

DigiPro for Windows

50310099

Copyright © 1997 Slope Indicator Company. All rights reserved.

This document contains information that is proprietary to Slope Indicator Company and is subject to return upon request. It is transmitted for the sole purpose of aiding the transaction of business between Slope Indicator Company and the recipient. All information, data, designs, and drawings contained herein are proprietary to and the property of Slope Indicator Company, and may not be reproduced or copied in any form, by photocopy or any means, including disclosure to outside parties, directly or indirectly, without permission in writing from Slope Indicator Company.

DigiPro is a registered trademark of Slope Indicator Company. Windows and MS-DOS are registered trademarks of Microsoft Corporation.

Slope Indicator Company
A Boart Longyear group company
3450 Monte Villa Parkway, PO Box 3015
Bothell, WA 98041-3015
Tel: 425-806-2200 Fax: 425-806-2250



Contents

Installing DigiPro	1
Quick Start Guide	2
Creating Graphs and Reports.....	3
Modifying a Report.....	4
Printing a Report.....	5
Templates and Snapshots	6
Options and Defaults	7
Error Correction.....	8
Index	

1

Installing DigiPro

Notes

Installing DigiPro

1. Close all programs. Insert the CD into the CD drive.
2. Click on the Start menu, then choose Run.
3. Enter the letter of your CD drive (for example, D: or E:), then click Browse.
4. Select Setupxx.exe and click Open (the xx in the file name will change according to the version number). Then click OK.
5. The installation program starts and guides you through the rest of the installation. We recommend that you use the default settings provided by the installation program, which installs DigiPro and DigiPro Utilities (DU).
6. Restart your computer to complete the installation.

Note: If you are using floppy disks instead of a CD, insert Disk 1 into your floppy drive (typically A:). Click on the Start menu, choose Run, type in A:, and click browse. Then choose Setupxx, and click OK.

Windows NT Users: Before you install DigiPro, you must install Microsoft NT 4.0 Service Pack 3. To do this, insert the DigiPro CD in your computer and open the NT_SP3 folder. Then run the NT 4.0 Service Pack 3 installation program (NT4_SP3_I.EXE). NT 4.0 Service Pack 3 is also available at the Microsoft web site.

Using DigiPro on Networks

- DigiPro can access data that is stored on a network, but it must be installed on individual workstations (client computers) rather than on the network server.
- DigiPro automatically saves reports and snapshots in the same directory as the data file (project database).
- DigiPro's templates reside on the individual's workstation. If you want all reports and snapshots started from the same templates, create the templates on one computer first. Then copy the file Templates.mdb to other computers. Templates.mdb is found in C:\Program Files\DigiPro\System.

When you copy templates to another computer, the existing templates are replaced.

About Licensing

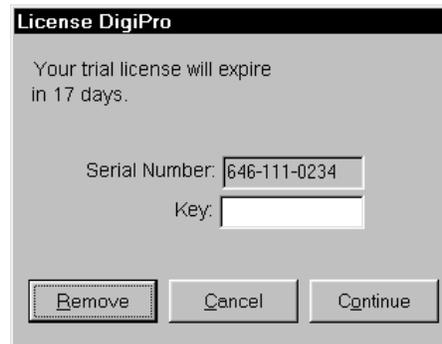
DigiPro is try-before-you-buy software. When you install it, you are granted a 30-day license. All the program functions are enabled for 30 days. After that period, DigiPro will not run. If you decide to buy DigiPro, contact Slope Indicator or your distributor. Slope Indicator's head office is at:

- Phone: 425-806-2200
- Fax: 425-806-2250
- E-mail: Sales@Slope.com

After you have purchased DigiPro, Slope Indicator can issue you an unlocking key that gives you a full license for running DigiPro on a single computer. You can obtain the key by phone, fax, or e-mail – or ask your distributor to obtain it for you.

Licensing DigiPro by Fax or E-mail

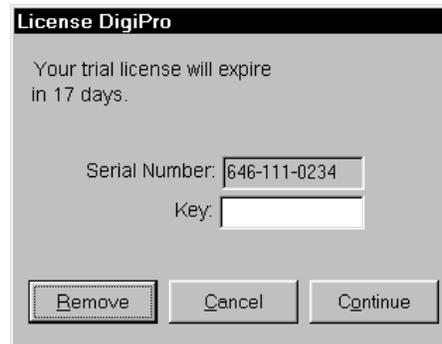
1. When the opening screen appears, click the License button. If DigiPro is already running, choose Help>License Information. The License DigiPro dialog appears.



2. Fax or e-mail the program serial number, your name, company, address, phone number, and fax number to Slope Indicator (fax: 425-806-2250, e-mail: Sales@Slope.com).
3. A technical support person will check that your company has purchased DigiPro and will issue you an unlocking key
4. Enter the unlocking key in the Key field.
5. Click the Continue button.

Licensing DigiPro by Phone

1. When the opening screen appears, click the License button. If DigiPro is already running, choose Help>License Information. The License DigiPro dialog appears.



2. Call Slope Indicator at 425-806-2200. Tell the operator that you want to obtain the unlocking key for DigiPro.
3. A technical support person will ask you for your name, company, address, phone and fax numbers, and the program serial number.
4. A technical support person will check that your company has purchased DigiPro and will issue you an unlocking key. Write it down and enter it in the Key field.
5. Click the Continue button.

Updating DigiPro

Digipro updates are available from Slope Indicator's web site: www.slopeindicator.com. You may also submit questions, bug reports, and request features at the site.

Notes

2

Quick Start

Notes

Introduction DigiPro for Windows has the power of the old DigiPro program but is much faster and easier to use. The look and feel of the program is different, so please take a few minutes to glance through the concepts below.

Reports vs Graphs The old DigiPro created one graph at a time. You had to select datasets, a graph type, scales, and other settings for each graph on the page. And then you had to create or recall a title block if you wanted to print the graph as a report. You had to go through all these steps each and every time that you wanted a graph.

The new DigiPro provides “reports” to speed up data processing. You create your graphs just once and save them as a report. After that, you just click on the report to process new data. The report automatically selects any new datasets and generates two graphs based on the scales, titles, and other settings that are stored with the report.

Templates You can save any report as a template and then use it to create new reports. Doing this, you can maintain a consistent format and style for all of your inclinometer reports.

Snapshots You can save any report as a “snapshot” to provide a record of events. Snapshots are also useful for experimenting with correction factors.

Context Help Context help provides information about most of the choices you have to make when using the program. Click the “?” on the title bar of the active window. Then point and click on a label or field. Help appears in a pop-up window. When you click again, the window disappears.

Online Help Online help provides detailed help that you can print, search, or browse. To access online help:

- Choose Help>Contents. The Help Topics dialog appears with the Contents tab active.

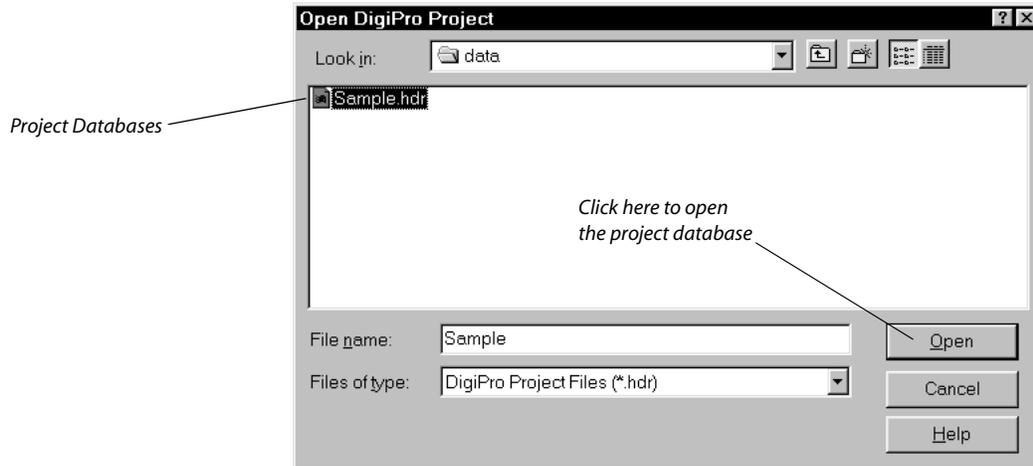
The Context tab shows help topics that are organized into books. Double-click on a book to see the topics inside. Double-click on a topic to display it.

- Choose Help>Search for Help On. The Help Topics dialog appears with the Index tab active.

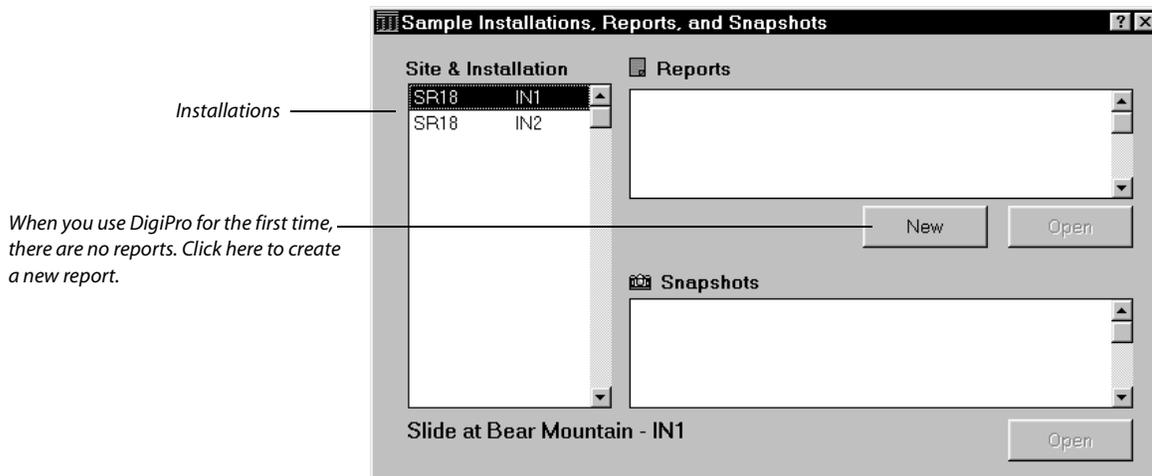
The Index tab lets you search for a key word and displays matching topics. Select a topic and click the Display button to read the help.

Browse buttons appear when a help topic is displayed. Click a browse button to step backwards (<<) or forwards (>>) through the help topics.

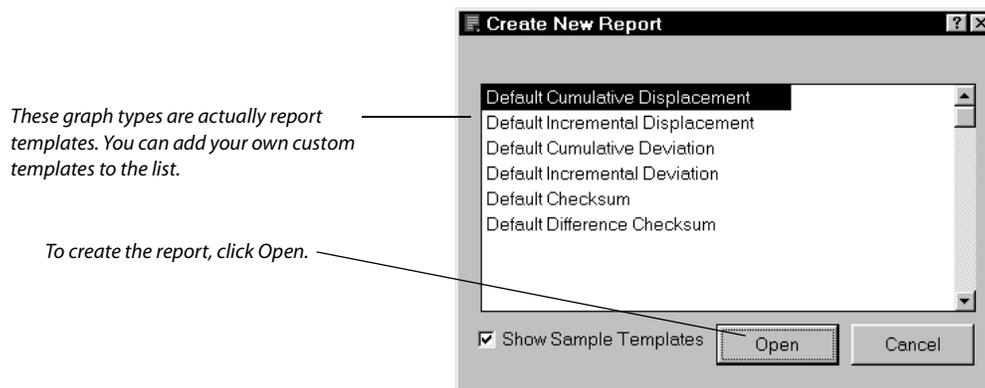
Open a Project Database Start DigiPro, then choose a project database. Click on the Data folder to find a sample project database.



Create a Report Choose an installation, then click New.



Choose a Graph Choose the type of graph you want, then click Open.



View the Report

The report is displayed with graphs for both A and B axes.

To move the report to a new location, click and drag on the title bar.

To modify the A-axis graph, click on it. To work with the B-axis, just click on the B-axis graph.

To close the report, click on the x.

To resize the report, click and drag here or use the zoom box near the menu bar.

Modify the Report

Click on the graph that you want to modify.

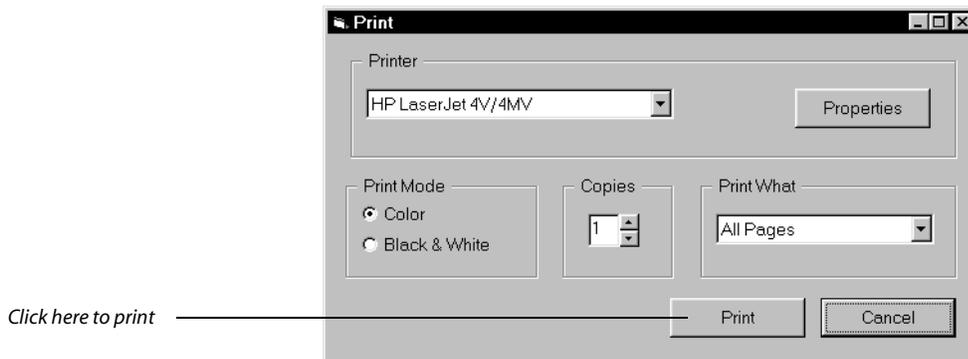
Look at the title bar to see which graph you are working on. In this case, the B-axis graph is selected. To work on the A-axis graph, just click on it.

Report settings are organized by tabs. Typically you will use only this row of tabs.

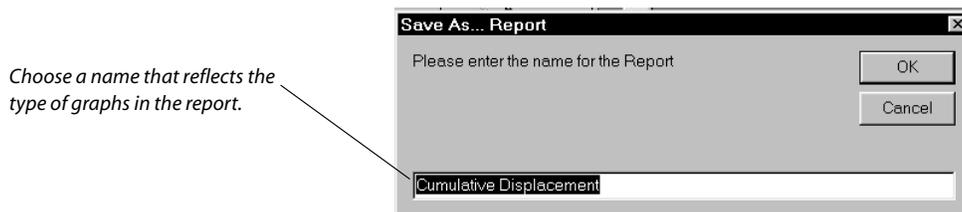
The Apply button applies changes to the graph but keeps the Report Properties dialog open. The Cancel button cancels any changes made since the last "Apply" and closes the dialog. The OK button applies changes and closes the dialog.

