Signalcrafters
TECH, INC

OWNERS MANUAL

Status Monitor

for

Windows 95, 98, ME, NT 4, 2000 & XP

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SIGNALCRAFTERS TECH, INC.
MODEL 4002
Status Monitor™
FOR WINDOWS 95, 98, ME, NT 4.0, 2000 & XP

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Getting Started:

I.   INSTALLING SOFTWARE & HARDWARE REQUIREMENTS

Insert disk 1 or CD-ROM and press Start, Run. Browse the floppy or CD-ROM for the setup.exe file or type x:\setup.exe and then press OK.

P-75, 3 ½ Floppy, VGA Graphics Card, Printer, 32MB of RAM, 5MB of Hard Drive Space, 1 Serial Port, 1 Parallel Port, 101 Enhanced Keyboard, Mouse, CD-ROM and Windows 95, 98, NT 4.0 or 2000.
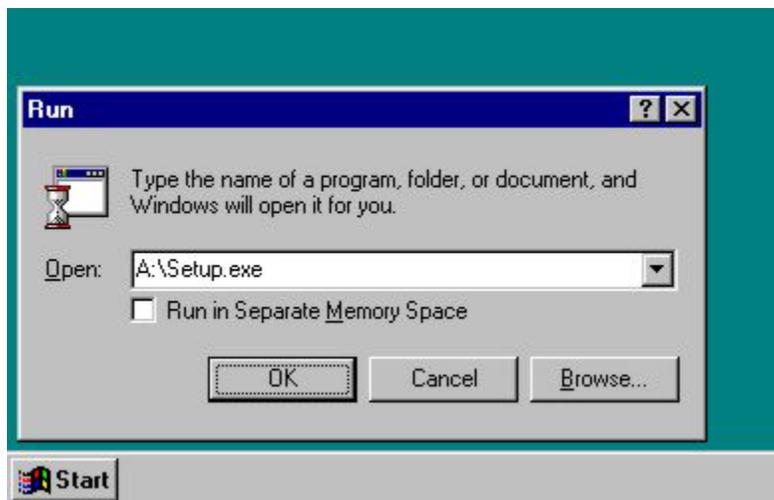
II.   MAIN MENU

The **Main Menu** gives the user five menu choices; **File**, **Setup**, **Report, Polling** and **Help**.

a)   The **File Menu** contains four sub-menus; **History**, **Change Users**, **Printer Setup** and **Quit**.

b)   The **Setup Menu** contains four sub-menus; **Sites**, **Types**, **Users** and **Program**.

c)   The **Report Menu** contains five sub-menus; **Open History File**, **Sort History**, **View History**, **View Sites** and **View Types**.

d)   The **Polling Menu** has four sub-menus; **Single**, **Auto**, **Manual** and **Monitor**.

e)   The **Help Menu** has three sub-menus; **Contents**, **Keyword Search** and **About**.

III.   ACCESSING THE HELP SCREENS

Status Monitor™ has a help screen to assist the user at any time during the program. By pressing Help on the menu bar and selecting Keyword Search you can find the Help screen your looking for.
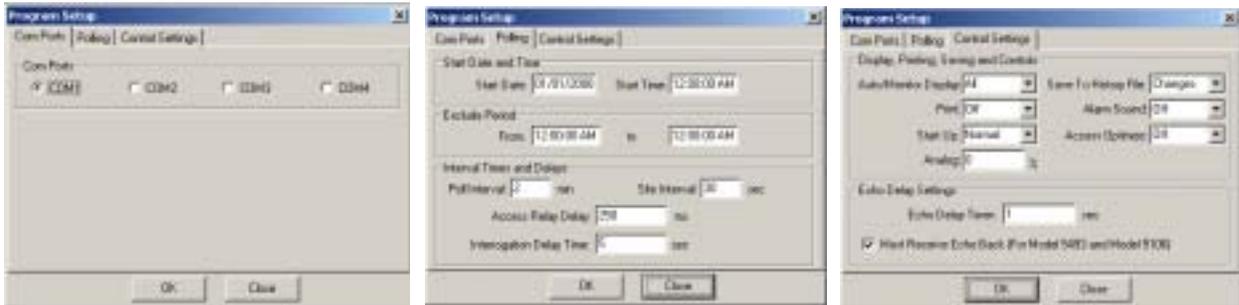
Begin Programming:

IV.   SETUP MENU

From the menu bar select the **Setup Menu**. Once the set up menu is displayed on the screen select the **Program** sub-menu.

