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dipperLog Software Version 1.5.0

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Thank you for choosing the Heron dipperLog. We are confident you will find it a durable, versatile and cost effective tool which will deliver accurate water level readings for many years over the course of your project. Groundwater professionals have been successfully employing the Heron family of instrumentation to monitor both open waters and boreholes, to perform pump and slug tests, and to complete wetland and tidal studies with excellent results for over 20 years.

This dedicated, intuitive software makes the dipperLog quick and easy to program and launch as well as allowing for simple data recovery. Our software has been tested on Windows 7, Windows 8 and Windows 10 operating systems and is available on our website as a free download.

Your new dipperLog has been inspected and calibrated prior to shipping and is accompanied by a certificate of calibration. A unique Serial Number and measurement range has been etched on the body and embedded in the internal firmware to simplify identification and data management.

dipperLog Options

dipperLog₃₂



The dipperLog ³², the most economical dipperLog in our line-up, has a stainless steel body and transducer with a maximum storage capacity of 32,000 data points. Each

data point consists of a date, time, pressure and temperature reading. The dipperLog ³² is only available in a 30m/100' range and has a 1 year warranty.

barLog



The barLog is a dipperLog configured to measure barometric pressure fluctuations necessary to compensate your dipperLog data files. The barLog takes

readings every 1 hour and has a capacity for 32,000 data points.

dipperLog₆₄



The dipperLog₆₄ is our flagship logger. It offers a memory of 64,000 data points, a choice of pressure ranges and a 3 year warranty.

dipperLogTOUGH



The dipperLogTOUGH is our premium logger with 100% titanium body. When coupled with the Teflon encapsulated O-rings, this logger is suitable for use in the harshest of

environments. Offering a memory capacity of 64,000 data points, a choice of 4 pressure ranges, an accuracy of 0.05% FS and a 3 year warranty, this product allows for worry free data collection at all of your projects.



4-20 mA Pressure Transmitter

The vented logger incorporates a gauged transducer that measures pressure exempt from barometric influences. dipperLog VENTED must be deployed on a vented cable. **We now offer a specialized cap that will allow for use without a cable for shallow water or wetland studies.**



The 4-20 mA Pressure Transducer is easily integrated into an existing SCADA system or with most third party data logger. It will provide a continuous water level reading for your application. It can also be equipped with a digital display. This device is a sensor only and requires an external power source.

Deployment Options*

Suspended Deployment

This is the simplest and most inexpensive method of deploying your dipperLog. Using a braided stainless steel cable or Kevlar string, suspend the dipperLog in the area to be monitored ensuring it is securely anchored to the surface for easy retrieval. If employing this method, no communication is possible with the deployed dipperLog. The dipperLog must be programmed and started prior to installation and then recovered for data retrieval and re-programming.

Well Head Readout Option

This is a much less labour intense option. The dipperLog is suspended on a direct read downhole cable enabling communication with the dipperLog from the wellhead. Once deployed the dipperLog never needs to be disturbed. Programming of the dipperLog, downloading of data and stopping and starting data collection can all be done via the communication cable. This cable can be mounted on a reel for portability or to simplify pump or slug tests. Real time display is also available with this configuration.

*Refer to our website for further information on deployment

Getting Started

Launching the software will generate the Logger Information screen.

| Device Setup | Data Reports Realtime Readings | Barometric Compensation | Multiple Downloads |
|------------------------------------|--------------------------------|-------------------------|---|
| Stop Logger 🔂 Clear Memory 🥥 Refre | sh 🔛 Download | | |
| | | | |
| Logger Information | | | |
| | Logger ID: | | |
| | Max Data Sets: | | |
| | Battery Strength: | | |
| Saved Settings | Max Pressure Range: | | |
| | Job Number: | | |
| | Well Number: | | |
| | Transducer Depth: | | |
| | Reading Interval: | | |
| Current State | Datum Location: | | |
| | Current Temperature: | | |
| Hei | ght of Water Above Transducer: | | |
| | Readings Stored: | _ | |
| | Logger on mission: | Used Free | |
| | Set to delayed start: | - | |
| | | | |
| | | | |
| | | | |
| | | | |
| t looses | Logger is not on a mission | n | Compatibility Mode 905-628-4999 9 Ver: 1.2.2.0 loggersupport@heroninstr |

______ 00 00

Connect the PC communication cable to your computer and 1 or more dipperLog. Each dipperLog requires a dedicated cable and USB port.

| Device Setup Q Logger In | formation 🔀 Data Reports 🛄 Realtime Readings | Barometric Compensation | Multiple Downloads | |
|---------------------------|--|-------------------------|--------------------------|--|
| Stop Logger 👩 Clear Memor | ry 🥥 Refresh 🔞 Download | | | |
| Logger Informa | ation | | | |
| angger anterna | Logger ID: | B14789 | | |
| | Max Data Sets: | 64000 | | |
| | Battery Strength: | 100% | | |
| Saved Settings | Max Pressure Range: | 10.00 M | | |
| | Job Number: | 00zxv | | |
| | Well Number: | Oasdf | | |
| | Transducer Depth: | 0.00 M | | |
| | Reading Interval: | Every 15 Seconds | | |
| Current State | Datum Location: | | | |
| | Current Temperature: | 25.19°C | Memory Status: 100% Full | |
| | Height of Water Above Transducer: | 0.151 M | | |
| | Readings Stored: | 64000 | | |
| | Logger on mission: | No Used | | |
| | Set to delayed start: | No | | |

A listing of any connected dipperLog is available in the adjacent drop box.

| B14789 | N | - |
|--------|---|--------------|

This box shows ID number of the dipperLog whose settings are currently being displayed. The selected dipperLog information will be displayed. Selecting a new ID number from the list display will update the screen to display the new settings.





Programming a dipperLog

| Job number is required | Top of Casing | |
|--|--|--|
| © Well Number Well number is required | Delayed Start Start Logger at specific date and time 04 Jul, 2019 1:09 PM | |
| Take Reading After Every 15 Minutes | Set Logger Date and Time Image: Set to current time | |
| Transducer Depth 0.00 Realtime | or specific date and time 04 Jul, 2019 - 12:59 PM | |
| Save & Start | 📚 Reset Form | |

Enter the information requested in the applicable fields

Please Note: All fields in ^{Device Setup} screen are mandatory and must be completed before dipperLog mission can be launched. One exception - the delayed start option

| 0.110 0 | |
|--------------------------|---|
| Job Number | Alpha-numeric field – same for all loggers in project 5 character limit |
| Well Number | Must be a unique alpha-numeric number |
| Recording Frequency | 1 second to maximum of 255 hours |
| Log time option | First reading at 1 second with 1 second added to each subsequent reading interval for 255 readings. |
| Transducer Depth | Distance the transducer is suspended below the reference point |
| Datum Location | Reference point used for transducer depth i.e. top of casing, ground surface, etc. |
| Delayed Start | Complete this field if you want the recording to start at a future date and time |
| Set Logger Date and Time | This field allows you to set your logger to a different time or time zone than your computer. i.e. Daylight Savings vs Standard |
| Seset Form | Will clear all input on this screen if multiple changes are needed or fields can be changed individually. |

| Once all fields are completed, select | | Save & Start | to launch mission. |
|---------------------------------------|--|--------------|--------------------|
|---------------------------------------|--|--------------|--------------------|

The default start time is immediately.

Updated Logger Information screen will be displayed showing new status of selected connected dipperLog.

Updated dipperLog Status appears at bottom of screen. Logger is on a mission



If delayed start option was selected, the screen will display the future start time.

Logger is set to start on July-11-19 at 11:00 AM

To disconnect dipperLog simply unplug PC communication cable.

If only a single dipperLog connected, blank logger information screen will be displayed.

If multiple dipperLog connected, logger information of newly indicated logger will be displayed.