Date	Time	A	+	-
7/21/93	15:36	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7/1/93	13:26	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6/10/93	08:04	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6/2/93	09:11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5/24/93	06:43	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5/4/93	10:47	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4/29/93	09:38	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

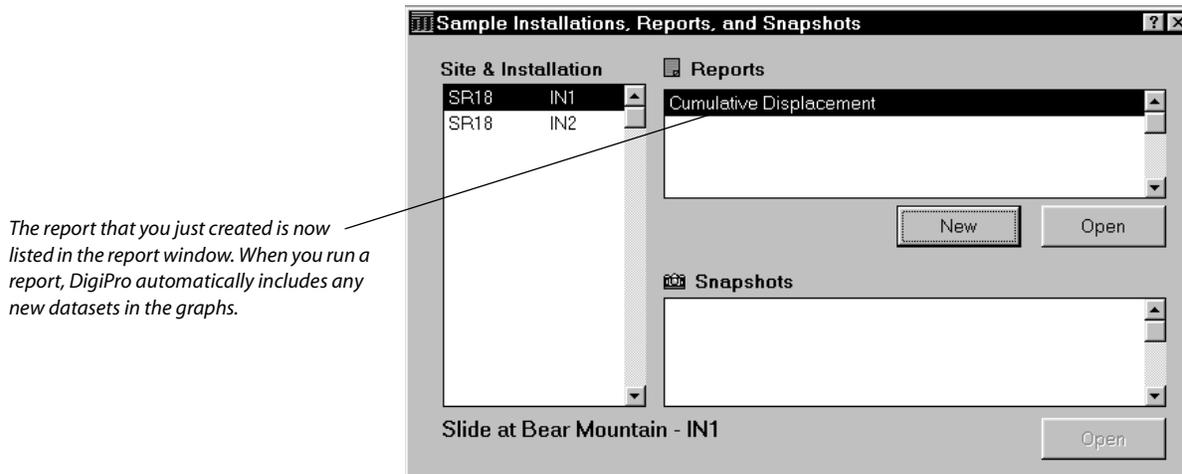
Print the Report Click on the printer icon, or choose Print from the File menu.



Save the Report Click on the disk icon, or choose Save from the File menu. DigiPro will prompt you to name the report.



Congratulations! You have just created a DigiPro report. The next time that you need a graph for this installation, just select the report and click the Open button.



Mouse and Keyboard

DigiPro requires the use of a pointing device, such as a mouse or trackball. Not all functions can be activated from the keyboard.

Mouse Usage

To move a window: Point at the title bar of the window. Click the left mouse button and hold it down. Then the window will move with the mouse pointer.

To close a window: Point at the “x” in the upper right corner of the window and click the left mouse button.

To open a menu: Point at the menu and click the left mouse button. To close a menu, choose a command or move the mouse pointer off the menu and click the left mouse button.

To choose commands on menus: Point at the command and click the left mouse button.

To select an item: Point at the item and click the left mouse button.

To open context menus: Point and click the right mouse button. A context menu appears at the position of the cursor. Then click the left mouse button on the command that you need.

To use check boxes: Click check boxes to turn features on or off. If a check mark has a mark in it, the feature is turned on. If the box is empty, the feature is turned off.

To use radio buttons: Radio buttons allow you to choose one of two or more options. Click on the radio button next to the option you want.

Keyboard Usage

To open menus: Press and hold the Alt key. Then press the underlined letter in the name of the menu. For example, press Alt-F to access the File menu. To close a menu, choose a command or press Esc.

To choose commands on menus: Press the underlined letter in the command. For example, when the file menu is displayed, press P to run the Print command. When a command is dimmed (gray letters rather than black), it cannot be used.

To choose commands with shortcut keys: Some commands have shortcut keys listed on the menu. For example, the shortcut key for Save is Ctrl-S (hold down the Ctrl key and press S).

To move the cursor from field to field: Use the Tab key.

To move the cursor within a field: Use the arrow keys.

Creating Graphs and Reports

Notes

Overview of Creating Graphs and Reports

- Creating a Graph The basic steps to creating a graph are:
- 1.** Open a project database.
 - 2.** Choose an installation.
 - 3.** Choose a graph type.
 - 4.** DigiPro then displays the A and B-axis graphs.

Creating a Report When you save a graph, DigiPro automatically creates a report so you can reuse scales, labels, legends, and other settings. To process new datasets, you just click on the report. DigiPro automatically retrieves your settings, finds the new data, and displays an updated graph.

When you use DigiPro for the first time, there are no reports. You will create at least one report for every installation in the project database.

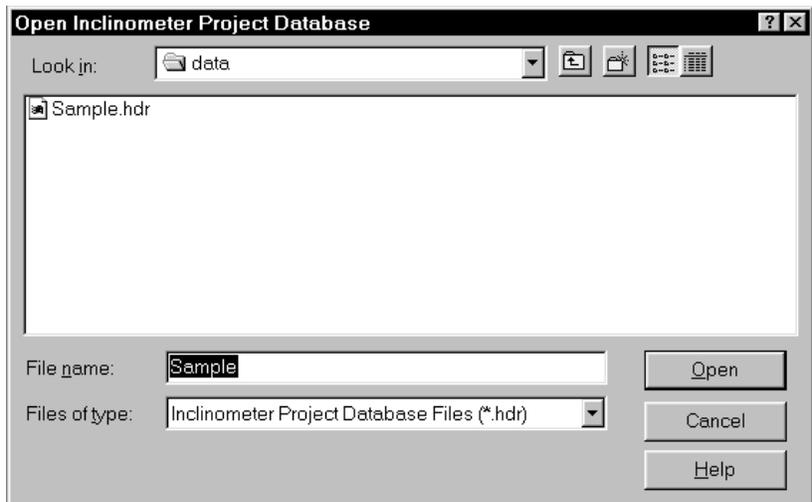
Open a Project Database

What is a Project Database?

DigiPro works with data stored in Slope Indicator's project database format. If you have been using DigiPro for DOS, or if you use the DataMate Manager (DMM) program to retrieve data from the Digitilt DataMate readout, your data is already stored in a project database.

If you use Gtilt to retrieve data from the Digitilt DataMate, your data is stored in Gtilt files. You can use the DigiPro Utilities (DU) program to import data from Gtilt files into a project database. Instructions are given in the DU manual.

Opening a Project Database



1. Use the File>Open dialog to find the project database. Click in the Look-in field, if necessary, to switch to a different drive or directory. You can use files locate on a network server too.
2. Click on the project database, the file with an .hdr extension, and click Open.

Note: If you are using a project database that is located on a network, see Chapter 1.

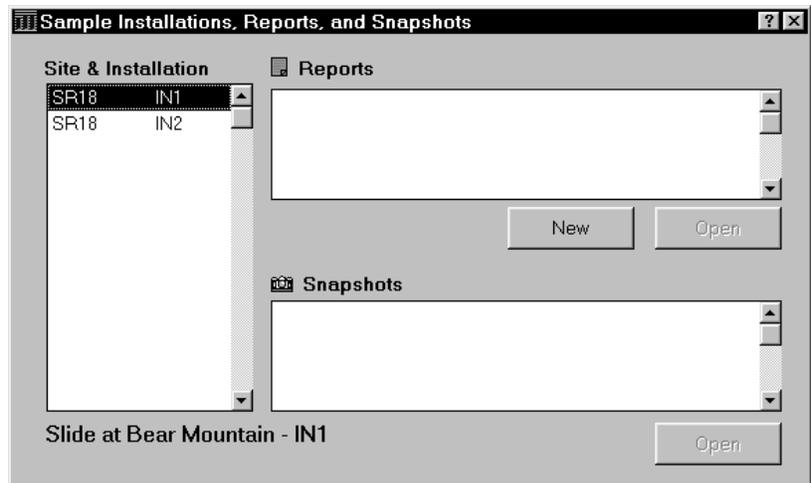
Opening a Recently-Used Project Database

- 1.** Close the Open Inclinometer Project Database dialog, if necessary (click Cancel).
- 2.** Click on the File menu.
- 3.** Click on the name of a recently used database at the bottom of the menu.

Choose an Installation

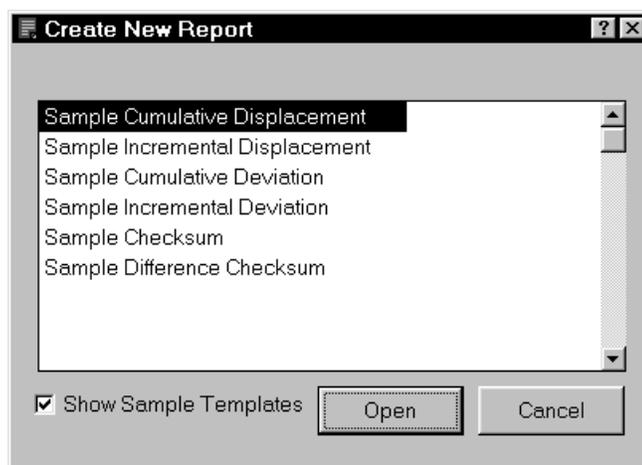
The Site & Installation list shows the inclinometer installations that are contained in the project database. The term "installation" refers to inclinometer casing that is installed in a borehole. Informally, installations are sometimes called boreholes or holes.

1. Select an installation from the Site & Installation list.
2. Normally, a list of reports and snapshots appears. Since you haven't created any reports, click New.



Choose a Graph Type

1. The Create New Report dialog appears.
2. Select a graph type (see descriptions on the next page).
3. Click Open.



Graph Types

Cumulative Displacement: Displacements are changes in the position of the casing. A graph of cumulative displacement shows displacements referenced to a fixed point at the bottom or top of the casing. The plotted point at any depth is the sum of incremental displacements up to and including that depth. The template provides two graphs, A-axis on left and B-axis on right, and a title block.

Incremental Displacement: Displacements are shown for each depth. No summing is involved. The template provides two graphs, A-axis on left and B-axis on right, and a title block.

Cumulative Deviation: Deviations show the position of the casing referenced to vertical. A graph of cumulative deviation shows the profile of the casing. The default setting shows only the current dataset. The plotted point at any depth is the sum of incremental deviations up to and including that depth. The template provides two graphs, A-axis on left and B-axis on right, and a title block.

Incremental Deviation: Deviations are shown for each depth. No summing is involved. The default setting shows only the current dataset. The template provides two graphs, A-axis on left and B-axis on right, and a title block.

Time Displacement: This graph shows the rate of change for up to five zones. The template provides a single graph in landscape orientation. Initially a single zone, consisting of the top and bottom depths) appears.

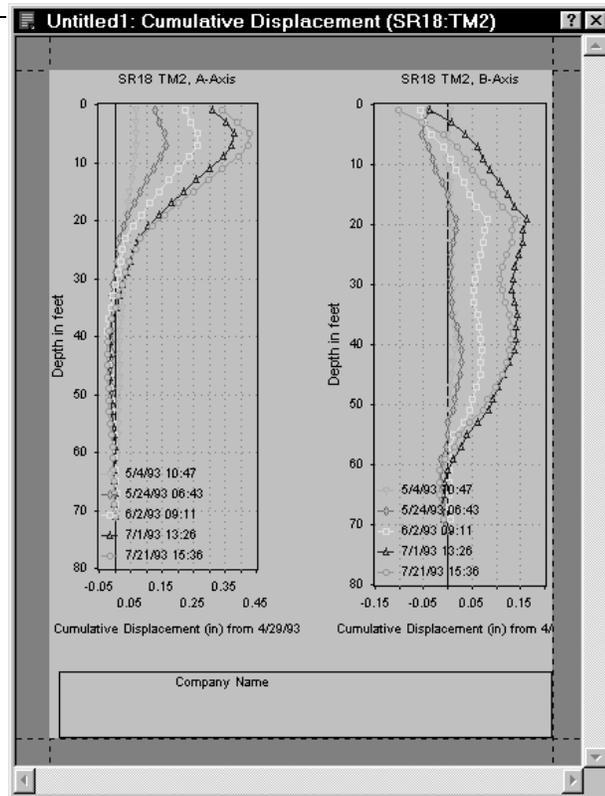
Checksum: This graph is used for data validation. It plots checksums from each dataset at each depth. The template provides two graphs, A-axis on left and B-axis on right, and a title block.

Difference Checksum: This graph compares each checksum plot to the initial checksum plot. The template provides two graphs, A-axis on left and B-axis on right, and a title block.

Graphs are Displayed

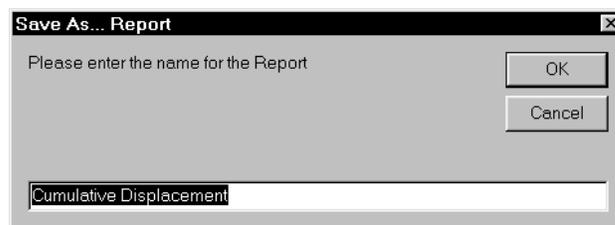
At this point, DigiPro has generated two graphs. Now you can save the graphs as a report. Later, you can modify the report, print the report, or make a template or snapshot from the report.

"Untitled" means the graphs have not been saved, so the icon is red. Once the graphs have been saved as a report, the icon will change to green and the word "untitled" will disappear.



Save the Graphs as a Report

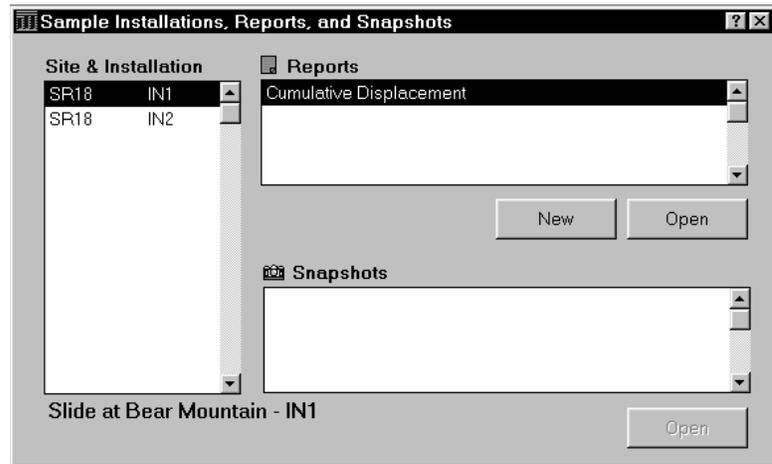
1. Choose File>Save.
2. Enter a name, then click OK.



What is a suitable name for a report? A simple name, such as "Cumulative Displacement" is sufficient, since it indicates the kind of graph that the report will produce.

Note: DigiPro automatically links the report to the installation, so you can have a "Cumulative Displacement" report for every installation. There is no need to worry about name conflicts.

- The saved report now appears in the Reports window.



- To redisplay the report, just click on Open. Notice that the name appears in the title bar and that the icon is green, indicating that this is a saved report.

Creating Other Reports You can create other reports for this installation by repeating the steps above. You can also create specialized reports. For example, you might want a report that isolates a shear zone and shows only the displacements in that zone. Be sure to read the next chapter to learn how to customize your reports.

Creating Templates You can create custom templates from a report with the File>Save As command. Then you can use the template to create other reports with the same style. See Chapter 6 for details.

Creating Snapshots You can create a snapshot from a report. A snapshot is a report that does not update itself. See Chapter 6 for details.

Notes

4

Modifying a Report

Notes

Overview of Modifying a Report

To modify the data selection, scales, labels, and other aspects of the report, click on a graph to access the Report Properties dialog.

