 1 in the previous section for details on how this is done.

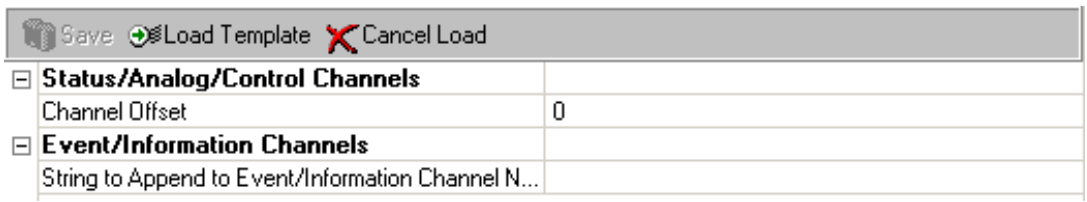
Place the GPX-32 Installation CD into the computers CD-ROM drive.

From Setup select the top or root of the setup tree, then Press the *Load Template* button on the Toolbar.



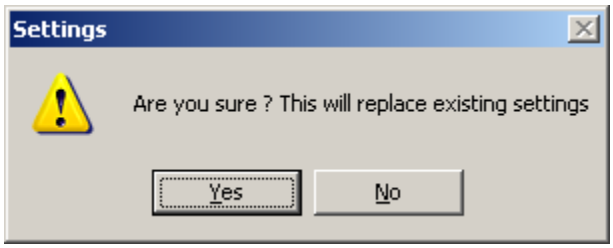
In the '*File name*' field enter: 'd:\GPX-32.stc', (where "d" is the drive letter for your CD-ROM).. Then press *Open*.

When prompted you may change the Channel Offset to load the Channels from the template to a starting location other than Channel 1. Then press *Load Template* from the toolbar.



