ProtoTRAK®

Offline Programming Manual

For CNC models:
- ProtoTRAK VM
- ProtoTRAK SM
- ProtoTRAK VL
- ProtoTRAK SL
- ProtoTRAK SMX
- ProtoTRAK SLX

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1.0 Introduction

The ProtoTRAK Offline Programming System allows you to write, edit, and inspect programs for your ProtoTRAK using most standard IBM compatible computers.

Programming with the Offline system is essentially the same as programming through the ProtoTRAK keyboard with a few differences. This manual will provide installation instructions for the offline and highlight the differences in programming between using the offline and the control pendant. The basic programming instruction is left to the programming, operating, and care manual you received with your ProtoTRAK CNC.

This manual is a part of the Offline Programming option ordered with part number PT4OL. The offline programming option includes:

- ProtoTRAK PT4OL CD (P/N 23823-2)

- Parallel (P/N 22648-2), or USB (P/N 23770) Hardware Keys

- Manual (P/N 23298)

In addition, you are entitled to a free copy of each of the programming manuals. For your convenience, an order form is located at the back of this manual. You can also download it off our website at www.southwesternindustries.com

2.0 Offline Computer Requirements

The ProtoTRAK Offline is designed to run on an IBM compatible PC, Pentium II or higher, CD-ROM drive, 256 MB RAM, 100MB free hard disk space, and Windows XP or above.

3.0 Installing the ProtoTRAK Offline Programming System

The ProtoTRAK Offline system will be installed onto the hard disk of your computer. In order to save programs or use software options it will be necessary to install a hardware key in either the parallel (see Section 3.2) or USB (see Section 3.3) port.

3.1 ProtoTRAK Offline Versions

The ProtoTRAK Offline system comes with a CD that contains two different versions of the ProtoTRAK Control.

Use the file starting with "pt4ol" to install the software to program the ProtoTRAK VM, SM, VL and SL.

Use the file starting with "sxol" to install the software to program the ProtoTRAK SMX and SLX.

You may install both in order to program all control types.

3.2 Using the USB Options Key
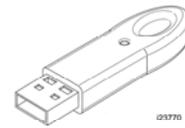
3.2.1 Installing on Windows XP and earlier

1. To begin installing the offline software, insert the CD (p/n 23823-2) into your CD drive.

2. Double Click on My Computer, then on the CD-ROM Drive, then on SXOL_40.exe

3. Click on OK followed by Unzip. When the status bar reaches 100%, click Close. Close the CD-ROM Drive folder Window.
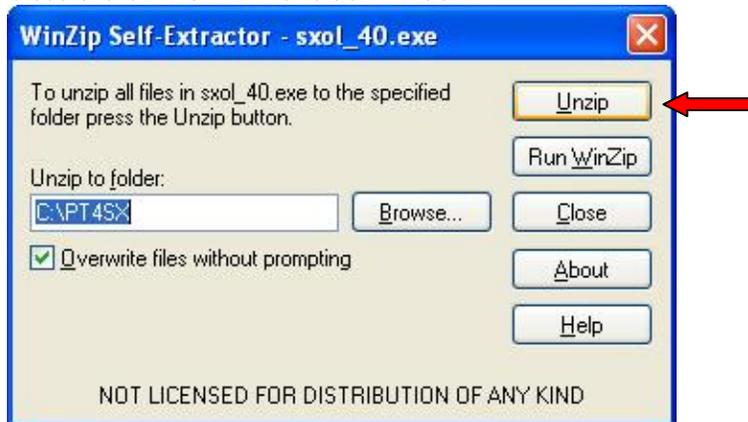
4. Double Click on My Computer, then the C:\ drive, followed by the PT4SX Folder.
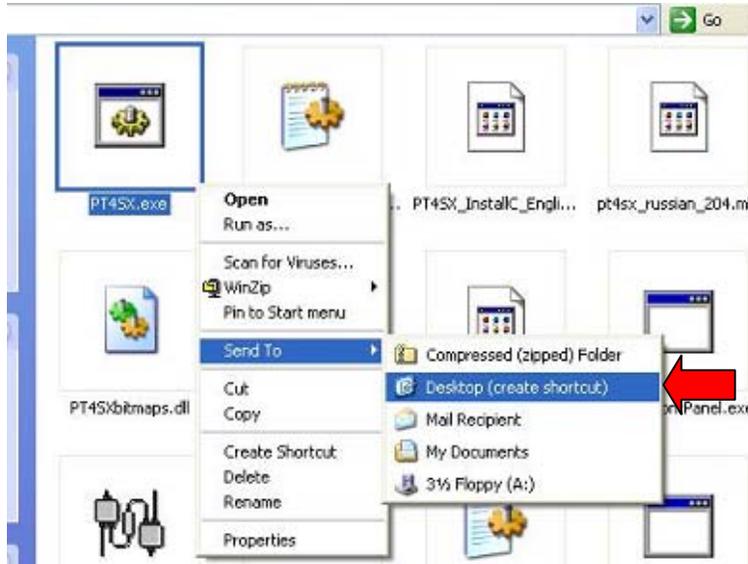
5.
   Right Click PT4SX.exe, move your mouse over Send To then click Desktop (Create Shortcut). The purpose for this is so that you'll have the PT4SX.exe icon on your desktop for ease of access so that you'll be able to run your offline from there rather then having to access the PT4SX folder every time.

6. Close the Folder.

3.2.2 Installing the USB Hardware Key (Dongle)

Note: The purpose of the Sentinel Drivers is for the USB dongle you'll have obtained for your offline. The drivers are a set of instructions for the computer on how to interpret the functionality of the dongle. The dongle itself serves as a key, enabling your offline to perform most if not all the functions that it's capable of. Without this, your offline will simply work as a demo and you'll be unable to save files and perform other functions. This dongle contains which options you've purchased as well such as the DXF option.