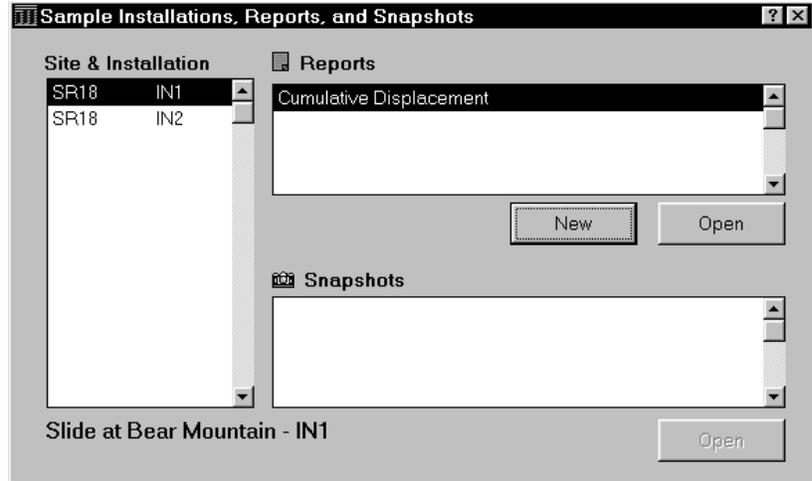
Modifying a Report

The basic steps to modifying a report are:

- 1.** Open a report.
- 2.** Click on a graph to access Report Properties.
- 3.** Modify the properties for each graph.
- 4.** The settings that you have changed are saved with the report and are automatically retrieved the next time you open the report.

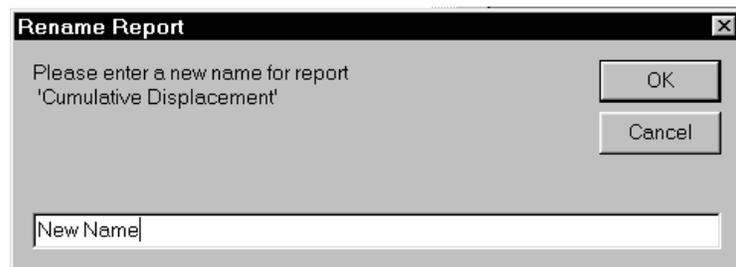
Open a Report

1. Open Installations, Reports, and Snapshots.
2. Choose an installation.
3. Select the report you want to open, then click Open.



Rename a Report

1. Open Installations, Reports, and Snapshots.
2. Choose an installation.
3. Point at the report and click the right mouse button.
4. Choose Rename from the shortcut menu. The Rename Report dialog appears.
5. Enter a new name and click OK.

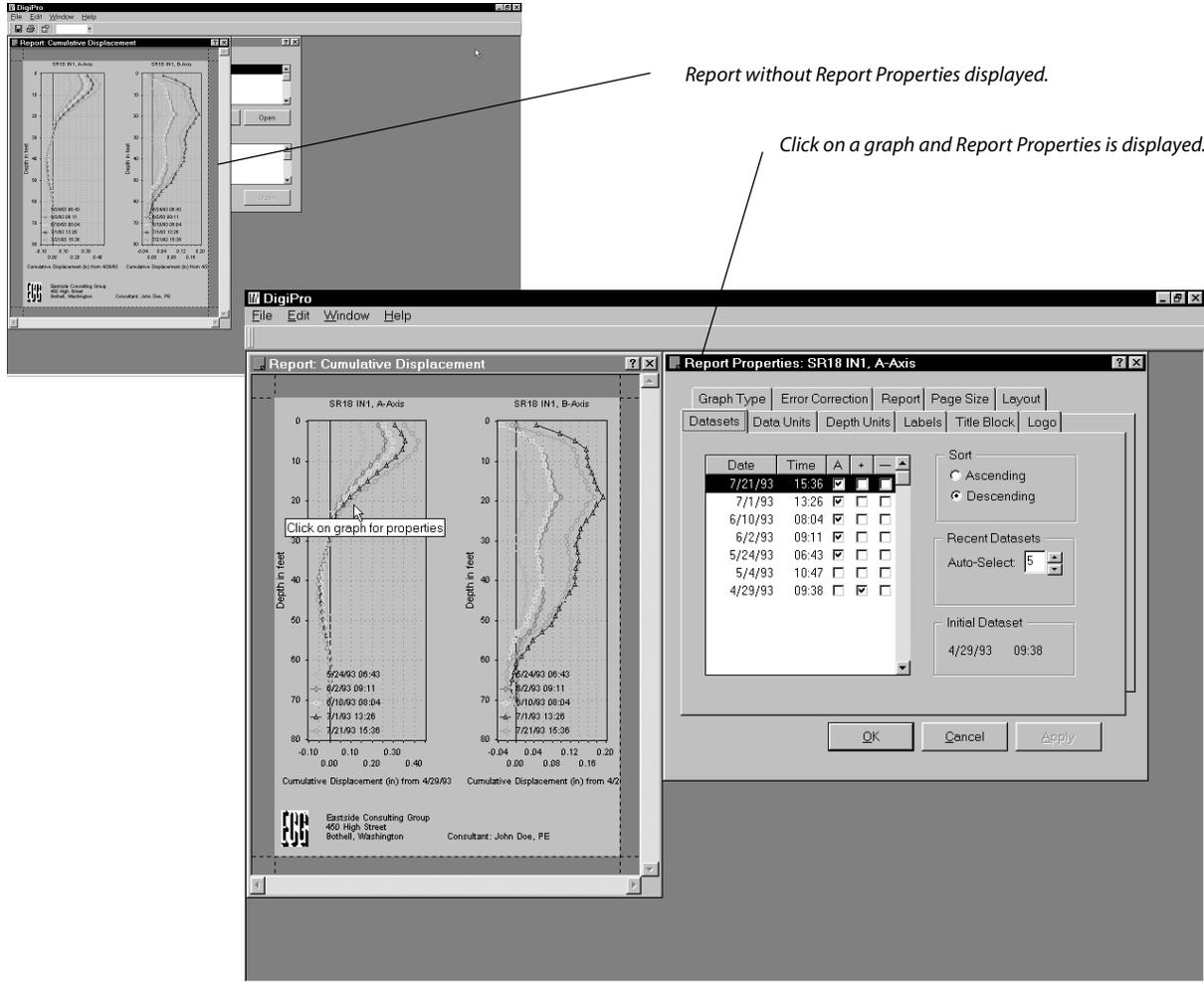


Delete a Report

- 1.** Open Installations, Reports, and Snapshots.
- 2.** Choose an installation.
- 3.** Point at the report and click the right mouse button.
- 4.** Choose Delete from the shortcut menu. The Delete dialog appears.
- 5.** Click Yes to delete the report, or click No or Cancel if you change your mind.

Open Report Properties

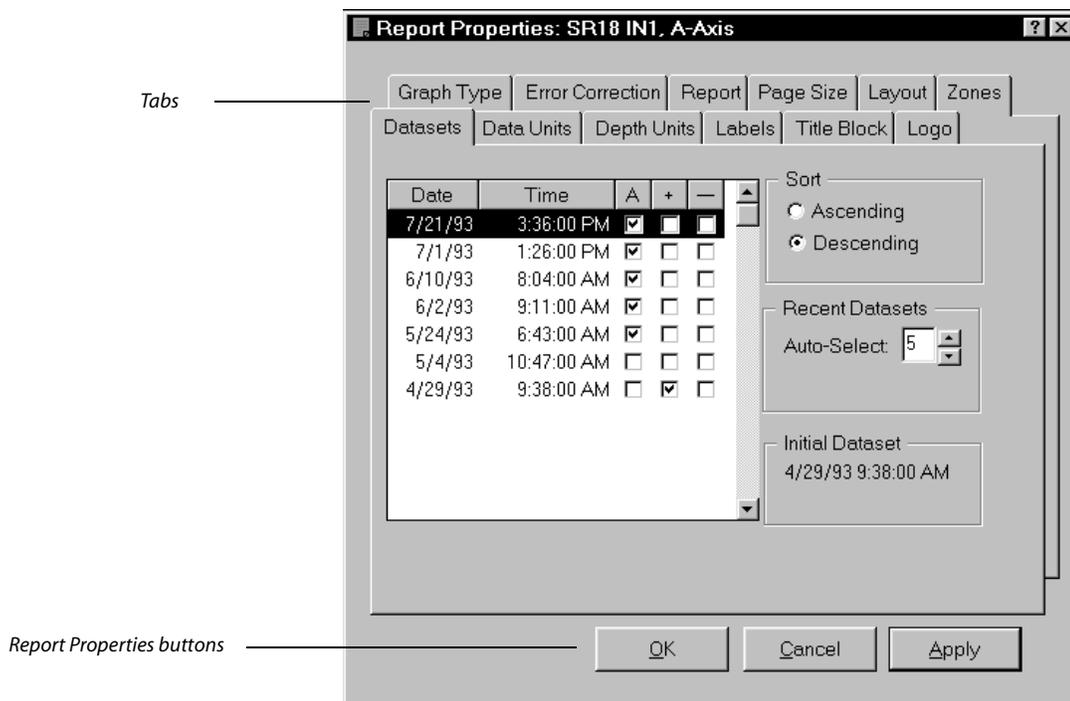
1. Click on a graph. If you click on the A-axis graph, properties for the A-axis graph will appear. If you click on the B-axis graph, properties for the B-axis graph will appear.
2. The Report Properties title bar shows which graph you are editing. To edit the other graph, click on it. Report Properties stays on the same tab, but shifts focus to the other graph.



Modifying Report Properties

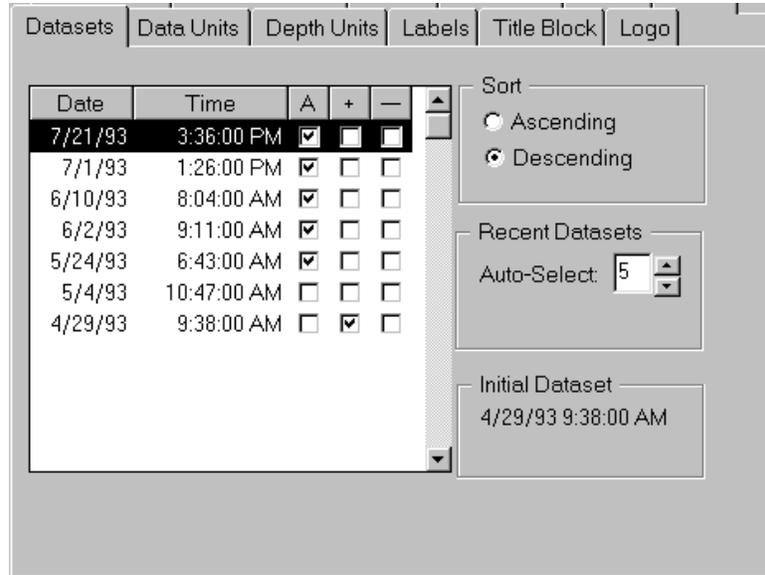
About Report Properties Report properties are organized by tabs. For example, settings related to the title block are found in the Title Block tab. To edit the report properties:

1. Click on the desired tab to edit its settings.
2. Click Apply to see the effects of your changes.
3. Click OK when you are finished.
4. Choose File>Save to save your changes.



- Report Properties Buttons**
- OK:** Click to apply changes and close Report Properties.
 - Cancel:** Click to cancel any changes made since the last click on the Apply button.
 - Apply:** Click to apply changes to the graph. Report Properties stays open so you can make more changes.

Datasets Tab



What is a Dataset?

A dataset contains the data for one inclinometer survey. Each dataset is identified by date and time.

Selection Status Window

DigiPro generates a graph from selected datasets. Check boxes for each dataset indicate its selection status.

"A": A check mark in this column indicates that the dataset is auto-selected. New datasets are auto-selected so that DigiPro can update graphs automatically. Use the Recent Datasets field to set the number of new datasets that you want included in the graph.

"+": A check mark in this column indicates that the dataset is selected permanently. It will be used every time you run a report. Click (check) the box in the + column to select a dataset. Click again (uncheck) to deselect the dataset.

"-": A check mark in this column indicates that the dataset is permanently excluded. Click (check) the box in the "-" column to permanently exclude a bad or incomplete dataset.

Datasets with No Mark: Indicates the dataset is excluded. When you have many datasets, most of them will have this status.

- Sort** Sorts the order of the datasets in the Selection Status window. Using these buttons does not affect how data is displayed in the graph.
- Ascending:** Click to sort datasets from the oldest to the newest date, with the initial dataset displayed first.
- Descending:** Click to sort datasets from the newest to the oldest date, with the most recent dataset displayed first.
- Auto-Select** Selects the number of new datasets to be used in the graph. To set the number of new datasets you want to include:
1. Click the up and down arrows next to the Auto-Select field.
 2. Click Apply.
- Example: If you enter a 4, DigiPro will select the four most recent datasets every time you run the report.
- Initial Dataset** This field identifies the date and time of the initial dataset. DigiPro automatically selects the oldest dataset as the initial and puts a check mark in the “+” column.
- To mark a different dataset as the initial:
1. Scroll to the dataset you want to mark as the initial.
 2. Right-click on that dataset. A menu pops up.
 3. Click “Mark as Initial Set.” A checkmark appears in the + column and the Initial Dataset field shows your choice.
- Note that earlier datasets are then ignored, even if selected.

Data Units Tab

The screenshot shows a software interface with a tabbed menu at the top containing 'Datasets', 'Data Units', 'Depth Units', 'Labels', 'Title Block', and 'Logo'. The 'Data Units' tab is active. It is divided into two main sections: 'Units' and 'Scale (inches)'. The 'Units' section has five radio button options: 'millimeters', 'meters', 'inches' (which is selected), 'feet', and 'reading units'. The 'Scale (inches)' section has two radio button options: 'Automatic' and 'Manual' (which is selected). Below these are four input fields: 'Full Scale Left' with a value of '0.00', 'Full Scale Right' with a value of '0.00', 'Tick Every' with a value of '0.00', and 'Label Every' with a value of '2' followed by the text 'Ticks'. An 'Apply' button is located in the top right corner of the 'Scale (inches)' section.

What are Data Units? Data units are the units used for displacements and deviations.

- Units
1. Choose a unit of measurement for the current graph.
 2. Click Apply.

Note: Displacement graphs typically require millimeters or inches. Deviation graphs may require meters or feet. Checksum graphs require reading units, the “raw” readings stored by the DigiTilt DataMate indicator.

Scales DigiPro sets scales automatically by default, or you can manually specify values for full scale left and full scale right of the data-axis scale.

Automatic: Sets Full Scale Left and Right for the maximum values found in the datasets. This ensures that all data points are plotted, but may exaggerate displacements.

Manual: Allows manual control over the settings below. Click on the Manual button and enter the desired values in each field. Click Apply when finished.

