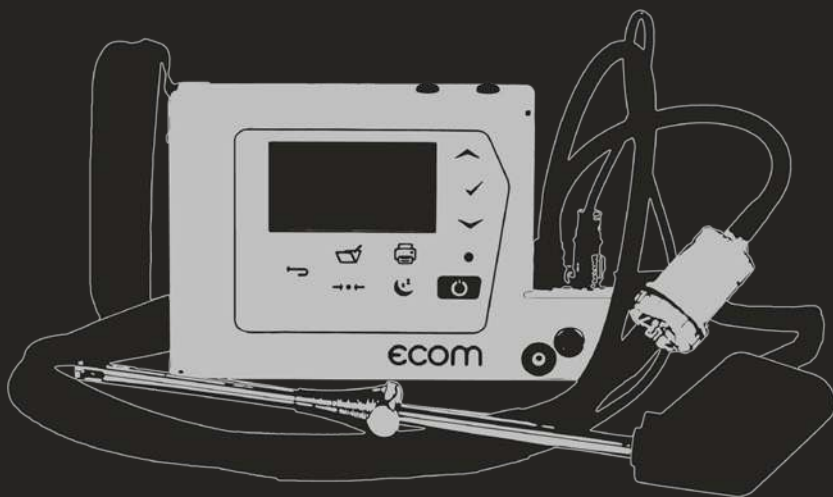


ecom

**INTELLIGENT MESSEN!**  
*MEASURE WITH INTELLIGENCE!*

**ecom<sup>®</sup> B**

*Flue Gas Analysis*



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# ecom PRODUCTS OFFER YOU MANY BENEFITS...



## EXTREM EFFICIENT.

The high output level (up to 2.6 liters/minute) not only enables ecom analyzers to provide a fast reading: It also makes it possible to bridge long distances during sampling, or negative pressure in the application. Manometers also provide readings in record time.



## EXTREM ACCURATE.

The reading accuracy of gas sensors (CO, NO, SO<sub>2</sub>) is determined and adjusted at 5, 20 and 40°C in the climatic test chamber using standardized test gases. High-quality sensors provide a perfect reading for pressure-measurements.



## EXTREM COMPLETE.

ecom analyzers are sold and designed as an entity (device, probe, probe hose, case). In addition: Printer paper and filter, a solid shoulder strap, PC software and Apps.



## EXTREM COOL.

The drier, the better: The gas to be measured is continually cooled to 5°C using a gas cooler. This way, the drying process is controlled. Collected condensate can be easily emptied in some cases this occurs in automatic mode.



## EXTREM FAR-REACHING.

ecom analyzers communicate wirelessly: Via Bluetooth, WLAN (wider range, more stable connection), as well as radio (highest range with the most stable connection). This way instruments can be remote-controlled via e.g. smartphones or ecom remote control unit.



## EXTREM ROBUST.

Hard on the outside - even harder on the inside! Almost all ecom measuring devices are housed in an ultra-light aluminium casing. Its durability pays off in its daily use - especially in rougher conditions.



## EXTREM SAFE.

The condensation control protects from moisture. An automatic CO shut-off (flushing of the CO sensor) without interruption of the measuring process ensures the long lifespan of the CO sensor. Each ecom instrument has its own „safety equipment.“



## EXTREM LOSS-FREE.

To measure the full concentration of extremely water soluble gases an inner PTFE coated hose or a heated sampling system are available. This guarantees the fast and condensate free flue gas transport.

# ...BY EVERY APPLICATION.

### HEATING

Combustion gas analysers, pressure meters, leak detectors and more for HVAC handicraft, chimney-sweep and heating after-sales service. For control and adjustment works in order to reduce emissions and to optimize the efficiency of heating plants.

### ENGINES

For control and adjustment works among all by commissioning of gas engines, thermal power blocks, etc. as well for the perfect measurement of water-soluble gases like nitrogen oxide – especially recommended for the NO<sub>x</sub> measurement.

### COMBUSTION

Combustion gas analysers, pressure meters, leak detectors and more for control and adjustment works at burners and large-scale firing plants in order to reduce emissions, to arrange for a more efficient combustion process and to optimize the thermal process.

