Instruction Manual

Flue Gas Analysis Computer
Type: EUROLYZER® ST

☞ Read manual before use!

☞ Observe all safety information!

☞ Keep manual for future use!

Contents

1   About this instruction manual

This instruction manual is part of the product.

▶   Read this manual before using the product.

▶   Keep this manual during the entire service life of the product and always have it readily available for reference.

▶   Always hand this manual over to future owners or users of the product.

1.1   Structure of warning

WARNING TERM The type and source of the danger are shown here.

⚠   ▶   Precautions to take in order to avoid the danger are shown here.

There are three different levels of warnings:

Warning term	Meaning
DANGER	Imminent danger! Failure to observe the information will result in death or severe injuries.
WARNING	Possibly imminent danger! Failure to observe the information may result in death or severe injuries.
CAUTION	Dangerous situation! Failure to observe the information may result in minor or severe injuries as well as damage to property.

1.2   Explanation of symbols and typeface

Symbol	Meaning
☑	Prerequisite for an activity
▶	Activity consisting of a single step
1.	Activity consisting of a several steps
♵	Result of an activity
•	Bulleted list
Text	Indication on display
Highlighting	Highlighting

2 Safety

2.1 Intended use

The flue gas analysis computer EUROLYZER® ST is exclusively suitable for use in the following application areas:

- Professional settings and control measurements at all small combustion systems (low temperature and burner value boilers and thermal systems) for gas, oil and pellet systems.
- Measurements at bi-valent and modulating combined heating and power plants.

Any use other than the application explicitly permitted in this instruction manual is not permitted.

2.2 Predictable incorrect application

The EUROLYZER® ST flue gas analysis computer must never be used in the following cases:

- Hazardous area (Ex)
  If the device is operated in hazardous areas, sparks may cause deflagrations, fires or explosions.
- Use as a safety (alarm) unit or continuous measuring device.

2.3 Safe handling

The EUROLYZER® ST flue gas analysis computer represents state-of-the-art technology and is made according to the pertinent safety regulations. Each device is subjected to a function and safety test prior to shipping.

▶ Operate the EUROLYZER® ST flue gas analysis computer only when it is in perfect condition. Always observe the operating instructions, all pertinent local and national directives and guidelines as well as the applicable safety regulations and directives concerning the prevention of accidents.

▶ Perform an overall visual inspection of the measuring device (including any accessories) prior to each operation of the EUROLYZER® ST in order to ensure proper operation of the device.

WARNING TERM Danger due to electricity.

⚠ ▶ Do not touch parts under voltage with the instrument or sensors.

2.4 Qualification of personnel

The product may only be installed, commissioned, operated, maintained, shut down and disposed of by qualified, specially trained personnel.

Electrical work may only be carried out by qualified electricians in accordance with local and national regulations.

2.5 Modifications to the product

Changes or modifications made to the product by unauthorised persons may lead to malfunctions and are prohibited for safety reasons.

2.6 Usage of spare parts and accessories

Usage of unsuitable spare parts and accessories may cause damage to the product.

▶ Use only the manufacturer´s genuine spare parts and accessories of the manufacturer (refer to chapter 14, page 41).

2.7 Liability information

The manufacturer shall not be liable in any direct or consequential damage resulting from failure to observe the technical instructions, guidelines and recommendations.

The manufacturer or the sales company shall not be liable for costs or damages incurred by the user or by third parties in the use or application of this device, in particular in case of improper use of the device, misuse or malfunction of the connection, malfunction of the device or of connected devices. The manufacturer or the sales company shall not be liable for damage resulting from any use other than the use explicitly stated in this instruction manual.

The manufacturer shall not be liable for misprints.

3 Product description

The EUROLYZER® ST flue gas analysis computer is a multiple-function analyser with integrated calculating functions. Measurements are in accordance with the general regulations set forth by the German "BIMSchV" at all kinds of combustion plants within the framework of the monitoring of yyyexhaust systems.

The EUROLYZER® ST flue gas analysis computer has a USB interface for PC, laptop, notebook, etc. and a wireless infrared printer interface.

The EUROLYZER® ST can be optionally fitted with a Bluetooth interface (BT) for wireless data transmission and a memory card (MicroSD).

This innovative measuring device no longer has a conventional key-board. It is equipped with modern Touch Pack technology which allows for practically wear-and-tear free operation of the device. The responsiveness and speed of the control panel can be set and configured to meet the user's individual requirements. User-friendly, colour-coded menus support improved and intuitive operation. The individual measuring programs, configuration menus, etc. are assigned distinctive colours.

3.1 Control panel (buttons and scroll function)
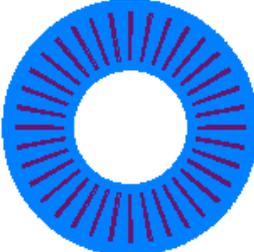
Button	Function
	Scroll panel (touchpad) Adjustment/navigation functions to move up and down in the menu section.
	Cancel program (ESCAPE / CLEAR button).
	Confirm selection (ENTER button).
	Switch on and off.

3.2 Display

1 Status line

2 Program selection
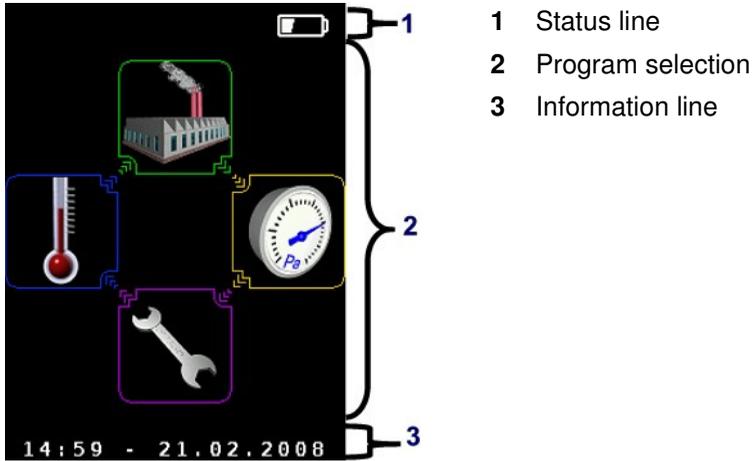
3 Information line

Figure 1: Start menu version 1 (full colour)

1 Coloured status line

2 Measured values

3 Information line with colour background
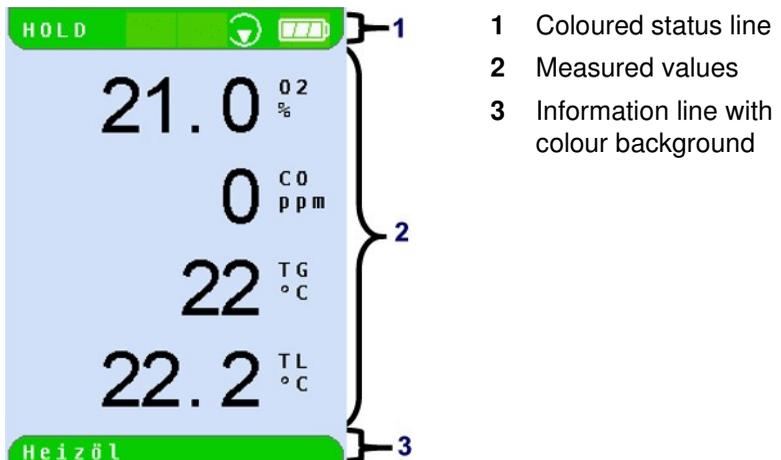
Figure 2: Display showing measuring program (example: flue gas analysis)

Status line

The status line shows the status of relevant program information such as remaining battery power, HOLD function, operation of the pump, etc. The information displayed depends on the mode and function-specific criteria.

Program selection

The program selection section displays the available programs as symbols. Colour-coding provides additional support. Programs can be selected or started.

Information line

The information line provides details on the time and date, chosen fuel, service messages, etc.

3.3 Measurement and calculation parameters

Table 1: Measured Values

Display	Measured medium	Unit
TG	Flue gas temperature	°C, °F
TA	Air temperature	°C, °F
O2	Oxygen concentration	Vol. %
CO	Carbon monoxide concentration	ppm
Draft	Draft	Pa, hPa, mbar, mmWs, mmHg, inWc, inHg, Psi
P	(Differential) Pressure (option)	Pa, hPa, mbar, mmWs, mmHg, inWc, inHg, Psi
NO	Nitrogen monoxide concentration (option)	ppm

Table 2: Calculated values

Display	Measured medium	Unit
CO_2	Carbon dioxide	% vol.
$CO_{0\%}$	Carbon monoxide, absolute	ppm
Eta	Combustion efficiency value	%
Lambda	Excess air value	Lamda
qA	Flue gas loss	%
Dewpnt	Fuel-specific dew point	°C, °F
NO_x	Nitride oxides (option)	ppm

3.4 Measuring methods

Table 3: Measuring procedure

Function	Explanation
Temperature measurement	Thermocouple NiCr-Ni (type K)
O_2 measurement	Electrochemical measuring cell
CO measurement	Electrochemical measuring cell
NO measurement (option)	Electrochemical measuring cell
Pressure/draft	Piezo-resistive sensor with internal temperature compensation
Measuring duration	Short-term, stable measurements of max. 60 minutes are possible, followed by a new calibration phase with ambient air.
Flue gas measurement	Via an external water separator and filter, the flue gas is supplied to the sensors by means of a gas pump.
Sensor calibration	After switching on the instrument, there is a calibration phase that takes 30 seconds after a cold start.
CO Sensor protection	The standard CO sensor with dynamic H_2 compensation is protected automatically since the gas pump switches off when the maximum measuring range limit is reached (> 9,999 ppm). The measurement starts again automatically when the sensor resets.
Flue gas sampling	Flue gas sampling is done by means of a probe which enables either a "one-point measurement" (combi probe) or a "multi-point measurement" (multi-hole probe).

