



VINVENTIONS

WQS

Nomasense CO₂ P2000



USER GUIDE

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Nomasense CO₂ P2000

INTRODUCTION

ABOUT THIS USER GUIDE

INTENDED USE

- This User Guide describes the common use and maintenance of the NomaSense CO₂ P2000 device.

It is intended for the daily users and should be kept with the equipment for reference at all times.

RESERVATIONS

- This User Guide was written and illustrated using the best possible information available at the time of publication.
- Any differences between this User Guide and the device reflect improvements introduced after the publication of the User Guide.
- Changes, technical inaccuracies and typographic errors will be corrected in subsequent editions.
- As a part of our policy of continuous improvement, we reserve the right to alter design and specifications without further notice.

IMPORTANT!

- The manufacturer cannot be held responsible for any damage caused by incorrect use of the device.

SAFETY INSTRUCTIONS

Personnel operating and maintaining the device must be familiar with all aspects of its operation and be proficient in maintenance.

Such personnel should review the following precautions to promote safety awareness:

- Refer to the User Guide before operating or maintaining the device.
- Do not open the device. In case of technical problems please contact your service provider.
- Do not expose the device to heavy moisture or heat and keep it away from direct sunlight.
- When operating the device always obey the relevant rules and regulations for workers safety.
- Repair or replace damaged power cords immediately.
- Never block gas outlets or needles.
- Replace needles if they get clogged (e.g. when cutting through septa).
- Do not expose the device to liquids.
- Always place the needle in the holder when not in use.
- Use only the original external power supply unit/charger when connecting to mains.
- Using the wrong type can destroy the unit.
- The device should be cleaned with a mild detergent solution.

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SPECIFICATIONS - NOMASENSE CO₂ P2000

General

- Min. 2000 measurements on fully charged battery
- Sample flow 130 - 165 ml/min standard
- Auto power-off after 1 minute
- Memory function for 10 measurements
- Display hold function (also after power off)
- Charging time for NiMH-battery: 3 hours (auto off)
- Operational temperature: 0 - 40°C
- Humidity: <95% RH (non-condensing)

CO₂ Sensor

- Non-dispersive infrared (NDIR), temperature compensated
- Range: 0 – 2.5 g/L
- Resolution: 0.01 g/L
- Accuracy:
 - 50 mg/L abs. @ 0 – 1 g/L
 - 100 mg/L abs. @ 1 – 2.5 g/L
- Expected life-time > 3 years

Measuring system

- Measuring time: 10 sec.
- Sample volume: approx. 23 mL
- Built-in pump max. -200 mbar vacuum, expected life-time > 500 hours (180.000 measurements)
- Calibration: 0% CO₂ and 100% CO₂ gas

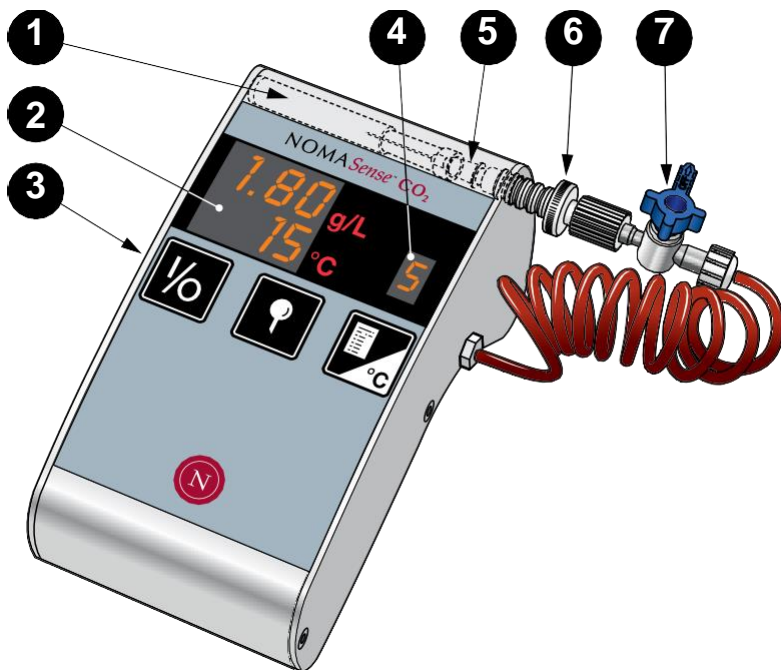
Cabinet

- Weight: 0.5 kg
- Size: 74 x 63 x 135 mm (W x H x D)
- Class: IP53
- Material: Anodized aluminium

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OVERVIEW



ON/OFF KEY



Switches the device ON/OFF. Key is also used to interrupt a running measurement or the display of collected measurements.