- **Full Scale Left:** Enter a value to be used for full scale left. If you chose millimeters for units, enter a value in millimeters.
- **Full Scale Right:** Enter the value to be used for full scale right.
- **Tick every:** Ticks are graduations on the data scale. For example, if you want a graduation every 10 mm, enter 10.
- **Label every *nth* tick:** DigiPro will label every *nth* tick. For example, enter a 2 to label every second tick. For example, if ticks are 10 mm apart, labels will appear every 20 mm.

Depth Units Tab

The screenshot shows the 'Depth Units' tab in a software application. The interface includes several sections: 'Units' with radio buttons for 'meters' and 'feet' (selected); 'Depth or Elevation' with radio buttons for 'Depths' and 'Elevations' (selected), and corresponding offset input fields; a checked 'Auto Depth Adjust' checkbox; and 'Scales: feet' with radio buttons for 'Automatic' and 'Manual' (selected), and input fields for 'Top', 'Bottom', 'Tick Every', and 'Label Every' (1) Ticks. An 'Apply' button is located in the top right of the 'Scales: feet' section.

What are Depth Units? Depth units are the units used along the axis of the casing.

Units To change the unit of measurement to the depth-axis scale:

1. Choose meters or feet for the current graph.
2. Click Apply.

Note: If your data is stored in feet, but you want it displayed in meters, simply select meters. Conversion is automatic.

Depth or Elevation You can choose Depths or Elevations for depth-axis labels. Depth labels are incremented with depth: 0, 10, 20, etc. Elevation labels are decremented with depth: 260, 250, 240, etc.

Depth Offset: Depths stored with inclinometer readings are typically referenced to the top of the casing or to an index mark on the pulley assembly. If you want the depth-axis label scale referenced to ground level, enter an offset:

$$\text{Depth Offset} = \text{casing height} + \text{index on pulley}$$

Casing height is the height of the casing above ground level. Using the index on the pulley assembly adds 0.3 meters (1 foot).

Example: The top of the casing is 0.5 meters above ground level. Your pulley assembly adds 0.3 meters. Enter 0.8 meters for the depth offset. Now the depth-axis label scale will be referenced to ground level.

Elevation + Offset: If you want the depth-axis label referenced to ground elevation, enter an offset:

$$\text{Elevation Offset} = \text{ground elevation} + \text{casing height} + \text{index on pulley}$$

Casing height is the height of the casing above ground level. The pulley assembly adds 0.3 meters (1 foot).

Example: Ground elevation is 500 meters above sea level. The top of the casing is 0.5 meters above ground level and you are using a pulley assembly (add 0.3 meters). Enter 500.8 meters for the elevation offset. Now elevation labels will be referenced to ground elevation.

Auto Depth Adjustment This adjustment causes DigiPro to plot data points at the top (or bottom) of the measurement interval. The Auto Depth Adjustment check box is enabled (checked) by default.

What is Auto Depth Adjustment? Auto Depth Adjustment ensures that deviations and displacements are plotted at the depth of the top (or bottom) of the measurement interval rather than at the cable depth stored with the reading. Auto Depth Adjustment is active by default.

Why is an adjustment necessary? Depth marks on Digitilt control cable are measured from the middle of the inclinometer probe. This places the probe at the middle of any measurement interval, whether it is a half-meter or two-foot interval, a greater or smaller interval, or a variable-length interval.

Deviations and displacements apply to the top (or bottom) of a measurement interval, but the depth stored with a reading is the cable depth, which is the depth at the middle of the interval.

For example, suppose you have a half-meter metric probe and are using half-meter measurement intervals. The measurement interval is defined by the top and bottom wheels of the probe, which are 0.25 meters above and below the middle of the probe. Thus deviations or displacements calculated from a reading taken at a cable depth of 20 meters should really be plotted at 19.75 meters, which is the depth at the top of the measurement interval. The Auto Depth Adjustment makes this correction.

If you have a two-foot probe and are using a two-foot measurement interval, deviations and displacements calculated from a reading taken at a cable depth of 60 feet should be plotted at 59 feet, which is the top of the two-foot interval. The Auto Depth Adjustment makes this correction.

In general terms, when Auto Depth Adjustment is active and you are using a bottom reference, deviations and displacements are plotted at cable depth minus a half interval. If you are using a top reference, deviations and displacements are plotted at cable depth plus a half interval.

Scales DigiPro sets the depth axis scales automatically, or lets you specify values for top and bottom of the depth-axis scale.

Automatic: Automatically displays the entire depth-axis and applies labels and ticks at multiples of 10.

Manual: Allows manual control over the settings below. Click on the Manual button and enter the desired values in each field. If your report shows elevations rather than depths, be sure to enter an elevation. Also, be sure to enter a value appropriate for the English/metric units you have selected. Click Apply when finished.

- **Top:** Enter a value for the top of the depth-axis scale.
- **Bottom:** Enter a value for the bottom of the depth-axis scale.
- **Tick every:** Ticks are graduations on the depth-axis scale. If you want a graduation every 5 meters, enter 5.
- **Label every *nth* tick:** DigiPro will label every *nth* tick. For example, enter 2 to label every second tick. For example, if ticks are 5 meters apart, labels will appear every 10 meters.

Tip: If you find you frequently zoom in to inspect a particular zone, you might find it useful to make a report that shows only that zone. Use manual scales to specify the top and bottom of the zone, then save the result as a new report.

Labels Tab

Datasets
 Data Units
 Depth Units
 Labels
 Title Block
 Logo

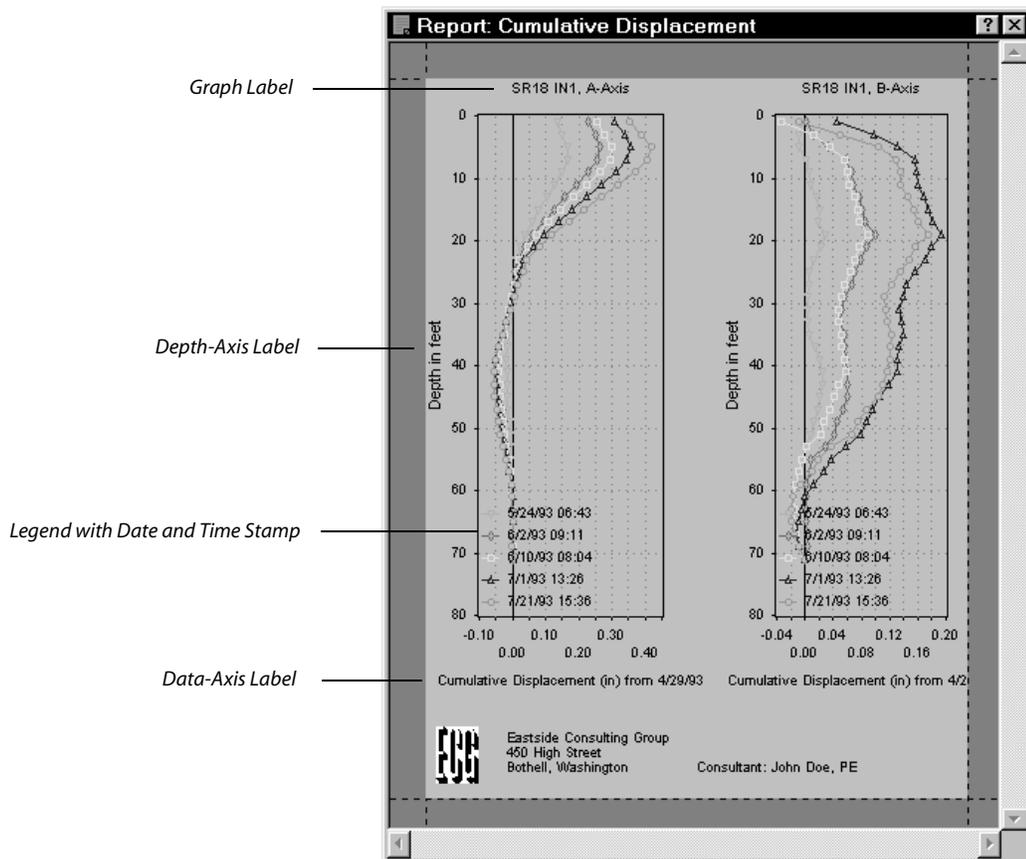
Graph Label: Auto

Depth-Axis Label: Auto

Data-Axis Label: Auto

Legend
 Position: Show Time

About Labels DigiPro automatically creates graph labels, and legends, but lets you edit them through the Labels tab. The names of the labels are shown below.



- Editing a Label** To enter your own labels:
1. Click (uncheck) the Auto check box above the Label field. (If this box has a mark in it, DigiPro's automatic label is locked in.)
 2. Enter text in the Label field. The Graph Label field will accept up to two lines of text. The Depth-Axis and Data-Axis fields will accept one line of text.
 3. Click the "A" button to change fonts.
 4. Click Apply.

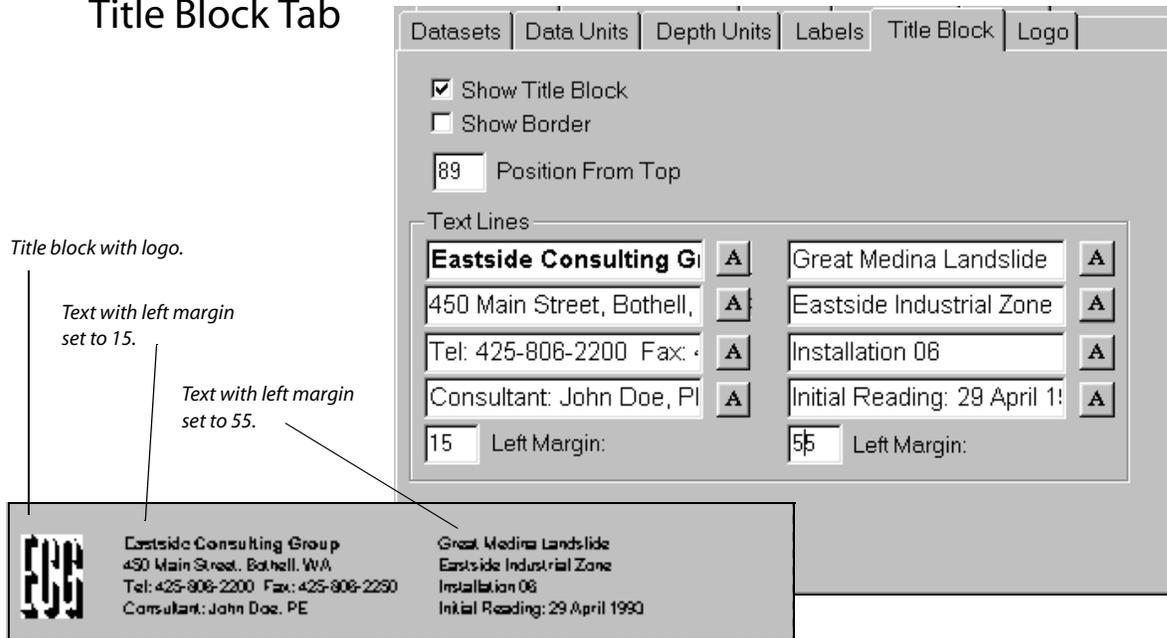
Note: The screen rendition of the text is not completely accurate. When your Windows display is set for Large Fonts, text will appear larger on-screen than it will on the printed page. Text that overlaps on-screen may appear fine when printed. To work around this, print the report, inspect and modify as required, and print again to check the results. An alternate solution is to switch your Windows display to Small Fonts.

- Legend Position** DigiPro can place the legend in one of the four corners of the graph. The square represents the graph and the buttons represent the four corners.
1. Click on one of the four buttons in the Position square.
 2. Click Apply.

Example: If you click the upper right button in the square, the legend will appear in the upper right corner of the graph.

- Legend Time** DigiPro can display either the date or the date and time for each dataset.
1. Click (check) the Show Time box if you want the legend to display both date and time for each dataset. Click the box again (uncheck) if you want the legend to display only the date for each dataset.
 2. Click Apply.

Title Block Tab



About the Title Block

The title block provides a place where you can enter information about the graph. You can also include a company name, address, and company logo in the title block. If you want to add a logo to the title block, we recommend that you do this before setting the title block text. See “Logo Tab” later in this chapter.

Text Lines

DigiPro provides eight cells for text arranged into two columns. The left margin for each column is set separately. The fields work much like cells in spreadsheets.

1. Click in one of the eight fields and enter text. You can enter as long a line as you want into each field. When finished, you can tab to the next field.
2. Click the “A” button to change the font.
3. Click Apply.

Note: The screen rendition of the text is not completely accurate. When your Windows display is set for Large Fonts, text will appear larger on-screen than it will on the printed page. Text that overlaps on-screen may appear fine when printed. To work around this, print the report, inspect and modify as required, and print again to check the results. An alternate solution is to switch your Windows display to Small Fonts.

Tip: Save the report as a template so you can base future reports on the same style with very little additional work. See Chapter 6 for information about templates.

- Left Margin**
- 1.** There are two Left Margin fields, one for each column of text. Click in the appropriate field.
 - 2.** Enter a percentage value measured from the left side of the page.
 - 3.** Click Apply.

- Show Title Block**
- 1.** Click (check) this box to show title block; click again (uncheck) to hide the title block.
 - 2.** Click Apply.

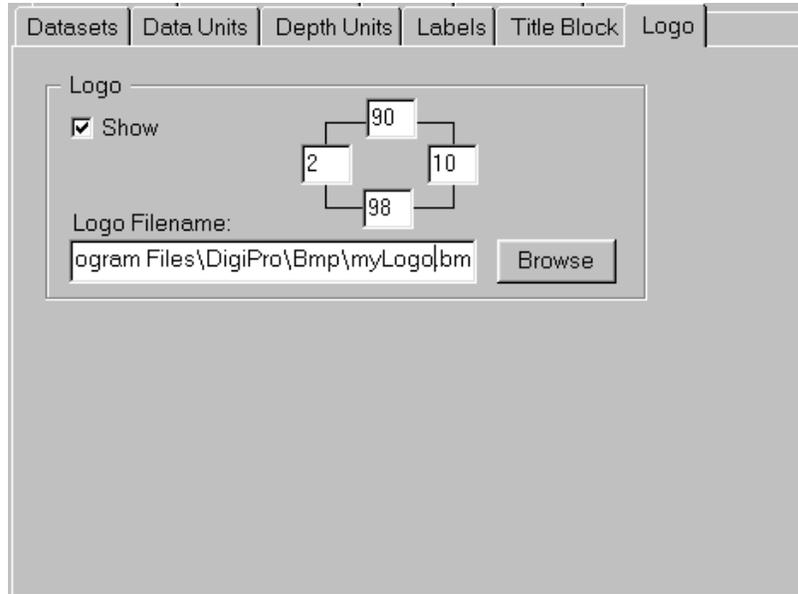
Note: If you hide the title block, you can enlarge your graphs using the Layout tab.

- Show Border**
- 1.** Click (check) this box to show the ruling line around the title block. Click again (uncheck) to hide the ruling line.
 - 2.** Click Apply.

