

An extremely compact Flue Gas Analyzer



CO: EN50379-3

Many modern central heating systems are adjusted to CO₂ (carbon dioxide) for optimal performance and safety. In order to do this, measuring the composition of the flue gas is essential. Besides carbon dioxide, the concentration of carbon monoxide and the resulting toxicity index are of great importance for safety and for environment considerations. The BlueLine® BLUELYZER ST offers an accurate flue gas analysis for managing and maintaining central heating systems in an unrivalled compact form.

The appliance only has 5 controls, a clear English menu structure and a large TFT colour display. The built-in rechargeable battery makes using normal batteries superfluous. You can read the measurements from the display, store it on an optional MicroSD card or print it with the optional EUROprinter.



Functionality

Measurement of:

- O₂ (oxygen)
- CO (carbon monoxide)
- Draft pressure
- T_{air} (ambient temperature)
- T_{gas} (flue gas temperature)

Calculation of:

- CO₂ (carbon dioxide)
- CO undiluted
- Difference in temperature
- Combustion efficiency
- Lambda (excess air)
- Ratio (for UK and AU only)
- Flue-gas losses
- CO_{ref} (with O_{2ref} to configure)
- T_{au} (dewpoint)

Operation

A drop-down menu with colored icons appears immediately after activating the BLUELYZER ST. The arrow keys can be used to choose flue gas analysis, temperature measurement, measurement of the concentration of carbon monoxide in the environment, adjustment of the instrument settings or editing the MicroSD memory. You confirm your selection with the enter key.

When using the flue gas analysis function, you will first be asked to make a selection from a list of fuel types. A screen, on which the measured values are clearly shown, will then appear.

EN50379 part 2

The EN50379 is the European standard in which the permissible measurement techniques, for measurements of combustion appliances, are specified. The BLUELYZER ST has EN50379 part 2 certification for measuring O₂, CO₂ and temperature with the exception of CO (EN 50379-3).



Color screen

The BLUELYZER ST has a 2.8" (7.1 cm) TFT color display with a resolution of 240 x 320 pixels. The various English measurement menus are each displayed in their own unique color, which simplifies navigation. The display's large viewing angle, clarity and backlight ensure that the data and measurement values displayed are clearly visible under all circumstances.

Extremely compact

The BlueLine® BLUELYZER ST is very compact and therefore easy to handle and transport. However, the appliance's small size is not at the expense of quality. You can make the same high quality demands on the BLUELYZER ST as on any other BlueLine® measuring instruments! Due to the clever design, everything is put in a convenient and logical place (see above).

Modern communication techniques

Safety

Safety and security are important aspects in all BlueLine® measuring instruments. For your safety, and the safety of the occupants/users of the building where the central heating system is located, the BLUELYZER ST offers a special function for measuring the concentration of carbon monoxide in the surrounding air. This will enable you to recognize a malfunction in the central heating system and make repairs in time.

The BLUELYZER ST performs a check when starting up, to ensure proper functioning of your instrument. All sensors are checked, the condition of the battery is displayed and, if the calibration date has been exceeded, a message to this effect will be displayed.

The BLUELYZER ST is of course fitted with a condensate cartridge. This part has been placed in the sampling line, so that the user can properly see when the cartridge needs to be emptied. A dust filter and a PTFE-filter have also been fitted in the condensate cartridge. The PTFE-filter prevents the condensate water from reaching the sensors.

Reports and data communication

The BLUELYZER ST has been equipped with an internal clock which means that a date and time are linked to each measurement. These data can be used to draw up a report via the wireless infra-red connection, with the optional EUROprinter. If you want to apply the measurements in your own company's reports, you can store measurement results on an (optional) MicroSD card. The results are saved in different files and directories. The MicroSD card can be read by a laptop/PC card reader. The measurements can then be processed further with your own software. By default the BLUELYZER ST is equipped with Bluetooth® Smart (BLE- Bluetooth® Low Energy). This means that the instrument is set up for wireless communication with other instruments.