Your dipperLog is now ready to be deployed.

Programming a barLog

When working with a barLog the only information requested at setup is Job Number. One barLog may be used to compensate the data collected by all the deployed dipperLog in the project and is capable of accurately covering a 5 mile radius.

| s Heron Instruments Inc. | | - ¥ 1 |
|--|-------------------------|--|
| 🔀 Device Setup 🥥 Logger Information 🕅 Data Reports 🕐 Barometric Compensation 🚆 Mul | Itiple Downloads | |
| Job Number Job number is required Job rLog is set to read by hour as default | Reset Form | |
| Connect Logger is not on a mission | Compatibility Mode 905- | 628-4999 🍳 Ver: 1.2.4.0 loggersupport@heroninstruments.com |
| Once Job Number has been entered, | Save & Start | vill launch the barLog. |

| | on 🔀 Data Reports 🔅 Barometric Compensation | n Multiple Downloads | |
|------------------------------|---|----------------------|------------------------------|
| Stop Logger 👩 Clear Memory 🥥 | Refresh 🔂 Download | | |
| | | | |
| Logger Information | 1 | | |
| | Logger ID: | A15551 | |
| | Max Data Sets: | 32000 | |
| | Battery Strength: | 100% | |
| Saved Settings | Max Pressure Range: | 0.00 M | |
| | Job Number: | 00123 | |
| | | | |
| | | | |
| Current State | | | |
| | Current Temperature: | 0.00°C | Memory Status: 99.997 % Free |
| | Barometric Pressure: | | |
| | Readings Stored: | 1 | |
| | Logger on mission: | Yes Used | |
| | Set to delayed start: | Free | |
| | · · · · · · · · · · · · · · · · · · · | | - |
| | Logger started on July-11-19 at 12:38 PM | | |
| | Logger started on July-11-19 at 12:38 PM | | |
| | Logger started on July-11-19 at 12:38 PM | | |

For optimum results, deploy the barLog at a central location on your project.

Downloading Data

If the dipperLog is deployed on a direct read downhole cable, connect PC communication cable at well head, otherwise retrieve dipperLog from deployment location and connect the PC communication cable directly with the dipperLog.

Launch the software

Connect each PC communication cable to your computer and dipperLog or well head. Select

Connect Loggers In bottom left corner of screen

💥 Device Setup 🛛 Q. Logger Information 🕅 Data Reports 📲 Realtime Readings 👩 Barometric Compensation 🌋 Multiple Downloads Step Loger 👸 Clear Memory 🥥 Refresh 😰 Download Logger Information Logger ID: B14789 Max Data Sets: 64000 Battery Strength: 100% Max Pressure Range: 10.00 M Saved Settings Job Number: 00zxv Well Number Oasdf Transducer Depth: 0.00 M Every 15 Seconds Reading Interval: **Current State** Datum Location: Memory Status: 100% Full Current Temperature: 25.19°C Height of Water Above Transducer 0.151 M Readings Stored: 64000 Logger on mission: No Used Free Set to delayed start net Logger is not on a mission X 1 02 00 07 S 07 🗁 10 🚆 00 😪 10 37 Compatibility Mode 905-628-4999 9 Ver: 1.2.2.0 logg N 100%) C · Ir W &

The high-lighted dipperLog information will be displayed.

A listing of any connected dipperLog is available in the adjacent drop box.



This box shows ID number of the dipperLog whose settings are currently being displayed. The selected dipperLog information will be displayed.

If only one dipperLog connected, that is the ID number and settings which will be displayed.



Will initiate the download of data from the displayed dipperLog.

Data in memory will be downloaded and displayed.

Download will not cause the mission to be stopped or paused.

Download will not cause the data to be erased from the memory.

Data will not be saved upon download, this must be done manually.

Pressure and temperature data will be displayed on the same graph.

Once completed, Data Reports tabular

will be displayed showing both a graphical and representation of the collected readings.

| Device Setup 🛛 🕖 Logger Inform | ation 😿 Data Reports 🛛 🥀 Ba | arometric Compensation Multiple D | ownloads | |
|---------------------------------|--|--|--|--|
| | | a hun la hun hun | - | |
| Download e Refresh III Save | e on Computer Ma Save Graph Off | iset None Multiplier None | | |
| iraph Reports | | | | |
| | | | | |
| 10.01 25 | | | | |
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| 9.96 23 | | | | |
| 9.97 bit 22 | | | | |
| a 9.96 p | | | | |
| 9.95 21 | | | | |
| 9.94 | | | | |
| 22 | | | | |
| 9.93 | | | | |
| | | | | |
| 9.92 | | | | |
| 9.92 | | | Time | |
| 9.52 19 | | | Time | |
| 9.92 B | 1 2 2 | | Time | |
| 9.929 194 | | | Time | |
| 19.92 194 | | Pran a rolumn he | Time | |
| 9 52 13 | Date | Drag a column her | Time to group by this column. Time Temperature(T | C) PresureM) |
| 9 529 [13] | 7/13/19 | Drag a column her 123822 PM | Time to group by this column. Time Z4312 | C) Pressure(M) 9.961 |
| 9 529 [13] eta Reports No | 7/11/19 7/11/19 7/11/19 | Drag a column her 123822 PM 13822 PM | Time to group by this column. Time 24.312 24.375 | C) Pressure(M) 9.961 9.959 |
| 5 529 [13] | Date 7/11/19 7/11/19 7/11/19 | Drag a column her 12:36:22 PM 138:22 PM 238:22 PM | Time to group by this column. Time 24.312 24.355 24.188 | C) Presum(M) 9.561 9.559 9.552 |
| 5 509 USL | Date 7/11/19 7/11/19 7/11/19 | Drag a column her 123822 PM 19822 PM 29822 PM 39822 PM | Time | C) Pressure(M) 9.961 9.959 9.952 9.952 9.954 |
| 19 207 Ligh | Date 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 | Drag a column her 123622 PM 13852 PM 23822 PM 33822 PM 43822 PM | Time Temperature(N) To group by this column. 7emperature(N) 24.312 24.312 24.355 24.418 21.356 23.568 | C) Presure(M) 9.961 9.959 9.952 9.954 9.954 |
| E 227 USL | Date 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 | Drag a column her 123822 PM 18822 PM 28822 PM 38822 PM 48822 PM 58822 PM | Time | C) Pressure(M) 9555 9552 9554 9554 9554 9552 |
| B 327 Ligh | Date 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 | Drag a column her 1238:02 PM 138:02 PM 238:02 PM 338:02 PM 438:02 PM 538:02 PM 638:02 PM | Time to group by this column. Tame 24312 24375 2438 23.750 23.688 23.568 23.562 23.562 23.520 | C) Pressure(M) 9.951 9.559 9.552 9.554 9.554 9.554 9.552 9.554 9.552 9.554 |
| E 927 ESL | Date 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 | Drag a column her 123822 PM 138522 PM 33822 PM 43822 PM 63822 PM 63822 PM 73822 PM | Time | C) Pressure(M) 9.955 9.552 9.554 9.554 9.554 9.554 9.554 9.554 9.552 9.550 9.553 |
| 19 22 USL | Date 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 | Drag a column her 128622 PM 13822 PM 23822 PM 33822 PM 43822 PM 63822 PM 63822 PM 73822 PM 83822 PM | Time to group by this column. Tame 44312 24375 24188 23.750 23.668 23.562 23.56 23.562 23.56 23.5 | C) Pressure(M) 9.955 9.559 9.552 9.554 9.554 9.554 9.552 9.554 9.552 9.554 9.552 9.554 9.552 9.554 9.552 9.554 9.555 9.559 |
| 15 50 11 1 | Date 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 | Drag a column her 123822 PM 23822 PM 23822 PM 43822 PM 63822 PM 63822 PM 63822 PM 83822 PM 83822 PM | Time to group by this column. Time 24.312 24.375 24.375 24.385 2.3.50 2.3.688 2.3.562 2.3.59 2.2.685 2.3.59 2.2.635 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.63 2.2.6 2.2.63 2.2.6 2.2.6 2.2.6 2.2.6 2.2.6 2.2.6 2.2.6 2.2.6 2.2.6 2. | C) Pressure(M) 9.951 9.559 9.552 9.554 9.554 9.554 9.554 9.554 9.554 9.554 9.554 9.552 9.552 9.554 9.552 9.552 9.552 9.553 9.559 9.552 9.553 9.559 9.552 9.553 9.559 9.552 9.554 9.559 9.552 9.554 9.559 9.552 9.554 9.552 9.554 9.555 |
| 8 529 134 | 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 | Drag a column her 128922 PM 13922 PM 23822 PM 33822 PM 53822 PM 53822 PM 73822 PM 63822 PM 93822 PM 93822 PM 93822 PM | Time to group by this column. Tene 24.312 24.375 24.188 21.562 23.552 23.552 23.552 22.825 22.825 22.825 22.848 22.438 2 | C) Pressure(M) 9.955 9.952 9.554 9.554 9.552 9.554 9.552 9.560 9.600 9.600 9.600 9.600 9.600 9.600 9.675 |
| 5 53 13 | Date 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 | Drag a column her 123822 PM 23822 PM 23822 PM 33822 PM 43822 PM 63822 PM 63822 PM 13822 PM 13822 PM 13822 PM | Time | C) Pressure(M) 9.961 9.959 9.952 9.954 9.954 9.954 9.954 9.954 9.954 9.952 9.950 9.969 9.971 9.975 9.975 |
| 9 39 19 No | 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 7/11/19 | Drag a column her 128622 PM 13822 PM 23822 PM 33822 PM 33822 PM 53822 PM 63822 PM 93822 PM 93822 PM 13822 PM 13822 PM 13822 PM 13822 PM | Time to group by this column. Tene 44.512 44.512 44.513 44.513 44.513 24.188 21.552 21.562 21.562 22.355 22.825 22.825 22.438 22.438 22.348 22.348 22.348 22.355 22.55 25 22.55 22.55 22.55 25 25 2 | C) Pressure(M) 9 555 9 555 9 552 9 554 9 554 9 554 9 554 9 554 9 554 9 555 9 575 9 575 |
| 15 50 19 | Date 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 7/11/39 | Drag a column her 123822 PM 23822 PM 23822 PM 33822 PM 43822 PM 63822 PM 63822 PM 13822 PM 13822 PM 13822 PM 13822 PM 13822 PM | Time | C) Pressure(M) 9.961 9.959 9.952 9.954 9.954 9.954 9.954 9.954 9.952 9.950 9.969 9.971 9.975 9.975 9.975 9.975 |