- Position from Top**
- 1.** Enter a percentage value in this field to set the position of the top edge of the title block. By default, the title block appears at the bottom of the page. However, if you set the value to zero, it will print at the top of the page.
 - 2.** Click Apply.

Note: If you change the position of the title block, you must move the graphs down using the Layout tab.

Logo Tab



About Logos

DigiPro can print a bitmap (.bmp) image of your logo on the report. The values in the position fields are percentages, and represent the locations of the top and bottom edges of the logo in relation to the top of the page, and left and right edges of the logo in relation to the left edge of the page.

Displaying a Logo

1. Click (check) the Show check box.
2. Click in the Logo Filename field.
3. Enter the path and filename to the logo file. Click the Browse button to navigate to the logo file.
4. Enter percentage values in the Position fields. These values define not only a position for the logo, but also the size of the logo. If your logo appears distorted, change the position settings to increase or decrease the size of the logo.
5. Click Apply.

Note: We recommend that you place the logo file in DigiPro's BMP folder so that it will not be accidentally lost during routine disk cleanups. The path will appear like this: C:\Program Files\DigiPro\BMP\myLogo.bmp.

Graph Type Tab

The screenshot shows a software interface with a tabbed menu at the top. The 'Graph Type' tab is active. Below the tabs, there are three main sections: 'Graph Type', 'Axis', and 'Reference'. Each section contains a list of radio buttons. In the 'Graph Type' section, 'Cumulative Displacement' is selected. In the 'Axis' section, 'A Axis' is selected. In the 'Reference' section, 'Bottom' is selected.

About Graph Types

You can change the graph type, graph axis, and installation reference settings in this tab. These settings are useful if you want to mix graph types to check error correction values.

Graph Type

The radio buttons show the type of graph that is currently selected. To select a different type of graph:

1. Click on the appropriate button.
2. Click the Apply button.

Cumulative Displacement: Displacements are changes in the position of the casing. In a cumulative displacement graph, the plot starts from a fixed point at the bottom or top of the casing. The displacement shown at a particular depth is the sum of the displacements up to and including that depth.

Incremental Displacement: Displacements are shown for each depth. No summing is involved.

Cumulative Deviations: Deviations show the position of the casing referenced to vertical. Cumulative deviation is referenced to a fixed point at the bottom or top of the casing. The plotted point at any depth is the sum of the deviation at each depth up to and including that depth. The template provides two graphs, A-axis on left and B-axis on right, and a title block.

Incremental Deviations: Deviations are shown for each depth. No summing is involved.

Time Displacement: Plots displacement versus time for selected zones. Use the “Zones” tab to specify up to 5 zones. This tab also lets you specify a range of days for the horizontal axis. The plotted value for each zone is the difference between the displacement value at the top of the zone and the displacement value at the bottom of the zone.

Checksums: This graph is used for data validation. It plots checksums from each dataset at each depth.

Difference Checksums: This graph compares each checksum plot to the initial checksum plot.

- Axis
1. Click A or B to choose A-axis data or B-axis data for the graph. The sample templates use A-axis data for the left graph and B-axis data for the right graph.
 2. Click Apply.

- Reference
1. Select top or bottom of the casing as the fixed point for calculations of cumulative displacement and cumulative deviation. Bottom is the default.
 2. Click Apply.

Error Correction Tab

The screenshot shows the 'Error Correction' tab in a software application. The interface includes several tabs: 'Graph Type', 'Error Correction' (which is active), 'Report', 'Page Size', and 'Layout'. The 'Error Correction' tab is divided into two main sections: 'Corrections for Casing' and 'Sensor Corrections'. In the 'Corrections for Casing' section, there are two options: 'Orientation Correction', which is checked and has a text input field containing the number '0' followed by the unit 'degrees', and 'Spiral Correction', which is unchecked and its label is grayed out. In the 'Sensor Corrections' section, there are three options: 'Enable Zero Offset Correction', 'Enable Rotation Correction', and 'Enable Sensitivity Correction', all of which are unchecked.

About the Error Correction Tab

This tab is used for enabling or disabling the application of correction values. For convenience, we allow you to enter an orientation correction, but this too can be entered elsewhere. See Chapter 8 for details on entering correction values.

To Enable Corrections

To enable a correction, click (check) the appropriate check box. To disable a correction, click again (uncheck).

Note: The Spiral Correction check box is grayed out when DigiPro cannot detect a spiral dataset for the current installation. See Chapter 8 for details.

Orientation Correction

When casing grooves are not properly oriented or if ground movement occurs in an unexpected direction, you can use DigiPro to mathematically rotate the orientation of the measurement axes into the direction of interest. To enable the correction:

1. Click (check) the Orientation Correction check box. The Orientation Correction field appears.
2. Click in the Orientation Correction field and enter an orientation correction in degrees. For example, enter 10 to rotate the orientation 10 degrees clockwise. Enter -10 to rotate orientation 10 degrees counterclockwise.
3. Click Apply.

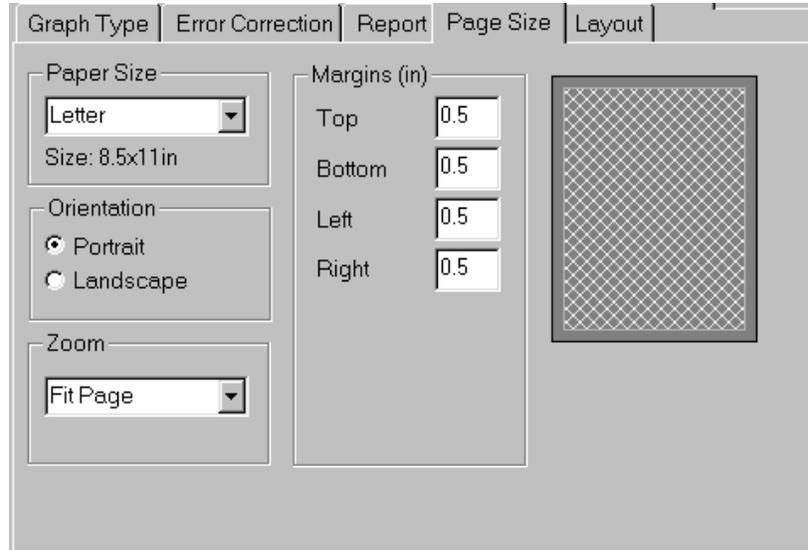
Report Tab

The screenshot shows a software window with a tabbed interface. The 'Report' tab is selected. Below the tabs is a 'Details' section containing five rows of information, each with a label and a text box:

Details	
Project	Sample
Site & Installation	SR18:IN1
Report Name	Cumulative Displacem
Last Mod Date	11/10/97 8:54:31 AM
Last Print Date	11/7/97 7:43:57 AM

- Details**
- Project:** Displays the name of the project database. This field cannot be edited.
 - Site and Installation:** Displays the name of the current installation. This field cannot be edited.
 - Report Name:** Displays the name of the report. To rename the report:
 1. Enter a new name in the field.
 2. Click Apply.
 - Last Mod Date:** Displays the date that the report was modified. This field updates automatically and cannot be edited.
 - Last Print Date:** Displays the date that the report was printed. This field updates automatically and cannot be edited.

Page Size Tab



About Page Settings

Changing these properties will affect the page settings of the current report only. This is useful if you want to print a copy of a report in a page size you wouldn't normally use.

Note: To change the default size for all new reports, choose File>Options and Defaults>Page Setup.

Paper Size

Controls the paper size of the report. Sizes include letter, legal, tabloid, A4, and B4. To change the paper size:

1. Click in the Paper Size field.
2. Choose a paper size from the drop list.
3. Click Apply.

Orientation

Controls the page orientation for the report. Choices are portrait (long side is vertical) or landscape (long side is horizontal). To change the page orientation:

1. Click either the Portrait or Landscape button to choose a paper orientation.
2. Click Apply.

Margins Controls the page margins for the report. The default margin values are in inches. If you select the A4 or B4 paper sizes, the margin values automatically convert to centimeters. To change the page margins:

- 1.** Click in the Margins fields.
- 2.** Enter values for top, bottom, left, and right margins.
- 3.** Click Apply.

Zoom Controls the screen size of the report. The default is "Fit Page," which allows the report and report properties to be displayed on-screen simultaneously (with no overlap) on a monitor set to a resolution of 800x600 or better. To change the zoom level:

- 1.** Click on the Zoom field.
- 2.** Choose a zoom level from the drop list.
- 3.** Click Apply.

Layout Tab

The screenshot shows the 'Layout' tab in a report editor. It features three main sections for configuring graph placement:

- Distance from Top:** Top edge is set to 0% and Bottom edge is set to 85%.
- Distance from Left:** Left edge is set to 0% and Right edge is set to 45%.
- Visibility:** The 'Visible' radio button is selected, and the 'Invisible' radio button is unselected.

To the right of these settings is a preview window showing a graph area with a grid pattern, indicating the current layout configuration.

About Layout Settings

Layout settings determine the placement and size of each graph. The values in the fields are percentages, and represent the locations of the top and bottom edges of the graph in relation to the top of the page, and the left and right edges of the graph in relation to the left edge of the page. If you want only one graph on the page, you can click “invisible” for the graph that you want to hide.

Changing Layout Settings

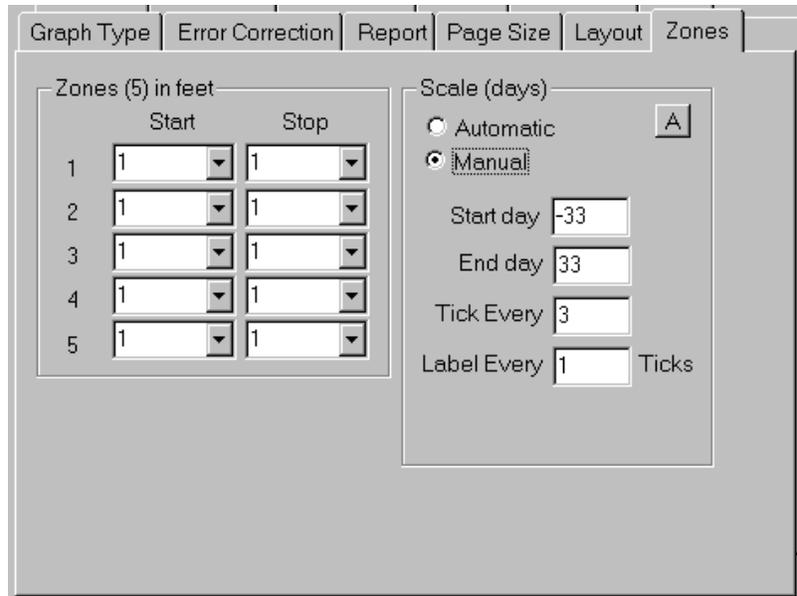
1. Click on a graph.
2. Click in the layout property fields and enter percentage values as desired.
3. Click Apply.

Reports Without Title Blocks

Changing the properties in the Layout tab is useful if you are not using a title block. To enlarge the graphs to cover the vacant title block area:

1. Click on a graph.
2. Click in the Bottom Edge field. Enter 98%.
3. Click Apply.

Zone Tab



About the Zone Tab

The zone tab is used to select zones for time-displacement graphs.

Zones

You can graph up to five zones by specifying a start and stop depth for each zone. Click the drop list to choose a valid depth or elevation. Each zone is independent of the other zones, but within each zone, the start depth must be shallower than the stop depth.

The displacement value that DigiPro plots is the difference between the displacement value at the start depth and the displacement value at the stop depth.

Scales

The automatic setting shows the number of days from the initial survey. The manual setting lets you choose a start and an end day to show only a portion of the available time span. You can also set the frequency of tick marks (in days) and labels (numbers).

In the current version of DigiPro, it is not possible to display dates.

5

Printing a Report

Notes

Printing

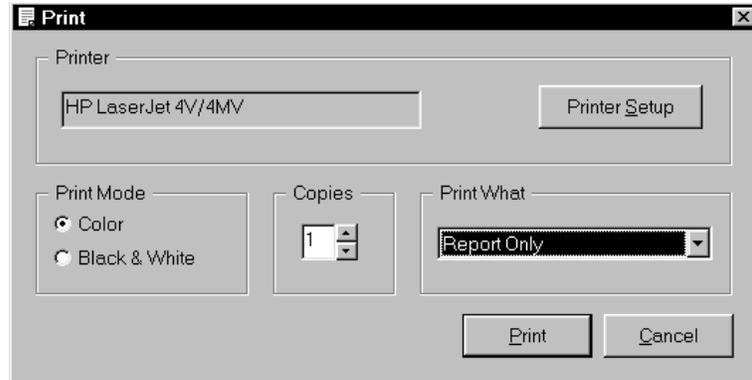
DigiPro can print to any printer or plotter that uses Window 95-compatible printer drivers. Graphs can be printed in color, grayscale, or black and white.

What Can You Print?

DigiPro can print the following items:

- Report only.
- Report with listing of the current dataset.
- Plotted data.
- Report properties.
- Snapshots (same as printing a report).
- Snapshots with listings of the current dataset included.

Printing a Report



1. Open a report.
2. Choose File>Print from the file menu, or click on the printer icon located on the tool bar. The Print dialog appears.
3. Click in the Print What field. Choose Report Only from the drop list.
4. Check the Printer window to be sure it displays the printer you want. To change printers or adjust the printer setup, click on the Printer Setup button. If you change the printer in DigiPro's Print dialog, the new printer becomes the Windows default printer.
5. Click in the Copies field and enter the number of copies you want.
6. Select a print mode: color or black and white. (If you are using a black and white printer but choose the color print mode, the report will print in grayscale.)
7. Click Print to print the report. Click Cancel to cancel printing.

Note: You can change the colors that DigiPro uses, if some plots are hard to see. Choose File>Options and Defaults>Preferences. You will see a band of eight colors. click on the color that you want to change and choose a different color from the pop up menu.

Printing a Report with the Current Dataset

DigiPro can print a listing of the current (most recent) dataset along with the report.

Print in the same way you would print a report, except click on the Print What field and choose Report and Current Dataset.

Printing Report Properties

Report Properties include all the settings for the report plus the settings for one graph. It may be useful to print report properties to compare two different reports.

- 1.** Open a report.
- 2.** Click on a graph to open Report Properties.
- 3.** Choose File>Print from the file menu, or click on the printer icon located on the tool bar. The Print dialog appears.
- 4.** Click in the Print What field. Choose Report Properties from the drop list.
- 5.** Check the Printer window to be sure it displays the printer you want. To change printers or adjust the printer setup, click on the Printer Setup button.
- 6.** Click in the Copies field and enter the number of copies you want.
- 7.** Select a print mode: color or black and white.
- 8.** Click Print to print the report properties. Click Cancel to cancel printing.

