

2.0 Quick Start

2.1 Quick Start Introduction

The Model DL-1 logging unit can sample up to 4 analog channels simultaneously, as fast as 512 times per second or as slow as one time every 99 minutes, with the capacity to store over 540,000 readings.

The Tinker & Rasor **TRAC (True Recording and Capture)** Configuration and Analysis software was designed to be intuitive, so that you can put this capability to work, right out of the box. The “Quickstart Operation Diagram” in the next section (Section 2.2) shows you how to do this.

By understanding the basic framework of the DL-1 system, you will find that each time you put the system to work, your experience will not be one of constant “relearning” but one of increasing convenience. Tips are listed in this introduction and throughout the User’s Guide to help you save even more setup time in future applications.

****Tip:** You may use the system for many different applications, or you may use it for the same application every time. In either case, it will be valuable for you to be able to reuse any work you have done in the past. The **TRAC** software gives you the capability to do this by saving configuration files and sensor profiles. Choose meaningful names for configuration files and sensor profiles so that you may find them and use them again in the future, either for reference or for additional data acquisition tasks.

****Tip:** Notes can be typed directly into the configuration window for reference. This is an extremely valuable feature, and the notes are saved and stored to disk along with ALL configuration settings in data and graph files. In the same way, all raw data that is retrieved from the logging unit is stored in a graph file. The **TRAC** software allows you to recreate a configuration or a complete raw data file, along with scale settings, from a graph file. This capability makes it easy to organize data and assures that you can always duplicate a setup, effortlessly.

2.2 Quick Start Diagram

1. Connect the DL-1 Data Logger to your PC or Handheld computer.

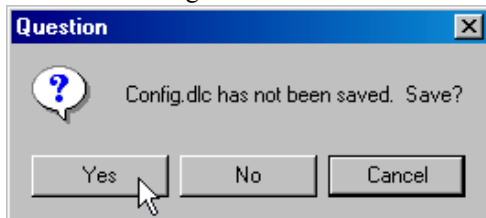


2. Open the TRAC software program

3. Open a New configuration window.



4. Set the configuration and save.



5. Send the configuration. The DL-1 is now configured.



6. Connect the DL-1 in the field.



Connect the Data Logger in the field using the included cable with four pairs of clamps. The clamps make it easy to connect to test stations, like the connection at left between the DL-1 Data Logger and the Tinker & Razor CP Test Station Model T-3.

The DL-1's slim body allows it to slide through the test station head and hide in the riser pipe. A convenient and safe location to deploy the DL-1, without having to remove the test station! You can see the cutout of the test station terminal marked with an X at left. (This is true for the Tinker & Razor Model T-3 CP Test Station. May not apply to other manufacturers test stations.)

7. Press the Start/Stop button on the DL-1. The DL-1 is now recording.

The DL-1 has only one button on it: Start/Stop. All configurations are done through the computer. This makes the



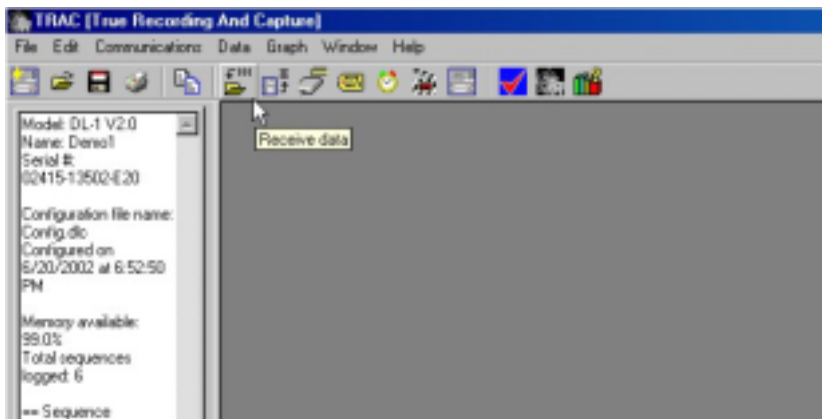
DL-1 the easiest data logger to deploy. Press Start/Stop and leave. Come back and press Start/Stop and you are done. (You do not have to press the button at all if you have configured a start and stop date/time.)

8. Retrieve the DL-1 from the field and re-connect it to your PC or Handheld computer.



Connect the DL-1 to your PC using the included cable. The 3-pin (round) end of the cable connects to the DL-1, the 9-pin (serial connector) end connects to the computer.

9. Open the TRAC software program and the click Receive Data button.



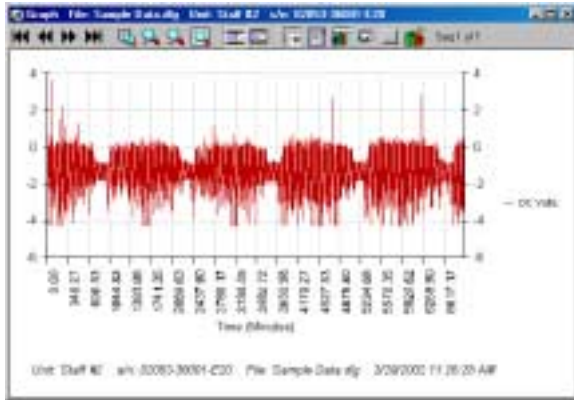
Make sure that the Model DL-1 Data Logger is turned off when connected to the PC or handheld computer. (No lights are visible on the face of the Data Logger)

****NOTE:** The LED on the face of the DL-1 will blink when the unit is recording. The speed at which the LED will blink is configurable to allow for maximum battery life. To determine if the unit is turned off, the LED's should be observed for at least 2 seconds.