*** Do not plug in the USB dongle beforehand. Failure to comply may mean having to go through the driver removal process, only to have to reinstall everything again. ***

To install the Sentinel Drivers you'll need to perform the following functions:

1.   Double Click My Computer, then the CD-ROM Drive, then on the Sentinel Protection Installer executable file.

2.   Click on Next, followed by Accept, Next, Complete, Install, Yes, and then Finish.

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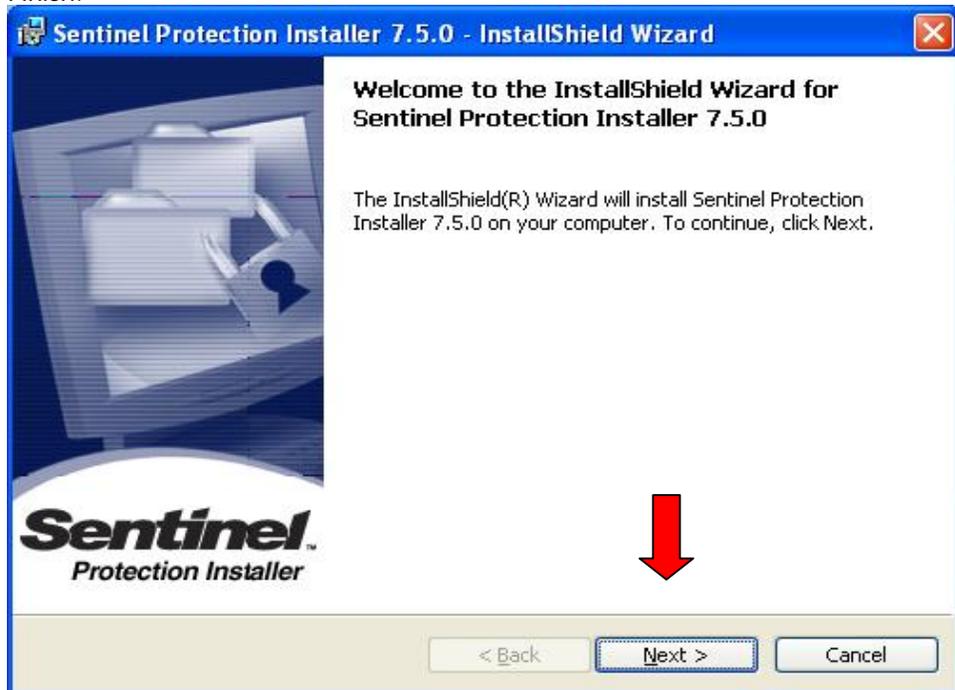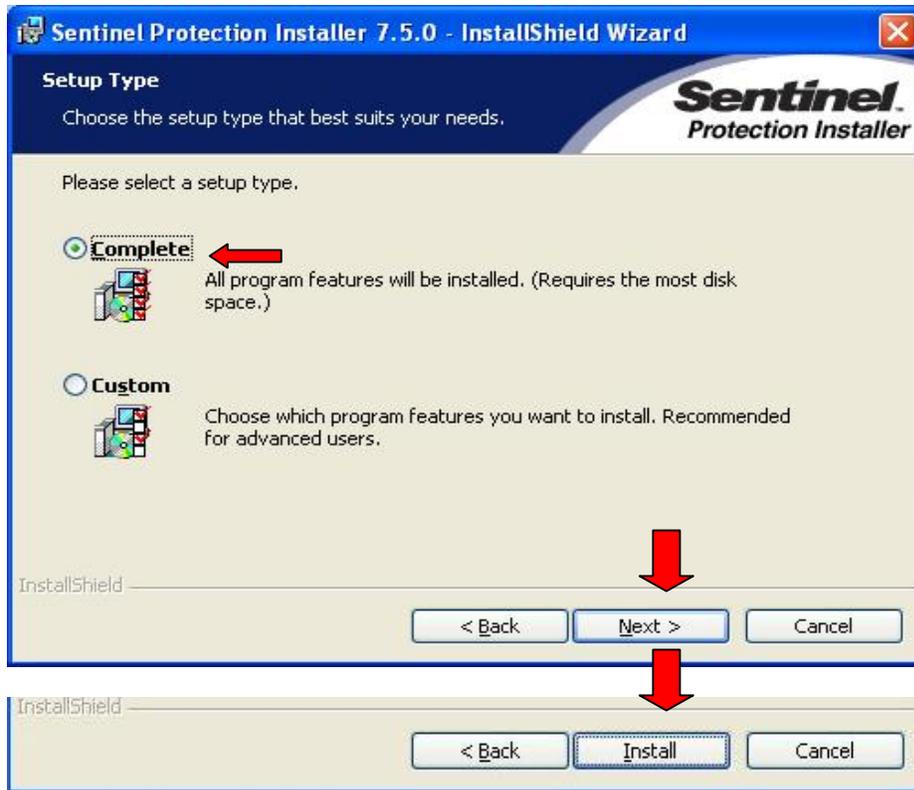
3.   Click Start, then Shutdown and Restart.

4.   Once computer has restarted, insert dongle into an open USB port.

5.   A USB icon should appear near the time with a bubble floating above it reading "Safe Net USB UltraPRO/SuperPro". The "Found New Hardware" bubble will then follow. Once it disappears, the dongle should be fully installed.

6.   Execute the PT4SX Offline and go into Program In/Out, then Save, and verify Save File is in black.

3.2.3 Installing on Windows Vista

Note: There are two methods to do this. One is to use the "Run As Administrator" function, and the other is to temporarily disable the User Access Control (UAC).