Pressing and holding this key together with the (TEMP./MEMORY) key for 3 secs. switches the device into "TEST MODE".

MEASURE KEY



Starts a measurement cycle of 10 seconds. Pressing the key during a measurement will extend the measurement with another 10 seconds.

The key is also used to select the proper measurement temperature (when function is activated by the key).

Pressing and holding this key while pressing the (TEMP./MEMORY) key will start a sensor calibration.

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TEMP./MEMORY KEY



Activates the temperature selection function. Key is also used to scroll through the saved measurements.

1. NEEDLE HOLDER

Place the needle (5) in the holder when not in use.

2. MAIN DISPLAY

Shows the measurement result and the temperature setting.

3. CONNECTOR FOR EXTERNAL POWER SUPPLY/BATTERY CHARGER

See "External power supply/battery charger" for details.

4. COLLECTED MEASUREMENTS DISPLAY

Shows the number of a stored measurement. The corresponding measurement result

and temperature is displayed in the main display (2). See "Memory function" for details.

5. NEEDLE

6. FILTER/WATER TRAP

Protects the device from particles and liquids.

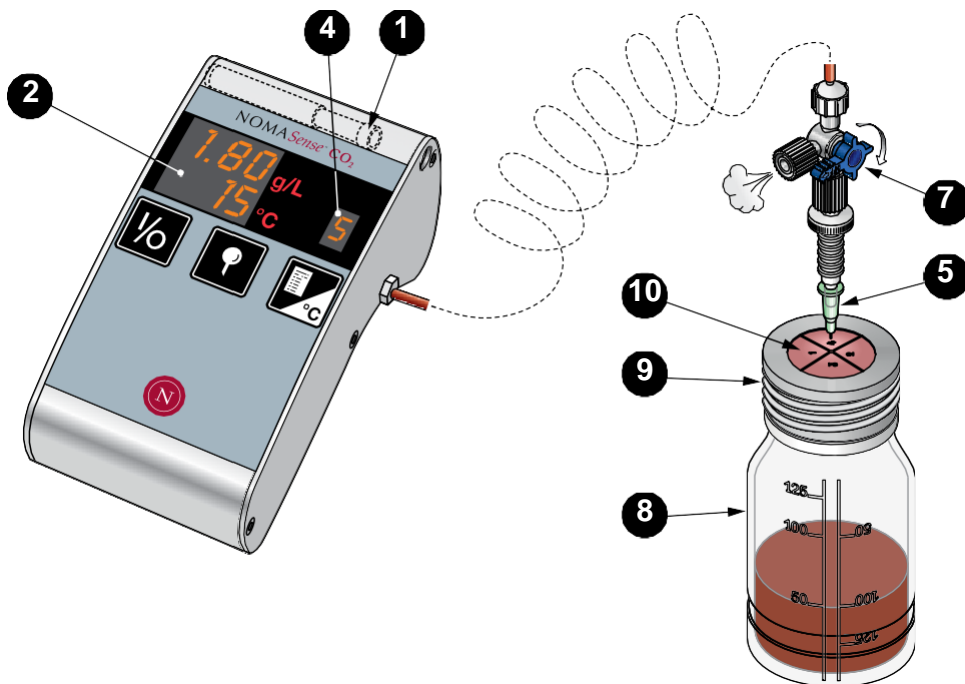
7. PRESSURE RELIEF VALVE

Use to perform a pressure relief of the test bottle before measuring.

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OPERATION



SWITCHING ON/OFF

Press the (ON/OFF) key to switch the device ON. The device beeps twice and the display (2) briefly shows the version number of the installed software followed by the result of the latest measurement.