Menus



Flue gas menu CO Ambient Measurement Pressure Measurement Temperature Measurement

Technical specifications

O ₂ (oxygen)	
Range	0 to 21.0 Vol. %
Accuracy	± 0,2 Vol. % RDG
Resolution	0,1 Vol. %
T90 time	< 30 seconds
CO (carbon monoxide)	
Range	0 to 2.000 ppm 2.000 to 6.000 ppm The measured value is displayed in red, accuracy not specified. > 6.000 ppm: the sample pump stops and - - - is displayed.
Accuracy	± 5 ppm (< 150 ppm) ± 5% RDG (150 to 2.000 ppm)
Resolution	1 ppm
T90 time	< 60 seconds
CO ₂ (carbon dioxide)	
Range	0 to CO _{2 max} (depending on fuel)
Accuracy	± 0,2 Vol. %
Resolution	0,1 Vol. %
T90 time	< 30 seconds
Flue gas temperature	
Range	0 to +1.000 °C
Accuracy	± 1 °C (0 to +300 °C) ± 0,5% RDG (from +300 °C)
Resolution	1 °C
T90 time	< 30 seconds
Temperature combustion air	
Range	-20 to +200 °C
Accuracy	± 2 °C (-20 to 0 °C) ± 1 °C (0,1 to +200 °C)
Resolution	0,1 °C
T90 time	< 70 seconds
Draft (optional)	
Range	± 40 hPa
Accuracy	± 0,02 hPa (< 2,00 hPa) ± 1 % RDG (> 2,00 hPa)
Resolution	0,01 hPa (< 19,9 hPa) 0,1 hPa (> 20 hPa)
T90 time	< 10 seconds

General specifications

Dimensions (L x W x D)	144 x 67 x 37 mm (including protective cover)
Weight	About 275 gram (including protective cover)
Material housing	Plastic
Display	Graphic color screen 2,8" (240 x 320 pixels)
Data communication	Wireless infra-red connection with optional EUROprinter Bluetooth Smart (BLE- Bluetooth Low Energy)
Printer	External wireless thermal printer (EUROprinter, optional)
Memory	MicroSD card / SDHC to 16 GB (optional), max 100 measurement reports
Operating temperature	5 to +40 °C
Storage classOpslagtemperatuur	-20 to +50 °C
Ingress Protection Rating	IP42
Battery	Li-Ion battery 3,6 V / 1.800 mAh, battery life to 12 hours
Mains power supply	Mini USB (5 V)



Accessories included

Aluminum carrying case, 170 mm flue gas probe (300 °C / 15 minutes) with 1,8 meter sample tube and condensate cartridge with filter, rubber protective cover with magnets, battery charger /mains power supply, temperature probe for ambient air, instruction manual (incl. copy of EN50379 certificate).

A complete measurement solution

Optional accessories

Combustion air temperature probe

This temperature probe includes a 2.5 meter cable and is intended for measuring the temperature of the combustion air. This means that you can accurately measure temperatures and combustion efficiency in central heating systems where the combustion air is supplied via a separate channel.



X-series thermocouples

BlueLine® X-series thermocouples consist of 7 different temperature probes for various applications. Connect the (K-type) thermocouple to one of two thermocouple connections on the appliance and measurement value will show on the display. It is also possible to connect two thermocouples to measure a temperature difference.



X17 thermocouple with coiled cord

Type	Purpose	Type	Purpose
X11	surface	X15	Flue gas
X12	insertion	X16	Pipe clamp
X13	liquid/gas	X17	surface
X13A	liquid/gas		



EUROprinter

The BlueLine® EUROprinter is a useful thermal printer for wireless printing of measurement results from various BlueLine® instruments. The EUROprinter communicates with the measuring instrument by means of wireless infra-red communication. The EUROprinter is suitable for use with the BLUELYZER ST Flue Gas Analyzer, the EUROLYZER ST(e) service analyzer, the MULTILYZER NG service analyzer and the S4600-series (differential) pressure meters.



Accessories included: batteries, 1 roll printer paper and user's manual.

Printer paper for the EUROprinter (5 rolls)
Set of 5 rolls of thermal printer paper.



PTFE-filter (5 pieces)

The BLUELYZER ST's condensate cartridge contains a PTFE-filter, which functions as an additional safeguard against condensation.



If the condensate cartridge is not emptied in time, this filter will close access to the Flue Gas Analyzer, so no water can reach the sensors.

Dust filter

The BLUELYZER ST's condensate cartridge contains a dust filter that protects the Flue Gas Analyzer against dust and soot particles.

These particles can damage the instrument if they reach the sensors. The dust filter should be replaced periodically to guarantee proper operation.



SYSTRONIK

SYSTRONIK GmbH is specialized in development and production of high quality measuring instruments for flue gas analysis, testing and maintaining HVAC installations, climate technology and environmental technology.

All SYSTRONIK products meet the highest standards for quality, reliability and safety. Our facilities are certified to full operational requirements of the ISO 9001 quality standard. We are constantly striving to improve our quality assurance position with input from periodic audits by independent experts required for continued ISO 9001 certification.