### INDUSTRY

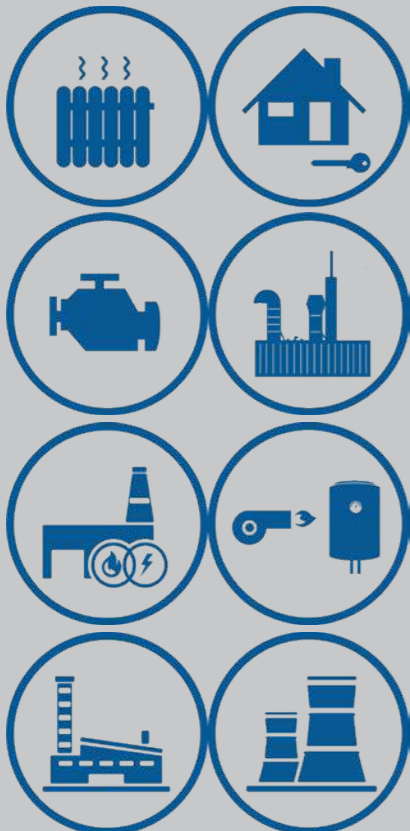
Combustion gas analysers, pressure meters, leak detectors and more for the perfect preparation of water-soluble gases (i.a. NO<sub>2</sub> and SO<sub>2</sub>) by industrial applications (like e.g. aluminium process, coke oven plants, cement processing, power plants, refineries, waste incineration...).

# Overview of technical data

√ Standard • Optional

Flue gas analyser model				B
Gas Components		Resolution	Accuracy	max. 3
O <sub>2</sub>	O <sub>2</sub> (0 - 21 vol.%) - electrochemical	0,1 vol.%	± 0,3 vol.%	√
CO	CO (n. H <sub>2</sub> -komp. 0 -2.000 ppm) - electrochemical	1 ppm	± 20 ppm or 5 % of reading*	•
	CO (H <sub>2</sub> -komp. 0 -10.000 ppm) - electrochemical	1 ppm	± 20 ppm or 5 % of reading*	√
NO	NO (0 - 5.000 ppm) - electrochemical	1 ppm	± 5 ppm or 5% of reading*	•
Additional Measurements   Display Options		Resolution	Accuracy	
T-Gas	0 - 500 °C	1 °C	± 2 °C or 1,5 % of the reading*	√
T-Air	0 - 99 °C	1 °C	± 1 °C	√
Pressure   ΔP	± 100 hPa	0,01 hPa	± 0,5 hPa or 1 % of the reading*	•
Calculated values				
CO <sub>2</sub> - 0 - CO <sub>2</sub> max				√
Combustion efficiency (ETA)				√
Excess air (Lambda) - > 1				√
Losses qA - 0 - 100 %				√
Dew point - x °C				√
mg/m <sup>3</sup> - x mg/m <sup>3</sup>				√
mg/KWh - x mg/KWh				√
O <sub>2</sub> reference - x % O <sub>2</sub>				√
Gas processing				
Condensation trap with moisture-absorbing pad				√
Operation safety				
Temperature trend indication for core stream search				√
CO switch-off				√
Fresh air purge by CO exceeding				√
Fresh air purge after operation				√
Sampling system				
Unheated probe, type BB				√
Gas transportation (tubing)				
Multi-chamber silicone tubing				√
Printer				
Infrared interface for external printer				√
Data processing				
Serial interface for data transfer				√
Wireless data interface (e.g. for connection to a smartphone or tablet)				√
Internal memory				√
Remote control				
via backlit keypad				√
via smartphone/tablet (free iOS + Android app)				√
Transport				
Carrying bag				•

\* the higher value prevails

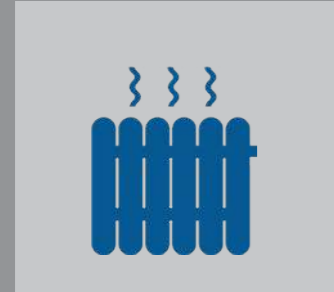




Testing according to DIN EN 50379-2 and 1st. BImSchV.

# ecom® B

FLUE GAS ANALYSIS



## ecom-B EASY

COMPACT, HANDHELD FLUE GAS ANALYZER

- O<sub>2</sub>/CO (H<sub>2</sub>-comp.) Longlife sensors
- Up to 3 sensors possible
- Aluminum housing fitted with magnets on the back
- Integral LiFePo4 high performance battery with long lifecycle
- Sampling probe, length 220 mm, with fixation cone; 3-chamber sampling tubing length 2.2 m
- T-Room sensor with cable and fixation cone
- Mains charger included
- Automatic CO-shutoff and flushing (without interruption of measurement)
- Optical condensate monitoring
- Calibration certificate
- Wireless data interface (e.g. for connection to a smartphone or tablet)

Dimensions (W x H x D) 220 x 125 x 75 mm

Weight approx. 1.5 kg (complete)



■ = Base; ■ = Optional EC

## ecom-B ALU-CASE

ADDITIONALLY WITH PROTECTIVE HOUSING (FIG. RIGHT)

- Robust aluminium housing with swingable and lockable protective cover
- Backside magnets for attachment to boiler casing
- Side slots for optional carrying strap
- T-room stick (instead of sensor)
- Sampling probe, length 150 mm, with fixation cone; 3-chamber sampling tubing length 1.5 m

### ADDITIONAL OPTION

- NO sensor
- Textile bag

Dimensions (W x H x D) closed 250 x 180 x 80 mm

open 250 x 350 x 80 mm

Weight approx. 2,1kg (complete)