4   Technical specifications

Table 4: Device description

Parameter	Value
General specifications	
Dimensions housing (W x H x D)	65 x 215 x 45 mm
Weight	Approx. 500 to 650 g (depends on equipment with sensors)
Display	High-resolution graphical 2.8" TFT display (240 x 320).
Data communication	USB interface and wireless infrared printer interface Option: Bluetooth interface.
Printer	External infrared thermal printer (Euro-Printer)
Memory	Micro-SD memory card with folder/file structure
Power supply	NiMH battery 4.8 V/1.6 Ah, external power adapter and charger.
Temperature range	
Ambient	+5 ℃ to +40 ℃
Storage	-20 ℃ to +50 ℃

Table 5: Device specifications

Parameter	Value
Flue gas temperature measurement	
Measuring range	0 °C to +1000 °C
Max. deviation	± 1 °C (0 °C to +300 °C)
	± 1.0 % of measured value (above +300 °C)
Resolution	1 °C
Sensor	Thermocouple NiCr-Ni (type K)
Combustion air temperature	
Measuring range	-20 °C to +200 °C
Max. deviation	± 3 °C + 1 digit (-20 °C to 0 °C)
	± 1 °C + 1 digit (0 °C to +200 °C)
Resolution	0.1 °C
Sensor	Thermocouple NiCr-Ni (type K)
Pressure measurement	
Measuring range	± 50 hPa (draft)/± 130 hPa (pressure)
Max. deviation	± 2 Pa + 1 digit (0 hPa to ± 2.00 hPa)
Resolution	± 1 % of measured value (± 2.01 hPa to ± 50.0 hPa)
	± 1.5 % of measured value (± 50.1 hPa to ± 130.0 hPa)
Sensor	Semiconductor sensor
O_2 measurement	
Measuring range	0-21.0 % by volume
Max. deviation	± 0.2 % by volume of measured value
Resolution	0.1 % by volume
Sensor	Electrochemical measuring cell
Response time (T90)	50 seconds
CO_2 determination	
Range	0 to $CO_{2\,max}$ (fuel-specific)
Max. deviation	± 0.2 % by volume of measured value

Parameter	Value
Resolution	0.1 % by volume
Sensor	Calculation on the basis of measured O2 value
Response time (T90)	50 seconds
CO measurement (with H_2 compensation)	
Measuring range	0-5000 ppm (nominal) or 9999 ppm (maximum)
Accuracy	5 ppm (to 50 ppm)
	5 % of measured value (above 50 ppm)
Resolution	1 ppm
Sensor	Electrochemical measuring cell
Response time (T90)	60 seconds

Table 6: Device specifications – options

Parameter	Value
NO Measurement	
Measuring range	0-2000 ppm
Accuracy	5 ppm (to 50 ppm)
	5 % of measured value
Resolution	1 ppm
Sensor	Electrochemical measuring cell
Response time (T90)	60 seconds

4.1 Calculation formulae (extract)

Calculation of the CO_2 value

$$CO_2 = CO_{2\ max} * (1 - \frac{O_2}{21})\ \text{in \%}$$

CO_{2max}	Max. CO_2 value (fuel-specific) in % by volume
O_2	Measured oxygen concentration in %
21	Oxygen concentration of the air in % by volume

Calculation of the flue gas loss

$$qA = (TG - TA) * (\frac{A_2}{21 - O_2} + B) \text{ in } \%$$

TG	Flue gas temperature in °F or °C
TA	Combustion air temperature in °F or °C
A2, B	Fuel-specific factors

Calculation of the excess air value Lambda

$$Lambda = \frac{CO_{2\,max}}{CO_2} = \frac{21}{21 - O_2}$$

Calculation of the combustion efficiency value (Eta)
Eta = 100 - qA in %

Calculation of CO absolute

$CO_{und.} = CO * Lambda$

$CO_{und.}$	Carbon monoxide concentration, absolute
CO	Measured CO value

4.2 Approvals, tests and conformities

This product is approved in accordance with the German "1. Bundes-ImmissionsSchutzVerordnung" (1. BImSchV) and EN 50379-2 and TÜV-tested and also meets the applicable directives of 89/336/EWG and KÜO ("Kehr- und Überwachungsordnung der Bundesländer")

The measuring device is approved for measurements according to the German "1. Bundesimmissionsschutzverordnung" (1. BImSchV).

5 Transportation and storage

CAUTION **Damage to the device due to improper transportion.**

▶ Do not throw or drop the device.

CAUTION **Damage to the device due to improper storage.**

▶ Protect the device from shock when storing it.

▶ Store the device in a clean and dry environment.

▶ Only store the device within the permissible temperature range.

▶ Store the device away from paint, solvent and glue.

6 Commissioning

6.1 Connection diagram

1 Plug for flue gas temperature (yellow)

2 Draft hose

3 Hose for measurement gas

4 (Combustion) air temperature sensor blue

5 (Combustion) air temperature sensor with 2.5 m line and magnet retainer

6 Measurement gas treatment (see extra sheet)

7 Multi-hole probe

8 Adjustable cone

9 Flue gas probe with draft for measurements according to 1. BImSchV
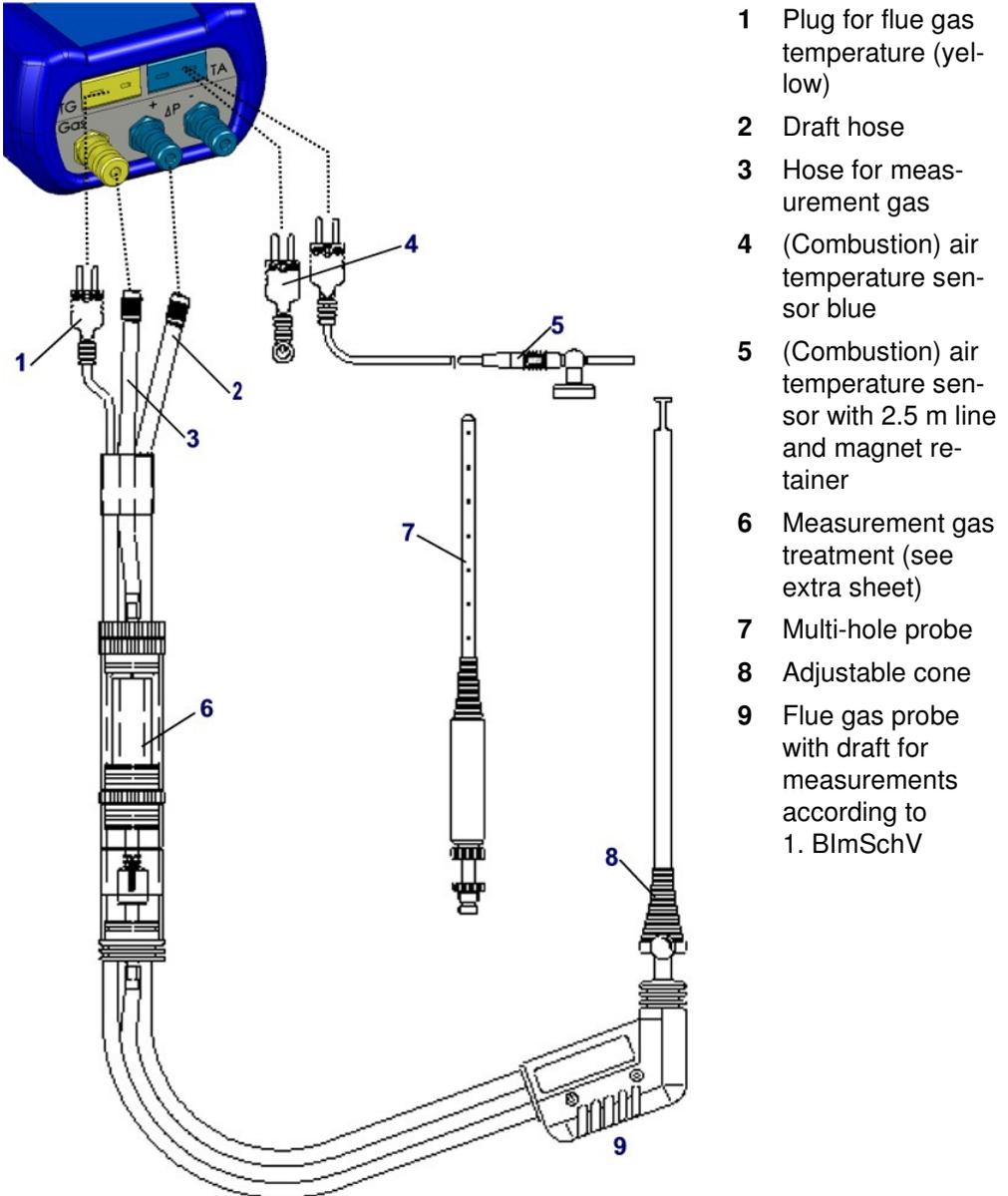
Fig.3: Connection diagram
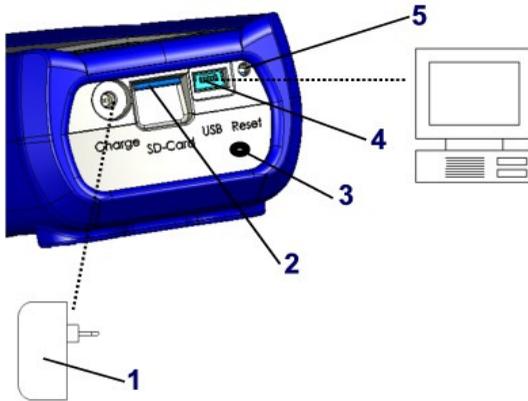
1 Power supply unit 100-240 V / 50-60 Hz