Run As Administrator

1.   Right click on the Sentinel Protection Installer and click on Run as Administrator.

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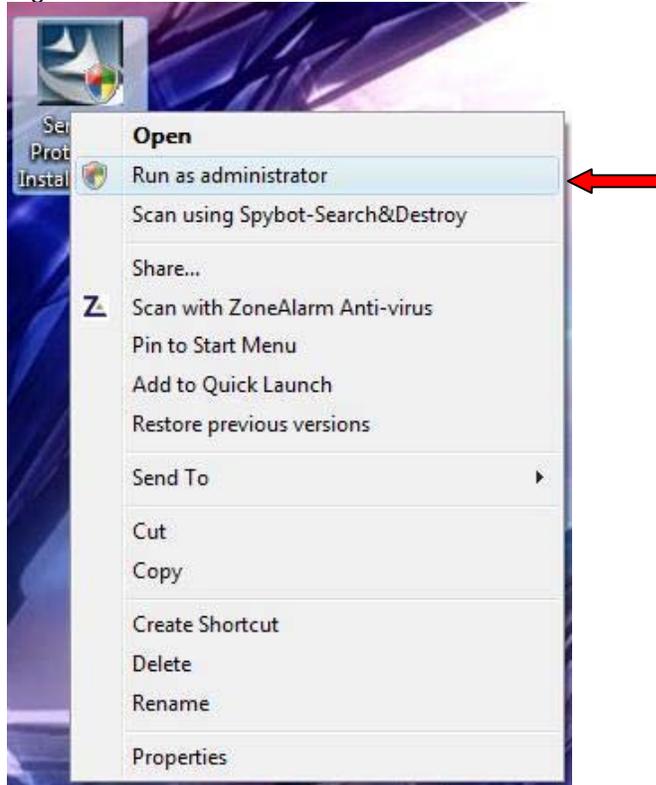
2.	Click "Continue" on the prompt.
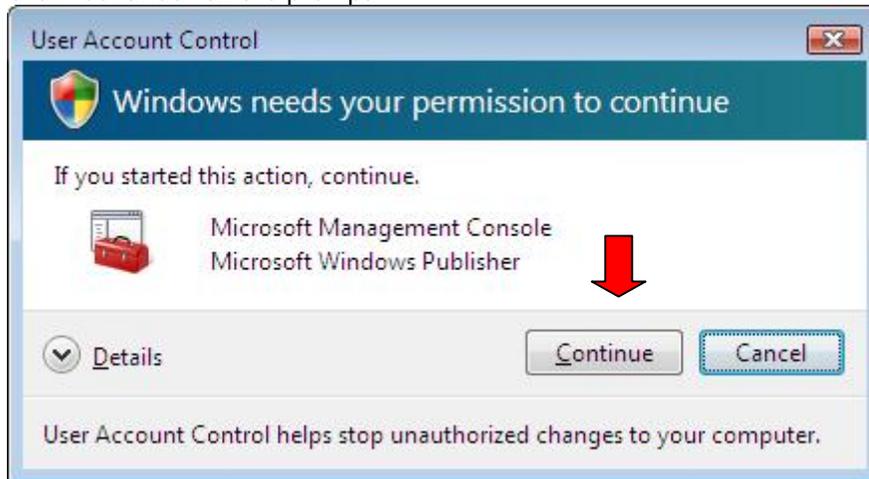
3.	Follow the instructions in section 3.2.2 starting with Step 2 to proceed with the rest of the installation.

Disabling the UAC

Note: This is only for the purposes of installing our software. To turn the UAC back on, follow the directions again and check the box instead of unchecking it.

