

Display – shows particle concentration [pt/cm³] and average particle diameter [nm] on the left; Status (HiVolt, Flow, Heating, Recording) top right; remaining battery in % bottom right.

Press ► to display the two electrometer currents.

Press ◀ to display lung-deposited surface area concentration (alveolar)

SD-card slot – insert SD card face down

USB connector

Power connector



Inlet thread, accepts a tube connector or the impactor

Power Button: Press to turn on, press long to turn off (wait for an audible beep before releasing the button). After power-up, miniDiSC warms up for 5 minutes.

◀ Switch off things in menus

Menu button - press long for advanced menu selection (read the manual)

► Switch on things in menus

Record button: press to record, press long to stop - a beep will acknowledge the stop. Recording is indicated by a blinking full circle in the top right corner of the display.

MiniDiSC best practice guide

Please follow this best practice guide to make the most of your miniDiSC

- **Warm-up:** The instrument warms up for 5 minutes before it is ready for measurements. If the instrument was very cold (e.g. after transport in winter), this can be too little. In this case, turn off the pump to avoid condensation within the instrument; wait longer, and do a new zero offset adjustment before measuring.
- **Impactor:** The instrument is equipped with an inlet impactor. Clean the impaction surface before use (unscrew the impactor cap, and wipe the flat surface below the thread). Make sure to screw the impactor cap firmly into the impactor to ensure proper functioning of the impactor. Clean the impactor orifices in an ultrasonic bath regularly; put the impactor in the cleaning fluid (alcohol) up to the orifices and leave the thread to screw it into the housing outside of the cleaning fluid to avoid degreasing.
- **Zero offsets:** The electrometer zero offsets may drift due to humidity changes or temperature changes. The miniDiSC turns off its pump once every hour when recording to measure the zero offsets. Use this feature, if possible, i.e. make one long measurement rather than many short ones. Check that the zero offsets are stable in the data file.
- **Maintenance:** Have your instrument serviced and calibrated once per year. Alternatively, if you own a CPC, do a cross check against your CPC in regular intervals. Please remember: the miniDiSC is not a precision instrument. Deviations of +30% compared to a CPC are normal.



MiniDiSC known issues

The miniDiSC is a newly developed instrument. We did our best to develop an instrument that is reliable and easy to use. But unfortunately, there are some (hopefully minor) issues with it that you should know about:

- The instrument clock is not very accurate (~5s per day, or ~30 minutes per year). If you need accurate timing, you have to set the clock before the measurement! The instrument clock will also not change to daylight saving time and back.
- The inlet thread is weak, and may be stripped out by applying too much force when (un-)screwing the inlet inserts (impactor, tube connector). We have greased all threads to alleviate the problem => please don't clean the threads; in particular try to avoid cleaning the impactor thread when cleaning the impactor orifices.
- At high humidity, the electrometer zero offsets can drift. We verify the instruments at 80% relative humidity at 20°C. Up to this point, drifts are small (at most a few fA). At higher humidity, proper operation of the instrument is not guaranteed. Please check the stability of the zero offsets when measuring at high humidity, and if possibly, dry your gas a little before the measurement.
- The SD card slot is a bit too small, and the SD card might become stuck. Do not stick any labels onto your SD card, this could make the problem worse. If your SD card becomes stuck, don't use any force but give us a call.

