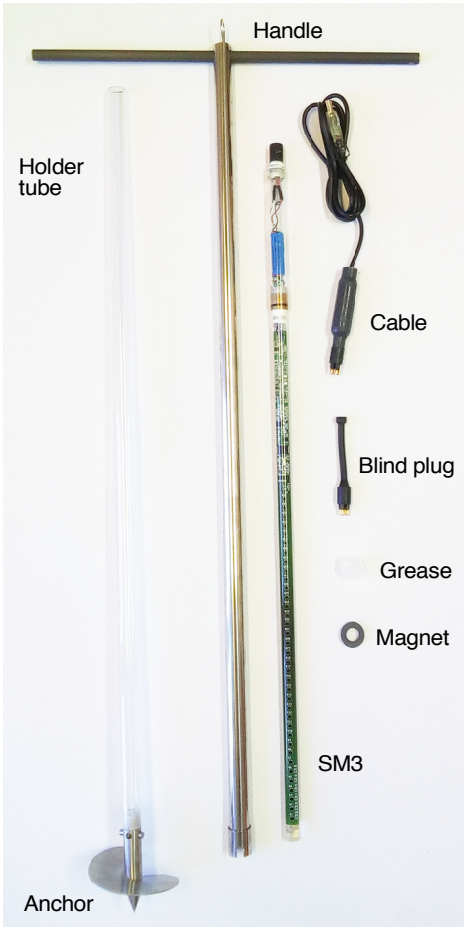
SediMeter™ SM3 manual



LEDs:



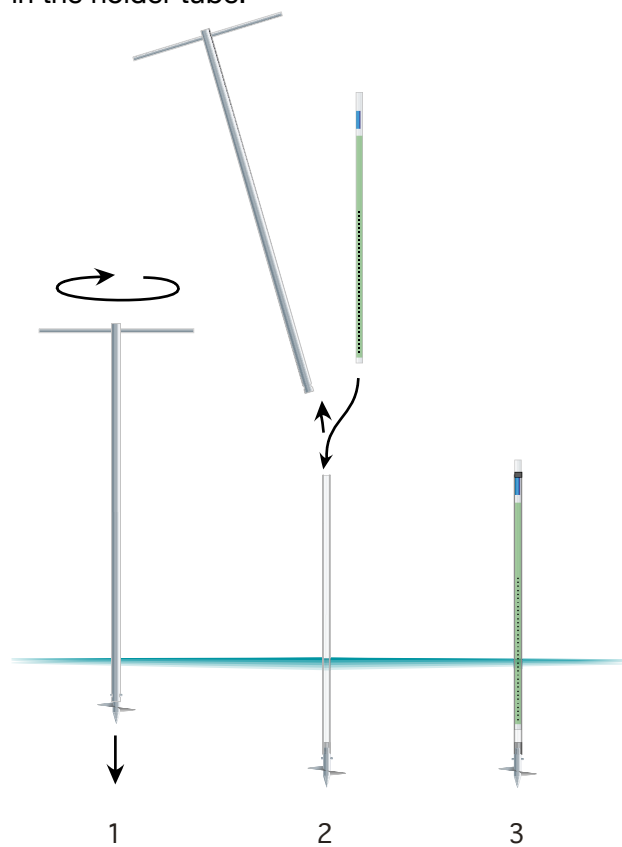
1. Apply insulating **grease** to the under-water connector or blind plug prior to plugging it in to the SediMeter. If plugging it in under water, connect the power last.



2. Install the **driver** for the USB to RS485 cable. See lindorm.com/downloads
3. Connect the cable to the computer. The SediMeter battery will start **charging**.
4. Install the SediMeter **software** from the USB stick or as downloaded from lindorm.com
5. Use the software to **set up** the SediMeter for deployment (other side).