1.	Press the Windows Start key on your keyboard and click Control Panel.

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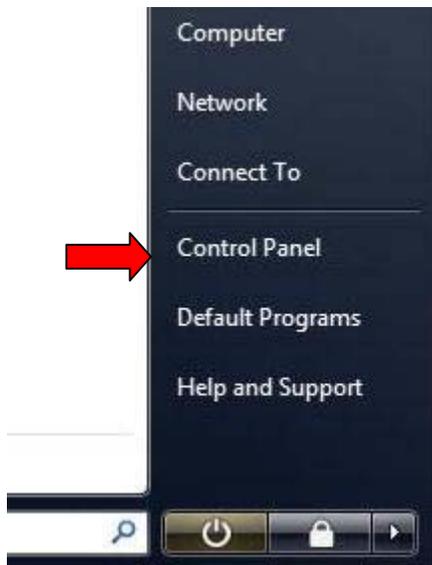
2. Locate User Accounts and Double Click it.
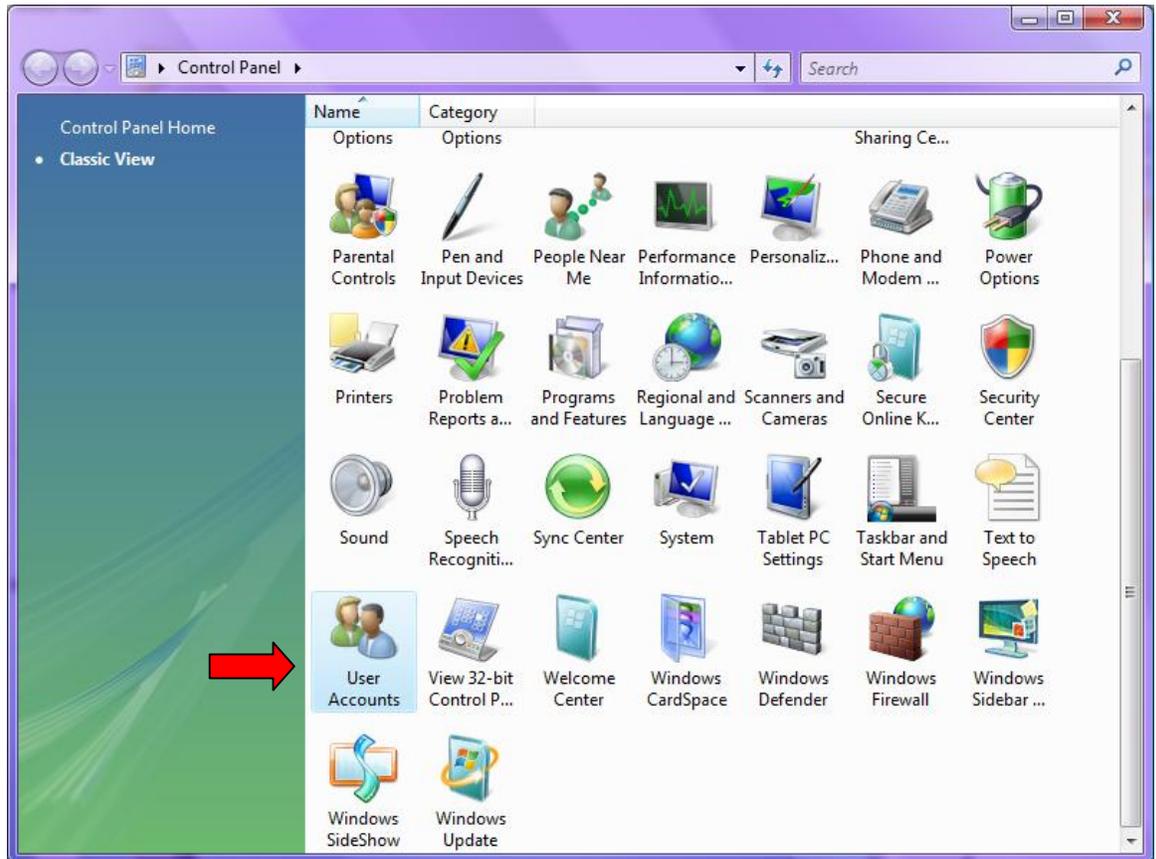
3. Click on the Turn User Account Control on or off link.
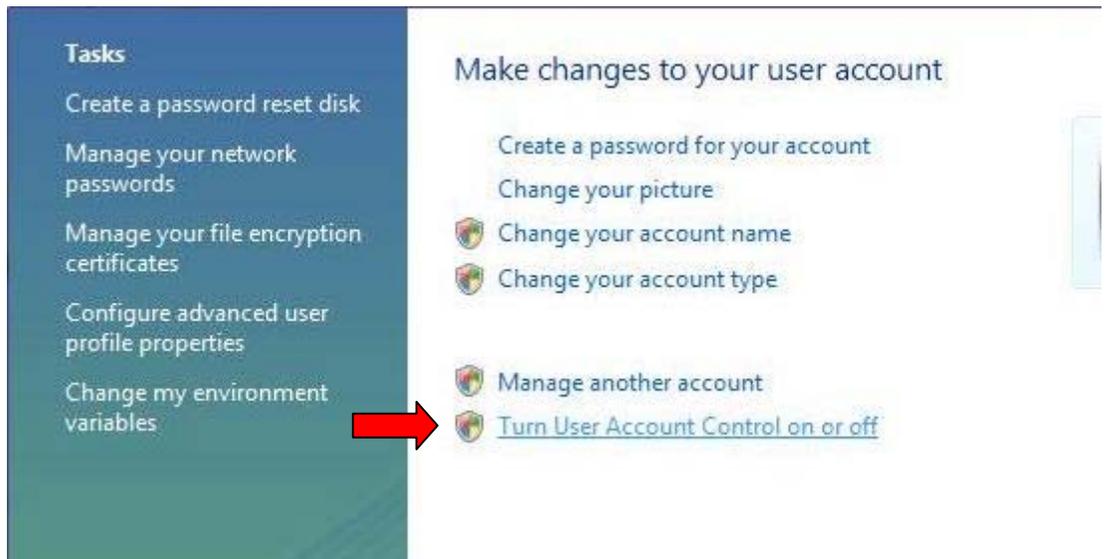
7.   Click "Continue" on the User Account Control Prompt.
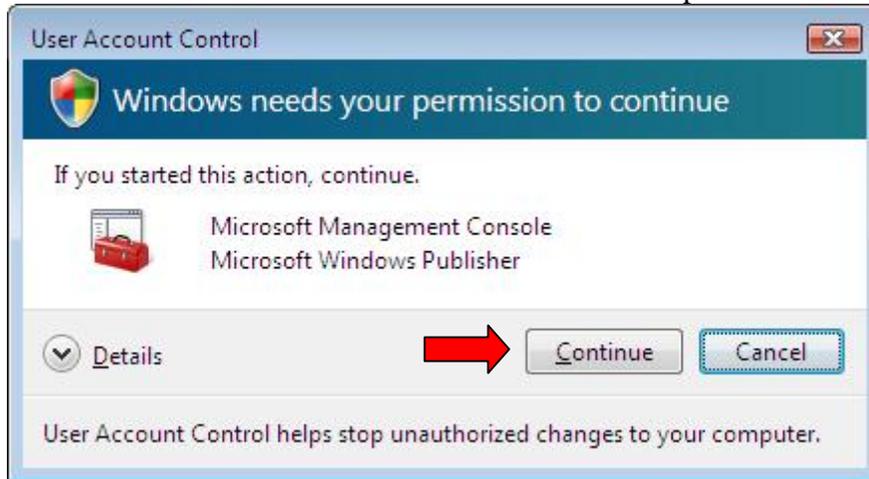
8.   Uncheck "Use User Account Control (UAC) to help protect your computer" then
        click "OK".
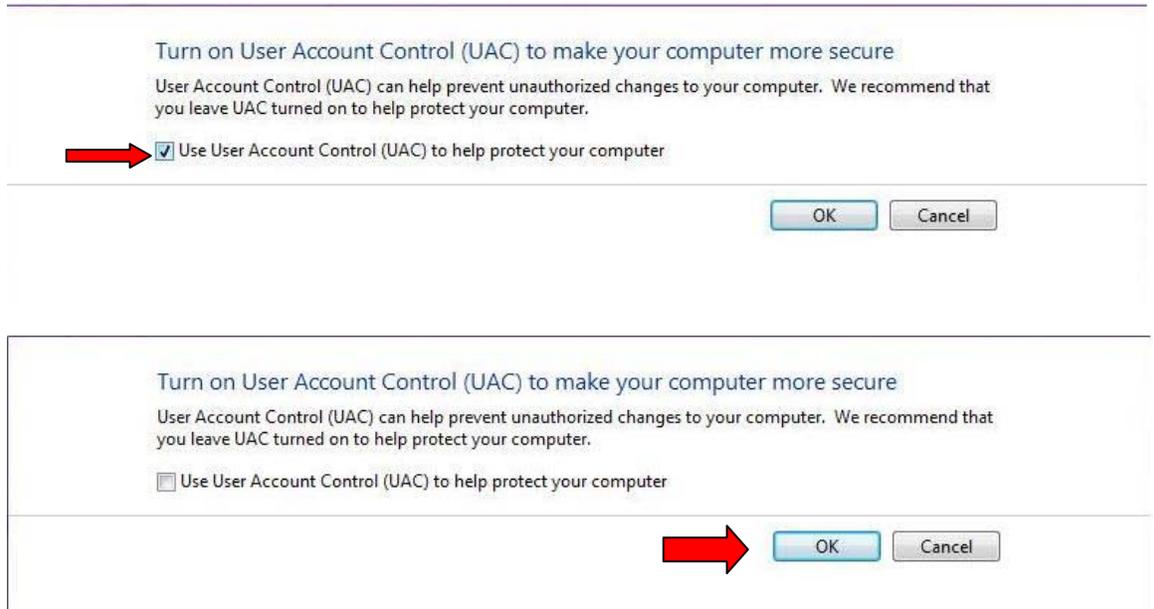
9.   Click "Restart Now".
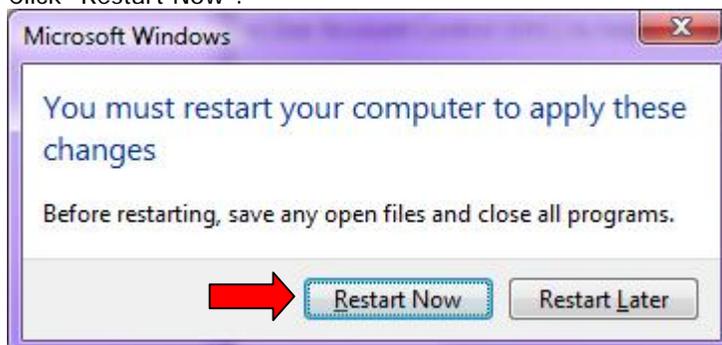
10.   Follow the instructions for Sentinel Driver Installation under section 3.2.2.