These screen may be customized to show this data in a variety of layouts.

| Download 😁 | Refresh IC Save | on Computer 2 | Save Graph | Offset Non | • | Multiplier N | one | * | | | | |
|-------------|-----------------|---------------|---------------------------------------|------------|--------|--------------|-----|--------------|---------|------------------------------|-----------------|-------------|
| aph Reports | | | | | | | • | Data Reports | | | | |
| | | | | | | | | | D | rag a column here to group b | y this column. | |
| 10.01. | 1 | | | | | | | No | Date | Time | Temperature(°C) | Pressure(M) |
| 10.01 | 1 | | | | | | | 1 | 7/11/19 | 12:38:22 PM | 24.312 | 9.961 |
| | | | | | | | | 2 | 7/11/19 | 1:38:22 PM | 24.375 | 9.959 |
| 150 | | | | | | / | | 3 | 7/11/19 | 2:38:22 PM | 24.188 | 9.952 |
| | | | | | | | | 4 | 7/11/19 | 3:38:22 PM | 23.750 | 9.954 |
| 2 | | | | | | | | 5 | 7/11/19 | 4:38:22 PM | 23.688 | 9.954 |
| | 1 | | | | | | | 6 | 7/11/19 | 5:38:22 PM | 23.562 | 9.952 |
| 9.99 | | | | | | | | 7 | 7/11/19 | 6:38:22 PM | 23.250 | 9.960 |
| | | | | | | | | 8 | 7/11/19 | 7:38:22 PM | 22.875 | 9.963 |
| | | | | | | | | 9 | 7/11/19 | 8:38:22 PM | 22.625 | 9.969 |
| 9.98 | 4 | | | | | / | | 10 | 7/11/19 | 9:38:22 PM | 22.438 | 9.971 |
| | | | | ~ | | | | 11 | 7/11/19 | 10:38:22 PM | 22.438 | 9.975 |
| | | | \frown | | | | | 12 | 7/11/19 | 11:38:22 PM | 22.375 | 9.975 |
| 9.97 E | | \rightarrow | · · · · · · · · · · · · · · · · · · · | | | / | | 13 | 7/12/19 | 12:38:22 AM | 22.250 | 9.974 |
| an tes | | | | | | / | | 14 | 7/12/19 | 1:38:22 AM | 22.125 | 9.973 |
| 2 d 2 | 3 | | | | | / | | 15 | 7/12/19 | 2:38:22 AM | 22.000 | 9.975 |
| | | | | | | / | | 16 | 7/12/19 | 3:38:22 AM | 21.875 | 9.977 |
| 3.30 | | (| | | | | | 17 | 7/12/19 | 4:38:22 AM | 21.750 | 9.977 |
| | | / | | | \sim | | | 18 | 7/12/19 | 5:38:22 AM | 21.688 | 9.981 |
| | | | | | | | | 19 | 7/12/19 | 6:38:22 AM | 21.562 | 9.983 |
| 9.95 | 9 | | | | | | | 20 | 7/12/19 | 7:38:22 AM | 21.438 | 9.987 |
| | | | | | | | | 21 | 7/12/19 | 8:38:22 AM | 21.562 | 9.992 |
| | | | | | | | | 22 | 7/12/19 | 9:38:22 AM | 22.062 | 9.994 |
| 9.94 | | | | | | | | 23 | 7/12/19 | 10:38:22 AM | 23.188 | 9.996 |
| | | | | | | | | 24 | 7/12/19 | 11:38:22 AM | 23.500 | 10.003 |
| 2 | 9 | | | | | | | | | | | |
| 9.93 | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 6.63 | | | | | | | | | | | | |
| a. a6 | T | | Time | | | | | | | | | |
| | | | | | | | | | | | | |

C Refresh

Re-downloads data incorporating any newly recorded data points since last download.

Save on Computer allows you to designate the location where the data is saved.

| 🚺 Export Data to File | A COLUMN AND | X |
|---|---|---|
| 🔾 🗸 🖉 🗸 🖉 | .0.11 data 🔸 0.8.0.12 | ✓ ✓ |
| Organize 👻 New f | lder | ii • 🔞 |
| Favorites E Desktop Downloads C OneDrive Recent Places SkyDrive | barLog_A07794_392018_110000 AM_US barLog_A07794_09032018_100000 AM barLog_A07794_12032018_100000 AM barLog_B12345_2132018_42022 AM_US dipperLog_B12345_13022018_42022 AM_1S dipperLog_B12345_13022018_42022 AM_1S dipperLog_B12345_13022018_42022 AM_1S dipperLog_B12345_13022018_2022 AM_1S | dipperLog_D12766_06032018_95344 PM dipperLog_D12766_06032018_95344 PM dipperLog_E12540_362018_90710 PM_U dipperLog_E12540_06032018_90710 PM dipperLog_E12540_06032018_90710 PM S |
| Libraries Documents Music Pictures Videos | Image: Comparison of the second sec | 1 |
| File name: | operLog_E12540_06032018_90710 PM mma Separated File | - |
| Hide Folders | | Save Cancel |
| lavigate to des | ired location, name the dat | ta set and Save |

If you wish to save the data as a .txt file, select "text (tab delimited)" from dropdown menu in "Save as type" field

| Export | 23 |
|--------|---|
| ? | Successfully exported to \\HII-PDCEXCH\RedirectedFolders\$\lsupport\Desktop\MVP 8.0.11 data\0.8.0.12 \dipperLog_E12540_06032018_90710 PM_3.csv. Do you want to open this file? Yes No |

You may now view the data in an Excel spread sheet or text file if desired.



dipperLog is now ready to be re-deployed or return to further options.