FIELD DEPLOYMENT

1. Assemble the handle (see photo)
2. Screw the holder tube onto the anchor
3. Plug the *greased* blind plug into the SediMeter
4. Insert the SediMeter into the holder tube
6. Decide desired insertion depth of the SediMeter (maybe to the 10 cm mark)
7. Place the handle next to the instrument so that the bayonet lines up
8. Place a turn of electric tape on the handle at the desired insertion depth
9. Remove the instrument from the holder and bring the handle, holder, and instrument to the deployment site.
10. Place the handle over the holder tube and attach it to the bayonet of the anchor.
11. Screw it down counter-clockwise to the tape mark.
12. Pull the handle up and place the instrument in the holder tube.



COPPER TAPE

To decrease the fouling you can apply copper tape on the rear side of the holder tube from detector #1 though #36, behind #37, and all around the instrument away from the detectors. Leave 2 cm above and below free from copper on the front side. A good dimension for the rear side is 1 inch wide tape. Make sure it is not coated (if it is electrically conductive when tested with an ohm-meter, it is good).



BATTERY

The instrument ships with a AA Lithium rechargeable cell in a separate compartment. Use rechargeable Lithium cells with max charging voltage 4.2 V, connecting positive to the violet wire and negative to the blue wire. Primary 3.6 V cells can also be used provided that a diode is connected in series to prevent charging of the cell. The warranty does not cover leaks or damage caused by improper battery replacement. We recommend having an authorized service provider perform battery replacements.

Specifications

Memory capacity	16,384 measurements
Burst samples	1 to 20, interval 1 to 16 s
Turbidity resolution	1 FBU (backscatter FTU)
Level resolution	10 µm
Recommended depth	1 to 50 m
Temperature range	0°C … 50°C

May overheat if left in direct sunshine. Do not bend. When possible, store in an upright position.

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USING THE SOFTWARE

1. Connect the modem cable to the SediMeter and the computer.
2. Start SediMeter.exe ver 4.
3. Select the COM port of the modem cable in the Serial Port selector.
4. The Baud Rate after reset shall be 9600.
5. Click Open Connection. If successful the other tabs will become unlocked.

DEPLOYMENT

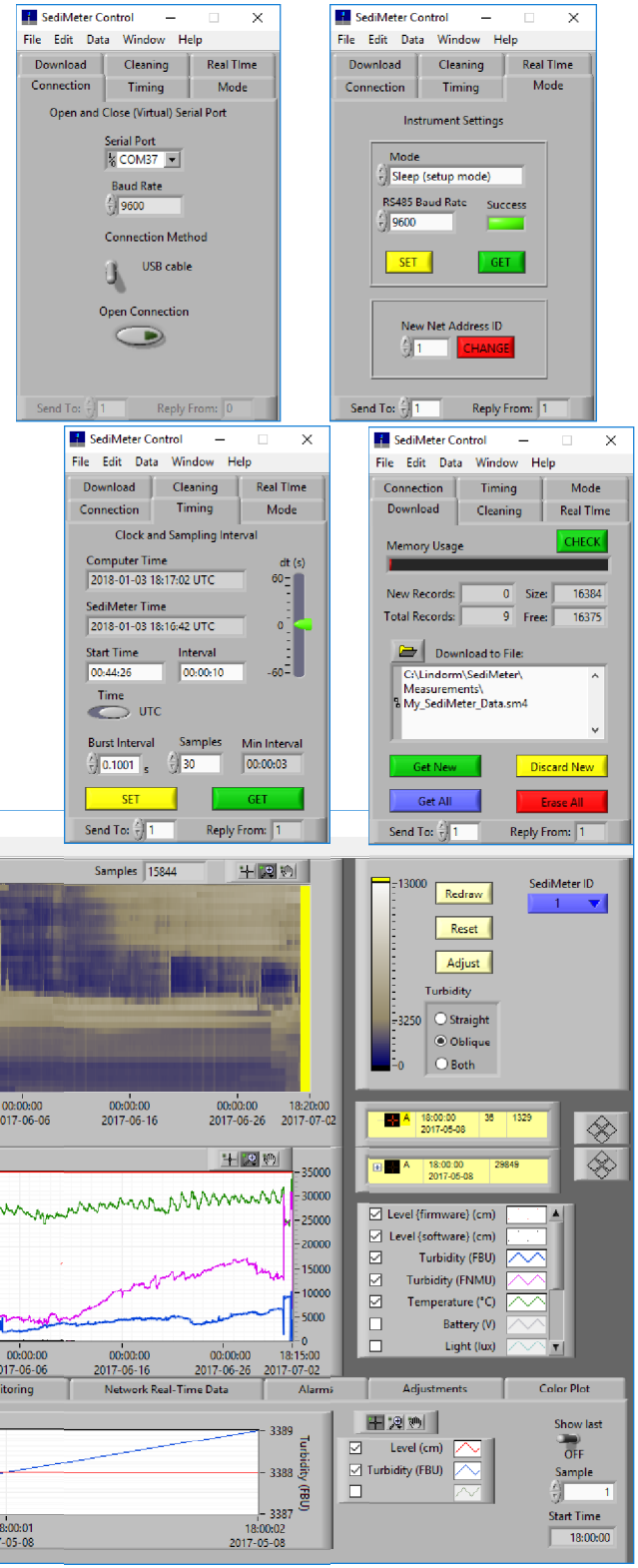
1. Go to the Timing tab and set Interval and Start time. Optionally set burst samples to more than one.
2. Optionally go to the Cleaning tab and set that.
3. Go to the Mode tab and set it to Logger mode.
4. Disconnect the instrument from the cable, plug in the blind plug, and deploy.