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3.3 Using the Parallel Options Key
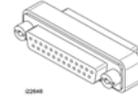
3.3.1 Installing on Windows XP

Note: Unless you have a problem, you will not need to install the hardware key drivers on the PT4OL CD. If you do, follow the instructions for installing the Sentinel Drivers.

1. Insert the hardware key (or dongle) that came with your offline kit into the printer port of your computer. If you have a printer cable already using this port, the hardware key should be plugged into the computer and the printer cable then plugged into the hardware key.

2. Follow the instructions in section 3.2.2, Steps 1 through 3.

3.4 Checking the Hardware Key Installation

You can assure that the hardware key has been installed properly by starting the ProtoTRAK Offline program and going to the Program In/Out Mode. If the SAVE key is grayed out, the hardware key is not being recognized.

Be sure to double-check the physical installation of the key. If you did not already load the sentinel drivers found on the CD, do so now. Refer previous sections above for instructions on how to install the key.

If you still have problems, contact the Southwestern Industries Service Department at (800) 367-3165.

3.5 Software Options

There are a number of optional converters available with your ProtoTRAK Offline system. The converters that convert past ProtoTRAK and TRAK CNC systems to work in the V, SX and S series CNC's are provided at no charge. Other converters are available, generally at a price, and it is our intention to add to the library of converters over time.

To check to see which converters are available and active with your offline software, go to the Set Up Mode, Service Codes, Software, Code 318. All available converters are listed. The ones in black are currently activated, the grayed out ones are not activated.

See the Programming and Operation manual for your ProtoTRAK CNC for more information about converters.

4.0 Programming with ProtoTRAK Offline Programming System

To use your ProtoTRAK Offline software on your computer, open the directory C:\PT4 and double click on the file PT4.exe for the VM, SM, VL and SL, and open the directory C:\Pt4SX and double click on the file PT4SX.exe. You may want to create shortcut icons for these files for your desktop.
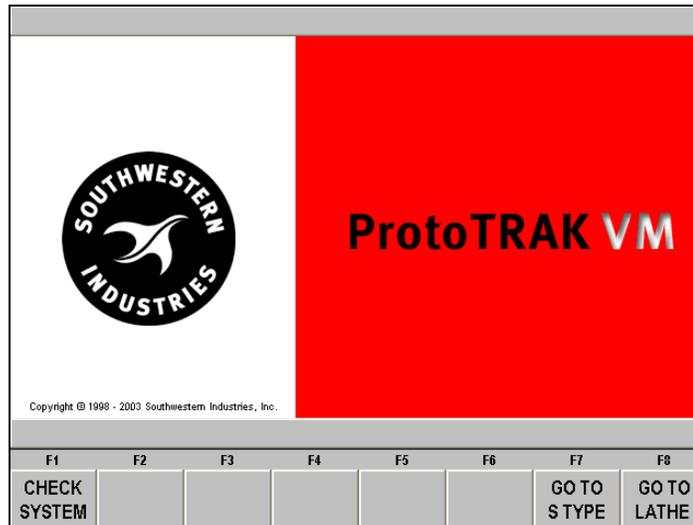
The ProtoTRAK Offline will begin and you will see a screen that looks like Figure 4.0 below.

Figure 4.0 The first Offline Screen.

Each Offline kit contains the program to run all of the current ProtoTRAK controls. On Figure 4.0 above, the screen says "ProtoTRAK VM" which is the CNC used on TRAK V series milling machines. You can change the system by using the softkeys in the F7 and F8 positions. For example, if you wanted to program (or look at) the ProtoTRAK VL CNC for TRAK V Series Lathes, you would select the softkey "Go To Lathe". Once the system is switched to a lathe CNC, the F8 softkey will say "Go To Mill".

The softkey selections may be made either with your computer's mouse or using the function (F) keys on the keyboard. For the Offline, the F1 softkey "Check System" may be ignored.

To begin programming, press alt+M to get to the Select Mode screen of the ProtoTRAK. Using the offline is almost identical to using the ProtoTRAK CNC at your machine tool.

The next sections will give you the keyboard equivalents for the hard keys on the ProtoTRAK CNC display.

To quit the ProtoTRAK Offline application press the PAUSE BREAK key on your computer keyboard. Be sure to save programs and tools before quitting. If the ProtoTRAK does not respond to the PAUSE BREAK key press, it could be that you inadvertently deselected the ProtoTRAK window. Simply mouse click anywhere within the ProtoTRAK screen and press PAUSE BREAK again.

To minimize the ProtoTRAK screen so you can see the Windows desktop, press Alt + W, then F1. To get the ProtoTRAK screen back, press Alt + B.

4.1   ProtoTRAK VM Keyboard Equivalents
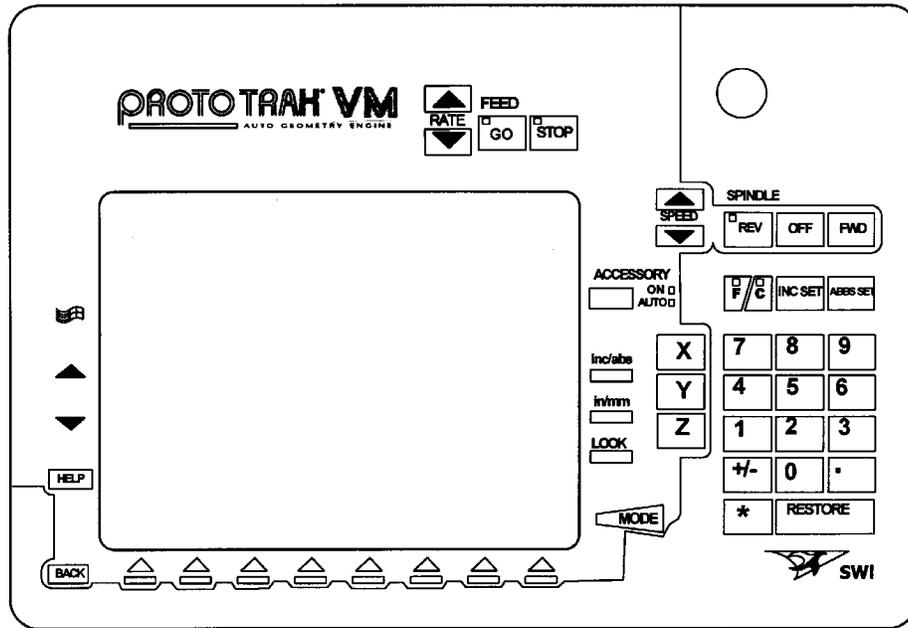
i00848

ProtoTRAK VM Key	Keyboard Equivalent
GO	Alt + G
STOP	Alt + S
REV	Alt + R
OFF	Alt + O
FWD	Alt + F
ACCESSORY	Alt + C
F / C	Alt + Z
INC SET	Alt + I
ABS SET	Alt + A or Enter
X	X
MODE	Alt + M or ESC key
Y	Y
Z	Z

