

# H<sub>2</sub> breath test device LactoFAN2



– Storage information –



**Dear customer,**

In order to obtain reliable results when working with your H<sub>2</sub> breath test device, please observe the following instructions:

- Do not store or operate the device in places where:
  - surface disinfection is performed
  - cleaning spray is used (as well as atomizer, e.g. for cleaning ECG electrodes)
  - sterilization agent is used (e.g. alcohol)
- Do not touch the device with freshly disinfected hands.
- Do not use alcoholic cleaning agents for the device. The housing can be cleaned with a damp cloth and a soap solution. Disinfection may only be carried out with non-alcoholic disinfecting wipes.

The sensor surface must never be wiped; it is protected from contamination and germs by the use of filter mouthpieces.

If zero point or calibration errors occur frequently, please check whether a more suitable room is available for storing and operating the H<sub>2</sub> breath test device. Avoid rooms with the above-mentioned contamination or directly adjacent rooms without separate ventilation (in larger buildings, air conditioning systems can also spread disinfectant vapors across several rooms).

If the aforementioned measures do not lead to faultless operation, you can take the following alternative steps:

1. Preparations (one-time)
  - Ventilate the device for several days at a different place with uncontaminated air. No more error messages may appear when starting a measurement.
  - Calibrate the device there and wait until it is ready for measurement again.
  - Store the unit in a gas-tight container (e.g. PP refrigerator box with seal and clamping lid).
2. Perform measurements
  - Carry out shock ventilation in your treatment room in order to exchange all contaminated air in the room. Keep the doors closed.
  - Perform the breath test measurement as usual and wait until the device is ready for measurement again afterwards. Then switch off the device.
  - Store the unit in a gas-tight container (e.g. PP refrigerator box with seal and clamping lid).

Much success for your work,  
Your FAN service team

Please turn the page for further information.

### Technical information:

For a fast and yet cost-effective detection of the extremely low hydrogen concentrations in the respiratory air (a few ppm) measured in H<sub>2</sub> breath tests, only chemical sensors in the form of a fuel cell with liquid electrolyte are available so far.

All such sensors are highly sensitive to alcohol and similar substances due to their operating principle as fuel cells.

If the ambient air is contaminated with these substances (e.g. after disinfected surfaces have dried), they are detected by the sensor and generate a signal that considerably exceeds the usual measuring signal. In this state, it is not possible to carry out a measurement or a calibration. However, if the exposure to contaminated air is only for a short period of time, the sensor will soon be ready for use in clean air again.

If the exposure to contaminated air continues over a longer period of time, however, the pollutants are able to dissolve in the electrolyte of the sensor and thus accumulate.

This leads to unpredictable reactions during the measurement and an interference signal at the counter electrode, which results in a shift of the baseline.

The electronics checks the baseline of the sensor before each measurement and displays an error if applicable (error number 1 or 2) in order to prevent the patient from false diagnoses.

The functionality of the sensor can be regained by storing the device in uncontaminated air. However, it takes a longer time for the pollutants to evaporate - approximately as long as the sensor was exposed to contaminated air.

You can check the base voltage of the sensor (zero point) as follows:



The voltage in the third line of the screen should be  $485 \pm 30$  mV.

Since contamination of the sensor by pollutants (alcohol, disinfectants) can also permanently change its characteristic curve, calibration is necessary after the recovery phase.