Printing Plotted Data

Plotted data are the data points plotted on the graph. To print plotted data:

- 1.** Open a report.
- 2.** Click on the appropriate graph.
- 3.** When Report Properties appear, click on the Dataset tab.
- 4.** Place the pointer in the Selection window and click the right mouse button.
- 5.** Choose Print Plotted Data from the shortcut menu.

Writing Plotted Data

You can write plotted data to a file for use in a spreadsheet. DigiPro lets you control the information that you want in the file header.

- 1.** Open a report and click on the appropriate graph.
- 2.** When the Report Properties dialog appears, click in the dataset selection window.
- 3.** A menu appears. Choose “Write Plotted Data.”
- 4.** A submenu appears. Choose the items that you want to appear in the file header. You can also specify a filename and location if the default filename is not suitable.
- 5.** Click “Write” to write the data to the file.

6

Templates and Snapshots

Notes

Templates

What is a Template? When you create a new report, DigiPro shows you a list of graph types to choose from. These graphs types are actually templates that specify a page layout and a number of default settings.

Using templates is the quickest way to generate graphs and reports, and they provide a quick and convenient way maintain a consistent style and format in your reports. When you create a new report based on a template, the new report will automatically inherit the characteristics of the template. For example, you can create a template with a custom title block that holds a company name, logo, and other information in the title block.

Overview of Creating a Template

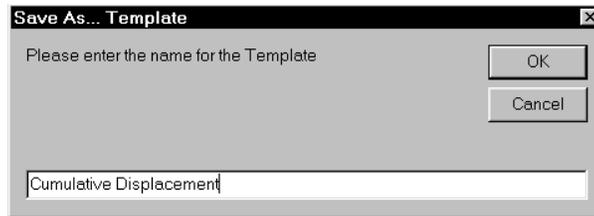
- 1.** Open a report.
- 2.** Modify the report as required.
- 3.** Save the report as a template. Now when you create a new report, your custom template will appear in the list of graph types.

Templates can't be edited directly. They must be created from reports. If you want to create a set of templates, the best way is to create the reports that you need, then save each of them as a template.

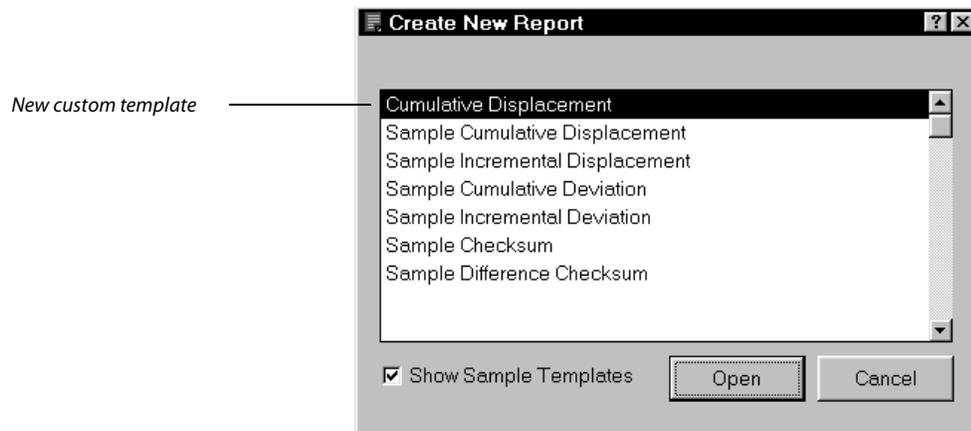
Once you have a set of your own templates, you will probably want to hide the list of sample templates provided with DigiPro. To do this, open the Create New Report dialog and simply click (uncheck) the Show Sample Templates box.

Saving a Report as a Template

1. Click OK on the Report Properties dialog.
2. Choose File>Save As>Template. The Save As Template dialog appears.

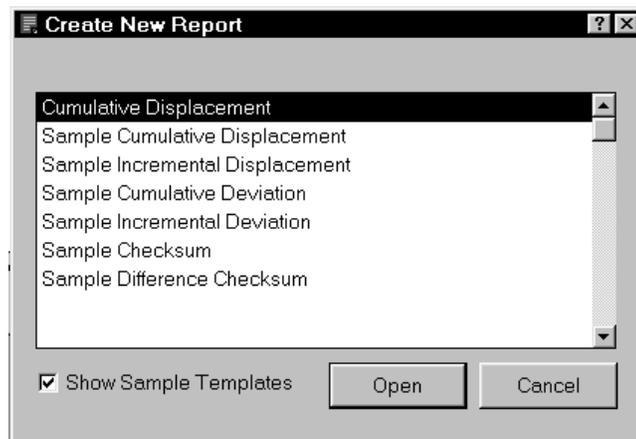


3. Click in the name field. Enter a name for the template, then click OK.
4. The new template will now appear in the list of graph types the next time you create a new report.

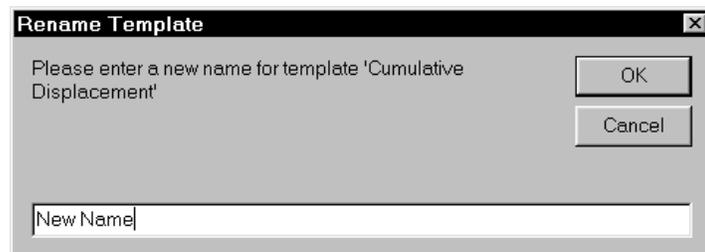


Renaming a Template

1. Start at the Installations, Reports, and Snapshots dialog.
2. Click the New button. The Create New Report dialog appears.



3. Point at the template you want to rename. (You cannot rename the sample templates. They are protected.)
4. Click the right mouse button.
5. Choose Rename from the shortcut menu. The Rename Template dialog appears.



6. Enter a new name and click OK.

Deleting a Template

1. Start at the Installations, Reports, and Snapshots dialog.
2. Click the New button. The Create New Report dialog appears.
3. Point at the template you want to delete.
4. Click the right mouse button.
5. Choose Delete from the shortcut menu. The Delete Template dialog appears.
6. Click Yes to delete the template.

Copying Templates to Another Computer

DigiPro's templates reside on the individual's workstation. If you want all reports and snapshots started from the same templates, create the templates on one computer first. Then copy the file Templates.mdb to other computers. Templates.mdb is found in C:\Program Files\DigiPro\System.

When you copy templates to another computer, the existing templates are replaced. This affects templates only. Reports and snapshots are not affected.

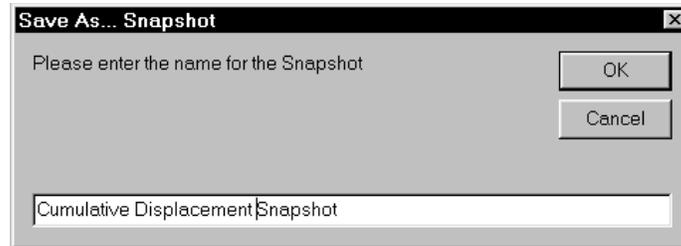
Snapshots

What is a Snapshot? Snapshots are reports that are "frozen" at a specific date, meaning that they operate like reports, but new data cannot be added to them.

Reports can be saved as snapshots to provide a record of events. Snapshots can also be useful for error analysis. Since a snapshot is a reflection of a report, you can experiment on a snapshot without affecting the report. If your experiment brings the desired result, then you can make the same change to the report.

Creating a Snapshot

1. Open a report.
2. Choose File>Save As>Snapshot. The Save As Snapshot dialog appears.

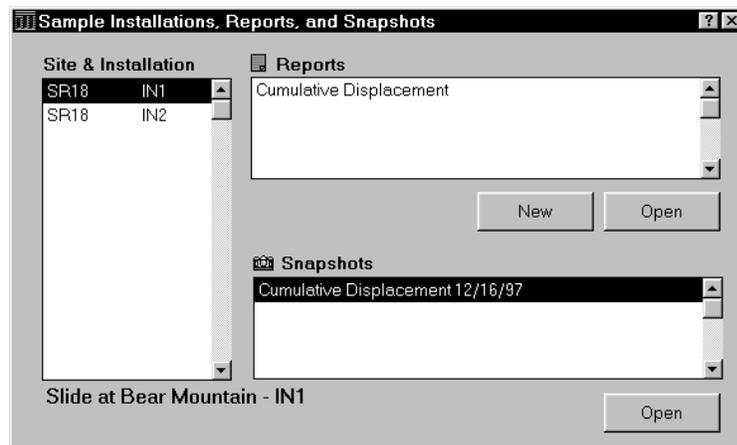


3. Enter a name for the snapshot and click OK.

Note: If you will be using the snapshot as a part of a record of events, we recommend that you include the date of the most recent dataset in the name.

Opening a Snapshot

1. Start from the Installations, Reports, and Snapshots dialog.
2. Select the snapshot from the Snapshots window.
3. Click the Open button under the Snapshots window.



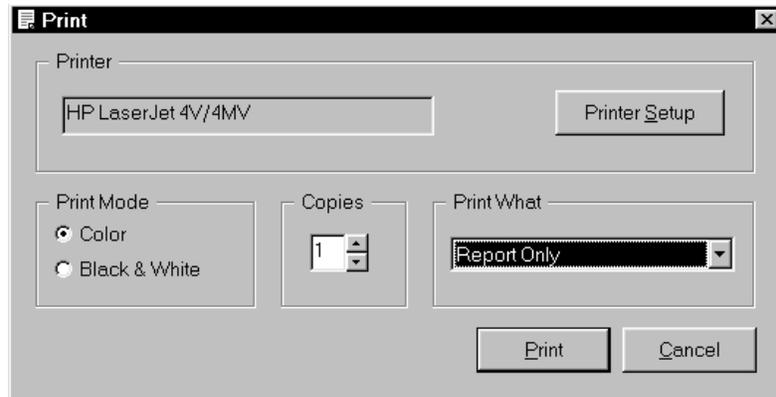
Renaming a Snapshot

1. Start at the Installations, Reports, and Snapshots dialog.
2. Point at the snapshot you want to rename.
3. Click the right mouse button.
4. Choose Rename from the shortcut menu. The Rename Snapshot dialog appears.
5. Enter a new name and click OK.

Deleting a Snapshot

1. Start at the Installations, Reports, and Snapshots dialog.
2. Point at the snapshot you want to delete.
3. Click the right mouse button.
4. Choose Delete from the shortcut menu. The Delete Snapshot dialog appears.
5. Click Yes to delete the snapshot.

Printing a Snapshot



1. Open a snapshot.
2. Choose File>Print from the file menu, or click on the printer icon located on the tool bar. The Print dialog appears.
3. Click in the Print What field. Choose Report Only from the drop list. (To print a snapshot and a printout of the current dataset, choose Report and Current Dataset from the drop list.)
4. Check the Printer window to be sure it displays the printer you want. Adjust the Printer Setup settings if necessary.
5. Click in the Copies field and enter the number of copies you want.
6. Select a print mode: color or black and white. (If you are using a black and white printer but choose the color print mode, the snapshot will print in grayscale.)
7. Click Print to print the snapshot. Click Cancel to cancel printing.

Note: If you change the target printer in DigiPro's Print dialog, the new target printer becomes the Windows default printer.

7

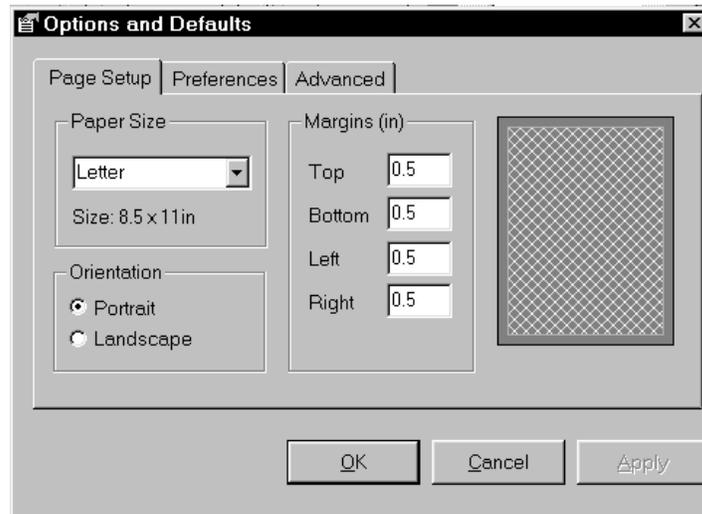
Options and Defaults

Notes

Options and Defaults

You can edit DigiPro's default settings by using Options and Defaults in the File menu. Changes to the settings do not take effect until you close and restart DigiPro.

Page Setup Tab



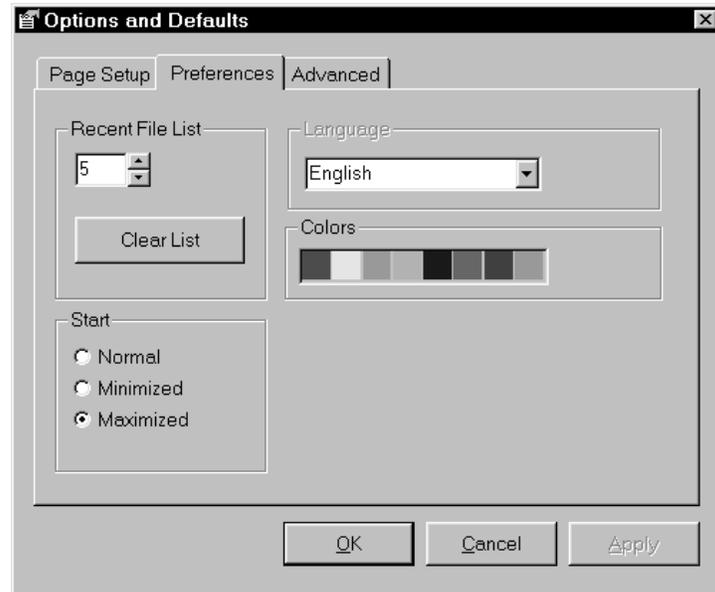
About Page Setup Use this tab to set the default paper size, orientation, and margins for all new reports and snapshots.

Paper Size To set the default paper size, click in the Paper Size field and choose a paper size.

Orientation Click the Portrait button (long side is vertical) or Landscape button (long side is horizontal).

Margins To set page margins, click in each margin field and enter a value in inches for US paper sizes, and centimeters for all others.

Preferences Tab



About Preferences Use this tab to set or clear the recent file list, adjust how DigiPro is displayed, and choose the language DigiPro uses (currently not implemented).