Multiple Downloads

If you have multiple dipperLog connected and listed in the text box on your screen



All dipperLog listed on left will be downloaded simultaneously, with individual progress bars indicating the speed of the download.

Once all downloads have been completed, the data files in CSV format will be exported to the designated destination folder with no further input from you.

| on Instruments Inc. | | | | • |
|---|----------------------------|-------------------------|--|---|
| 🐇 Device Setup 🔍 Logger Information 🕅 Data R | eports 🔛 Realtime Readings | Barometric Compensation | Multiple Downloads | |
| Download All Offset None + Multiplier | None * | | | |
| | | | | |
| Select destination folder: ULogger DeptiTest Data | | Browse | | |
| Progress | | Logger ID | File name template | Status |
| | | B14789 | dipperLog_B14789_YYYY-MM-DD_HHMM_AM(PM). | 64000 recordings downloaded out of 64000. |
| | | B14459 | dipperLog_B14459_YYYY-MM-DD_HHMM_AM(PM). | 32000 recordings downloaded out of 32000. |
| | | A15551 | barLog_A15551_YYYY-MM-DD_HHMM AM[PM].csv | 121 recordings downloaded out of 121. |
| | | B12514 | dipperLog_B12514_YYYY-MM-DD_HHMM_AM(PM). | 32000 recordings downloaded out of 32000. |
| | | | | |
| | | | | |
| 1 Loopers (81 351 4 | Multiple data doubles d | completed | Compatibility Made | 00 9 Var 1.2.4.0 January upport@have=last |

If data needed in Text format, dipperLog must be downloaded and saved individually or saved using the "Save as TXT" option on the barometric compensation screen.

Realtime Readings



will launch a graphical display of current

Navigating to the tab measurements.

Data will be plotted until a maximum of 20 data points is reached.

The graph will then update every second eliminating earlier readings since no more than 20 data points can be displayed at any time.



This data will not be recorded and is intended for display purposes only. You may choose to display pressure readings, temperature readings or both. Navigating to another screen will stop the display.



These readings represent Head of Water values.

Stopping a dipperLog

| evice Setup 🧕 🧕 Logger Informatio | on 🔀 Data Reports 🛛 🛄 Realtime Readings | Barometric Compensation | Multiple Downloads | |
|-----------------------------------|---|-------------------------|-------------------------|--|
| Stop Logger 👩 Clear Memory 🥝 | Refresh 🙀 Download | | | |
| Logger Information | 1 | | | |
| | Logger ID: | B14789 | | |
| | Max Data Sets: | 64000 | | |
| | Battery Strength: | 100% | | |
| Saved Settings | Max Pressure Range: | 10.00 M | | |
| | Job Number: | 00123 | | |
| | Well Number: | 00011 | | |
| | Transducer Depth: | 12.00 M | | |
| | Reading Interval: | Every 15 Seconds | | |
| Current State | Datum Location: | Top of Casing | | |
| | Current Temperature: | 23.50°C | Memory Status: 83.5 % F | Free |
| | Height of Water Above Transducer: | -0.007 M | | |
| | Readings Stored: | 10540 | | |
| | Logger on mission: | Yes Used | | |
| | Set to delayed start: | No | | |
| | Logger started on July-16-19 at 4:15 PM | | | |
| | | | | |
| 00ers 814789 | Logger is on a mission | | | Compatibility Mode 905.628.4999 🦁 Ver. 1.2.4.0 Innersunners@heroninstrum |

Stop Logger

will stop data recording.

Once stopped, the dipperLog may not be restarted until memory cleared and all settings re-programmed.

| St | top Logger | 23 | |
|------------------------|---|---|------|
| A | Are you sure that you want to sto Narning: you will not be able to r | op the logger? esume from here later on. | |
| | Yes | No | |
| After stopping mission | Clear Memory | clears all information in | memo |

If logger not previously stopped, this operation will also stop the mission.

| Clear Memory | | | 23 | | | | |
|--|-----|----|----|--|--|--|--|
| Are you sure that you want to clear logger memory? Please note that clearing the memory, will also stop the logger. | | | | | | | |
| | Yes | No | | | | | |

WARNING: If memory is cleared before downloading and saving the data, all recorded data will be erased and *unrecoverable*.

| eron Instruments Inc. | | | | |
|--------------------------------------|--------------------------------------|----------------------------|-----------------------------------|--|
| 🔀 Device Setup Q Logger Information | 🔀 Data Reports 🛛 🛄 Realtime Readings | Barometric Compensation | Multiple Downloads | |
| 🕈 Stop Logger 🔂 Clear Memory 🥝 Refre | sh 🚯 Download | | | |
| | | | | |
| Logger Information | | | | |
| | Logger ID: | í | | |
| | Max Data Sets: | | | |
| | Battery Strength: | | | |
| Saved Settings | Max Pressure Range: | | | |
| | Job Number: | | | |
| | Well Number: | | 23 | |
| | Transducer Depth: | Logger memory has been cle | ared | |
| | Reading Interval: | ОК | | |
| Current State | Datum Location: | | | |
| | Current Temperature: | | | |
| Heig | ht of Water Above Transducer: | | | |
| | Readings Stored: | _ | | |
| | Logger on mission: | Used | | |
| | Set to delayed start: | - | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| et Loggers B14459 | Logger is not on a mission | n | Compatibility Mode 905-628-4999 🧐 | /er: 1.2.4.0 loggersupport@heroninstruments. |

Device setup screen will be displayed with all data fields cleared.

| Job Number | Datum Location |
|--|--|
| Job number is required | Top of Casing |
| 2 Well Number | Delayed Start Start Logger at specific date and time |
| Take Reading After Every 15 Minutes | Set to current time |
| Transducer Depth 0,00 Realtime | or specific date and time 22 Jul, 2019 - 4:13 PM |
| Save & Start | Seset Form |

dipperLog is now ready to be re-programmed and re-deployed.

Barometric Compensation

This operation can be done at any time. It is not necessary to be connected to any logger.



Select in either barLog or dipperLog section and navigate to location where downloaded data sets are saved,



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Select barLog data to be used in compensation or dipperLog data to be compensated. Select Open to import files.