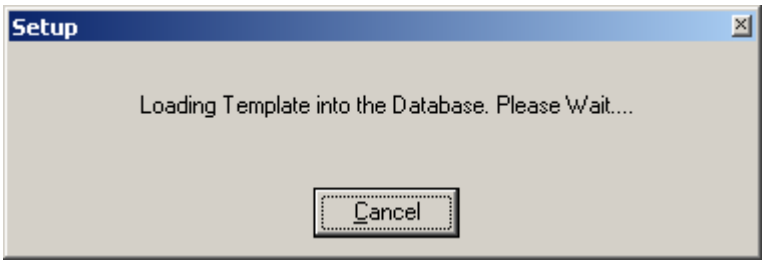
Setup Guide – GPX-32

Loading the GPX-32 Template

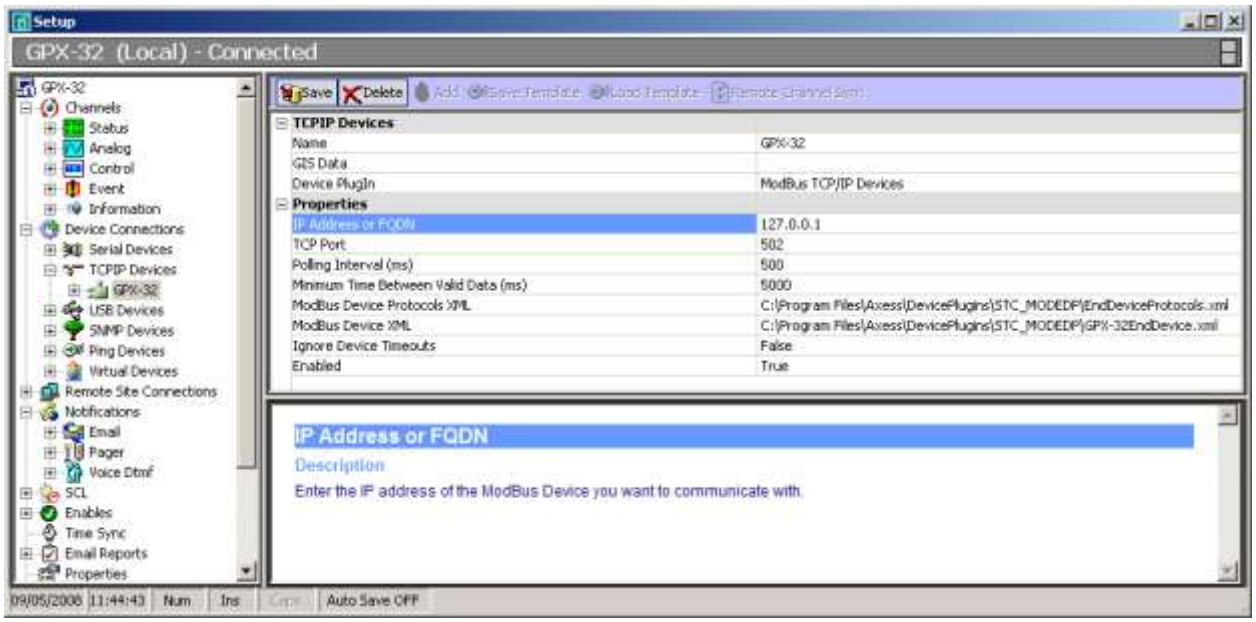


Press *Yes* to continue with loading the template.

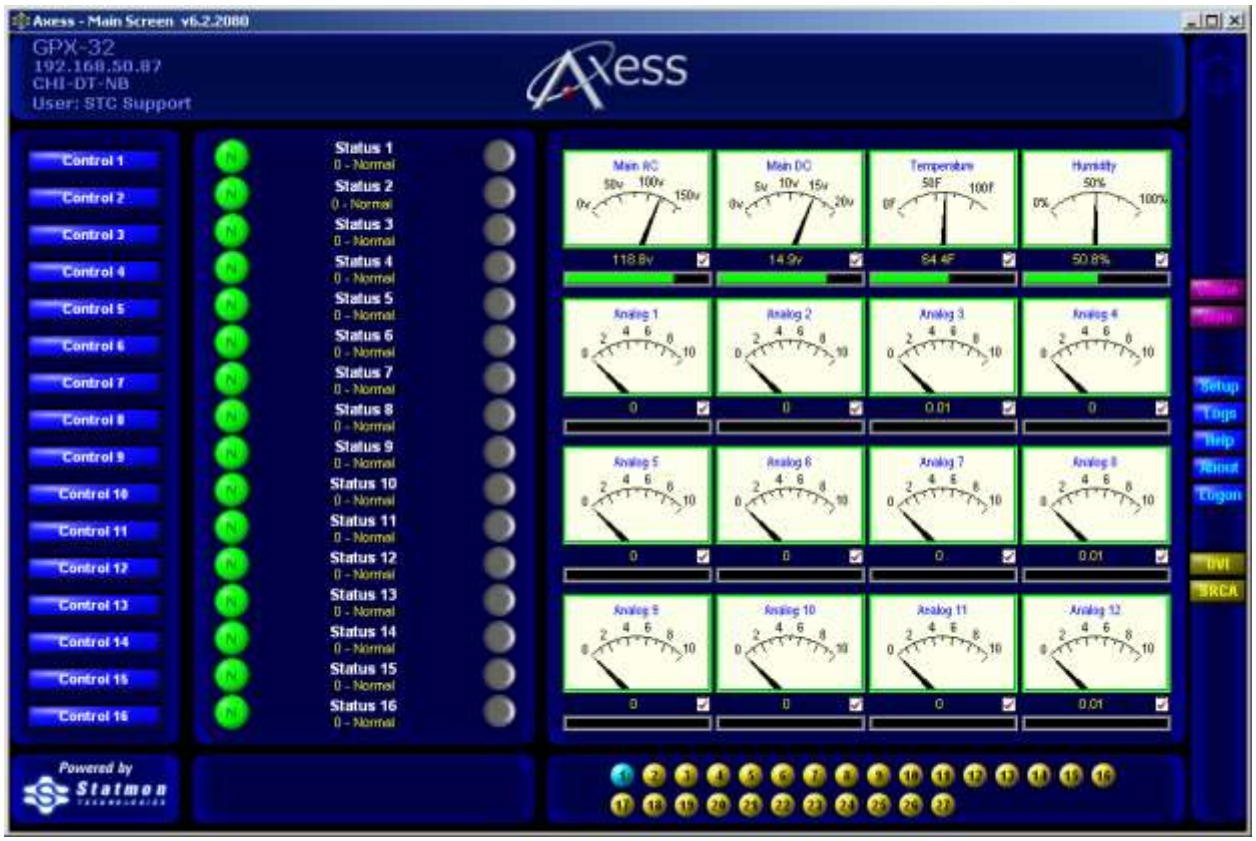
While the template is being loaded this dialog box will be shown, it will be automatically closed when completed:



Once the load has successfully completed expand TCPIP Devices and select the 'GPX-32' device. Select the *IP Address or FQDN* field and change the IP address to the correct static IP address for the device. Next ensure the device is enabled by setting the *Enabled* property to 'True'.



If correctly loaded and configured the *Axess* Main screen should look similar to the image shown here:



Technical Specifications

Power Supply

- 110-220VAC, 50/60Hz via standard IEC plug.
  Power Supply Specifications
  - Input Voltage: 100 ~ 240VAC
  - Input Frequency: 47 ~ 63Hz
  - Input Current: 0.8A ~ 0.5A

- +/-48VDC input (external battery or solar array) in the event of conventional power failure. Input via 2 position Molex connector.
  DC to DC Converter Specifications
  - Input Voltage: 20VDC - 60VDC
  - 1500V isolation
  - Mating Connector: Molex Part No. 39-01-2020
  - Crimp Pin: Molex Part No. 39-00-0039 #18-24AWG

Operating Temperature

-30°C to +45°C (-22°F to 133°F)

Humidity

10% to 90% RH (non-condensing)

Mechanical Dimensions

19"W X 1.75"H (1U) X 10.5"D, Standard EIA Rack Mounting

Onboard Temperature Sensor

Operating Range: -30°C to +80°C

Onboard Humidity Sensor

10% to 95% RH

Onboard Voltage Monitoring

- AC Mains Voltage
- DC Bus Voltage

Status Indication

- Data – Illuminates with the arrival of incoming host data.
- Error – CRC Communication Error or any general error condition.
- Power – DC Bus Power Good.

Network Interface

- Ethernet 10Base-T or 100Base-TX (Auto-Sensing)
- Connector - RJ45
- Indicators (LED)
    - 10Base-T/100Base-TX connection
    - Link & activity indicator – Full/half duplex

Digital I/O

Opto-Isolated Inputs

- Number of Inputs: 32 Total
- I/O Connector: 0.050" 68 Pin SCSI Connector
- Input Voltage Range: +5VDC to +30VDC Non-Polarized Anode and Cathode available on isolated pins

Analog Inputs

- Number of Inputs: 32 Balanced Differential
- I/O Connector: 0.050" 68 Pin SCSI Connector
- Input Voltage Range: +/-5VDC and +/-15VDC, selectable in 4 banks of 8
- Input Modes:
    1. Differential – Both AIN+ and AIN- inputs driven within voltage range however neither signal falls below a common or ground reference. The difference in the 2 signals is amplified across the full scale input of the ADC.
    2. Bipolar – AIN+ input driven within voltage range above and below AIN- while it is held at fixed reference. The signal is amplified across the full scale input of the ADC.
    3. Unipolar – AIN+ input driven within voltage range while AIN- is held at a fixed reference. The signal is amplified across ½ full scale of the ADC.
- Input Impedance: Minimum 100K
- ADC: 16 bit, 200Ksps, +/-2LSB INL, accurate to within +/-5% of input voltage

Relay Outputs

- Number of Outputs: 32 Total
- I/O Connector: 2 X 0.050" 50 Pin SCSI Connector
- Contact Rating: 1A @ 30VDC
- Maximum Switching Power: 30W
- Maximum Switching Voltage: 60VDC
- Maximum Switching Current: 1A