2 MicroSD memory card

3 IR printer interface (*not shown*)

4 USB data interface

5 RESET button

Fig.4: Connection diagram (interface side)

7 Program start

Switch on the EUROYLZER® ST by placing a finger on the button with the ON/OFF symbol. Activation of the device may take up to 5 seconds after longer periods of inoperation since an activation trigger is generated in so-called "sleep mode". If the device does not switch on after a further attempt, the battery may be empty. Please use only the device-specific charger / the charger shipped with the device.

1. Switch on device:

↳ Start screen is shown
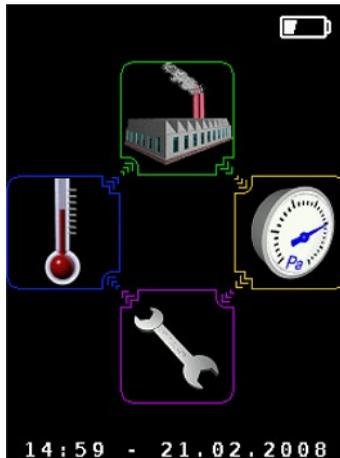
2. Scroll to select program:
   (lightly touch the scroll area to activate the required icon):
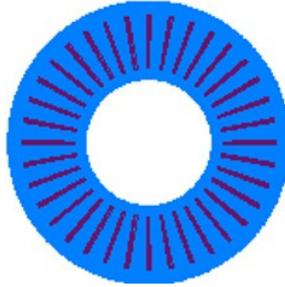
3. The selected program icon flashes (stand-by mode)

4. Confirm selected measuring program: →≡

5. Measuring program is activated / calibration phase is started

8 Measuring programs and Settings menu

8.1 "Flue gas analysis" program

▶ Start the "Flue gas analysis" program.
   (menu colour: green)

After a cold start the calibration phase takes 30 seconds.
After calibration the last fuel used is selected by default and displayed for confirmation.

Button	Function
	Select other fuels
→≡	Confirm selected fuel for measurement.
	Switch off device.
	Repeat calibration (10 sec.)

▶ Select and confirm required fuel.
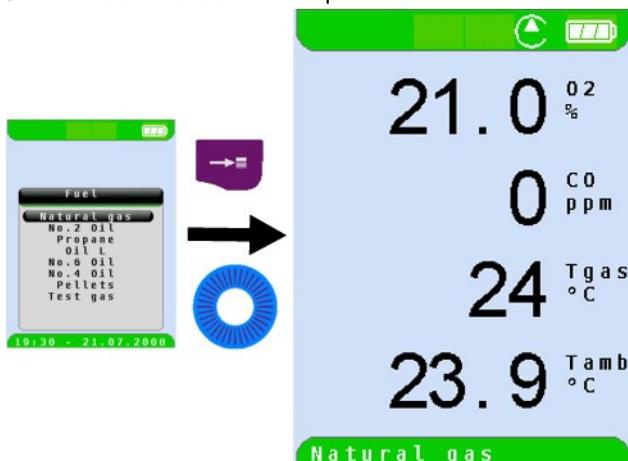
Button	Function
	Scroll through measured value display line by line.
→≡	Display start menu.
	Cancel measuring program. Return to start menu.
	Switch off device.

▶ Keep measured values / activate HOLD function.
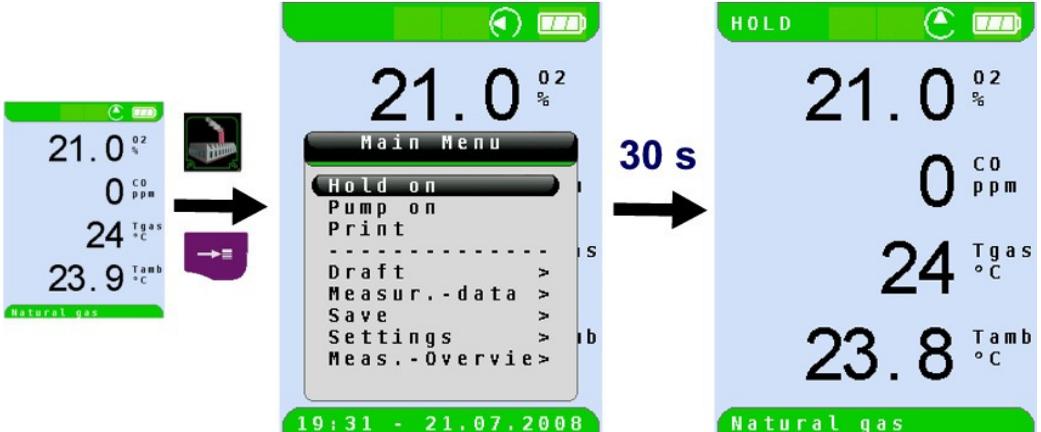
As soon as the flashing HOLD symbol is displayed in the status bar, all measured values (except draft) are held temporarily.

▶ Switch gas pump off or back on.

When the gas pump is switched off, the pump symbol is no longer shown in the status bar. Changes in the corresponding measured gas values cannot be ruled out, e.g. the O2 value may change as a result of lack of oxygen in the gas lines inside the device. If the gas pump remains off for a longer period of time, calibration in fresh air should be carried out before a new measurement is made.

▶ Print measurement record (current measured values)
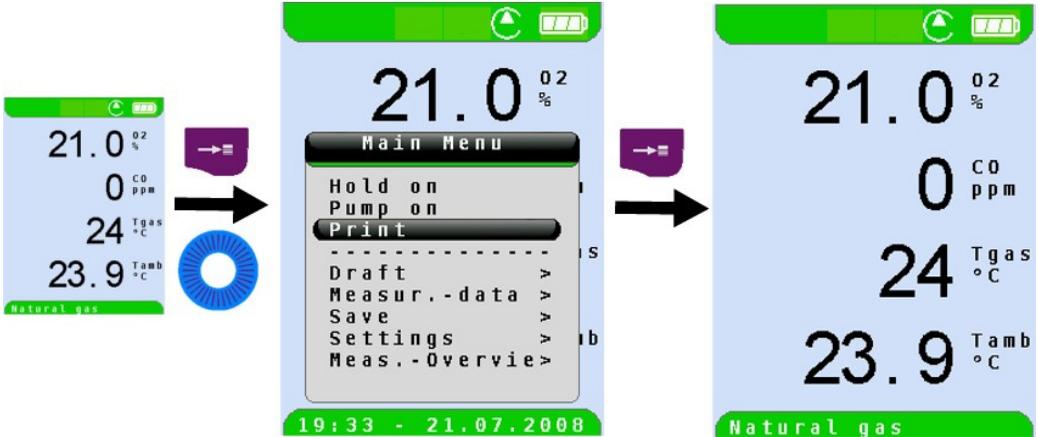
Measured values which were not in HOLD mode prior to the print command are current values or "momentary values". These values are printed immediately upon activation of the print command.

As soon as the print command is chosen, the record is printed parallel to the measuring task ($\rightarrow$ multitasking function), i.e. the measurement mode remains active.