A. Program sub-menu:

The **Program Setup** sub-menu will be displayed on the screen.

1)   **Com Ports:** you will need to select one of four **Com Ports.** Select the port that your Model 5493 or other RS-232 device is connected to your computer.

2)   **Access Relay Delay:** allows the user to set the time after an Access Relay is set or reset.

3)   **Interrogation Delay Time:** allows the user to set the time between the dialing of the phone number to the Setting of the Access Relay's and the interrogating the remote unit (for PSTN applications).

4)   **Start Date:** allows you to choose the data at which the program will start polling (automatic mode only). This setting along with Start Time setting allows you to setup a poll days or even months in the future.

5)   **Start Time:** allows the user to choose the time at which the program will start polling (automatic mode only!). This setting along with Polling Start Date setting allows the user to setup a polling sequence days or even months in the future.

6)   **Exclude Period From/To:** allows the user to set the start time of the exclude period. The Exclude Period To allows the user to set the end of the exclude period. The Exclude Period keeps the **Status Monitor**™ program from automatically polling during this time period. If the user is sharing a communication path with another system or with one that downloads information once per day, as an example, Midnight. You would set up the **Exclude Period** start time for Midnight and the **Exclude Period** end time to Midnight plus the download time.

7)   **Site Interval:** allows the user to choose the amount of time (in seconds) that the program will wait between polling sites. The user will want a smaller number in this field if the system is a polled only system. If the system is mixed with polled and self-initiate, use a larger number to allow for self-initiated data to be acquired by the Status Monitor™ program.

8) **Poll Interval:** allows the user to choose the amount of time (in minutes) that the program will wait between the polling cycles. This time is the time that the program waits between polling the last site and begins the polling cycle again, starting with the first site. **NOTE:** If you are planning to select the option of "All" for Auto/Monitor Display, Save to History File, and Printer, we suggest that this interval be a large number to eliminate large data files, large printouts, and a full polling screen.

9) **Start Up:** allows the user to choose whether the program will automatically start in the Normal, Monitor, or Auto mode when Status Monitor is executed.

10) **The Auto/Monitor Display:** allows the user to choose whether all site data will be displayed, or just the changes that have occurred from the last time this site's data was displayed. **NOTE: In the Single and Manual Modes all the data is displayed.**

11) **Save To History:** allows the user to select whether ALL polling information will be saved or just the CHANGES, or the save option should be turned off. If you are keeping a record for trend analysis then select either ALL or Changes.

12) **Alarm Sound:** allows the user to select whether the alarm sound will be active if an alarm is DISPLAYED ON THE SCREEN. If the user has selected ALL on the Auto/Monitor Display option, the alarm will sound every time a site reports with an alarm. However, if the user has selected CHANGES on the Auto/Monitor Display option, only alarms with changes will be heard. Alarms for digital units (Model 2109 or 5109) are chosen at the remote site via dipswitches or programming. Alarms for analog units (Model 2110, 2222 and 5222) are set by the input, Value 0% and the input, Value 100. Hitting <Esc> will reset this audible alarm

13) **Analog:** allows the user to choose the percent change from the last logged analog value to get an alarm display.

14) **Print:** allows the user to select whether ALL site data will be sent to the active printer, just the CHANGES, or if the print function should be shut off. If the user wants to keep a record on paper as well as the computer then the user should select ALL or CHANGES.

The Print option controllers the output of the ACSII output (Real time History printing). When printing with this option it is recommend using a dot matrix printer.

15) **Access Optimize:** allows the user to choose whether the program will reset the access relays after test. Certain conditions must be met in order for the program to bypass resetting the access relays. First, the Access Reset must be turned on in the Sites dialog. Second, the following site must have the same Access code.

The program also uses this setting to decide whether it will un-seize the PSTN line, or keeps the line seized for the next test. If the Dial # is the same as the next Dial #, the program will not issue the hang up command if this is "No"

Note that the program makes decisions on Access and PSTN independently. That is, if the Dial # is the same but the Access is different, the program will reset the Access relays, but not the Line Seize Relay.

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16) **Must Receive Echo Back (For Model 5493 or Model 5106):** Must Receive Echo Back allows the Status Monitor Software to verify that the Model 5493/5106 received the message correctly. Status Monitor Software will try four times before going on to the next function.

B. Types

The **Types** menu allows you to **Add**, **Delete**, **Edit**, or **List** the current types.
A Type is defined as a device (Water Pump (ON/OFF), Door (OPEN/CLOSED), Flow (Analog)).

