SOP Fidas

v0.1.0 – 5 May 2025/jkl

Normal operations

The Fidas runs unattended and does not require maintenance. It measures particle number concentration (counts/cm3), and estimates PM1, PM2.5, PM4 and PM10. The normal setup is shown below:

Illustration 1: Normal setup of Fidas with inlet line

The main display is shown below. There should be a soft-keyboard also. Make sure the Settings of the soft-keyboard say “Always on top”!!

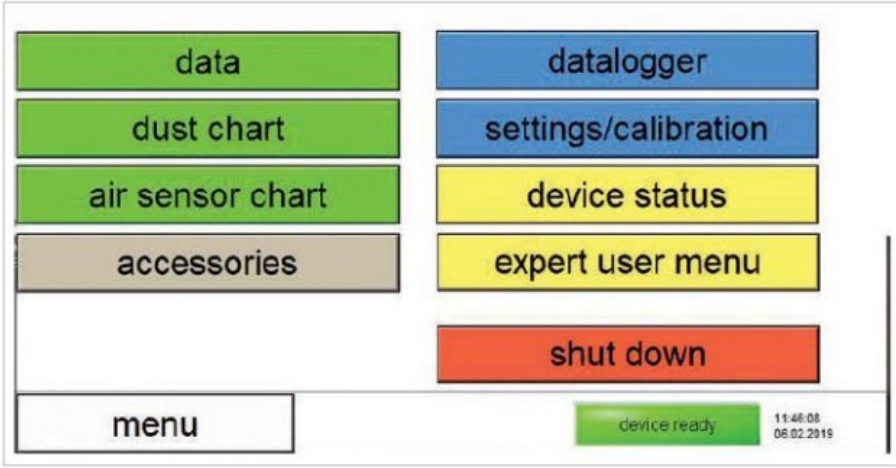

Illustration 2: Main display of Fidas

Daily routine

1. Check the number concentration and other data and verify that they are in the expected range.
2. Verify the instrument status. There are no IADS nor weather station connected, so expect some errors.

Main menu > device status

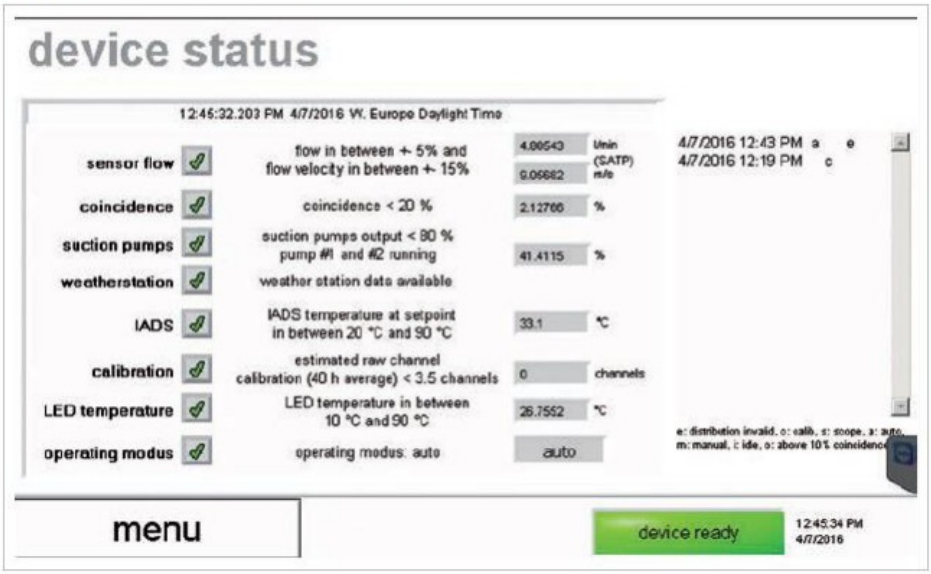

Illustration 3: Status display of Fidas

Monthly routine

1. Remove the inlet line and close with a plug or tape during the following checks.
2. Verify that counts drop to zero after connecting the zero-air filter.

Illustration 4: Zero air filter used at Nairobi. For Mount Kenya, there is a larger white one.

3. Verify the load of the pump (should be < 70%).

6 Monthly routine

1. Remove the inlet line and close with a plug or tape during the following checks. Attach the zero air line without the zero filter.
2. Open the Expert Menu (Password: 1-) and select Sensor/Calibration twice. Gently shake the CalDust 1100 or MonoDust 1500 bottle, open it, and stick the inlet line into the bottle top for 5 seconds. A distinguished peak should appear as shown below:

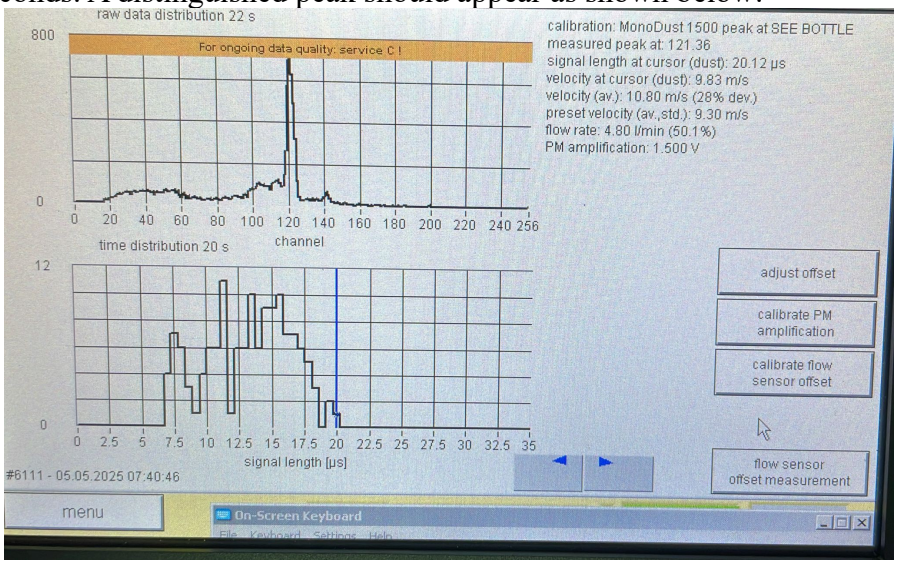

Illustration 5: Display in calibration mode showing the channels and the peak

3. The acceptable values for the measured peak are:
   - with CalDust 1100: 113.5 – 128.5 (middle: 121)
   - with MonoDust 1500: 139.5 – 142.5 (middle: 141)
4. In case the peak is not at the desired position, inform your partners and click on “Calibrate PM amplification”. Increase or decrease the number shown in increments of 0.01 or 0.02 until the desired peak position is reached.
5. Check the motor % and write it down. If this number increases above 70%, then the blue pump filter should be replaced.