▶ Print measurement record (measured values stored with HOLD)
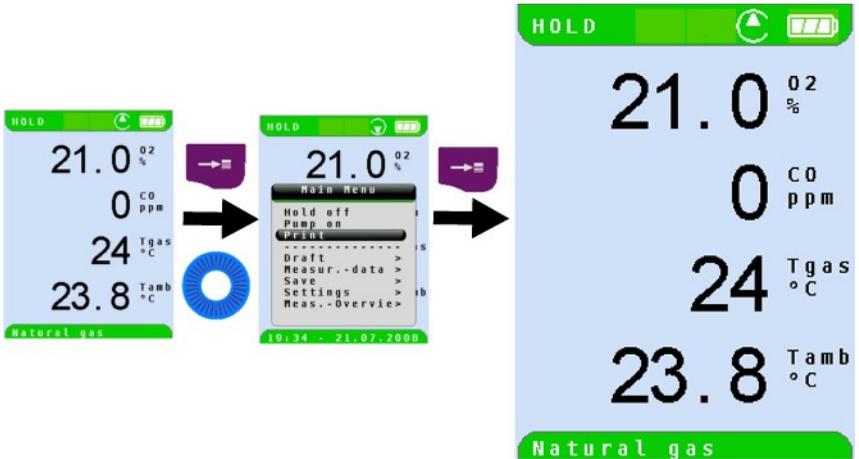
Measured values in HOLD mode can be checked prior to printing. It is also possible to print values recorded in HOLD mode at a later point in time.

▶   Draft measurement

To determine the zero point (= initial value in relation to the ambient air pressure), the air hose (with the blue connector) must be un-plugged before each draft measurement. After this, the zero point can be readjusted in case of a deviation from "0.00 hPa". Re-connect the draft hose for measurement and complete the measurement.
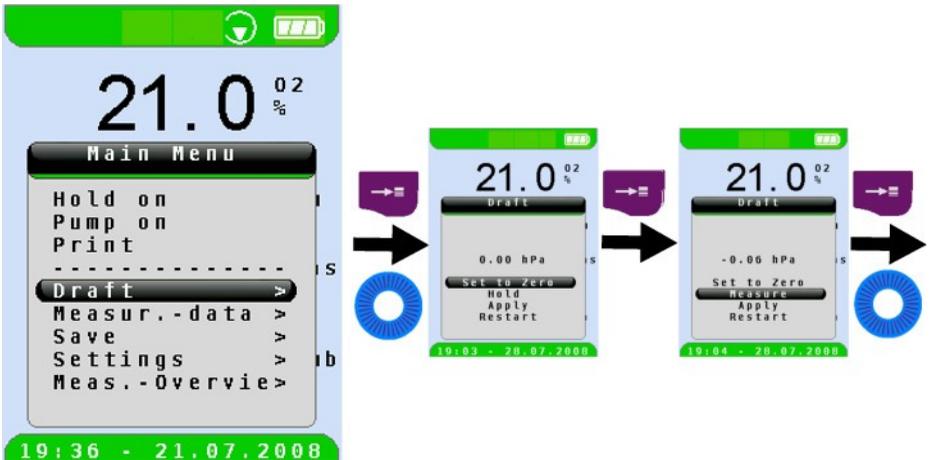
The measured draft value can be included in the record by means of the "HOLD" command followed by confirmation with the Apply func-tion. Draft measurements can be repeated any number of times.
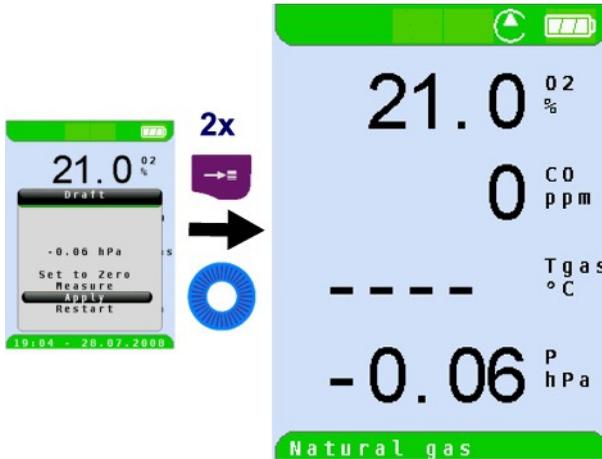
The applied draft measurement is then displayed in the list of flue gas values and can be printed / saved.

▶   Entry of further measured data (soot spot number, oil derivatives) and further configuration (units, sequence of measured values)
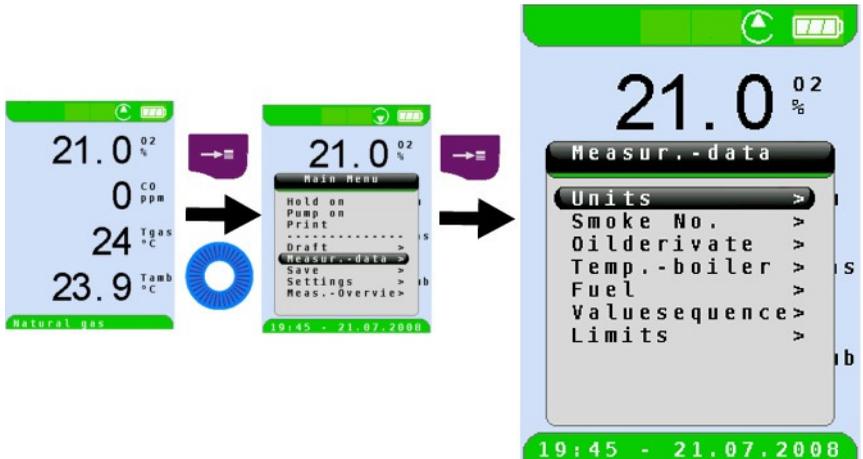
▶ Change units for temperature values (°C → °F)
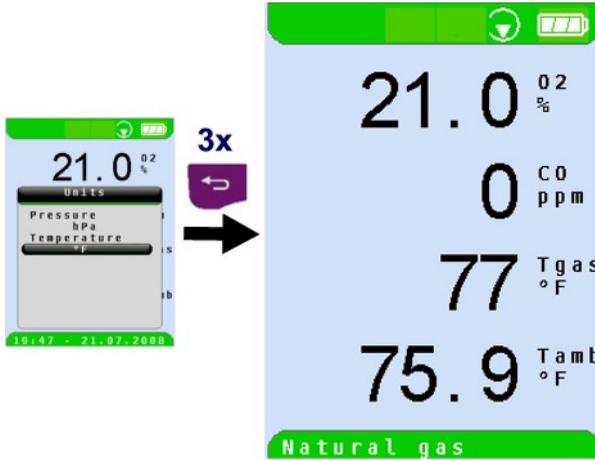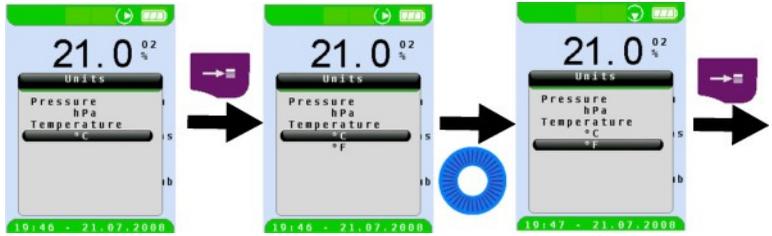