Recent File List To adjust the number of recently-used files to be displayed in the File menu:

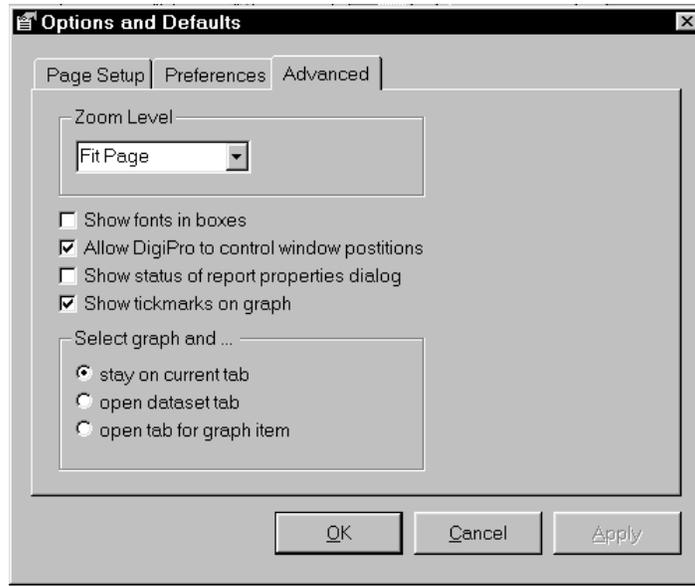
1. Select the existing number and type a replacement, or use the up and down buttons to change the number.
2. Click Apply. If you want to start a fresh list, click the “clear list” button.

Language Currently, the only choice is English.

Colors You can specify eight colors for DigiPro graphs. Some colors, such as yellow, do not print well. To change a color, click on it and choose a different color from the pop-up pallet.

Start **Normal:** DigiPro starts in a resizable window.
Minimized: DigiPro starts minimized and appears as a task on the task bar.
Maximized: DigiPro fills the entire screen.

Advanced Tab



Zoom Level This setting determines the initial size of all displayed reports. There are eight zoom levels ranging from Fit Page to 200% of full size.

The default setting is optimized for 800 x 600 displays. It ensures that both a report and the Report Properties dialog will fit side by side on the screen.

Show Fonts in Boxes If unchecked, the text fields in the Title Block and Labels tabs will display text in DigiPro's default display font (Arial 10). If the box is checked, the text fields will display text in the font you select using the "A" button.

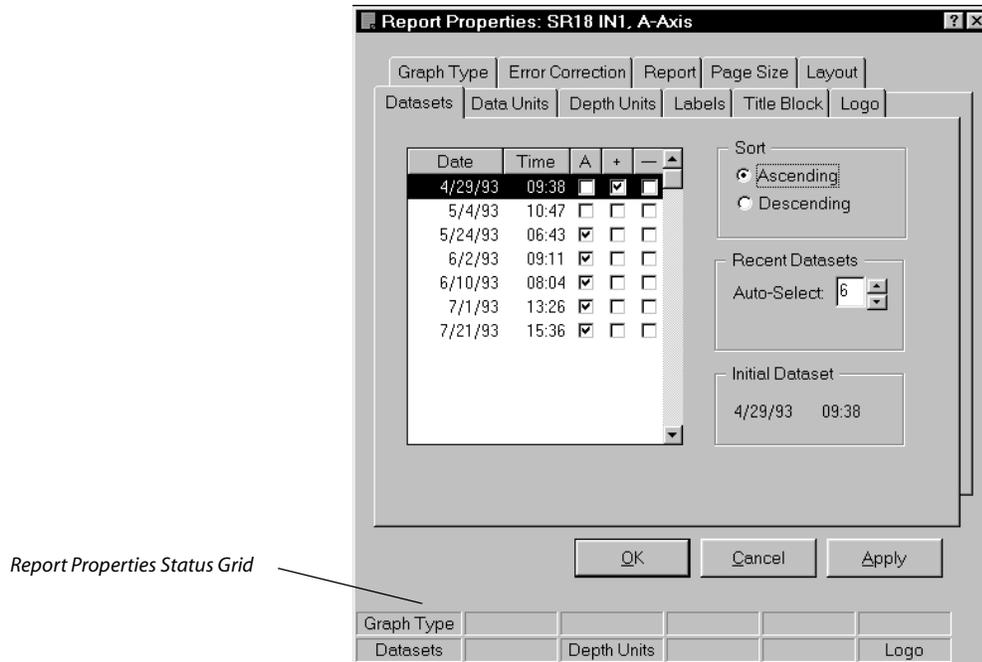
Allow DigiPro to Control Window Positions

Starts the report window in the upper left corner of the screen and the Report Properties dialog to the top edge of the screen.

If the box is not checked, the Windows system controls placement. This may be the preferred setting if you open multiple windows.

Show Status of Report Properties

If this box is checked, a grid appears at the bottom of the Report Properties dialog. The grid lists the tabs in which changes have been made. When you click Apply, the grid resets.



Show Tickmarks on Graph

When this box is checked, DigiPro displays tick marks on the borders of the graphs. When the box is unchecked, the tick marks do not appear. You can set the tick mark positions in the Data Units and Depth Units tabs of the Report Properties dialog.

Select Graph and...

This setting controls the behavior of the Report Properties dialog.

Stay on Current Tab: This is the default. Report Properties displays the same tab as you switch back and forth between graphs.

Open Dataset Tab: Report Properties shows the Dataset tab each time you switch between graphs.

Open Tab for Graph Item: Report Properties opens to the tab that corresponds to the part of the graph that you clicked on. For example, clicking on the title block will open the Title Block tab.

8

Error Correction

Notes

Experimenting with Sensor Corrections Values

DigiPro never alters data. Any correction values that you enter are stored separately from the data and are applied on-the-fly when the graphs are generated.

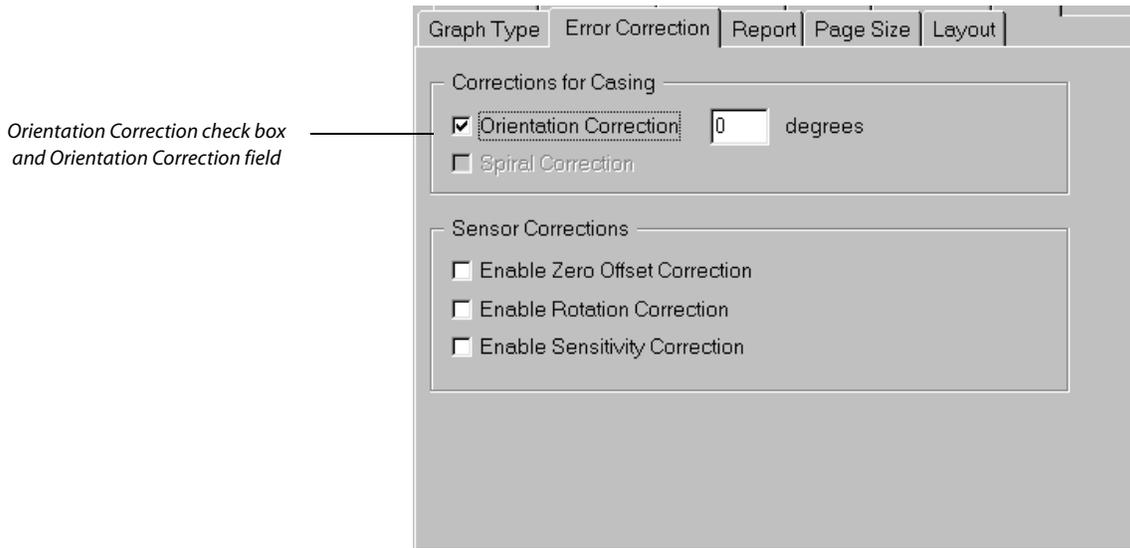
Although DigiPro makes it easy to apply corrections, we recommend using corrections cautiously until you are familiar with their effects. In some cases, you could “over-correct” data and obscure real ground movement.

We recommend that you use snapshots rather than reports when experimenting with correction values. That way you can see the effects on the graph without compromising your report. Then, when you are satisfied with the effects of the correction values, enter the correction values in the report.

Orientation Correction Ideally, inclinometer casing is installed so that one set of grooves is aligned in the direction of interest. This keeps the A-axis of the inclinometer probe oriented in the same direction.

If grooves are not properly oriented or if ground movement occurs in an unexpected direction, you may want to apply an orientation correction. DigiPro can mathematically “rotate” the orientation of the measured axes into the direction of interest.

Enabling Orientation Correction



1. Click (check) the Orientation Correction check box. The Orientation Correction field appears.
2. Click in the Orientation Correction field and enter an orientation correction in degrees. For example, enter 10 to rotate the orientation 10 degrees clockwise. Enter -10 to rotate orientation 10 degrees counterclockwise.
3. Click Apply and observe changes to the graph.

Spiral Correction

Inclinometer casing controls the orientation of the inclinometer probe. If the casing is spiraled (twisted), the orientation of the probe changes during the survey, and the resulting data will indicate an incorrect magnitude of movement for the A and B directions.

A spiral survey, done with a spiral sensor, provides measurements that can be used to correct for spiraled casing. Note that spiral surveys are not required for most installations, but are recommended when:

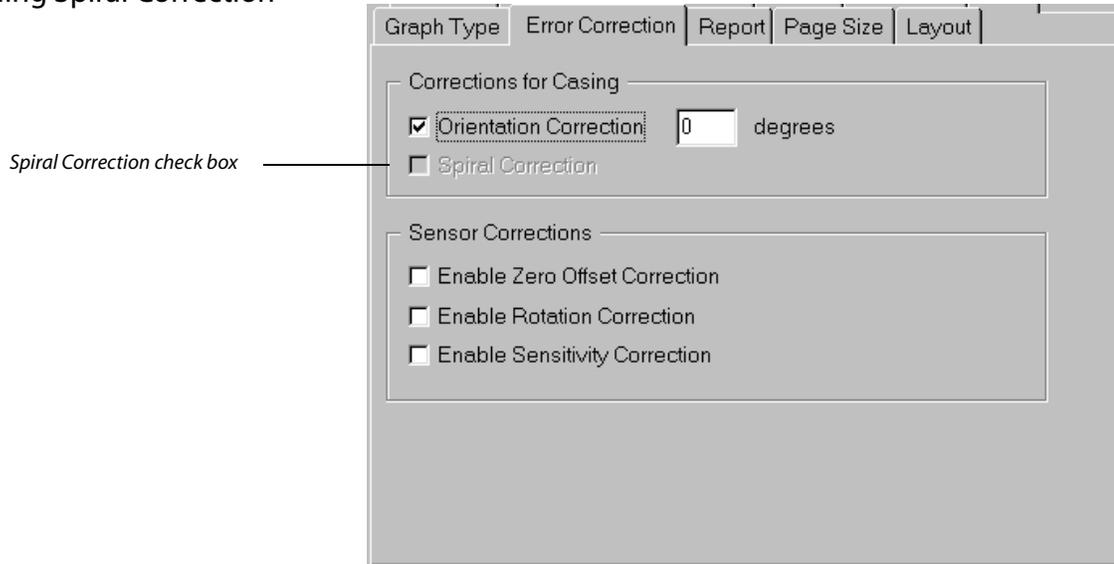
- The installation is very deep.
- Data indicates movement in an unlikely direction.
- Extreme accuracy is required.
- Difficulties were experienced when the casing was installed.

Processing Spiral Data

If you recorded the spiral survey with the Digitilt DataMate or Digitilt PC, the spiral set is already in the database. If you recorded the spiral set with a Digitilt RPP, you must import the spiral set as you import other datasets. If you recorded the spiral survey on paper, you must enter it manually using the DigiPro Utilities program.

The spiral probe has a gauge length that is longer than that of the inclinometer probe. The DigiPro Utilities program provides an “expansion” routine that generates an appropriate correction factor for the spiral at each reading depth.

Enabling Spiral Correction



1. Click (check) the Spiral Correction check box to enable spiral correction. Click again (uncheck) to disable spiral correction.
2. Click Apply.

Note: The Spiral Correction box will be available if the installation contains a spiral set. The box will be grayed out if there is no spiral set.

Sensor Corrections

DigiPro provides routines to correct for errors caused by zero-offset, rotation, and sensitivity of the inclinometer probe.

Zero-Offset

Corrects for non-zero output of the accelerometer when the probe is vertical. The standard two-pass survey generally cancels zero-offset errors. However, if only 0 readings are available, this correction should be applied. It should also be applied if the offset changes between the 0 pass and the 180 pass.

DigiPro Utilities has a zero-offset analysis function that helps determine if zero-offset correction is required.

Rotation

Corrects for misalignment of the accelerometer relative to the wheels of the inclinometer probe. The effect of rotation error is proportional to casing verticality. In vertical casing, the error is very small. When casing is inclined more than three degrees from vertical, the error may become significant.

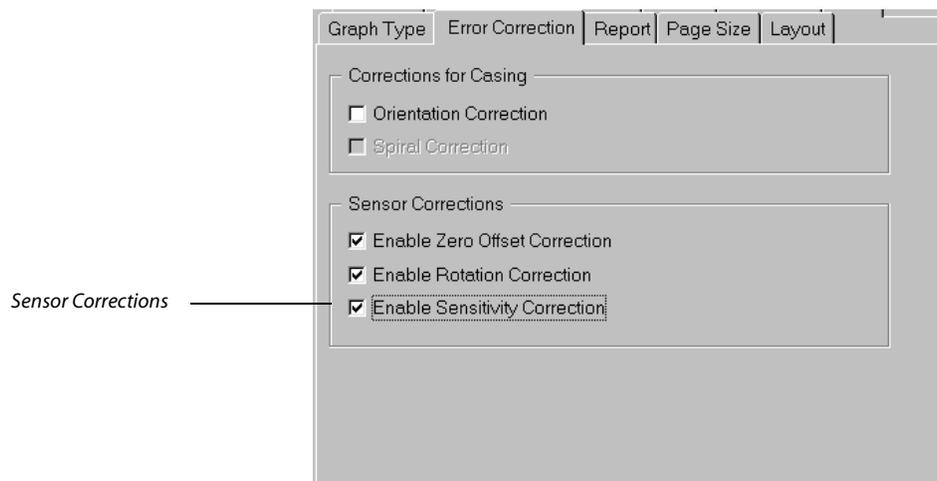
Sensitivity

Determined by measuring the output of the sensor at mid-scale. Errors due to sensitivity are generally insignificant compared to those due to rotation and zero-offset.

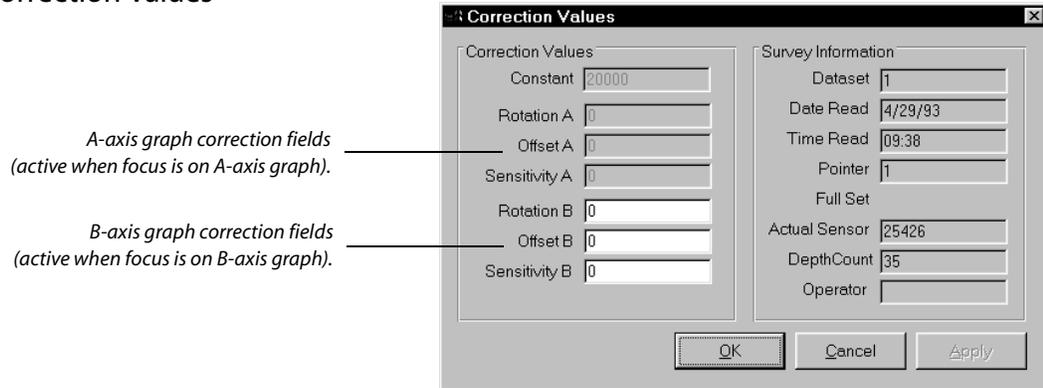
Sensitivity must be entered in the sensor record with DigiPro Utilities.