Please Note: barLog and dipperLog files must be imported separately.

| Process Selected Files 🖉 Save on Compute | Save As TXT | | | | | | | | | |
|--|---------------------------------------|----|-----|-------------|---------|------------|--------------|-----------------|-------------------------------|--|
| | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | | | | | | |
| SarLog File | | 1. | | barLog File | | | | | dipperLog Files | |
| | Bernove | * | Add | | | | | Drag a column t | here to group by this column. | |
| 8 | | | | No | Date | Time: | Temperature(| Pressure(M) | | |
| rlog_a15551_2019-07-16_1247 pm.csv | | | | P 1 | 1/09/19 | 1:52:03 PM | 21.875 | 9.975 | | |
| | | | | 2 | 1/09/19 | 1:53:03 PM | 21.938 | 9.975 | | |
| lipperLog Files | | | | 3 | 1/09/19 | 1:54:03 PM | 21.938 | 9.975 | | |
| | Bernove | 2 | Add | 4 | 1/09/19 | 1:55:03 PM | 21.875 | 9.975 | | |
| | | | | 5 | 1/09/19 | 1:56:03 PM | 21.812 | 9.974 | | |
| dipperLog_803581_110118_73147 PM.csv | | | | 6 | 1/09/19 | 1:57:03 PM | 21.812 | 9.974 | | |
| dipperLog_614782_2019-02-11_0424 PM.csv | | | | 7 | 1/09/19 | 1:58:03 PM | 21.750 | 9.974 | | |
| depertog_630045_61019_114756 AM.csv | | | | 1 | 1/09/19 | 1:59:03 PM | 21.750 | 9.974 | | |
| dipperLog 814789 2019-07-16 1247 PM.ckv | | | | 9 | 1/09/19 | 2:00:03 PM | 21.750 | 9.974 | | |
| and a second | | | | 10 | 1/09/19 | 2:01:03 PM | 21.688 | 9.974 | | |
| | | | | 11 | 1/09/19 | 2:02:03 PM | 21.688 | 9.973 | | |
| | | | | 12 | 1/09/19 | 2:03:03 PM | 21.688 | 9.974 | | |
| | | | | 13 | 1/09/19 | 2:04:03 PM | 21.688 | 9.975 | | |
| | | | | 14 | 1/09/19 | 2:05:03 PM | 21.625 | 9.973 | | |
| | | | | 15 | 1/09/19 | 2:06:03 PM | 21.625 | 9.975 | | |
| | | | | 16 | 1/09/19 | 2:07:03 PM | 21.625 | 9.975 | | |
| | | | | 17 | 1/09/19 | 2:08:03 PM | 21.625 | 9.975 | | |
| | | | | 18 | 1/09/19 | 2:09:03 PM | 21.625 | 9.975 | | |
| | | | | 19 | 1/09/19 | 2:10:03 PM | 21,562 | 9.975 | | |
| | | | | 20 | 1/09/19 | 2:11:03 PM | 21.562 | 9.976 | | |
| | | | | 21 | 1/09/19 | 2:12:03 PM | 21.562 | 9.975 | | |
| | | | | 22 | 1/09/19 | 2:13:03 PM | 21.688 | 9.976 | | |
| | | | | 23 | 1/09/19 | 2:14:03 PM | 21.750 | 9.975 | | |
| | | | | 24 | 1/09/19 | 2:15:03 PM | 21.812 | 9.976 | | |
| | | | | 25 | 1/09/19 | 2:16:03 PM | 21.875 | 9.977 | | |
| | | | | 26 | 1/09/19 | 2:17:03 PM | 21.875 | 9.976 | | |
| | | | | 27 | 1/09/19 | 2:18:03 PM | 21.938 | 9.976 | | |
| | | | | 28 | 1/09/19 | 2:19:03 PM | 22.000 | 9.976 | | |
| | | | | 29 | 1/09/19 | 2:20:03 PM | 22.000 | 9.976 | | |
| | | | | 30 | 1/09/19 | 2:21:03 PM | 22.000 | 9.976 | | |
| | | | | 31 | 1/09/19 | 2:22:03 PM | 22.000 | 9.977 | | |

Data sets may be viewed in table on right when highlighted.

Select data sets to be compensated by placing check mark in the corresponding box.

| dipperLog_B03581_110118_73147 PM.csv | |
|---|--|
| dipperLog_B14782_2019-02-11_0424 PM.csv | |
| dipperLog_B30045_61019_114756 AM.csv | |
| dipperLog_B14787_2019-02-11_0424 PM.csv | |
| dipperLog_B14789_2019-07-16_1247 PM.csv | |
| | |

Select Selected Files to begin compensation.

You will be asked to confirm operation.

| Compensate selected files | 1414 | X |
|---------------------------------|----------------------|-----------|
| You have select to compensate 3 | 3 data logger files. | Continue? |
| | Yes | No |

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| 🕼 Process Selected Files 🛛 📅 Save on Computer | Save As TXT | | | | | | | | | | | |
|--|-------------|-------|-------------|---------------------------------|--------------|------------|--------------|--------------|-----------------|------------------|--|--|
| BarLog File Berove 3 Add | | -11 | barLog File | | | | | | | | | |
| | Bemove | Add | | | | | | Dran a colum | in here to once | s by this column | | |
| 8 | | | | No | Date | Time | Temperature/ | Pressure(M) | Head of Wat | Depth to Wat | | |
| barlog_a15551_2019-07-16_1247 pm.csv | | | | 1 | 1/09/15 | 1-52-03 PM | 21.875 | 9.975 | 0.000 | 0.000 | | |
| | | | - 11 | 2 | 1/09/19 | 1:53:03 PM | 21.938 | 9.975 | 0.000 | 0.000 | | |
| lipperLog Files | | | | 3 | 1/09/19 | 1:54:03 PM | 21.938 | 9.975 | 0.000 | 0.000 | | |
| | Remove | bhA 🐔 | | 4 | 1/09/19 | 1:55:03 PM | 21.875 | 9.975 | 0.000 | 0.000 | | |
| | Derivite | - Boo | | 5 | 1/09/19 | 1:56:03 PM | 21.812 | 9.974 | 0.000 | 0.000 | | |
| dipperLog_803581_110118_73147 PM.csv | | | | 6 | 1/09/19 | 1:57:03 PM | 21.812 | 9.974 | 0.000 | 0.000 | | |
| dipperLog_814782_2019-02-11_0424 PM.csv | | | | 7 | 1/09/19 | 1:58:03 PM | 21.750 | 9.974 | 0.000 | 0.000 | | |
| depertog_814789_2019-07-16_1247 PM.csv | | | | 8 | 1/09/19 | 1:59:03 PM | 21.750 | 9.974 | 0.000 | 0.000 | | |
| depertog_630045_61019_114756 AM. Cev | | | | | a mana | | P1.350 | 9.974 | 0.000 | 0.000 | | |
| and a set of the set o | | | | Compen | isation Comp | plete | | 9.974 | 0.000 | 0.000 | | |
| | | | | The compensation has completed. | | | | | 0.000 | 0.000 | | |
| | | | | | | | | | 0.000 | 0.000 | | |
| | | | | | | | | | 0.000 | 0.000 | | |
| | | | 1111 | | | | | 9.973 | 0.000 | 0.000 | | |
| | | | | | | | | 9.975 | 0.000 | 0.000 | | |
| | | | | | | _ | | 9.975 | 0.000 | 0.000 | | |
| | | | | | | - | OK | 9.975 | 0.000 | 0.000 | | |
| | | | | | | _ | | 9.975 | 0.000 | 0.000 | | |
| | | | | L | 1.000 | | 100000 | 9.975 | 0.000 | 0.000 | | |
| | | | | 20 | 1/09/19 | 2:11:03 PM | 21.562 | 9.976 | 0.000 | 0.000 | | |
| | | | | 21 | 1/09/19 | 2:12:03 PM | 21.562 | 9.975 | 0.000 | 0.000 | | |
| | | | | 22 | 1/09/19 | 2113303 PM | 21.685 | 9.976 | 0.000 | 0.000 | | |
| | | | | 23 | 1/09/19 | 2.14303 PM | 21.750 | 2.975 | 0.000 | 0.000 | | |
| | | | | 24 | 1,09/19 | 2:12:03 PM | 21.812 | 0.077 | 0.000 | 0.000 | | |
| | | | | 16 | 1,00,00 | 2-17-01 PM | 21 876 | 0.076 | 8,000 | 0.000 | | |
| | | | | 27 | 1/09/19 | 2:18:03 PM | 21.938 | 9.976 | 0.000 | 0.000 | | |
| | | | | 28 | 1,09/19 | 2-19-03 PM | 22,000 | 9.976 | 0.000 | 0.000 | | |
| | | | | 29 | 1,09/19 | 2-20:03 PM | 22.000 | 9.976 | 0.000 | 0.000 | | |
| | | | | 30 | 1/09/19 | 2:21:03 PM | 22,000 | 9.976 | 0.000 | 0.000 | | |
| | | | | | | | | | | | | |

Once the compensation is completed the data will be displayed on screen.