▶ Change units for pressure or draft (Pa → hPA –> mbar → mmWs → …)
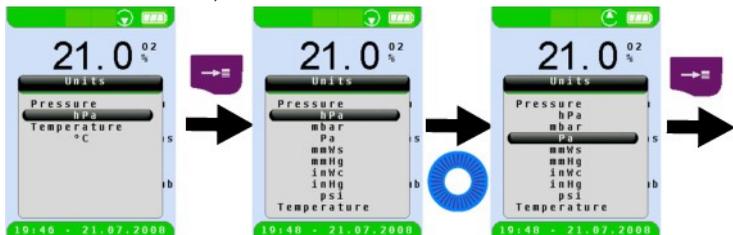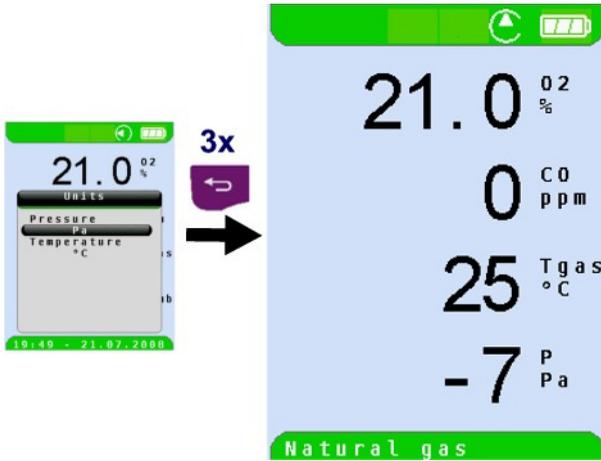
▶ Entry of smoke number (reading according to BACHARACH scale)
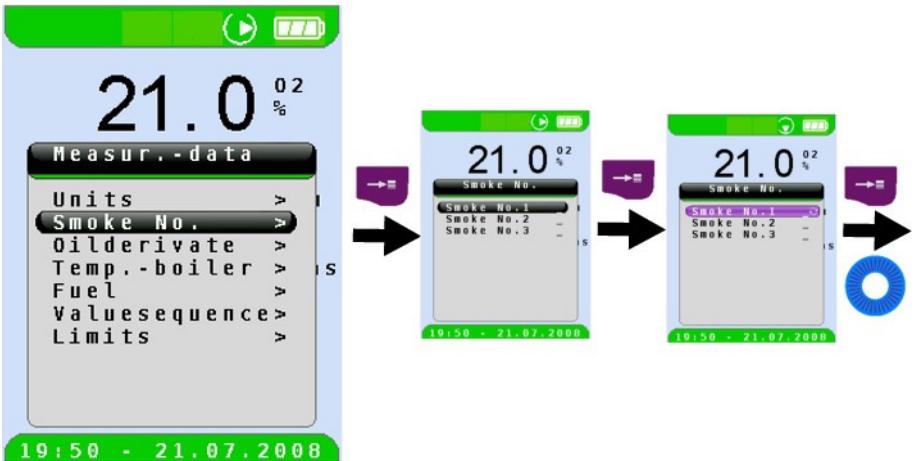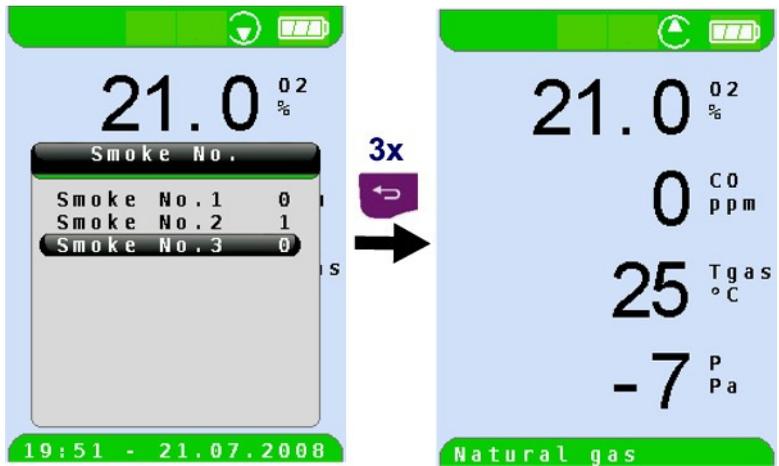
The entered smoke numbers are used exclusively for documentation in the printed measurement record / stored measurement data.

▶   Entry of oil derivatives
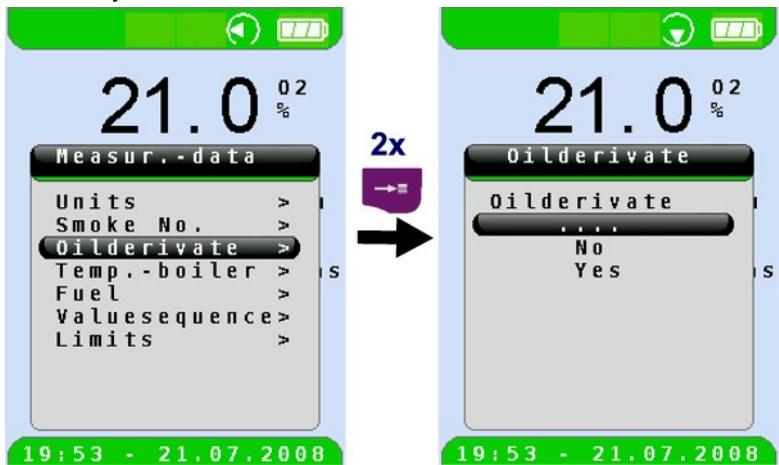
Classification of the oil derivatives is not displayed in the measurement menu. However, they can be documented in so far as they can be printed and saved along with all other measured values.

▶ Entry of boiler temperature
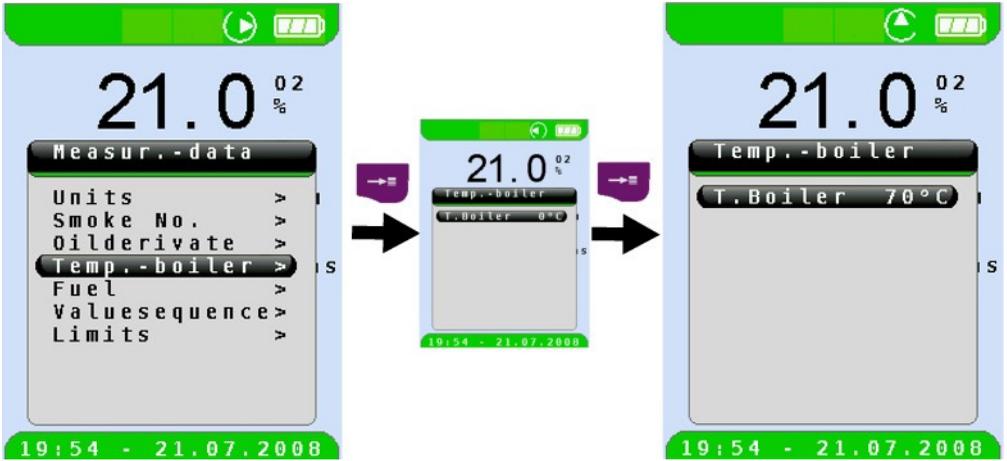
The entered boiler temperature is handled in the same manner as the smoke number and oil derivatives, i.e. it is used exclusively for documentation in the printed measurement record / stored measurement data.

▶ Change sequence of measured values (MV)
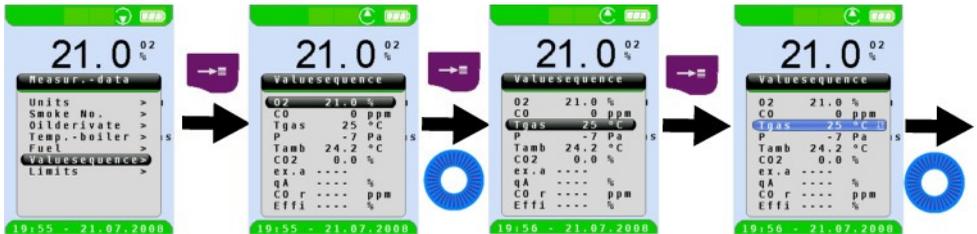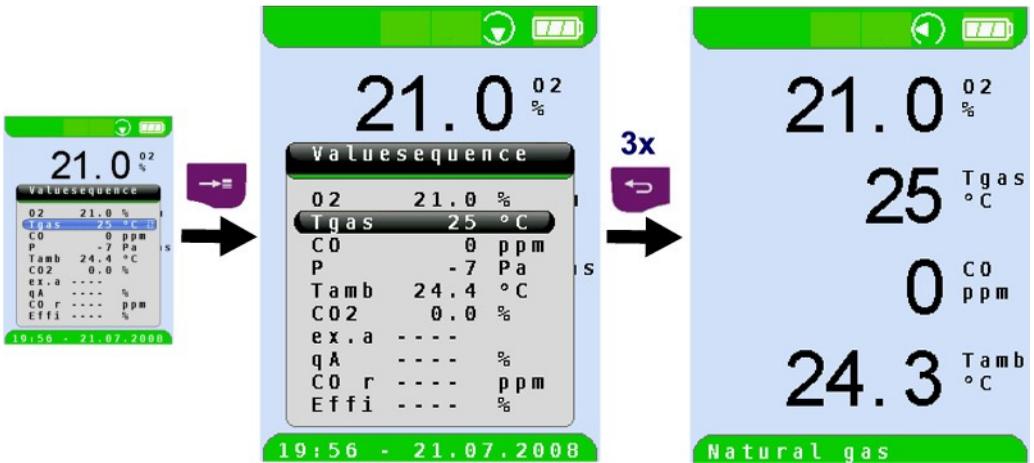
Example: Display TG value as second value.