Connector Pinouts

Opto Inputs 1 – 32

Connector	Input Number	Opto A	Opto B
68 Pin SCSI	1	1	2
68 Pin SCSI	2	35	36
68 Pin SCSI	3	3	4
68 Pin SCSI	4	37	38
68 Pin SCSI	5	5	6
68 Pin SCSI	6	39	40
68 Pin SCSI	7	7	8
68 Pin SCSI	8	41	42
68 Pin SCSI	9	9	10
68 Pin SCSI	10	43	44
68 Pin SCSI	11	11	12
68 Pin SCSI	12	45	46
68 Pin SCSI	13	13	14
68 Pin SCSI	14	47	48
68 Pin SCSI	15	15	16
68 Pin SCSI	16	49	50
68 Pin SCSI	17	17	18
68 Pin SCSI	18	51	52
68 Pin SCSI	19	19	20
68 Pin SCSI	20	53	54
68 Pin SCSI	21	21	22
68 Pin SCSI	22	55	56
68 Pin SCSI	23	23	24
68 Pin SCSI	24	57	58
68 Pin SCSI	25	25	26
68 Pin SCSI	26	59	60
68 Pin SCSI	27	27	28
68 Pin SCSI	28	61	62
68 Pin SCSI	29	29	30
68 Pin SCSI	30	63	64
68 Pin SCSI	31	31	32
68 Pin SCSI	32	65	66
68 Pin SCSI	+15VDC	33	34
68 Pin SCSI	Ground	67	68

Analog Inputs 1 – 32

Connector	Analog Input Number	Analog IN+	Analog IN-
68 Pin SCSI	1	1	2
68 Pin SCSI	2	35	36
68 Pin SCSI	3	3	4
68 Pin SCSI	4	37	38
68 Pin SCSI	5	5	6
68 Pin SCSI	6	39	40
68 Pin SCSI	7	7	8
68 Pin SCSI	8	41	42
68 Pin SCSI	9	9	10
68 Pin SCSI	10	43	44
68 Pin SCSI	11	11	12
68 Pin SCSI	12	45	46
68 Pin SCSI	13	13	14
68 Pin SCSI	14	47	48
68 Pin SCSI	15	15	16
68 Pin SCSI	16	49	50
68 Pin SCSI	17	17	18
68 Pin SCSI	18	51	52
68 Pin SCSI	19	19	20
68 Pin SCSI	20	53	54
68 Pin SCSI	21	21	22
68 Pin SCSI	22	55	56
68 Pin SCSI	23	23	24
68 Pin SCSI	24	57	58
68 Pin SCSI	25	25	26
68 Pin SCSI	26	59	60
68 Pin SCSI	27	27	28
68 Pin SCSI	28	61	62
68 Pin SCSI	29	29	30
68 Pin SCSI	30	63	64
68 Pin SCSI	31	31	32
68 Pin SCSI	32	65	66
68 Pin SCSI	Ground	33	34
68 Pin SCSI	Ground	67	68

Relay Outputs 1 – 16

Connector	Relay Number	Common	Open	Closed
50 PIN SCSI	1	2	1	3
50 PIN SCSI	2	5	4	6
50 PIN SCSI	3	8	7	9
50 PIN SCSI	4	11	10	12
50 PIN SCSI	5	14	13	15
50 PIN SCSI	6	17	16	18
50 PIN SCSI	7	20	19	21
50 PIN SCSI	8	23	22	24
50 PIN SCSI	9	27	26	28
50 PIN SCSI	10	30	29	31
50 PIN SCSI	11	33	32	34
50 PIN SCSI	12	36	35	37
50 PIN SCSI	13	39	38	40
50 PIN SCSI	14	42	41	43
50 PIN SCSI	15	45	44	46
50 PIN SCSI	16	48	47	49

Unused Pins: 25 and 50

Relay Outputs 17 – 32

Connector	Relay Number	Common	Open	Closed
50 PIN SCSI	17	2	1	3
50 PIN SCSI	18	5	4	6
50 PIN SCSI	19	8	7	9
50 PIN SCSI	20	11	10	12
50 PIN SCSI	21	14	13	15
50 PIN SCSI	22	17	16	18
50 PIN SCSI	23	20	19	21
50 PIN SCSI	24	23	22	24
50 PIN SCSI	25	27	26	28
50 PIN SCSI	26	30	29	31
50 PIN SCSI	27	33	32	34
50 PIN SCSI	28	36	35	37
50 PIN SCSI	29	39	38	40
50 PIN SCSI	30	42	41	43
50 PIN SCSI	31	45	44	46
50 PIN SCSI	32	48	47	49

Unused Pins: 25 and 50

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