The compensated data will now display 2 additional columns of values:

Head of Water – Pressure recorded with the barometric pressure removed

Depth to Water – Transducer depth entered less head of water

The depth to water reading can be verified with a Heron Instruments dipper-T water level meter.



Saving your data

After data download

You may opt to save either the data in tabular format or as a graph by selecting the appropriate option on the page header.

Save on Computer 🏄 Save Graph

The Save on Computer option will save the data as a CSV file. To save it as a TXT file, simple chose that option in the save as type field when selecting destination.

After Barometric Compensation

Select files to be exported by placing check mark in appropriate box

dipperLog_B64987_05012018_70329 AM.csv
 dipperLog_C12345_05292018_51500 PM.csv
 dipperLog_D12766_03132018_105718 PM.csv
 dipperLog_D12766_06012018_82014 PM.csv

Save on Computer

Save on Computer will overwrite any previously saved "CSV" data set with the compensated data file.

| Export | | 23 |
|--------------------------------------|------------------|---|
| The files have been saved to your co | mputer in the sa | ame location as the original CSV files. |
| | ОК |] |



will overwrite any previously saved "TEXT" data with the compensated

data file.

After compensation all data is saved in the same location data was uploaded from before the compensation.

Your actual measured pressure values will still be viewable in the Pressure column displayed in the data.

If the compensation is redone at a later date and time, the software will only refer to the actual pressure measured and re-do all the calculations with the new barLog data.

After Multiple Download

Once all downloads have been completed, the data files will be exported to the designated folder in CSV format with no further input from you.

Data Files

| Header | |
|----------------------|----------------------------|
| Logger ID | <mark>E12540</mark> |
| Reading Stored | 32000 |
| Unit of Measurement | Μ |
| Job Number | 99999 |
| Well Number | 99999 |
| Transducer depth | 10M |
| Calibration Factor 1 | <mark>919</mark> |
| Calibration Factor 2 | <mark>12565</mark> |
| Sampling interval | 1 Second |
| Start Date | March-06-18 at 12:13:51 PM |

The above example of the data set header lists the information specific to this data set. The highlighted information is stored in the firmware of the dipperLog and cannot be edited. The balance of the information is user input or system defined. The following is an example of the data saved from the barometric compensation screen.

| | | | | | Head of | Depth to |
|----|------------|-------------|----------|-------------|----------|----------|
| No | Date | Time | Temp(°C) | Pressure(M) | Water(M) | Water(M) |
| 1 | 06-03-2018 | 12:13:51 PM | 23.25 | 10.382 | 0.04 | 9.96 |
| 2 | 06-03-2018 | 12:13:52 PM | 23.25 | 10.361 | 0.019 | 9.981 |
| 3 | 06-03-2018 | 12:13:53 PM | 23.25 | 10.371 | 0.029 | 9.971 |
| 4 | 06-03-2018 | 12:13:54 PM | 23.25 | 10.361 | 0.019 | 9.981 |
| 5 | 06-03-2018 | 12:13:55 PM | 23.25 | 10.371 | 0.029 | 9.971 |
| 6 | 06-03-2018 | 12:13:56 PM | 23.25 | 10.361 | 0.019 | 9.981 |
| 7 | 06-03-2018 | 12:13:57 PM | 23.25 | 10.371 | 0.029 | 9.971 |
| 8 | 06-03-2018 | 12:13:58 PM | 23.25 | 10.371 | 0.029 | 9.971 |
| 9 | 06-03-2018 | 12:13:59 PM | 23.25 | 10.371 | 0.029 | 9.971 |
| 10 | 06-03-2018 | 12:14:00 PM | 23.25 | 10.361 | 0.019 | 9.981 |
| 11 | 06-03-2018 | 12:14:01 PM | 23.25 | 10.371 | 0.029 | 9.971 |
| 12 | 06-03-2018 | 12:14:02 PM | 23.25 | 10.361 | 0.019 | 9.981 |
| 13 | 06-03-2018 | 12:14:03 PM | 23.25 | 10.361 | 0.019 | 9.981 |
| 14 | 06-03-2018 | 12:14:04 PM | 23.25 | 10.371 | 0.029 | 9.971 |
| 15 | 06-03-2018 | 12:14:05 PM | 23.25 | 10.361 | 0.019 | 9.981 |
| 16 | 06-03-2018 | 12:14:06 PM | 23.25 | 10.371 | 0.029 | 9.971 |
| 17 | 06-03-2018 | 12:14:07 PM | 23.25 | 10.371 | 0.029 | 9.971 |
| 18 | 06-03-2018 | 12:14:08 PM | 23.25 | 10.371 | 0.029 | 9.971 |
| 19 | 06-03-2018 | 12:14:09 PM | 23.25 | 10.371 | 0.029 | 9.971 |
| 20 | 06-03-2018 | 12:14:10 PM | 23.25 | 10.371 | 0.029 | 9.971 |
| 21 | 06-03-2018 | 12:14:11 PM | 23.25 | 10.371 | 0.029 | 9.971 |

"No" represents the location of the reading in the data set.

"Date" indicates the date the measurement recorded.

"Time" indicates the time of day the measurement taken.

"Temperature" is the recorded temperature of the surrounding environment.

"Pressure" represents the pressure the transducer measured.

- If using a vented dipperLog, this would be the pressure exerted by the liquid above the transducer excluding barometric pressure.
- If using a non-vented dipperLog, this is the pressure exerted by everything above the transducer.

If you have not completed the barometric compensation in the software, the Head of Water and Depth to Water columns will not be present in your data. These values are calculated as part of the compensation process.

"Head of Water" is the pressure recorded minus the barometric pressure recorded by the assigned barLog. It represents the height of the liquid above the transducer.

* If you have a vented and non-vented logger in the same location, the compensated height recorded by the non-vented unit should agree with the uncompensated height recorded by the vented unit.

"Depth to Water" is the depth to the water based on the user input depth of the transducer below the reference point minus the compensated height previously calculated.

The units of measure are determined by the settings of your computer and will be displayed in the header of each column, either feet or meters of water.

Please Note: If you are using a **Vented dipperLog** in your project, no barometric compensation will be required. The pressure reading recorded will be your Head of Water measurement.



Legacy Series II dipperLog



If you have any of our older "Series II" dipperLog, this software package is backwards compatible and will work with these dipperLog. The older technology incorporated in these units is much slower and cannot communication at the increased speed of

today's dipperLog. In order to communicate and download data from these older dipperLog you must adjust the response time of the software.

| Heron Inst | ruments Inc. | | | | | | o @ 1 |
|------------|--------------|-------------------|-----------------------------|-------------------|------------------------|-----------------------|---|
| 🔀 De | vice Setup | Q Logger Informat | tion 🔀 Data Reports 🖉 | Realtime Readings | Barometric Compensatio | on Multiple Downloads | |
| 8 | Stop Logger | 😇 Clear Memory 🧯 | Refresh 🙀 Download | | | | |
| | | | | | | | |
| | Logge | r Informatio | n | | | | |
| | | | | Logger ID: | B14789 | | |
| | | | Ma | x Data Sets: | 64000 | | |
| | | | Batte | ery Strength: | 100% | | |
| | Saved | Settings | Max Press | sure Range: | 10.00 M | | |
| | | | | Job Number: | 00123 | | |
| | | | V | Vell Number: | 00011 | | |
| | | | Transc | lucer Depth: | 12.00 M | | |
| | | | Rea | ding Interval: | Every 15 Second | s | |
| | Curren | nt State | Date | um Location: | | | |
| | | | Current Te | emperature: | 23.88°C | Memory Status: 45.8 % | Free |
| | | | Height of Water Above | Transducer: | -0.059 M | | |
| | | | Read | ings Stored: | 34713 | | |
| | | | Logger | on mission: | Yes Use | | |
| | | | Set to de | elayed start: | No | | |
| | | | Logger started on July-16-1 | 9 at 4:15 PM | | | |
| | | | | | | | |
| nnect Log | gers B147 | 89 - | Logger | is on a mission | | | Compatibility Mode 905-628-4999 🧐 Ver: 1.2.4.0 loggersupport@heroninstruments.com |
| | | | | | / | / | |
| | | | | | | | |
| | | | | | K | | |
| | | | | | | By placing | a check in this box, found at th |
| | | | | | | hottom of t | the corean the coffware will be |
| | | | | | | | the screen, the solution will be |
| | | | | | | slowed end | hugh to enable this |
| | | | | | | communica | tion |
| | | | <u> </u> | mpatibili | ty Wode S | communica | |
| | | | | | | | |