ProtoTRAK VM Key	Keyboard Equivalent
Numbers 0 - 9	Numbers 0 - 9
+/-	+ and -, default is positive
INC/ABS	Alt + [
IN/MM	Alt +]
LOOK	Alt + L
RESTORE	Use back/clear key
SYS	Alt + W
▲	Alt + up arrow
▼	Alt + down arrow
HELP	Alt + H
BACK	Alt + B

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4.2 ProtoTRAK VL Keyboard Equivalents
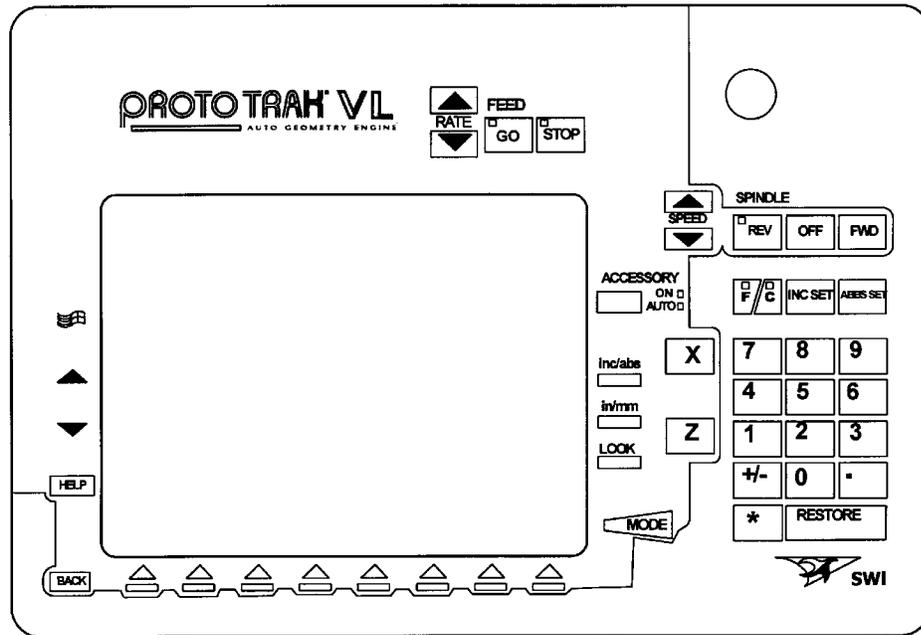
ProtoTRAK VL Key	Keyboard Equivalent
GO	Alt + G
STOP	Alt + S
REV	Alt + R
OFF	Alt + O
FWD	Alt + F
ACCESSORY	Alt + C
F / C	Alt + Z
INC SET	Alt + I
ABS SET	Alt + A or Enter
MODE	Alt + M or ESC key
X	X
Z	Z
Numbers 0 - 9	Numbers 0 - 9
+/-	+ and -, default is positive

ProtoTRAK VL Key	Keyboard Equivalent
INC/ABS	Alt + [
IN/MM	Alt +]
LOOK	Alt + L
RESTORE	Use back/clear key
SYS	Alt + W
▲	Alt + up arrow
▼	Alt + down arrow
HELP	Alt + H
BACK	Alt + B

4.3   ProtoTRAK SM Keyboard Equivalents
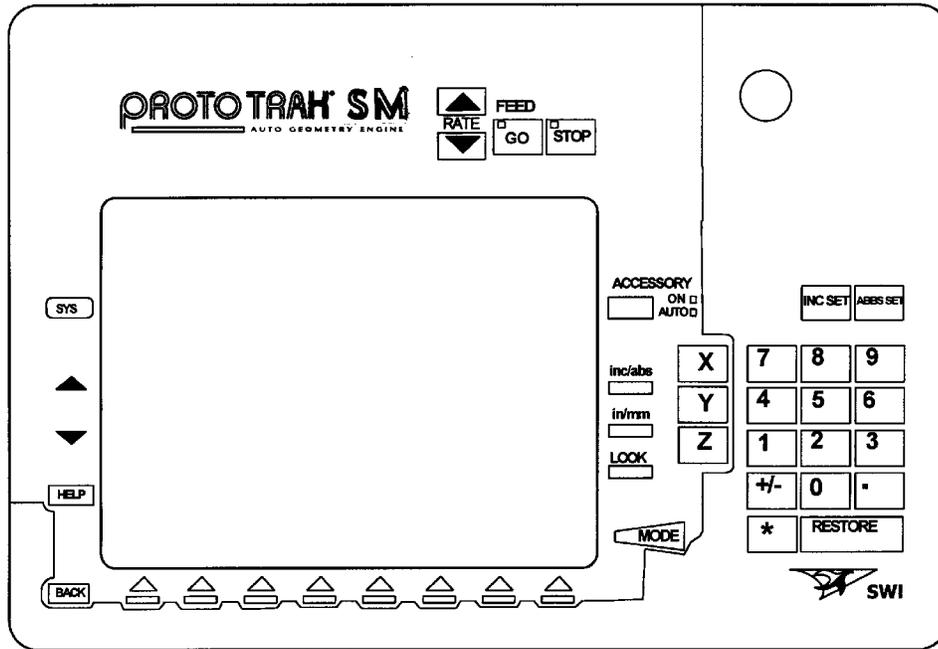
i00741

ProtoTRAK SM Key	Keyboard Equivalent
GO	Alt + G
STOP	Alt + S
ACCESSORY	Alt + C
F / C	Alt + Z
INC SET	Alt + I
ABS SET	Alt + A or Enter
X	X
Y	Y
Z	Z
MODE	Alt + M or ESC key

ProtoTRAK SM Key	Keyboard Equivalent
Numbers 0 - 9	Numbers 0 - 9
+/-	+ and -, default is positive
INC/ABS	Alt + [
IN/MM	Alt +]
LOOK	Alt + L
RESTORE	Use back/clear key
SYS	Alt + W
▲	Alt + up arrow
▼	Alt + down arrow
HELP	Alt + H
BACK	Alt + B