▶   Limit value configuration

The required limit value can be configured within the respective (nominal) measuring range on a user-specific basis. Values exceeding the limit value are displayed in red.
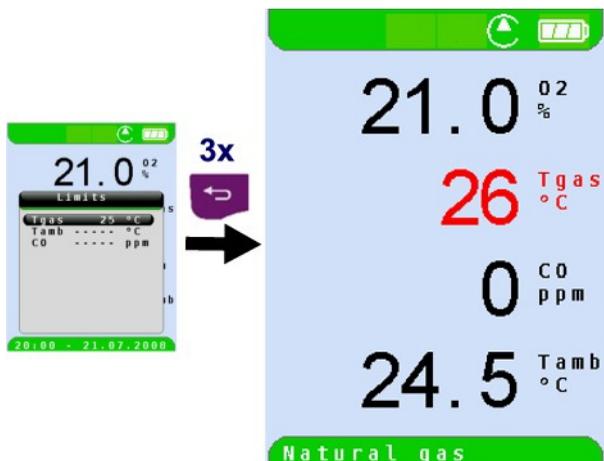
8.2 "Temperature measurement" program

▶ Start "Temperature measurement" program.
(menu colour: blue)
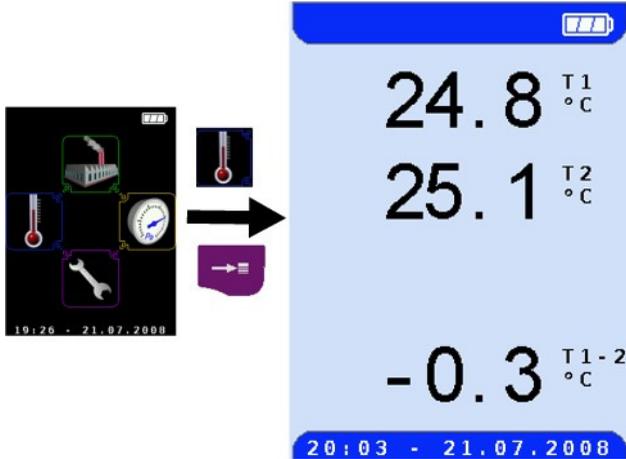
Button	Function
↩	Cancel or exit measuring program. Back to start menu.
→≡	Display main menu.
⏻	Switch off device.

▶ Keep measured values / activate HOLD function.
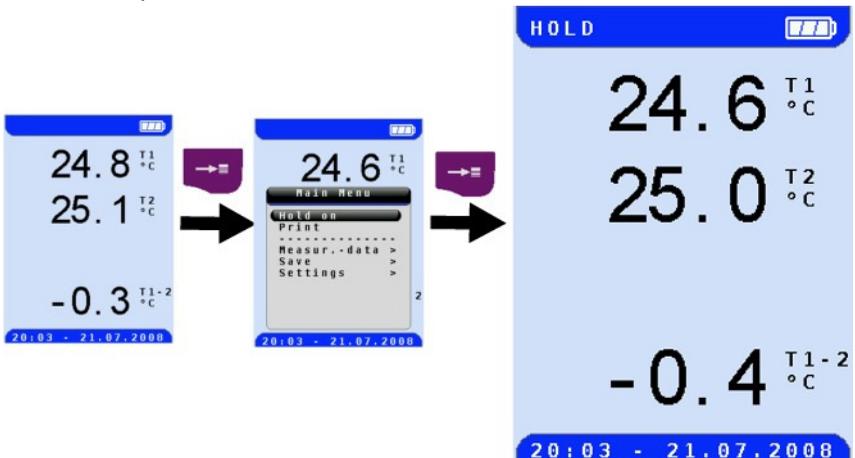
8.3 "Pressure measurement" program

▶ Start "Pressure measurement" program.
(menu colour: yellow)

Button	Function
↩	Cancel or exit measuring program. Back to start menu.
→≡	Display main menu.
⏻	Switch off device.

▶ Keep measured values / activate HOLD function.
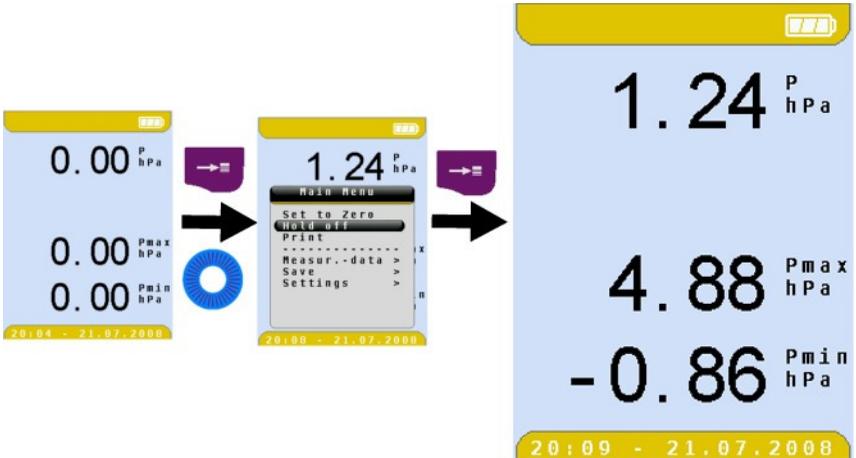
8.4 "Settings" configuration menu

▶ Open "Settings" configuration menu
(menu colour: purple

Button	Function
↩	Exit "Settings" configuration menu
◯	Scroll to select other menu item.
→≡	Display submenu.
⏻	Switch off device.

> ▶ Select required Settings function
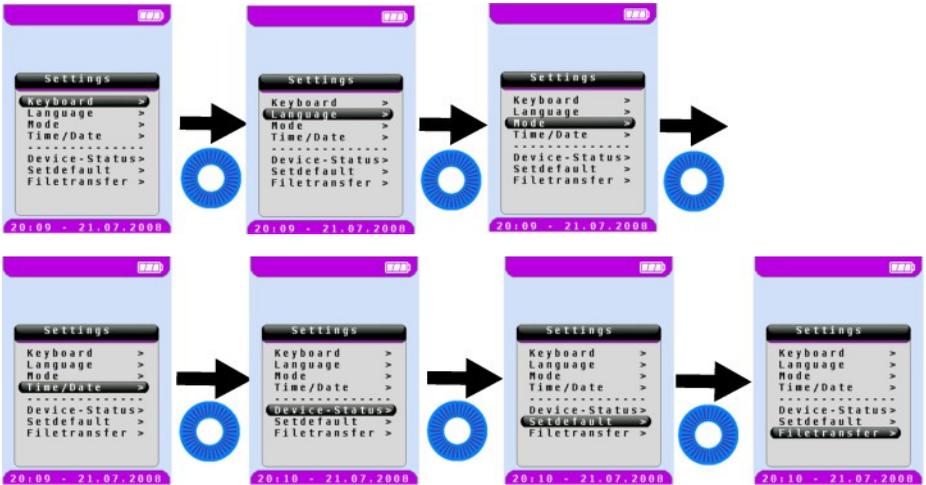
9 Memory mode & memory structure (option)

The use of Micro-SD memory cards as system-independent storage media ensures maximum flexibility in terms of storing and handling the measured data. All standard Micro-SD cards (with a memory of up to 4 GB) can be used. The card can be read without any additional software by all SD-card-enabled data processing systems (PCs, laptops, notebooks, etc.) using a web browser. More than 1,000,000 measured values can be saved with the recommended memory capacity of 1 GB.
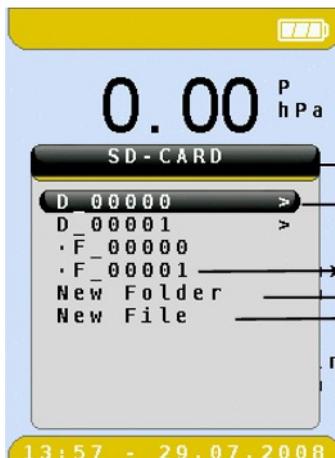
1 Current subdirectory (here root directory)

2 Existing directory (represented by a right arrow)

3 Existing file (represented by a dot)

4 Create a new folder

5 Create a new file
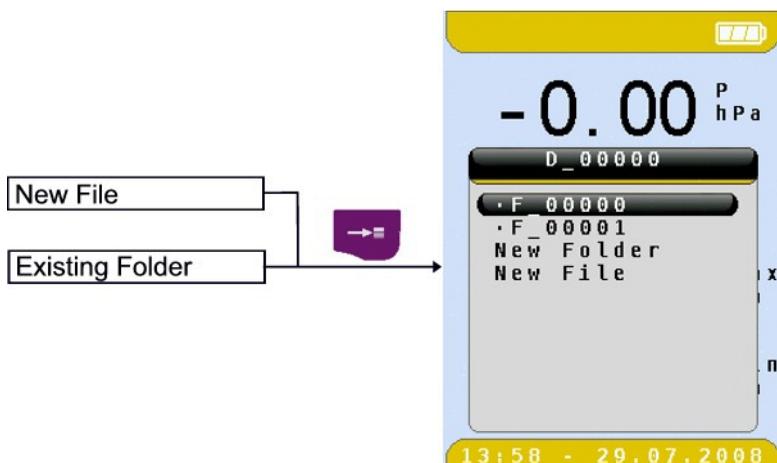
Button	Function
	Open the subdirectory with the Enter button.
	Use the Clear/Escape button to go to the higher level directory