10. View Spreadsheet.

Record	Interval	DC Volts	DC Amps	AC Volts	AC Amps	Date	Time
1	0.000	0.9528	0.0133	2.2513	-0.1231	6/20/2002	19:54:44.800
2	0.100	0.1280	0.0133	2.2513	-0.1231	6/20/2002	19:54:44.700
3	0.200	0.1194	0.0133	2.2513	-0.1231	6/20/2002	19:54:44.300
4	0.300	0.1201	0.0133	2.2513	-0.1231	6/20/2002	19:54:44.300
5	0.400	0.1385	0.0133	2.1386	-0.1231	6/20/2002	19:54:44.400
6	0.500	0.1380	0.0133	2.2513	-0.1231	6/20/2002	19:54:44.500
7	0.600	0.1429	0.0133	2.2513	-0.1231	6/20/2002	19:54:44.600
8	0.700	0.1429	0.0133	2.2513	-0.1231	6/20/2002	19:54:44.700
9	0.800	0.1290	0.0480	2.2513	-0.1231	6/20/2002	19:54:44.800
10	0.900	0.7680	0.0666	2.5995	-1.0653	6/20/2002	19:54:44.900
11	1.000	1.8045	0.0133	2.2513	-0.1231	6/20/2002	19:54:45.000
12	1.100	1.8045	0.0133	2.2513	-0.1231	6/20/2002	19:54:45.100
13	1.200	1.8034	0.0133	2.2513	-0.1231	6/20/2002	19:54:45.200
14	1.300	1.8045	0.0133	2.2513	-0.3603	6/20/2002	19:54:45.300
15	1.400	1.8045	0.0133	2.2513	-0.1231	6/20/2002	19:54:45.400
16	1.500	0.9027	0.0133	2.2513	-0.1231	6/20/2002	19:54:45.500
17	1.600	1.8073	0.0133	2.1386	-0.1231	6/20/2002	19:54:45.600
18	1.700	1.8034	0.0133	2.2513	-0.1231	6/20/2002	19:54:45.700
19	1.800	1.8034	0.0133	2.2513	-0.1231	6/20/2002	19:54:45.800
20	1.900	1.8045	0.0133	2.2513	-0.1231	6/20/2002	19:54:45.900
21	2.000	1.8045	0.0480	2.2513	-0.1231	6/20/2002	19:54:46.000
22	2.100	1.8045	0.0480	2.2513	-0.1231	6/20/2002	19:54:46.100
23	2.200	1.8045	0.0133	2.2513	-0.1231	6/20/2002	19:54:46.200
24	2.300	1.8073	0.0133	2.2513	-0.3603	6/20/2002	19:54:46.300
25	2.400	1.8034	0.0133	2.1386	-0.1231	6/20/2002	19:54:46.400

When viewing data in the Spreadsheet window, the user can see the record number, interval between reads, value columns and date and time of the read. It is also possible to hide columns to be able to focus on just the data you are interested in.



11. View Graph.

When viewing the data as a graph, it is possible to set statistical lines of Minimum, Maximum, Mean, Standard Deviation and Regression. Also, zooming in and out of the graph allows you to view all of the data at once, or just the sequences or individual reads you wish to view.

12. Save, print, export.



Spreadsheet data can be exported as comma separated text for importing into other spreadsheet programs, or as xml based for exporting onto the web. It is important to note that saving (exporting) the data into any format other than the ".dld" format in the TRAC software program will allow you to change the raw data. Changing is not possible within the TRAC software program. Graph data can also be exported as an image file.

3.0 Feature Summary

Data Acquisition

- Stand-alone operation – uses internal memory to store data
- Interval Recording
- Trigger-based (Event) Recording and Repetitive Triggering
- Status Indication: Sampling, Trigger-Mode, Memory Full, Low Battery
- Low-Power, Battery Operation
- 10-year battery backup and software interlock to protect data

Software Framework

- The TRAC Configuration and Analysis software framework is compatible with all current level Tinker & Razor DL-1 data acquisition systems.
- One-button operations to setup the logger, receive data and generate graphs.
- Configurations, data and graphs are treated as documents, much like a word processing program treats documents. All information is carried forward to the next level 'document', which means that you don't have to save configurations, data and graphs together as a set – a configuration can be created from an existing data file or graph file; a data file can be created from a graph file. Once a graph is created from data collected by the logging unit, the configuration and data files can be discarded, if desired, for the purpose of storing and organizing data files more efficiently.
- The 'configuration' button on the status window allows you to create a configuration 'document' from the logging unit that is currently connected to the PC.