4.4 ProtoTRAK SL Keyboard Equivalents
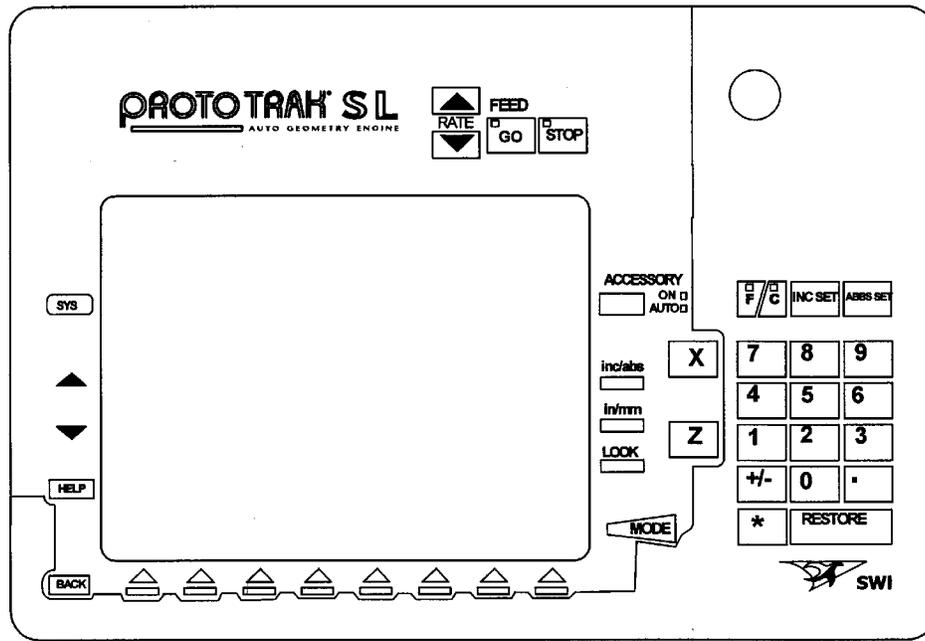
i00709

ProtoTRAK SL Key	Keyboard Equivalent
GO	Alt + G
STOP	Alt + S
ACCESSORY	Alt + C
F / C	Alt + Z
INC SET	Alt + I
ABS SET	Alt + A or Enter
X	X
Z	Z
MODE	Alt + M or ESC key
Numbers 0 - 9	Numbers 0 - 9
+/-	+ and -, default is positive

ProtoTRAK SL Key	Keyboard Equivalent
INC/ABS	Alt + [
IN/MM	Alt +]
LOOK	Alt + L
RESTORE	Use back/clear key
SYS	Alt + W
▲	Alt + up arrow
▼	Alt + down arrow
HELP	Alt + H
BACK	Alt + B

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4.5 ProtoTRAK SMX Keyboard Equivalents
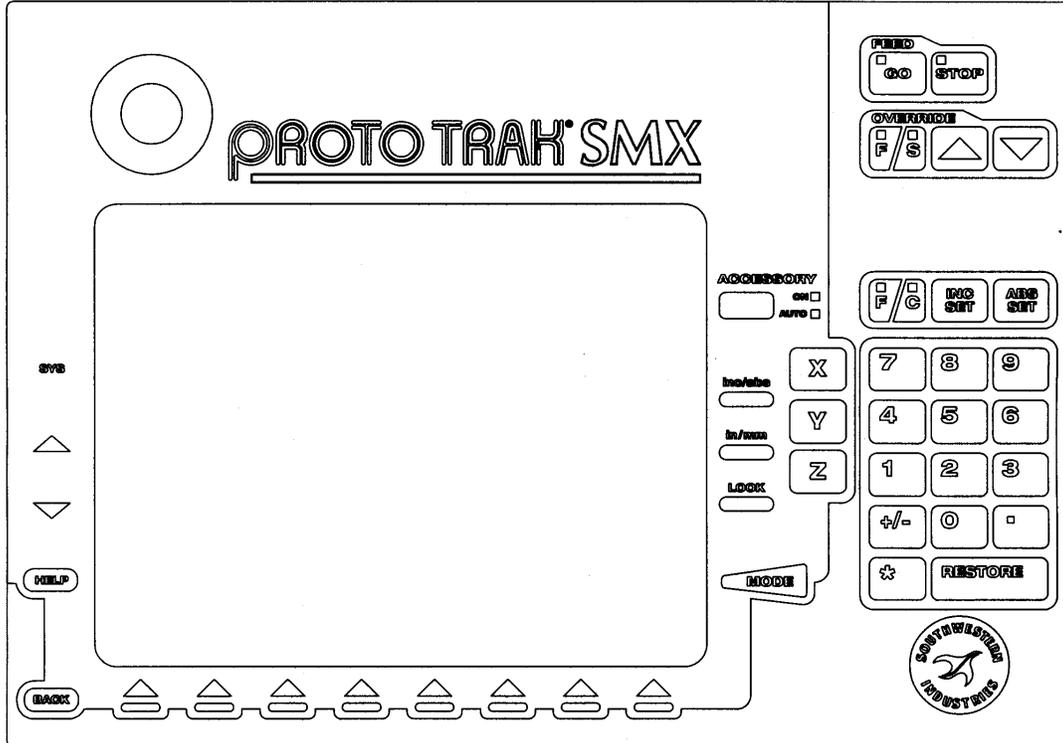
i24003

ProtoTRAK SMX Key	Keyboard Equivalent
GO	Alt + G
STOP	Alt + S
REV	Alt + R
OFF	Alt + O
FWD	Alt + F
ACCESSORY	Alt + C
F / C	Alt + Z
INC SET	Alt + I
ABS SET	Alt + A or Enter
X	X
Y	Y
Z	Z
Numbers 0 - 9	Numbers 0 - 9
+/-	+ and -, default is positive

ProtoTRAK SMX Key	Keyboard Equivalent
INC/ABS	Alt + [
IN/MM	Alt +]
LOOK	Alt + L
RESTORE	Use back/clear key
SYS	Alt + W
▲	Alt + up arrow
▼	Alt + down arrow
HELP	Alt + H
BACK	Alt + B
MODE	Alt + M or ESC key