ADD - The Add sub-menu allows the user to add types to the database.
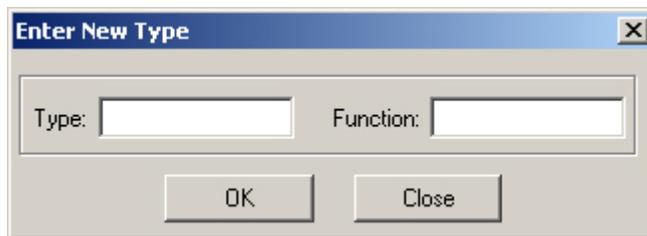
EDIT - The Edit sub-menu allows the user to change existing types in the database.
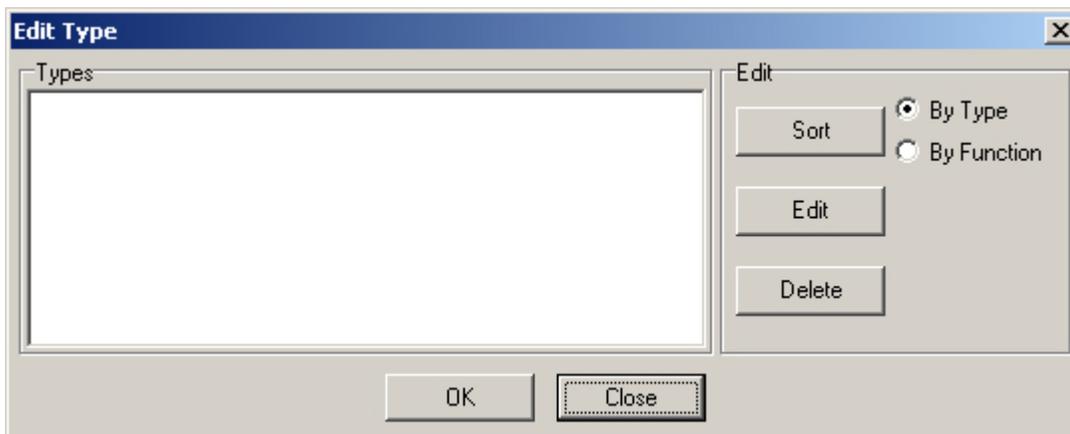
1) Adding Types To Database

When first installing the **Status Monitor**™ software, select **ADD**. The screen will display a window with he cursor flashing in the **Type** field. Enter a brief description in this field (Pmp 1, Beac 2, etc.) press "tab", the cursor will move across to the **Function** field. Enter in the **Type** description (Main Pump, Tower Beacon, etc.), press, "OK". **NOTE:** We suggest that the user compile a list of types and enter the entire list at one time.

From the menu bar select the **Setup Menu**. Once the set up menu is displayed on the screen select the **Sites**, **Add** sub-menu.

C. Sites:

ADD - The Add sub-menu allows the user to add sites to the database.

EDIT - The Edit sub-menu allows the user to change existing types in the database.

1) Adding Sites to the Database

   Once the user has selected the **ADD** option a new window will appear on the screen with the cursor flashing in the first field, **ADDRESS**.

2) Enter the **Address** of the remote site (this address is the address selected on the remote Signalcrafters module). Press "tab".

3) The cursor will drop to the next selection, **Description**. The Description field allows the user to enter the name of the site being added. Once the Description has been entered press "tab".

4) The cursor drops to the next selection, **Auto Poll**. The Auto Poll option allows the user to define if this site being added should be part of an Auto Poll cycle. Move the cursor part of an Auto Poll cycle. Use the drop down menu to select either "YES" or "NO" and press "tab".

5) The cursor then drops to the next selection, **Dial Number**. The Dial Number input field allows the user to enter the phone number that the master station will dial to reach the remote site. **NOTE:** Leave this field blank if this site is not accessed via a PSTN. To leave blank, or after phone number is entered, press, "tab".

6) The cursor will then drop to the next selection, **Access**. The Access field allows the user to enter the access codes required to reach this site. In autodial applications, the program will attempt to dial the phone number first, then set the access relays. If you have multiple paths where relays are switched to make the correct connections an example is listed below:

   To set all the relays on a local 5109:
   Access code: = **1001#A.**

   Note: At the end of each relay access number you must type a period at the end of each relay code (**1001#A.**).

   To set the first four relays on a Model 5452 (8x1 Relay Module) from a Model 5493 for a four-wire circuit the following access word is required:

   Access code = **ABC1*1.ABC1*2.ABC1*3.ABC1*4.**

   Note: At the end of each relay access number you must type a period at the end of each relay code (**ABC1*1.**).