New File

Existing Folder

SD-CARD

F_00003.txt

x

n

Save

13:58 - 29.07.2008

SD-CARD

F_00003.txt

x

Rename
show
Print
Overwrite

13:58 - 29.07.2008
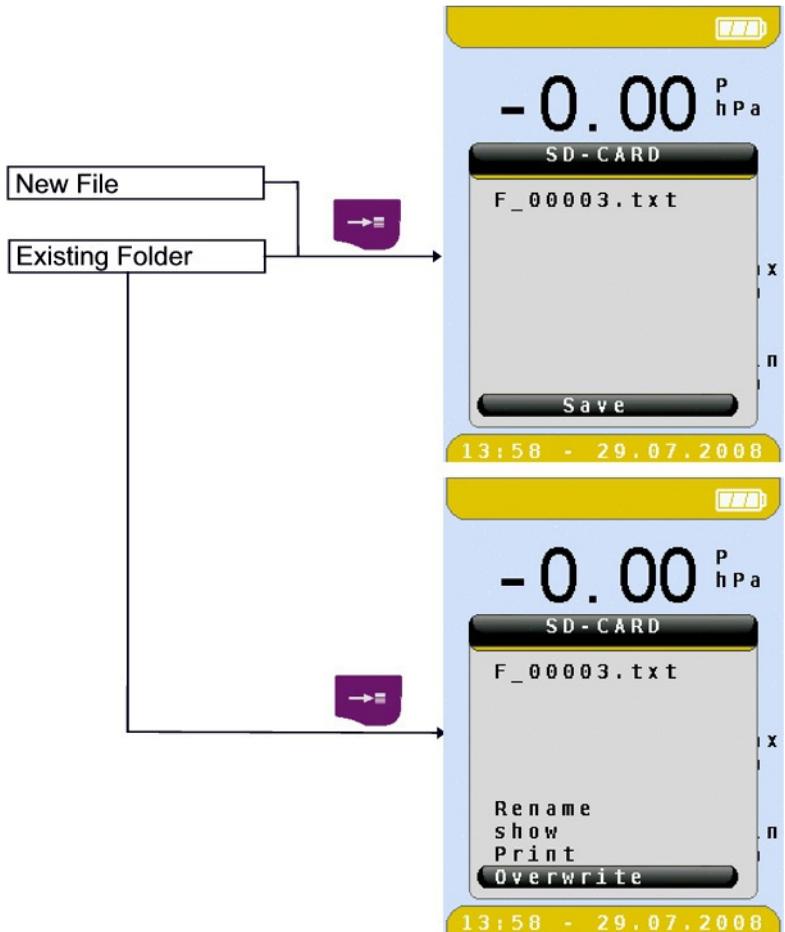
Button	Function
	The Enter button opens a menu containing functions for either creating a new file or displaying, printing or overwriting an existing one.

9.1 Memory structure
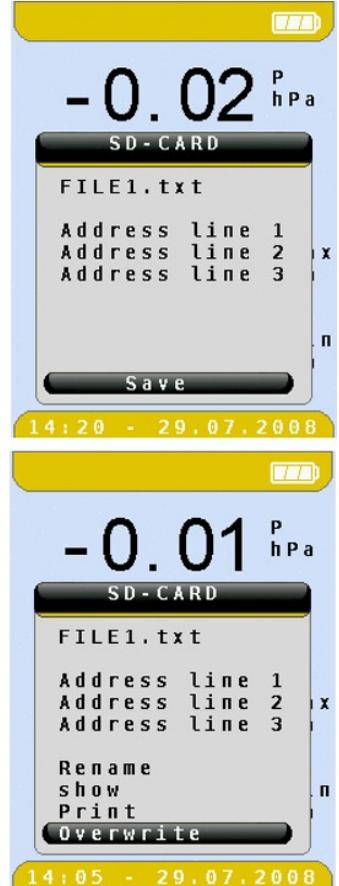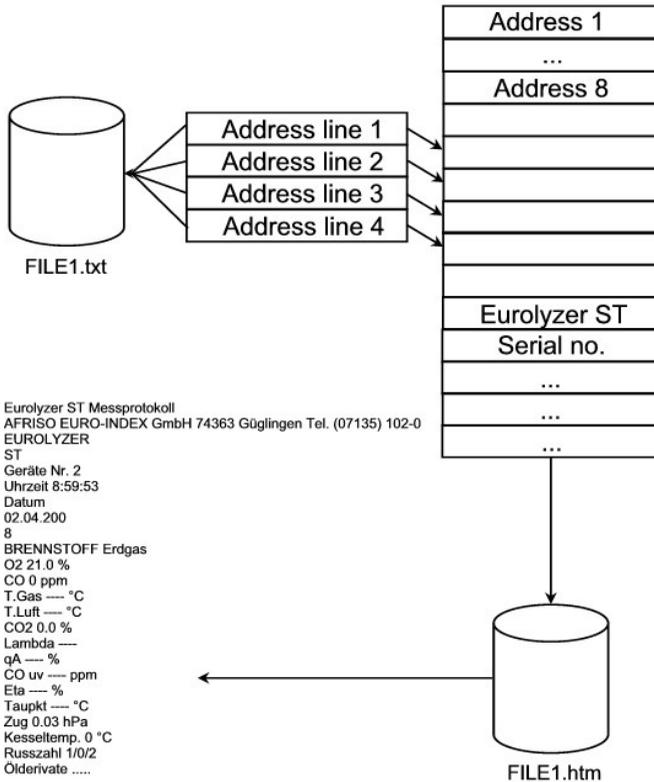
The stored data always consists of 2 files: a text-only file with the extension .txt and an HTML file with the extension .htm. The text file can be created on the PC using any text editor. The text file contains the target address / a description of the measuring site. The maximum length is 4 lines of 24 characters each. If there is no .txt file, the device can create an empty text file via "New file". The target address is visible during file selection.

When the file is saved or overwritten, the target address is included in the remaining device data according to the logic shown above and can then be displayed in the device or printed.

The HTML file uses standard HTML format and can be displayed and printed in any web browser. The memory can therefore be used on any PC system (Windows, Linux, MAC OS, etc.).

9.2 How to save
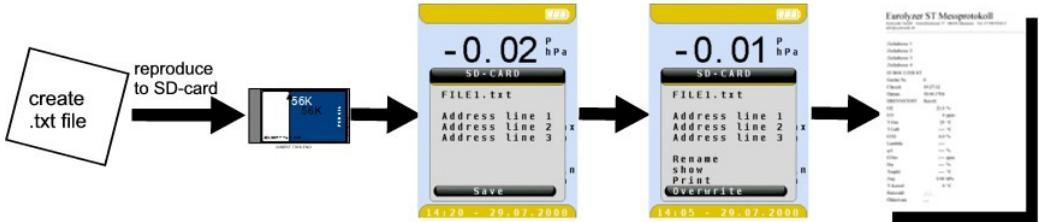
It is possible to create a new directory in the current directory using "New Dir.". The directory name has the following structure:

D_xxxxx

Directory (= folder). Number from 0…65535

It is possible to create a new file in the current folder using "New file". The file name has the following structure:

F_xxxxx.txt

File. Number from 0…65535

The numbers are consecutive and incremented automatically.
Limitations:

- Maximum **62 files** / **directories** + New Dir. + New File possible per directory.
- Maximum **4 directory levels** are possible.
- This results in a total number of files of 62^4 = 14,776,336 given maximum use of the structure (files only in the 4th level).
- File names are restricted to the "8.3" format, i.e. 8 characters for the file name and 3 characters for the extension.
- Directory names are also limited to **8 characters**.
- Only files with the extension **.txt** are displayed as only such files are required.
- Special characters must not be used in the file names.

- The card is to be formatted with FAT32 or FAT16. **Formatting in the device is not possible.**
- **Remove the card only after switching off or before switching on in order to prevent loss of data!**
- **A file which has been created and saved on the card is protected against manipulation and, if manipulated, can neither be displayed by the device nor printed!**

10 Battery management

10.1 Battery mode / charging mode

- Battery mode: Up to 8 hours of continuous measurement.
- Charging: External power supply unit 100-240 V~/50-60 Hz. Intelligent charging by means of an integrated charger management system.

10.2 Charging the batteries

CAUTION **Damage to the batteries or the device caused by power supply units that are not device-specific.**

▶ Use only the provided power supply unit for charging the batteries.

1. Connect the EUROYLZER® ST to the device-specific power supply unit and the power supply unit to the mains.
2. Switch the device on and off.
↳ The charging process of the batteries starts automatically:
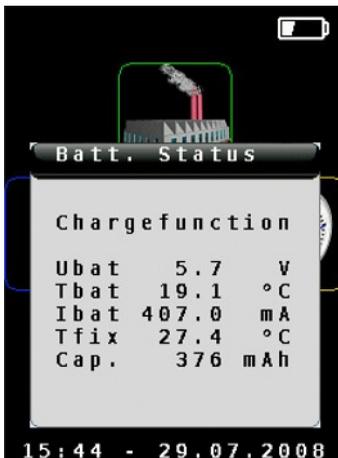
Ubat	Current battery voltage
Tbat	Measured battery temperature
Ibat	Current charging current
Tfix	Terminal temperature
Cap.	Current battery capacity

Button	Function
⬅	Close menu.