4.6 ProtoTRAK SLX Keyboard Equivalents
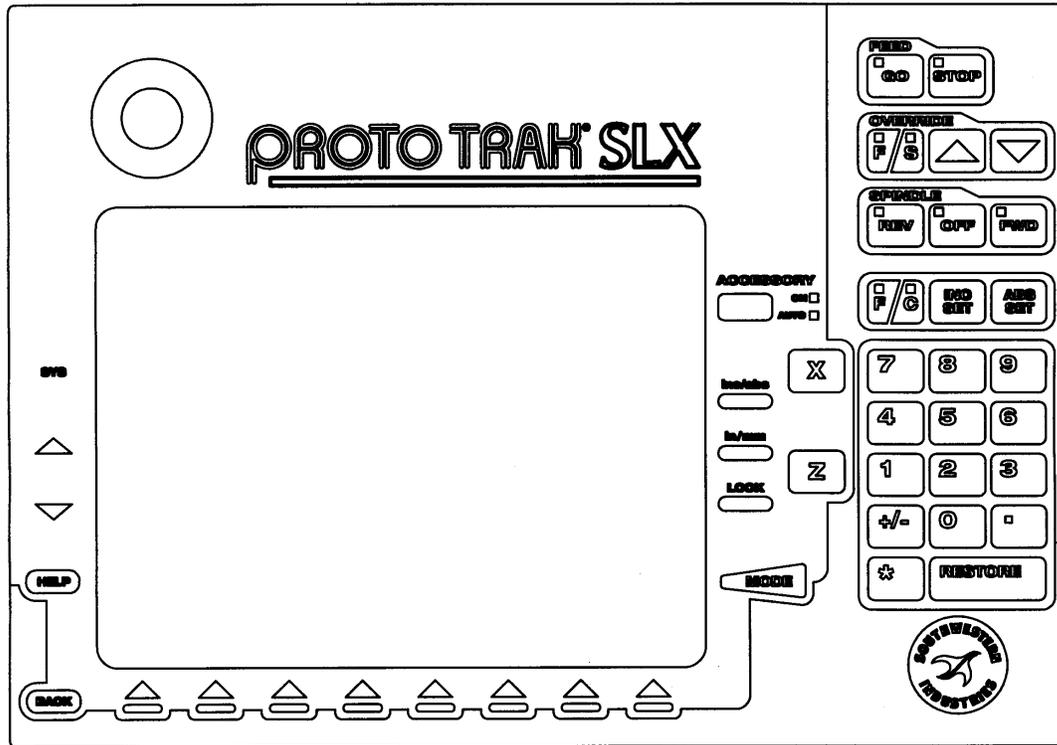
i24004

ProtoTRAK SLX Key	Keyboard Equivalent
GO	Alt + G
STOP	Alt + S
REV	Alt + R
OFF	Alt + O
FWD	Alt + F
ACCESSORY	Alt + C
F / C	Alt + Z
INC SET	Alt + I
ABS SET	Alt + A or Enter
X	X
Z	Z
Numbers 0 - 9	Numbers 0 - 9
+/-	+ and -, default is positive
INC/ABS	Alt + [

ProtoTRAK SLX Key	Keyboard Equivalent
LOOK	Alt + L
RESTORE	Use back/clear key
SYS	Alt + W
▲	Alt + up arrow
▼	Alt + down arrow
HELP	Alt + H
BACK	Alt + B
MODE	Alt + M or ESC key

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5.0 Turning On/Off SLX and SMX Options

For programs that are written on the ProtoTRAK Offline system to work on the CNC, there must be feature agreement between the two. Some feature dissimilarity will simply be ignored. For example, if spindle speeds are present in the program but not an active feature of the ProtoTRAK, the input for spindle speed will simply be ignored. Other differences will stop the program from running.   For example, a program that calls for an irregular island event will not work on a ProtoTRAK model that lacks this feature.

The ProtoTRAK offline for the SMX and SLX comes with the control software options loaded. It is easy to turn these features on or off in order to produce a program that is suitable for the machine.

1. From the Select a Mode screen, press alt+W.

2. Select the softkey labeled: Options On/Off.

3. Use the Data Forward and Data Back softkeys and the On/Off toggle softkey to select and configure the options as needed.

6.0 Setting Screen Resolutions

Resizing the ProtoTRAK Offline in order to fill the screen is accomplished through the properties function of your Windows® Operating System.

6.1 Windows 95, 98, ME and 2000.

- On your Windows desktop, right click and then select Properties.

- From the Properties window, select Settings.

- Under the label Screen Area, move the control tab to the left to change the screen resolution.

- Click Apply.

Note: when you finish using the ProtoTRAK Offline, you will probably want to change the settings back to the original screen resolution.

6.2 Windows XP and Vista

- Windows XP allows you to associate the screen setting to the application so that it automatically resizes itself when the application is launched and then resizes when the application is closed.

- To do this, first, place an icon on your desktop for the Offline programming system. You may want to create different shortcuts on your desktop to call up the different versions. For the VM, SM, VL and SL version of offline, the file that starts the program is "\\PT4\PT4.exe". For the SMX and SLX, the file that starts the program is "\\Pt4sx\PT4SX.exe".

- Place the cursor on the desktop icon, then right click.

- Select Properties. In the "Run" field, change to "maximize". Then click on the compatibility tab. Under the Display Settings, select "Run in 640 x 480 Resolution".

The 640 x 480 resolution is now associated with the ProtoTRAK Offline.

TRAK Warranty Policy

Warranty

TRAK products are warranted to the original purchaser to be free from defects in work-manship and materials for the following periods:

Product	Warranty Period	
	Materials	Factory Labor
New TRAK	1 Year	1 Year
Any EXCHANGE Unit	90 Days	90 Days

The warranty period starts on the date of the invoice to the original purchaser from Southwestern Industries, Inc. (SWI) or their authorized distributor.

If a unit under warranty fails, it will be repaired or exchanged at our option for a properly functioning unit in similar or better condition. Such repairs or exchanges will be made FOB Factory/Los Angeles or the location of our nearest factory representative or authorized distributor.

Disclaimers of Warranties

- This warranty is expressly in lieu of any other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligations or liability on the part of SWI (or any producing entity, if different).

- Warranty repairs/exchanges do not cover incidental costs such as installation, labor, freight, etc.

- SWI is not responsible for consequential damages from use or misuse of any of its products.

- TRAK products are precision mechanical/electromechanical measurement systems and must be given the reasonable care that these types of instruments require:

- Replacement of chip scrapers and wipers is the responsibility of the customer. Consequently, the warranty does not apply if chips have been allowed to enter the mechanism.

- Accidental damage, beyond the control of SWI, is not covered by the warranty. Thus, the warranty does not apply if an instrument has been abused, dropped, hit, disassembled or opened.

Improper installation by or at the direction of the customer in such a way that the product consequently fails, is considered to be beyond the control of the manufacturer and outside the scope of the warranty.

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