WARNING: If this box is checked when communicating with the dipperLog NANO, dipperLog 32, dipperLog 64, dipperLog TOUGH, or dipperLog VENTED the communication will be extremely slow.

Advanced Features

PLEASE NOTE: When using these features in the "Data Reports" tab, the adjustments can be made at any time, before downloading the data or while viewing the data after download. When using these features in the "Multiple Download" tab, the adjustments must all be selected prior to download.

| Offset | None | Ŧ | |
|--------|------|---|--|
|--------|------|---|--|

This feature is used to offset the recorded data by one of the following values:

- First Reading: In cases where no barLog data is available but your dipperLog was started before placement in well, this option allows you to use that first recorded barometric pressure reading to compensate all subsequent data points. This will not adjust your data for barometric influences over the time of the recordings, it will simply remove a constant value representing an approximate barometric pressure.
- Last Reading: This option works the same way as the "First Reading" choice with the exception of using the last recorded data point for the calculations. If your dipperLog recorded the first data point when submerged because of a delayed start, this allows you to use the last reading as an alternate barometric pressure value.
- Programmed Value: This selection will use the saved "barometric" value that the dipperLog stores when initially started. This is the same value that is used to calculate the Real Time reading value.

This stored value will change every time the dipperLog is reprogrammed and re-started.



Custom Value: When this option is selected a new field becomes available which enables the user to enter a constant value by which to offset the recorded values in memory. This could be an average barometric pressure reading from a local weather station or news channel.

| Multiplier None | ~ | | | | | | | |
|-----------------|--|--|--|--|--|--|--|--|
| Low Level: | This selection will multiply all downloaded all readings by 0.9 | | | | | | | |
| | Multiplier Custom Multiple 🔻 0 | | | | | | | |
| Custom Value: | This option allows you to select a constant value by which to adjust your readings. Since 1 is the specific gravity of clean water, the software calculates the height of water using 1 as the density. This option allows you to make the necessary adjustment when the fluid you are monitoring has a density of more or less than 1, i.e. seawater or brackish water. | | | | | | | |
| | "While density of pure water at 4 degrees Celsius is equal to 1, the density of seawater ranges over somewhat higher values, which vary with proximity to shores, rivers, etc., as well as with geographic location & depth. Representative average values are 1.026– 1.028," <i>Van Nostrand's, Scientific Encyclopedia 7th</i> <i>edition</i> . Canada, 1989: 2046. | | | | | | | |
| | You could also adjust your data for altitude using this option. Simply define a factor based on the height above sea level of your job site and enter it in the custom value field. | | | | | | | |

Drift Compensation

Located on the Compensation tab, this screen gives the user the ability of fine tune their readings. You can correct the values for any drift which may have occurred over time and also reduce the calibrated range of readings for greater accuracy.

| Device Setup | Logger Information | Data Reports Realtime Readings | Compensation Multiple Downloads |
|---------------------------|------------------------|--------------------------------|---------------------------------|
| Barometric Cor | mpensation Drift Compe | isation | 0 |
| Calibrate | | Correcti | ion Diagram |
| Device | E30302 | | |
| | Actual value | Device value | |
| Point 1 | 0.1 | 0.1 | 1- |
| Point 2 | 1 | 1 | |
| Realtime c Calibration | alibrated reading 0.0 | 43m | 06- |
| Last Synch | ronized Wednesday, S | eptember 04 at 16:47 PM | |

- Select the minimum and maximum point of the range desired
 Both values must be within the logger's original range
- 2. Enter the real time reading of the dipperLog at both these points
- 3. Select "Sync" to establish correct calibration factor

This correction can be applied by activating the drift compensation on the Data Reports tab at any time; however, it must be selected before download on the Multiple Download tab for it to be applied to the data.

The <u>Sync Now</u> button will cause this calibration factor to be uploaded to the cloud where it can be accessed and applied to any data downloaded from this dipperLog. The calibration data of the last synchronization will be displayed when this option is exercised.

Frequently Asked Questions

Q. Where is the data download button?

A. On both the Logger Information and Data Reports tab the button is in the header bar. The Download All option is only available on Multiple Downloads tab.

Q. Does the software have a dedicated data base?

A. No, you must establish your own location for the downloaded data to be saved.

Q. Once I have downloaded my data where is it saved?

A. You must establish the location where you want the data to be saved after

Save on Computer selecting In the case of multiple downloads, you must indicate this location prior to downloading and the data is saved automatically. The default format is "CSV".

Q. Can I save my data as a text file?

A. Yes. Go to the Barometric Compensation screen. Add the file you wish to save as text and the data will be displayed. Select the file to be saved by checking the box then Save As TXT. You do not need to compensate your data to perform this operation. You can save multiple data sets at the same time.