7) The cursor will then drop to the next selection, **Response Time**. The Response Time field allows the user to choose the amount of time that this program will wait for a response from the remote. In most cases, enter the Transmit Delay Time of the remote site module in the field. Additional time may be required due to older units (slower DTMF ON/OFF times), excessive radio key up time, repeaters, satellite delays or PSTN delays. This time is in seconds (10 sec recommend). Once a time has been entered, press, "tab".

8) The cursor will then drop to the next selection, **Sensor**. The Sensor field allows the user to select which type of site you are monitoring, Digital or Analog. Move the cursor to the correct Sensor and press the drop down menu.

9) If you chose **Analog**, a new window will be seen on the screen with several options from which to choose. There are two inputs into each 5222 Analog Module address, and the screen will display two inputs per address for you to fill in. The second input will be added in the same fashion as the first.

a) The cursor will be located in the **Units** field. The units' field could be Vdc, mA, PSI or Vac. Select a Type in the **Types** scroll box. Press the type you want and the **Units** and **Description** field will fill in.

b) **Description** field. The description field could be Battery Voltage, RF Power, etc.

c) The cursor will be at the **Units Min** field. This field allows the user to set up the minimum acceptable analog value (in your units) that the **Status Monitor**™ program will accept as normal. If a value is reported below this value, it will be displayed in red on the screen, the computer speaker will sound (if selected \See Alarm Sound) and its corresponding relay will be set. This field is located under the 0%. Once the value has been entered, press, "tab".

d) The cursor will move across to the next selection, **Units Max**. This field allows the user to set up the maximum acceptable analog value (in your units) that the Status Monitor™ program will accept as normal. If a value is reported above this value, it will be displayed in red on the screen, the computer speaker will sound (if selected \See Alarm Sound) and its corresponding relay will be set. This field is located under the 100%. Once a value has been entered, press, "tab".

e) The cursor will then drop to the next selection, **Transducer 0%**. The input Transducer 0% field allows the user to set up the transducer minimum value.

Example: If you are using a 0-2V transducer, this value would be 0.0. If you are using a 4-20 mA transducer, this value would be 4.0. Enter a value and press "tab".

f) The cursor will move to the next selection, **Transducer 100%**. This field allows the user to set up the transducers maximum value.

Example: If you are using a 0-2V transducer, this value would be 2.0. If you are using a 4-20 mA transducer, this value would be 20.0. Enter a value and press "tab".

g) The cursor will move to the next selection, **Value 0%**. This field allows the user to set the translation minimum value.

Example: If you are monitoring a tank level from 0 to 20 feet your minimum would be 0.0 (feet). If you are monitoring a battery voltage from 0 to 12 V you minimum would be 0.0 (volts).

h) The cursor will move to the next selection, Value 100%. This field allows the user to set the translation maximum value.

Example: If you are monitoring a tank level from 0 to 20 feet the maximum value would be 20.0 (feet). If you are monitoring a battery voltage from 0 to 12V your maximum value would be 12 (volts). Enter a value and select a new type for the second analog.

10) If you selected the **Digital** option a window will now be displayed for the user to select the Type of input that the remote site is monitoring. First press the **new** button. Select a Type in the **Types Available** scroll box. Press the type you want with the mouse by pressing the mouse over the Type field. Press the **Insert Type** button to insert selection. After a Type is selected press the mouse over the **Norm** combo box (Normal Relay setting).

a) The cursor will now prompt you for information regarding the **Norm** field. This option allows the user to choose whether the Digital input is "Normally Open"(OFF) or "Normally Closed (ON). This field is for your reference. Select your option and press "tab".

c) The cursor will move to the next selection, **Relay**. This option allows the user to choose a relay that will follow the remote input. **NOTE:** It is recommended when assigning relay controls that the user employ a polled only system so that a self-initiating remote will not transmit over the relay control commands.

d) Press the Save button to save the digital point.

D.   Users sub-menu

The last Option under the Setup menu is **USERS**. The Users menu allows the user to select from four options.

ADD - The Add sub-menu allows the user to add a new user to the system. Once a User's Name has been added, the Name/Password window will appear upon start up of **Status Monitor**™.