DOWNLOADING DATA

Connect as above, go to the Mode tab and set the unit to Sleep mode. It will fail if the command by chance is sent during an ongoing measurement. If so, try again.

1. Open the **Download** tab.
2. Click the **CHECK** button. The number of measurements in memory is shown.
3. Click the folder button. In the dialog that opens, select a file name and location for the file you are about to create.
4. To download only the new records, click **Get New**. To download all records, click **Get All**. To discard the new records without downloading them, click **Discard**.
5. After all the requested data has been downloaded and saved to a file you get a confirmation. Click OK. The data remains in memory until you close the application.
6. To clear the SediMeter's memory, click **Erase**. It will take about a minute.
7. Select menu **Data -> Analyze Logged…** to open the SediMeter Data window.

Refer to the software manual for further details.



RESET

To reset, approach the supplied magnet to the side of the printed circuit board where the text RESET CPU appears on the reverse side. The contents of the memory is not affected by a reset

BATTERY

The battery takes a few hours for a full charge. When the voltage drops well below half, the cleanings and the measurements are shut off. If the battery keeps discharging, the power is eventually cut to the electronics. When charging the instrument from a deep discharge it may be necessary to keep the CPU in the reset condition (using the magnet) until the voltage has risen sufficiently.

The battery can be replaced by authorized service personnel. It is also possible to install a primary battery instead of, or in addition to, the rechargeable battery. Contact Lindorm for details.

CLEANING

Clean the sensor with non-abrading sponges, water and mild detergent only.

DESCRIPTION

The sensor consists of an array of 36 optical backscatter (OBS) detectors, 1 cm apart. The turbidity is measured at each of these 36 levels, and also in between by measuring oblique backscatter (emitted at one level and measured at the adjacent level). Using the straight backscatter the instrument estimated the bottom level. There is also a 37th OBS, 11 cm above #36. This is used for measuring turbidity, and, in SM3B, for controlling the ascent of the cleaning shuttle.

The instrument can take up to 20 measurements of level and #37 turbidity per measurement, with an interval of 1 to 16 s. These burst samples can be used to get a better average over a period with varying measurement values, e.g. over a wave cycle. Finally the instrument measures the temperature.

LEGAL DISCLAIMER

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