Enabling Sensor Corrections

If you want to use any of the sensor corrections, enable (check) the desired sensor corrections for each graph, then click Apply.



Entering Correction Values



Enter correction values for one dataset at a time. When you are finished entering correction values for a dataset, click OK and repeat the steps below for the next dataset, if necessary.

Correction value fields are only available for the graph that is focused on. For example, if the focus is on the B-axis graph, the B-axis correction fields will be active.

1. Click on the Dataset tab.
2. Point to the desired dataset and click the right mouse button.
3. Choose Enter Correction Values from the pop-up menu. The Correction Values dialog appears.
4. Enter correction values in the appropriate fields. Click Apply to see your changes.
5. Click OK when you are done.

Data Validation DigiPro provides checksum graphs and checksum statistics for data validation and error analysis.

What is a Checksum? A checksum is the sum of two readings taken at the same depth. The first reading is taken with the probe in its initial orientation (the 0 pass). The second reading is taken with the probe rotated 180 degrees (the 180 pass).

In theory, the sum of the two readings would be zero since the readings will have opposite signs. In practice, however, variations in casing grooves and the positioning of the probe contribute to non-zero checksums.

Checksum Statistics The standard deviation of checksums provides the surest and easiest way of validating the dataset. For this reason, Slope Indicator's Digitilt DataMate, Digitilt PC, and Digitilt RPP are capable of displaying checksum statistics. With these readouts, you can check a dataset while you are still on-site. If the dataset fails the validation test, you can correct errors or repeat the survey.

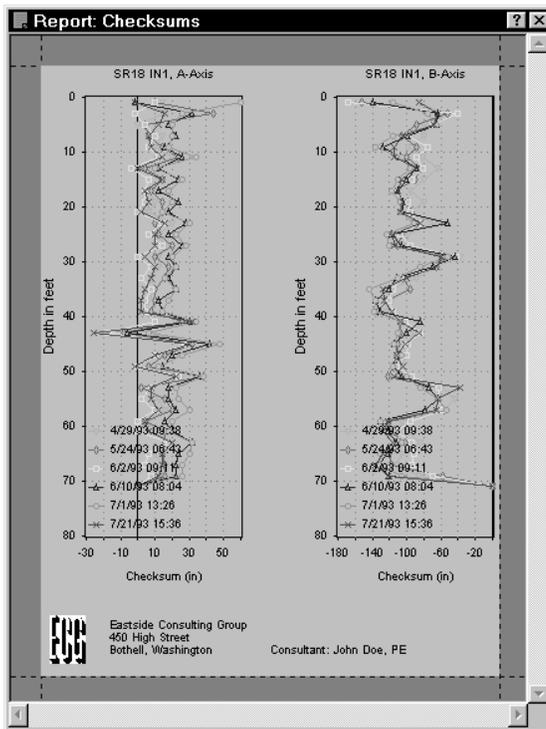
Start by establishing a typical standard deviation for each installation. You can do this by comparing the standard deviation for checksums from several surveys. Note that "typical" is likely to be different for every installation.

Later, when you obtain another dataset, compare its standard deviation of checksums with the typical established for installation. If the standard deviation is within 3 to 5 units of typical, the data is probably good. For example, if the typical standard deviation is 4, then acceptable standard deviations for subsequent datasets could range as high as 7 to 9. Narrower limits may be appropriate for deeper installations and critical measurements. Wider limits may be appropriate for shallower installations or for poorly-installed casing.

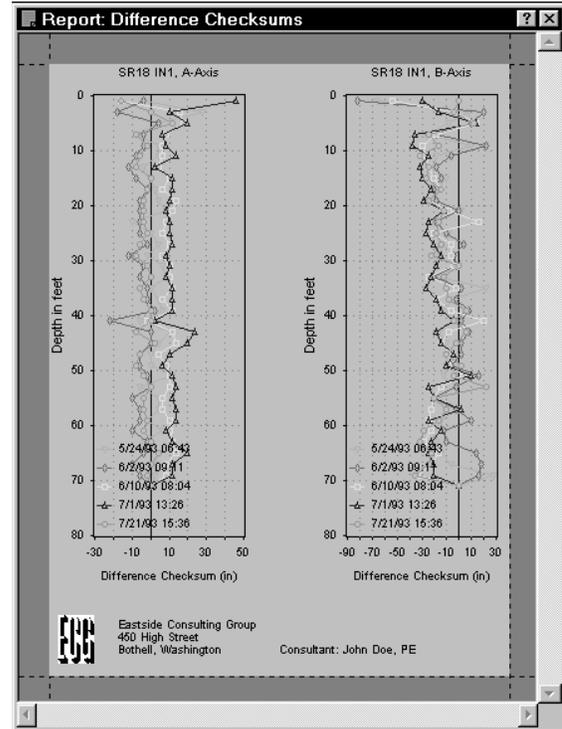
Checksum Graphs

Checksum Graphs: These graphs are used for data validation. They plots checksums from each dataset at each depth. In general, good datasets will result in checksum plots that have the same shape. Plots that are offset to the left or right are acceptable, so long as the lines are roughly parallel.

Difference Checksum Graphs: These graphs compare the checksum plots for each dataset to checksum plots for the initial datasets. This eliminates the effects of the casing itself. The resulting plots then show random errors, such as operator positioning errors, or minor instrument drift.



Checksum Graphs



Difference Checksum Graphs

Creating Checksum Graphs

Creating a New Checksum Report:

- 1.** Start from the Installations, Reports, and Snapshots dialog.
- 2.** Select an installation from the Site & Installation window.
- 3.** Click the New button (under the Reports window). The Create New Report window appears.
- 4.** Select either Sample Checksum or Sample Difference Checksum and click Open.

Notes

Index

Notes

Symbols

- "-" Column, Selection Status Window 4-8
- "+" Column, Selection Status Window 4-8
- "A" Column, Selection Status Window 4-8

A

- Advanced Tab, Options and Defaults 7-5
- Allow DigiPro to Control Window Positions,
 - Advanced Tab 7-5
- Ascending Sort in Dataset Selection 4-9
- Auto Check Box 4-16
- Auto Depth Adjustment, Depth Units Tab 4-14
- Automatic Scales, Data Units Tab 4-11
- Automatic Scales, Depth Units Tab 4-15
- Auto-Select, Datasets Tab 4-9
- Axis, Graph Type Tab 4-22

C

- Checksum Graphs 3-7, 4-22, 8-10
- Checksum Graphs, Creating 8-11
- Checksum Statistics 8-9
- Checksum, What is a? 8-9
- Choosing a Graph 2-5
- Clear List 7-4
- Correction Values, Entering 8-8
- Correction, Orientation 8-4
- Correction, Rotation 8-7
- Correction, Sensitivity 8-7
- Correction, Spiral 8-5
- Correction, Zero-Offset 8-7
- Corrections, Sensor 8-7
- Creating a Graph 3-3
- Creating a Report 2-5, 3-3
- Creating a Snapshot 6-8
- Creating Checksum Graphs 8-11
- Creating Graphs and Reports, Overview of 3-3
- Creating Other Reports 3-9
- Cumulative Deviation Graphs 3-7
- Cumulative Displacement Graphs 3-7, 4-21

D

- Data Units Tab, Report Properties 4-10
- Data Units, What are? 4-10
- Data Validation 8-9
- Dataset, What is a? 4-8
- Datasets Tab, Report Properties 4-8
- Datasets with No Mark, Selection Status Field 4-8

- Deleting a Report 4-5
- Deleting a Snapshot 6-9
- Deleting a Template 6-6
- Depth Offset, Depth Units Tab 4-13
- Depth or Elevation, Depth Units Tab 4-13
- Depth Units Tab, Report Properties 4-12
- Depth Units, What are? 4-12
- Descending Sort in Dataset Selection 4-9
- Details, Report Tab 4-25
- Difference Checksum Graphs 3-7, 4-22, 8-10
- DigiPro, Installing 1-3
- Displaying a Logo 4-20

E

- Elevation + Offset, Depth Units Tab 4-13
- Error Correction Tab, About the 4-23
- Error Correction Tab, Report Properties 4-23

G

- Graph Type Tab, Report Properties 4-21
- Graph Types 3-6, 3-7
- Graph Types, About 4-21
- Graph, Choosing a 2-5
- Graph, Creating a 3-3
- Graphs vs Reports 2-3
- Graphs, Checksum 3-7, 4-22
- Graphs, Cumulative Deviation 3-7
- Graphs, Cumulative Displacement 3-7, 4-21
- Graphs, Difference Checksum 8-10
- Graphs, Difference Checksum 3-7, 4-22
- Graphs, Incremental Deviation 3-7, 4-22
- Graphs, Incremental Displacement 3-7, 4-21
- Graphs, Saving as Reports 3-8
- Graphs, Time Displacement 3-7, 4-22

H

- Help 2-4

I

- Incremental Deviation Graphs 3-7, 4-22
- Incremental Displacement Graphs 3-7, 4-21
- Initial Dataset, Datasets Tab 4-9
- Installations 3-6
- Installing DigiPro 1-3

K

Keyboard and Mouse Usage 2-8

L

Label, Editing a 4-17
 Labels Tab, Report Properties 4-16
 Labels, About 4-16
 Language, Preferences Tab 7-4
 Layout Settings, About 4-28
 Layout Settings, Changing 4-28
 Layout Tab, Report Properties 4-28
 Left Margin, Title Block Tab 4-19
 Legend Position, Labels Tab 4-17
 Legend Time, Labels Tab 4-17
 Licensing DigiPro 1-4
 Licensing DigiPro by E-mail 1-4
 Licensing DigiPro by Fax 1-4
 Licensing DigiPro by Phone 1-5
 Logo Tab, Report Properties 4-20
 Logo, Displaying a 4-20
 Logos, About 4-20

M

Manual Scales, Data Units Tab 4-11
 Manual Scales, Depth Units Tab 4-15
 Margins 4-27
 Margins, Page Setup Tab 7-3
 Margins, Page Size Tab 4-27
 Maximized Start, Preferences Tab 7-4
 Minimized Start, Preferences Tab 7-4
 Modifying a Report 2-6, 4-3
 Modifying Report Properties 4-7
 Mouse and Keyboard Usage 2-8

N

Networks, Using DigiPro on 1-3
 Normal Start, Preferences Tab 7-4

O

Open Dataset Tab, Advanced Tab 7-6
 Open Tab for Graph Item, Advanced Tab 7-6
 Opening a Project Database 2-5, 3-4
 Opening a Recently-Used Project Database 3-5
 Opening a Report 4-4
 Opening a Snapshot 6-8
 Opening Report Properties 4-6

Options and Defaults 7-3
 Orientation 4-26
 Orientation Correction 8-4
 Orientation Correction, Enabling 8-4
 Orientation Correction, Error Corrections Tab 4-24
 Orientation, Page Setup Tab 7-3
 Orientation, Page Size Tab 4-26
 Overview of Creating Graphs and Reports 3-3

P

Page Settings, About 4-26
 Page Setup Tab, Options and Defaults 7-3
 Page Setup, About 7-3
 Page Size Tab, Report Properties 4-26
 Paper Size, Page Setup Tab 7-3
 Paper Size, Page Size Tab 4-26
 Plotted Data, Printing 5-6
 Position from Top, Title Block Tab 4-19
 Preferences Tab, Options and Defaults 7-4
 Preferences, About 7-4
 Printing 5-3
 Printing a Report 2-7, 5-4
 Printing a Report with the Current Dataset 5-5
 Printing a Snapshot 6-10
 Printing Plotted Data 5-6
 Printing Report Properties 5-5
 Project Database, Opening a 2-5
 Project Database, Opening a 3-4
 Project Database, Opening a Recently-Used 3-5
 Project Database, What is a? 3-4

R

Recent File List, Preferences Tab 7-4
 Reference, Graph Type Tab 4-22
 Renaming a Report 4-4
 Renaming a Snapshot 6-9
 Renaming a Template 6-5
 Report Properties, About 4-7
 Report Properties, Modifying 4-7
 Report Properties, Opening 4-6
 Report Properties, Printing 5-5
 Report Tab, Report Properties 4-25
 Report with the Current Dataset, Printing 5-5
 Report, Creating a 2-5, 3-3
 Report, Deleting a 4-5
 Report, Modifying a 2-6, 4-3
 Report, Opening a 4-4
 Report, Printing a 2-7, 5-4
 Report, Saving a 2-7
 Report, Saving as a Template 6-4

Report, Viewing a	2-6
Reports vs Graphs	2-3
Reports Without Title Blocks	4-28
Reports, Creating Other	3-9
Reports, Saving Graphs as	3-8
Rotation Correction	8-7

S

Saving a Report as a Template	6-4
Saving a Report	2-7
Saving Graphs as Reports	3-8
Scales, Data Units Tab	4-11
Scales, Depth Units Tab	4-15
Select Graph and ..., Advanced Tab	7-6
Selection Status Window, Report Properties Tab ..	4-8
Sensitivity Correction	8-7
Sensor Correction Values, Experimenting with	8-3
Sensor Corrections	8-7
Sensor Corrections, Enabling	8-7
Show Border, Title Block Tab	4-19
Show Fonts in Boxes, Advanced Tab	7-5
Show Status of Report Properties, Advanced Tab ..	7-6
Show Tickmarks on Graph, Advanced Tab	7-6
Show Title Block, Title Block Tab	4-18
Snapshot, Creating a	6-8
Snapshot, Deleting a	6-9
Snapshot, Opening a	6-8
Snapshot, Printing a	6-10
Snapshot, Renaming a	6-9
Snapshots	2-3, 6-7
Snapshots, Defined	6-7
Sort in Dataset Selection	4-9
Spiral Correction	8-5
Spiral Correction, Enabling	8-6
Spiral Data, Processing.....	8-5
Start, Preferences Tab	7-4
Stay on Current Tab, Advanced Tab	7-6

T

Template, Deleting a	6-6
Template, Renaming a	6-5
Template, Saving as a Report	6-4
Template, Defined	6-3
Templates	2-3, 6-3
Templates, Copying to Another Computer	6-6
Text Lines, Title Block Tab	4-18
Time Displacement Graphs	3-7, 4-22, 4-28
Title Block Tab, Report Properties	4-18
Title Blocks, Reports Without	4-28

U

Units, Data Units Tab	4-10
Units, Depth Units Tab	4-12
Using DigiPro on Networks	1-3

V

Viewing a Report	2-6
------------------------	-----

Z

Zero-Offset Correction	8-7
Zones, for Time Displacement	4-28
Zoom Level, Advanced Tab	7-5
Zoom, Page Size Tab	4-27

Notes