To switch the device OFF press the (ON/OFF) key. The display says "byE" and the device shuts down.

MEASURING

1. Press (TEMP./MEMORY) key. The temperature value in the bottom of the display (2) starts to flash.

2. Use (MEASURE) key to set the required measuring temperature. The temperature setting range is 0-25°C in steps of 5°C.

When required temperature setting has been selected, press the (ON/OFF) key to save the setting and return to measuring mode (this will happen automatically after app. 10 secs. if the (ON/OFF) key is not pressed).

3. Fill 50 ml of wine in the test bottle (8), then insert the rubber septum (10) and finally tighten the lid (9).

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4. Shake the test bottle vigorously for app. 10 secs. This will release CO₂ from the wine to the air in the bottle.
5. Verify the valve (7) is in closed position ('off' part in direction of the device).



CAUTION! Take care the valve is well positioned, otherwise the device could be damaged by receiving too much pressure.

6. Penetrate the septum (10) with the needle (5). Pressure will be equalized between the bottle and the air.
7. Close the valve (7) by turning left it ¼. The 'Off' part has to be as illustrated (7).
8. Press the (MEASURE) key to start measuring. The built-in pump starts to suck measuring gas through the needle. The pump stops after 10 seconds, and the result is shown in the display (2).

Extended measuring:

If a measuring period of more than 10 seconds is required, it can be extended by pressing (MEASURE) before the current measurement is complete. Each time you press (MEASURE), the device will start a 10 second measuring period.

Reduced measuring time:

The measuring period can be reduced by pressing (ON/OFF) while measuring is in progress.

9. When finished remove the needle (5) from the bottle (8) and place it in the needle holder (1).



CAUTION! Always place the needle (5) in the holder (1) when not in use.

MEMORY FUNCTION

The device's memory function can hold up to 10 measurements including the latest one. The small display (4) shows the number of measured values stored. If the display is off, the memory is full. The latest measurement will always be saved even if the memory is full.

CLEAR MEMORY

If the memory is full, it must be cleared before new values can be stored. Press and hold (TEMP./MEMORY) key. After 2 seconds the memory is cleared, and "0" is shown in the display (4), indicating that the memory is empty.

SHOW COLLECTED MEASUREMENTS

Press (TEMP./MEMORY) key twice and the first collected measurement is shown. The small display (4) shows the measurement number (flashing) and the main display (2) shows the saved result and temperature setting of the currently displayed measurement. Press (TEMP./MEMORY) again to show subsequently collected measurements.

To leave the display of collected measurements, press (TEMP./MEMORY) until all measurements have been shown, or press (ON/OFF) to return directly to the latest measurement. The display (4) stops flashing when you leave the "show collected measurements" function.

REPLACE COLLECTED MEASUREMENT WITH NEW MEASUREMENT

When showing the collected measurements (number in the display (4) is flashing), the currently displayed measurement can be overwritten by a new measurement. While the measurement is shown, press (MEASURE) to start measuring. Please note, that it is not possible to change the temperature for this measurement. The device will use same temperature setting as selected for the saved measurement. After measuring, the new measurement is stored in the memory location shown.

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DEVICE MESSAGES

- "P.On" Power on. External power supply connected.
- "P.OF. " Power off. External power supply disconnected.
- "Lo./BAT." Low battery voltage. Charge battery - see "Battery charging" for details.

ERROR MESSAGES

"P.Er." Power error. Error in the external power supply. Power supply with incorrect output voltage connected.

Remove the power supply immediately.

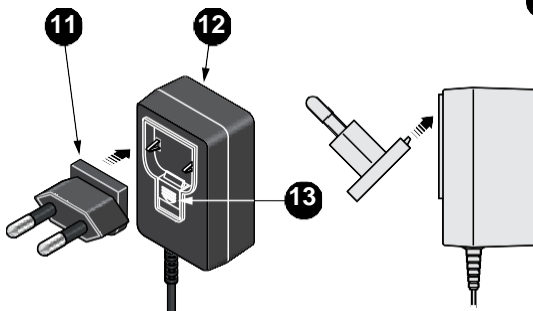
The device cannot be switched off before the incorrect power supply has been removed.