↳ During measurements, the battery is also charged continuously and monitored by the system.

As soon as the battery is fully charged the device switches to passive recharging mode (trickle charging).

↳ The charge control display is no longer shown.

↳ When recharging is finished the charger can remain connected to the EUROYLZER® ST without the battery being damaged.

Service life and capacity of the battery

The EUROYLZER® ST is equipped with a powerful NiMH battery. The service life and capacity of the battery are considerably affected by the way the device is charged and used. In order to make handling safer, the device features efficient and battery-saving charge management suitable for all applications.

The graphical charge level indicator of the EUROYLZER® ST consisting of three elements of a battery symbol helps the user to correctly estimate the capacity of the battery. Five different battery states are detected.

▶ During normal use it is recommended not to recharge the battery until it is run down completely.

The battery can be recharged at any time given that the charge management system recognises the need to recharge the battery. Otherwise, the charge management system will not release the battery for charging.

The service life of the NiMH battery is significantly reduced when the device is operated at temperatures below +5 °C.

Reconditioning cycle

If the device is used outside the permitted temperature range, if the battery is older or if incomplete charging cycles (charging/discharging) are carried out, the charge level indication may not correspond to the actual charge level. In this case the indicator can be corrected as follows:

1. Discharge the battery by switching on the device until it switches off automatically.
2. Connect the EUROYLZER® ST to the device-specific power supply unit and the power supply unit to the mains.
3. Switch the device on and off.
   - ↳ The charging of the battery starts automatically.
     Complete recharging takes approx. 4 hours, depending on the ambient temperature.
   - ↳ The EUROYLZER® ST switches off automatically when active recharging is completed.
4. Repeat the reconditioning cycle if necessary.

11 Maintenance

Gas treatment, refer to fig. 5, page 41.

- ▶ Empty the condensate trap completely after each operation. Water in the measuring device will destroy pumps and sensors.
- ▶ Check the fine filter for pollution and replace as necessary.
- ▶ If pump capacity is reduced, carefully replace the Teflon membrane filter. Damage to the filter membrane greatly decreases or eliminates the filter function and leads to the failure of expensive pumps and sensors.
- ▶ Make sure threaded parts are straight when positioned and tighten them moderately. Ensure sufficient sealing by means of O rings.
- ▶ Hard-to-move/plug parts (plug-type elements and flanges): Remove any gas residues and grease with Vaseline.

Replacing the battery

For technical reasons, old batteries may only be replaced by the manufacturer or an authorised service partner.

- ▶ Do not short-circuit connection terminals.
- ▶ To protect the environment, batteries must **not** be disposed of together with the normal household waste. Return old batteries to the point of purchase or to a collecting point.

12 Troubleshooting

Repairs may only be performed by specially trained, qualified staff.

Table 7:Troubleshooting

Problem	Possible reason	Repair
Device automatically switches off	Battery empty	▶ Charge battery.
	Battery defective	▶ Take device to service centre.
O_2 error message	Service life of O_2 sensor expired	▶ Run device without accessories in fresh air
	Repeated signal error	▶ Take device to service centre.
"CO value too high" / "CO sensor defective" message	CO sensor malfunction CO measuring range exceeded	▶ Run device without accessories in fresh air.
	End of service life of sensor	▶ Take device in for servicing.
Incorrect measured gas values (e.g. measured O_2 value too high, CO_2 value too low, no CO values displayed, etc.)	Leak in measuring system	▶ Check gas treatment system for cracks and other damage. ▶ Check hose system for cracks and other damage. ▶ Check O rings of gas treatment unit. ▶ Check O ring of external probe pipe.
Service message	Device has not been inspected for a longer period	▶ Take device in for servicing.
Measured gas values are displayed slowly	Filter in the gas treatment system is used up	▶ Check filter and replace, if necessary.
	Hose system bent	▶ Check hose system

Problem	Possible reason	Repair
	Gas pump polluted	▶ Take device to service centre.
Flue gas temperature unstable	Humidity in the probe pipe	▶ Clean probe
Device does not switch on	Battery empty	▶ Charge battery. ▶ Take device to service centre.
Other malfunctions	–	▶ Send the device to the manufacturer.

13 Shutting down and disposal

▶ To protect the environment, this device must **not** be disposed of together with the normal household waste. Dispose of the device according to the local conditions and directives.

This device consists of materials that can be reused by recycling firms. The electronic inserts can be easily separated and the device consists of recyclable materials.

If you do not have the opportunity to dispose of the used device in accordance with environmental regulations, please contact us for possibilities to return it.

14 Spare parts and accessories
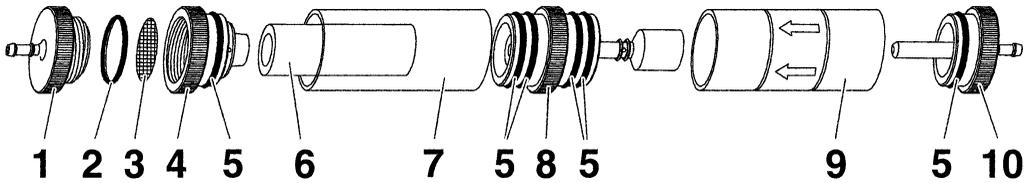
Bild 5: Gas treatment – condensate cartridge

Part	Part no.
Condensate cartridge	69411
Spare parts for condensate cartridge:	
(**1**) Outlet piece	695 000 98
(**2**) O ring 18 x 3	
(**5**) O ring 23 x 2	
Kit of assorted O rings, sorted	69427
(**3**) Teflon membrane 23.5 mm, 10 pieces	69206
(**4**) Intermediate piece	695 000 97
(**6**) Infiltec fine filter, 5 pieces	69412
(**7**) Glass piston with logo	695 000 99
(**8**) Centre piece with cylinder pieces	695 000 96
(**9**) Glass piston with arrow	695 000 95
(**10**) Inlet piece	695 000 94

15 Warranty

The manufacturer's warranty for this product is 24 months after the date of purchase. This warranty shall be good in all countries in which this device is sold by the manufacturer or its authorised dealers.

16 Copyright

The manufacturer retains the copyright to this manual. This manual may not be reprinted, translated, copied in part or in whole without prior written consent.

We reserve the right to technical modifications with reference to the specifications and illustrations in this manual.

17 Customer satisfaction

Customer satisfaction is our prime objective. Please get in touch with us if you have any questions, suggestions or problems concerning your product.

18 Addresses

The addresses of our worldwide representations and offices can be found on the Internet at www.afriso.de.

19 Appendix

19.1 Bluetooth Declaration of Conformity

19.2 EN DIN 50379 Certificate

ZERTIFIKAT
Certificate

05 10 90217 006
Revision 1

Hiermit wird bescheinigt, dass die
Herewith we certify, that the

**tragbaren elektrischen Geräte zur Messung
von Verbrennungsparametern an Heizungsanlagen, Typ**
*portable electrical apparatus, designed to measure
combustion flue gas parameters of heating appliance, type*

EUROLYZER

mit den Messparametern
for the parameters

O_2/CO_2, CO, T_{Abgas}, T_{Luft}, Druck$_{Förderdruck}$, Druck$_{Differenzdruck}$
O_2/CO_2, CO, $T_{flue\ gas}$, $T_{inlet\ air}$, pressure$_{draught}$, pressure$_{differential}$

und

EUROLYZER ST

mit den Messparametern
for the parameters

O_2/CO_2, CO, NO, T_{Abgas}, T_{Luft}, Druck$_{Förderdruck}$, Druck$_{Differenzdruck}$
O_2/CO_2, CO, NO, $T_{flue\ gas}$, $T_{inlet\ air}$, pressure$_{draught}$, pressure$_{differential}$

jeweils hergestellt durch die Firma
each manufactured by

**Systronik Elektronik und Systemtechnik GmbH
Gewerbestraße 57
88636 Illmensee**

den Anforderungen der folgenden Normen genügt.
fulfils the requirements of the following standards

DIN EN 50379-1:2005-01 und DIN EN 50379-2:2005-01

In Verbindung mit der regelmässigen Überwachung der Fertigung und der QM-
Maßnahmen nach der Zertifizierungsordnung der TÜV SÜD Industrie Service GmbH
erhält der Hersteller mit diesem Zertifikat das Recht, die Geräte mit dem in diesem
Zertifikat dargestellten Zeichen zu kennzeichnen.
*In connection with a periodical surveillance of the production and the quality control according the
certification regulations of TÜV SÜD Industrie Service GmbH this certificate permits to sign the
apparatus with the TÜV mark as shown in this certificate.*

München, 2008-01-25

Johannes Steiglechner

TÜV SÜD INDUSTRIE SERVICE GMBH, RIDLERSTRASSE 65, D-80339 MÜNCHEN