EDIT - The Edit sub-menu allows the user to change parameters of a user.
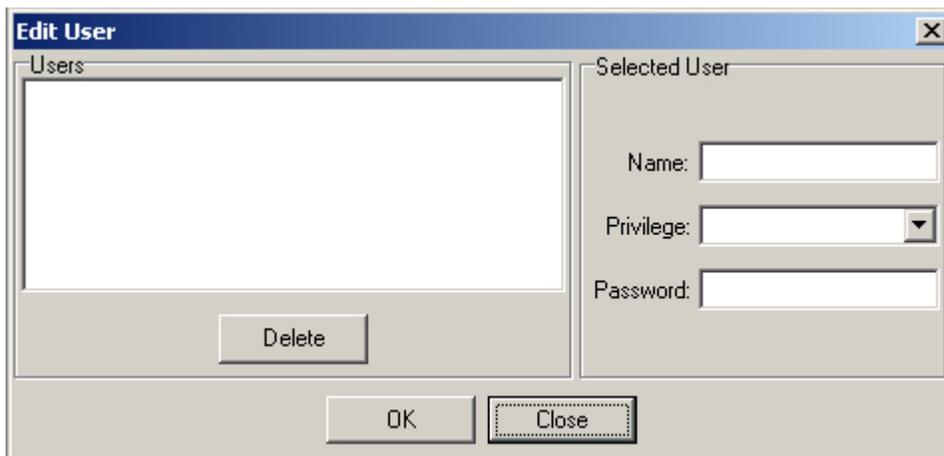
1)   Adding Users To the Database

When initializing the system, choose the option **ADD**. Once the ADD option has been selected a window will appear on the screen with the cursor in the **Name** field.

2)   The **Name** field should be filled in with a users name. Enter the name and press "tab". **NOTE:** A Manager Level user must be entered in as the first user (Manager \ Operator Privilege discussed below).

3)   The cursor will now prompt you to select the **Privilege** option. There are two levels of security, Operator and Manager. Managers can access all windows of the **Status Monitor**™ software. Operators cannot access the **Setup** sub menu. **NOTE:** Both the password and name must match with the user entered strings or the Operators privilege will be assumed. Select the Privilege and tab "enter".

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4)   The cursor will now prompt the user for the **Password**. The Password
        entry allows the user to associate a users name and password with a
        privilege. Once the password is entered press "enter".

        **NOTE: Retain your password for future use. Contact factory if you
        have lost your password.**

The **Setup** menu is now complete.

V.   FILE MENU:

Move the cursor to the File Menu and press it. There are four options to choose from
the menu.

1)   The first step is to create a History File. Select **History, New**. Enter the
        name of the History File that you want the data stored.

        Example: Jan94 History

        The File extension **.HIS** will automatically be added to the File name. Once
        the file name has been entered press "OK"

        To change **History** files, from the **Main Menu**, select the **File** sub-menu,
        select **History, Open**. Select the file you want to use to store your history
        information. This option allows the user to select which History File the
        Data is collected in. You may have many different History files to select
        from.

2)   **Change User**: The **Change User** allows different users to access the system
        without having to exit the Status Monitor™ program

3)   **Printer Setup**: The **Printer Setup** allows you to select different printers or
        settings. Printer Setup control the output for the Report

4)   **Exit**: This option allows the user to exit the Status Monitor™ program.

VI.   REPORT MENU:

The **Report** option allows the user to browse through the reports.

History Report: To view a history file Press the **Report Menu** then press **Open
                History File**, this will load the history file in memory. To sort the
                data, press **Sort History**, then press the desired sorting. To view the
                file in a report, press **View History**. The history file (*.his) is in a
                Comma Delimited File so it can be import in to Microsoft Access,
                Corel Paradox or any database program that the import of a Comma
                Delimited File.

Sites Report: To view all the sites press **View Sites**. This will display all sites that were entered.

Types Report: To view all the types press **View Types**. This will display all types that were entered

VII. **POLLING MENU**:

The last menu selection is the **Polling** option. The Polling Option opens a sub-menu with four options; Single, Auto, Manual and Monitor.

A) **Single** - The single option allows the user to poll just one selected site. After choosing the Single Mode, a site list will come on the screen. Select the appropriate site and press, "enter". The Status Monitor™ program will automatically dial (if set up for PSTN), access, poll and reset the access relays. All data will be displayed on the screen in the Single Mode even if you have chosen the option of only CHANGES.

B) **Auto** - The Auto mode allows the user to poll <u>ALL sites that have been chosen</u> for automatic polling. The program automatically accesses, polls and resets the access parameters. The Data will be displayed and printed according to the options that were discussed in the Program menu.