| Connect Longers | Device Setup 🕖 Logger Information 🕅 Data Reports 🔤 Realting | | | | | time Readings | Barometr | ic Compensat | tion M | Itiple Down | loads | | | |
|------------------|---|--|----------------|---------|------------|---------------|-----------------------------|--------------------|--------------|--------------|------------------|---------------|--|--|
| Leaser ID | O Process Selected Files 🗮 Save | on Computer | El Save | As TXT | | | | | | | | | | |
| Logger to | | | THE CONTRACTOR | | | 10 | | | | | | | | |
| | BarLog File | | | | | | bartog File dippertog Files | | | | | | | |
| | | | Bemove | 2V# | Add | | | | Drag a o | dumn here to | group by this co | lumn. | | |
| | 85 | | | | | No | Date | Time | Temperature(| Pressure(M) | Head of Wat. | Depth to Wat. | | |
| | barlog_a15507_2019-02-11_0424 pm. | | 0 1 | 2/11/19 | 3:14:49 PM | 22.062 | 10.122 | 8.000 | 0.000 | | | | | |
| | and the second | | | | | 2 | 2/11/19 | 3:15:04 PM | 22.125 | 10.123 | 0.000 | 0.000 | | |
| | dipperLog Files | | | | | 3 | 2/11/19 | 3:15:19 PM | 22.188 | 10.122 | 0.000 | 0.000 | | |
| | | 0 | Bemove | 2 | Add | 4 | 2/11/19 | 3:15:34 PM | 22.188 | 10.121 | 0.000 | 0.000 | | |
| | | | | 1 | | 5 | 2/11/19 | 3:15:49 PM | 22.250 | 10.121 | 0.000 | 0.000 | | |
| | ✓ dipperLog_830045_2019-02-11_0424 PM.cw | | | | | 6 | 2/11/19 | 3:16:04 PM | 22.250 | 10.121 | 0.000 | 0.000 | | |
| | e dipperLog_824/87_2019-02-11_0424 PM.09/ E disperLog_814782_2019-02-11_0424 PM.09/ E disperLog_814782_2019-02-11_0424 PM.09/ | | | | 7 | 2/11/19 | 3:16:19 PM | 22.312 | 10.119 | 0.000 | 0.000 | | | |
| | # disperiog 814781 2019-02-11 0424 PM.csv | | | | | 8 | 2/11/19 | 3:16:34 PM | 22.312 | 10.120 | 0.000 | 0.000 | | |
| | dipperLog_814543_2019-02-11_0424 PM.cov | | | | | . 9 | 2/11/19 | 3:16:49 PM | 22,312 | 10.122 | 0.000 | 0.000 | | |
| | R dipperLog_812514_2019-02-11_0424 PM.csv | | | | | 10 | 2/11/19 | 3:17:04 PM | 22.375 | 10.122 | 0.000 | 0.000 | | |
| | | Export The files have been saved to | | | | | | | E 3/5 | 10.122 | 0.000 | 0.000 | | |
| | | | | | | | | s the original CSV | / files. 420 | 10.121 | 0.000 | 0.000 | | |
| | | | | | OK | | | 500 | 10.122 | 0.000 | 0.000 | | | |
| | | | | | | 15 | 2/1//9 | 11819 PM | 22,500 | 10.122 | 0.000 | 0.000 | | |
| | | | | | | 16 | 2/11/19 | 3:18:34 PM | 22,500 | 10.121 | 0.000 | 0.000 | | |
| | | | | | | 17 | 2/11/19 | 3:18:49 PM | 22.562 | 10.120 | 0.000 | 0.000 | | |
| | | | | | | 18 | 2/11/19 | 3:19:04 PM | 22.562 | 10.121 | 0.000 | 0.000 | | |
| | | | | | | 19 | 2/11/19 | 3:19:19 PM | 22.562 | 10.121 | 0.000 | 0.000 | | |
| | | | | | | 20 | 2/11/19 | 3:19:34 PM | 22.625 | 10.121 | 0.000 | 0.000 | | |
| | | | | | | 21 | 2/11/19 | 3:19:49 PM | 22.625 | 10.121 | 0.000 | 0.000 | | |
| | | | | | | 22 | 2/11/19 | 3:20:04 PM | 22.625 | 10.121 | 0.000 | 0.000 | | |
| | | | | | | 23 | 2/11/19 | 3:20:19 PM | 22.625 | 10.121 | 0.000 | 0.000 | | |
| | | | | | | 24 | 2/11/19 | 3:20:34 PM | 22.688 | 10.121 | 0.000 | 0.000 | | |
| | | | | | | 25 | 2/11/19 | 3:20:49 PM | 22.688 | 10.121 | 0.000 | 0.000 | | |
| | | | | | | 26 | 2/11/19 | 3:21:04 PM | 22.688 | 10.121 | 0.000 | 0.000 | | |
| | | | | | | 27 | 2/11/19 | 3:21:19 PM | 22.750 | 10.121 | 0.000 | 0.000 | | |
| 2 | | | | | | 28 | 2/11/19 | 3:21:34 PM | 22.750 | 10.121 | 0.000 | 0.000 | | |
| A | | | | | | 29 | 2/11/19 | 3121149 PM | 22,750 | 10.121 | 0.000 | 0.000 | | |
| HERON | | | | | | 30 | 2/11/19 | 3:2204 PM | 25,013 | 10.122 | 0.000 | 0.000 | | |
| INSTRUMENTS INC. | | | | | | 31 | 2/11/19 | 24613 PM | 22.012 | 49-266 | 0.000 | 0.000 | | |

Q. Can I change my units of measure in the software?

A. The software displays the data in the units designated in your computer settings. If you go to the control panel of your computer, select Region and Language and then select Additional Settings, you will access the format screen. The software will use whatever units are selected in this template.

| 🐓 Customize Format | | | | | | | |
|--|---------------------------|--|--|--|--|--|--|
| Numbers Currency Time Date | | | | | | | |
| Example | | | | | | | |
| Positive: 123,456,789.00 | Negative: -123,456,789.00 | | | | | | |
| | | | | | | | |
| Decimal symbol: | • | | | | | | |
| No. of digits after decimal: | 2 🔹 | | | | | | |
| Digit grouping symbol: | , 🗸 | | | | | | |
| Digit grouping: | 123,456,789 🔹 | | | | | | |
| Negative sign symbol: | - • | | | | | | |
| Negative number format: | -1.1 🔹 | | | | | | |
| Display leading zeros: | 0.7 🔹 | | | | | | |
| List separator: | , – | | | | | | |
| Measurement system: | Metric | | | | | | |
| Standard digits: | 0123456789 🔻 | | | | | | |
| Use native digits: | Never | | | | | | |
| Click Reset to restore the system defaul numbers, currency, time, and date. | t settings for Reset | | | | | | |
| | OK Cancel Apply | | | | | | |

Because the display units are determined by your computer settings and not the software, if someone sends you a file of dipperLog data that they downloaded and saved in metric, if your computer settings indicate imperial units, the data will be converted when the file is opened. The data will always be displayed in your measurement system of choice. You can also change them in the Excel spreadsheet after the data has been saved. If done through

Excel you do not have to adjust your computer settings and can select units not available as an option in computer settings.

Q. What units are available in the software?

A. You may choose between metric and imperial units in your computer format. For other units such as PSI, you must make the change using Excel.

Q. Why do I only have pressure measurements?

A. Your data has not been compensated for barometric pressure effects. Once this compensation has been performed the height of water and depth to water calculations will be performed and values displayed.

Q. How do I compensate my data?

A. Refer to Barometric Compensation on page 17

Q. Must I have a barLog data set to compensate my data?

- A. To perform an accurate compensation a barLog data set should be used. If no barLog data is available, by indicating the data sets you wish to compensate and then selecting calculations
 Process Selected Files default barometric pressure. This procedure assumes the dipperLog was not started while submerged.
- Q. May I compensate multiple data sets at the same time?
- **A.** Yes, however a separate compensation must be performed with each barLog data set as only one can be chosen at any time.



- Q. When the memory is full will the dipperLog overwrite with the new data?
- **A.** No, when the memory is full the dipperLog will stop recording.
- Q, How long will it take to fill the memory?
- A dipperLog with a maximum capacity of 32,000 data points will be full in:
 8.9 hours
 5 ½ days
 22 days
 3 ½ months
 - 11 monthstaking 15 minute readings22 monthstaking 30 minute readings3.6 yearstaking 1 hour readings

Q. Can I reproduce the graph in the software when the dipperLog is not connected?

A. No. Once the dipperLog has been disconnected the graph must be created either by downloading the data again or using Excel or some other third party software application to recreate it.

- Q. What operating systems is the software compatible with?
- A. The software will work on Windows 7, Windows 8 & Windows 10.

Q. Will my current loggers work with this new software?



A. Yes. All dipperLog are compatible with this software. If you are using some of our older models as pictured and are having trouble connecting please refer to page 23 for additional instructions.

Q. Do I require a separate barLog for each dipperLog deployed?

A. No, you can compensate multiple dipperLog data sets with a single barLog. To guarantee accuracy, the barLog should be deployed within 5 km of the dipperLog and at a similar elevation. We recommend an optimal ratio of 1 barLog for every 10 dipperLog deployed.

Q. Are the batteries in the dipperLog replaceable?

A. No. Once the battery in the dipperLog is dead the entire unit must be replaced.

Q. Is any data in memory lost when battery dies?

A. No. The dipperLog has an internal non-volatile memory. Heron Instruments is usually able to retrieve the data from dipperLog with dead batteries. A service fee may be charged for this service.

Q. How many dipperLog can I connect at one time?

A. As many as you have PC communication cables connected.

Q. Where can I find which dipperLog are connected?

A. The drop down box in the lower left corner of the Logger Information Screen will



display the listing of connected dipperLog. The highlighted Serial Nunber is the information displayed on the screen.