"Er.x " Internal error. The device must be forwarded for service.

EXTERNAL POWER SUPPLY/BATTERY CHARGER

The device comes with an external power supply/battery charger. Before connecting the power supply to the mains outlet you must fit the appropriate adapter:

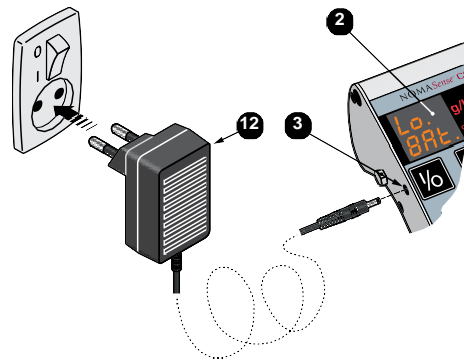
1. Select the appropriate adapter (11) from the kit
2. Fit the adapter to the external power supply (12) by inserting it at the top and then pushing it in at the bottom until it clicks.



3. To remove the adapter simply press the lock (13) downwards and hold it while removing the adapter.

BATTERY CHARGING

When the display (2) shows "Lo.BAT. " the battery needs to be charged:

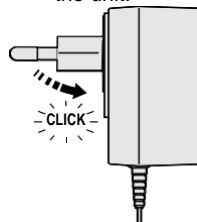


1. Connect the battery charger (12) between the mains outlet and the connector (3) on the device.
2. Turn the mains switch ON. Now the rechargeable battery pack will be recharged. When the power supply is connected/disconnected, the display (2) shows "P.On" and "P.OF.", respectively.



CAUTION! Use only the original power supply/charger unit when connecting to mains.

Using the wrong type can destroy the unit.



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CLEANING AND MAINTENANCE

GENERAL



CAUTION! Personnel performing any cleaning or maintenance must familiarize themselves with the "Safety Instructions" before attempting any of these procedures.



CAUTION! When using compressed air for cleaning, the hose must be disconnected from the device.

CLEANING

All of the device's surfaces must only be cleaned using a mild soap solution and a soft wrung cloth.

CAUTION! Never use hard tools or abrasive materials when cleaning any part of the device.

Never use cleaning agents containing any kind of acid. These constitute a health hazard and could damage the instrument.

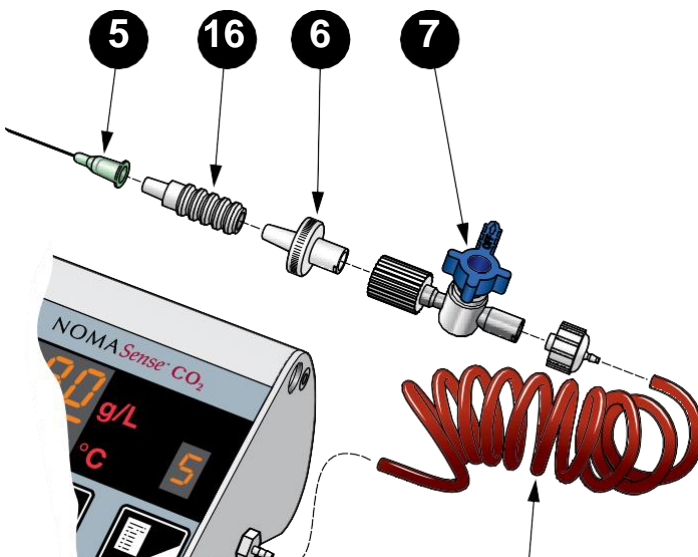
If there is any dirt or fluid in the measuring gas hose (17), it can be cleaned using dry compressed air.

REPLACING NEEDLES, FILTERS AND VALVES

During use of the device particles or liquids may over time be sucked through the measuring gas system.

Therefore it will be necessary to replace both the needle (5), the needle pen (16), the filter (6), and the valve (7).

See "Consumables" for further details.



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CALIBRATION

The device should be calibrated if it indicates a value that deviates by more than 2-3% when measuring gas with a known CO₂ content.

Please, contact [Vinventions WQS](#) for calibration service.

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