C) **Manual** - The Manual poll mode allows the users to generate any 1-11 character DTMF code. Use this mode for (Re) Setting relays, Writing to / Reading from EE PROM registers, or for normal poll operations. NOTE: Check Application notes for some common commands.

D) **Monitor** - This option allows the user to monitor all messages that the master station receives. This mode is commonly used as a backup to another polling master station. Therefore this mode will not control annunciation Relays.

Application Note:

Signalcrafters Protocol:

11 Data bytes (8 data bites, 1 start, 1 stop) and a ASCII return byte. 12 total bytes.

Status: Model 2109 and 5109.

1	2	3	4	5	6	7	8	9	10	11
Module Address				Status			Alarm			EOM

Analog Module: Model 5222.

1	2	3	4	5	6	7	8	9	10	11
Module Address				Analog 1			Analog 2			EOM

Common Commands (Manual Poll):
Module Address = 1001.

Interrogate Remote: 1001#
Set relay 1 of remote (Model 2452, 5452): 1001*1
Reset relay 1 of remote (Model 2452, 5452): 1001#1
Pickup phone with Model 5493: ABC1A1
Tell remote to hang-up: 1001DDD
Hang-up phone with Model 5493: ABC1#1

Model 5493 - DTMF to ASCII Modem

I.   Setting up your Model 5493 for use with Status Monitor™ software.

      A) Front Panel Dipswitch Settings:

Dipswitch	Function	To Left	To Right
1	Echo ASCII input		Echo after each DTMF out
2	Keyboard input	Store and Forward	
3	Unused		
4	Radio/PSTN	K1 for PTT	K1 for Line Seize

Program Wire Setup

Pin	**BROWN** Baud Rate	**RED** Interdigit Timer (seconds)	**ORANGE** K1 Key-Up Delay (seconds)	**YELLOW** DTMF ON (ms)	**GREEN** DTMF OFF (ms)	**BLUE** Reset Timer (seconds)
D	75	1.6	0.0	80	80	0.0
1	150	0.1	0.1	05	05	0.5
2	300	0.2	0.2	10	10	1.0
3	600	0.3	0.3	15	15	1.5
4	1200	0.4	0.4	20	20	2.0
5	2400	0.5	0.5	25	25	2.5
6	4800	0.6	0.6	30	30	3.0
7	9600	0.7	0.7	35	35	3.5
8	75	0.8	0.8	40	40	4.0
9	150	0.9	0.9	45	45	4.5
0	300	1.0	1.0	50	50	5.0
*	600	1.1	1.1	55	55	5.5
#	1200	1.2	1.2	60	60	6.0
A	2400	1.3	1.3	65	65	6.5
B	4800	1.4	1.4	70	70	7.0
C	9600	1.5	1.5	75	75	7.5

 * Notes:
1) Program the orange "program wire" on 5493 Module to desired key-up delay (Refer to 5493 Manual).
2) K1 is not operated if the orange wire is programmed to "D".

II.   Voltage

    1) Prior to making DC connections, please refer to 5493 Manual and drawings.

Files to Backup or Transfer

V1.00 thru V1.13

You will need to backup the data (Location of files list below). These same files can transfer to a new computer or when you upgrade to a new version of Status Monitor (the old data files will get erased when you upgrade so you will need to backup these files).

Note: When upgrading, it is best to uninstall Status Monitor from the computer using the Add/Remove in the Control panel.

Upgrading from V1.13 to V1.2

Upgrading from V1.13 to V1.2 you must follow the steps below.
1. Save database files (The default directory for V1.13 is: C:\Program Files\Signalcrafters\Status Monitor) that are listed below.
2. Uninstall Signalcrafters Status Monitor Software V1.00 thru V1.13.
3. Install V1.2
4. Copy database files to the default directory for V1.2: **C:\Program Files\Signalcrafters\Status Monitor\Data**.

Upgrading from V1.2 thru V1.25

If you use Analog points: You must re-enter Analog Data Field "Input" again (2nd field). This field assigns the analog input (1 or 2).

Backup Data files locations

For Version 1.00 thru 1.13

The default directory is: C:\Program Files\Signalcrafters\Status Monitor

For Version 1.2 and higher

The default directory is: C:\Program Files\Signalcrafters\Status Monitor\Data

Files to Backup:

analog.db
digital.db
s**ites.db, sites.PX, sites.XG0, sites.XG1, sites.XG2, sites.YG0, sites.YG1, sites.YG2**
types.db, types.PX, types.XG0, types.XG1, types.YG0, types.YG1
users.db

You may want to also backup history files.

Files to Backup: ***.his**