Appendix 5
GeoGauge Data Download Guide

Humboldt GeoGauge® *Data Download* Guide

For use with C series Humboldt GeoGauge

Purpose

To download data from the C series Humboldt H-4140 GeoGauge to a PC.

Equipment Required

- H-4140.12 Infrared Interface to serial port cable
- USB to serial port adapter (optional)
- Any PC running any version of Windows with HyperTerminal

Operation

Initial Setup

1. Attach the GeoGauge Infrared Interface Cable to a 9 pin serial port on the personal computer (PC) or to a USB port via an appropriate adapter (Figures 1, 2 & 3).

2. Attach the GeoGauge Infrared Interface Cable reader head to the slotted retainer on the top of the GeoGauge. Be sure that the two infrared windows line up (Figure 4).

3. Turn on GeoGauge and PC.

4. On the PC monitor, click "Start", highlight "Accessories", click "Communications", and click "HyperTerminal". HyperTerminal is the Windows terminal emulation program.

5. Enter a district file name for the GeoGauge download settings. For example. "GeoGaugeDownload". Select an appropriate icon. Click "OK". It is through this new connection setting that all download data can be entered repeatedly without having to re-enter the settings every time.

6. In the "Connect To" window, select "connect using". Highlight the COM port to which the Infrared Interface Cable is connected. Click "OK".

7. In the "COM Properties" dialog box under the "Port Settings" tab, show.
   - Bits per second: 4800 (for GeoGauge serial numbers less than 326) or 1200 (for GeoGauge serial numbers greater than or equal to 327)
   - Data bits: 8
   - Parity: none
   - Stop bits: 1
   - Flow control: Hardware

   Click "OK"; click "File" and then click "Save".

Data Downloading

1. Repeat operations 1, 2 and 3 above.

2. Double click on the HyperTerminal icon selected earlier.

3. In the window that opens, Click "Transfer". Click "Transfer Text". Create a file for the data to be saved in. A new file name will have to be entered for each new download. A unique reference number and date are suggested. The file name must end with ".csv".

4. Press the "Shift" key and then the "Print" key on the GeoGauge. Data should be seen streaming onto the screen immediately. The data should look like the example in Figure 4.

5. When the data stops streaming, click "Transfer", highlight "Capture Text" and click "Stop". Click "Call". Click "Disconnect". Click "File". Click "Save".

7. Confirm that the data was saved by opening the .csv file in Microsoft Excel. Close HyperTerminal. Figure 5 is an example of what a typical .csv file show look like.

8. Press the "Shift" key and then the "Erase" key on the GeoGauge. This will permanently erase the data just downloaded.

9. Repeat 2 through 8 each time data is downloaded

The .csv files can be "cut & pasted" into an Excel spreadsheet. Humboldt supplies Excel templates for various uses with these files. Contact Humboldt for further information or for help in developing a custom spreadsheet.

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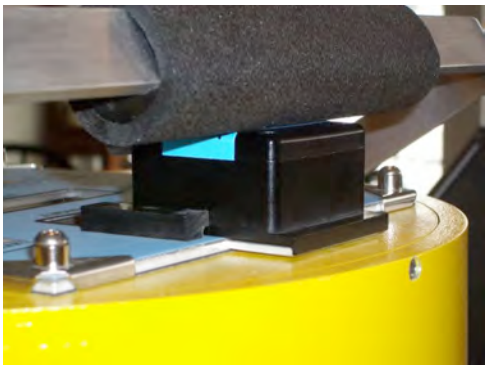
Figure 1
H-4140.12
Infrared Interface To
Serial Port Cable

Figure 2
Typical Serial To
USB Adapter

Figure 3
GeoGauge
Connected To A PC



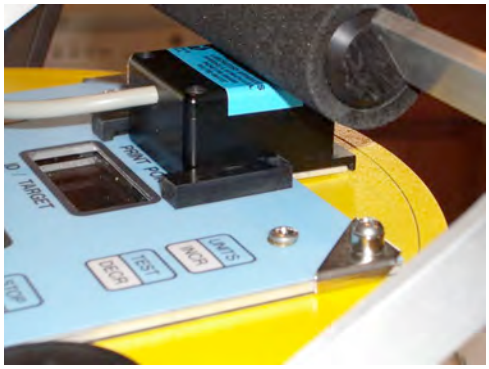


Figure 4
Proper Orientation of Infrared Sensor on GeoGauge

Sequential Run Number Assigned By GeoGauge When Data Is Saved

Average Stiffness As Displayed By The GeoGauge

Date Stamp Assigned By GeoGauge When Data Is Saved

Time Stamp Assigned By GeoGauge When Data Is Saved

Run#		1 Meas:		-9.19 CalFac:		4.3564 Date:	7/01/04	Time:	8:14				
	1	100	2047	2048	2048	2048	2062	2085	2633	2598	0	0	55.3 28.7
	2	104	2048	2048	2048	2048	2141	2167	2620	2633	0	0	29.1 29.4
	3	108	2048	2048	2048	2048	2212	2255	2597	2655	0	0	29.0 30.0
	4	112	2048	2048	2048	2049	2276	2348	2565	2665	0	0	28.9 56.7
	5	116	2048	2049	2048	2048	2332	2440	2526	2662	0	0	28.8 57.2
	6	120	2048	2049	2048	2048	2380	2534	2482	2647	0	0	28.6 57.7
	7	124	2048	2048	2048	2048	2417	2627	2436	2620	0	0	28.4 32.1
	8	128	2048	2048	2048	2048	2449	2716	2389	2579	0	0	28.3 32.5
	9	132	2048	2048	2048	2048	2472	2797	2335	2523	0	0	28.1 32.8
	10	136	2048	2048	2048	2048	2482	2863	2287	2469	0	0	27.8 33.1
	11	140	2048	2048	2048	2048	2490	2929	2238	2402	0	0	27.5 33.4
	12	144	2048	2048	2048	2048	2492	2987	2191	2328	0	0	27.2 33.7
	13	148	2048	2048	2049	2048	2488	3036	2148	2248	0	0	53.1 33.9
	14	152	2048	2048	2048	2048	2479	3076	2107	2164	0	0	26.6 34.2
	15	156	2048	2048	2048	2048	2468	3107	2069	2076	0	0	26.3 34.4
	16	160	2048	2048	2048	2048	2453	3131	2035	1986	0	0	26.0 34.6
	17	164	2048	2048	2048	2048	2434	3151	2004	1890	0	0	25.7 34.8
	18	168	2048	2048	2049	2048	2414	3170	1984	1755	0	0	51.4 35.2
	19	172	2048	2048	2048	2048	2406	3087	1952	1702	0	0	25.3 34.7
	20	176	2048	2048	2048	2048	2381	3101	1927	1627	0	0	24.9 35.0
	21	180	2048	2048	2049	2048	2360	3079	1908	1533	0	0	50.7 35.1
	22	184	2048	2048	2049	2048	2335	3049	1893	1474	0	0	50.3 35.1
	23	188	2048	2048	2048	2048	2312	3018	1880	1383	0	0	23.8 35.3
	24	192	2048	2048	2048	2048	2290	3002	1870	1340	0	0	23.4 35.4
	25	196	2048	2048	2048	2048	2269	2947	1861	1269	0	0	23.1 35.4

Data Used To Calculate The Real & Imaginary Portions Of Force & Deflection At Each Frequency (contact Humboldt for further details)

Frequency Number, 100 to 196 Hz in 4 Hz Increments

Figure 5
Typical .csv File
First 20 Runs (Records) Will Have All The Data Shown
Run 21 & Higher Will Have Only The First Row In Each Record