- 1 Robust aluminum housing with swingable and lockable protective cover
- 2 Slot for carrying strap
- 3 LCD-Display with backlight
- 4 Condensate trap
- 5 Sampling probe with fixation cone and 3-chamber sampling tubing
- 6 T-Room stick
- 7 Two strong fixation magnets
- 8 Serial interface



ACCURATE



ROBUST



SAFE



FAR-REACHING



COMPLETE

## USEFUL

### ecom-AK

READOUT UNIT FOR DIGITAL AUTOMATIC BURNER CONTROLLERS

- Automatic identification of automatic burner controller type
- Readout feature for errors and operating conditions
- Built-in display
- Data transfer via cable to PC or ecom-EN3 analyzer
- Data transfer via radio to the ecom-J2KNpro control panel (display + printing via flue gas analyzer)

Displayed data:

- Display of recent and past failures
- Display of burner operating conditions
- Measurement of the flame signal/comparison with minimum value
- Checks of delayed flame development
- Detection of the number of burner starts
- Display of all relevant operating times (safety time, etc.)

Dimensions (W x H x D) approx. 88 x 41 x 32 mm

Weight approx. 322 g - incl. belt pouch



ROBUST



COMPLETE



EFFICIENT



ecom-AK will show the following display messages:

Automat DKO 972 / 22	Identification of burner controller (Honeywell-Satronic DKG, DKO, DKW, DMO, DMG, DLG, DVI, DIO, SH, SG incl. N versions as well as Siemens-Landis & Staefa LMG, LMO).
☰ ☷ ☹ ☺ ☻ * 2.3µA 231V	Indication of burner operating mode.
* 2.2µA ☻ IS * 1.2µA ☻ MIN	Measurement of flame signal and comparison with minimal value.
Rest time TSA 3.9 sec	Check if flame occurs immediately or with delays.
Current error Flame signal during straylight check !	Indication of current disturbance source as well as of 5 past disturbances.
Start-ups counter 664	Determination of burner starts.

## ACCESSORIES



### Transport bag

Transport bag incl. comfort carrying strap.



### Thermal printer

ecom-P thermal printer with infrared interface for wireless data transmission.



### Filter plate

Multi-level processing: water separation in condensate trap; pre filtering via fine particulate filter; silica gel drying; removal of sensor-damaging, organic compounds in the hydrocarbon filter.



### CO multi-hole probe

For the CO measurement of the CO concentration according to KÜO (sweeping and monitoring system) - extendable from 80 to 280 mm.



### Ring slot multi-hole probe

For measurement on concentric exhaust systems. Continuously extendable (80 to 280 mm) - with three easily replaceable sealing plugs for measuring openings from Ø 5 to 25 mm.



### Contact sensor

Forerun and backrun temperature measurement.



### ecom-UNO

FOR THE ADJUSTMENT OF GAS BURNERS /GAS HEATINGS

- Device connection pressure (flow pressure)
- Nozzle pressure (flow pressure)
- Gas operating pressure (system pressure)
- Static pressure
- Switchable units: hPa / mbar, mmH<sub>2</sub>O, psi, mmHg
- Measurement range: ± 200 hPa, ± 2038 mmH<sub>2</sub>O, ± 2.9 psi, ± 150 mmHg
- Resolution: 0.01 hPa / 0.01 mmH<sub>2</sub>O / 0.01 psi / 0.01 mmHg
- Accuracy: approx. 1%
- Overload: 300 hPa / 3060 mmH<sub>2</sub>O / 4.35 psi / 225 mmHg

Dimensions (W x H x D) approx. 106 x 64 x 28 mm

Weight approx. 150 g



### ecom-LSG

DETECTION OF FLAMMABLE GASES

- Three sensitivity levels adjustable
- Acoustic signal on/off at choice
- Display range up to 0.5% vol. CH<sub>4</sub>, Response time: < 2 seconds
- Backlit bargraph
- Display approx. 20 x 7 mm
- 1-14 bars (10 bars = approx. 1000 ppm CH<sub>4</sub>)
- Warm-up time: approx. 3 minutes
- Sensor temperature compensation (-5°C to 40°C)

Dimensions housing (W x H x D) approx. 155 x 35 x 22 mm

Swan-neck: approx. 355 mm

Weight: approx. 200 g



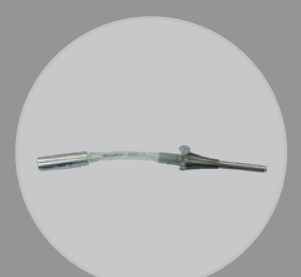
### T-Room-probe (PT 2000)

For measuring the room or intake air temperature - for example for concentric flue gas systems.



### Soot pump set

Consisting of soot pump, soot comparison scale, piston lubricant oil, socket wrench and 200 soot test strips.



### Probe extension

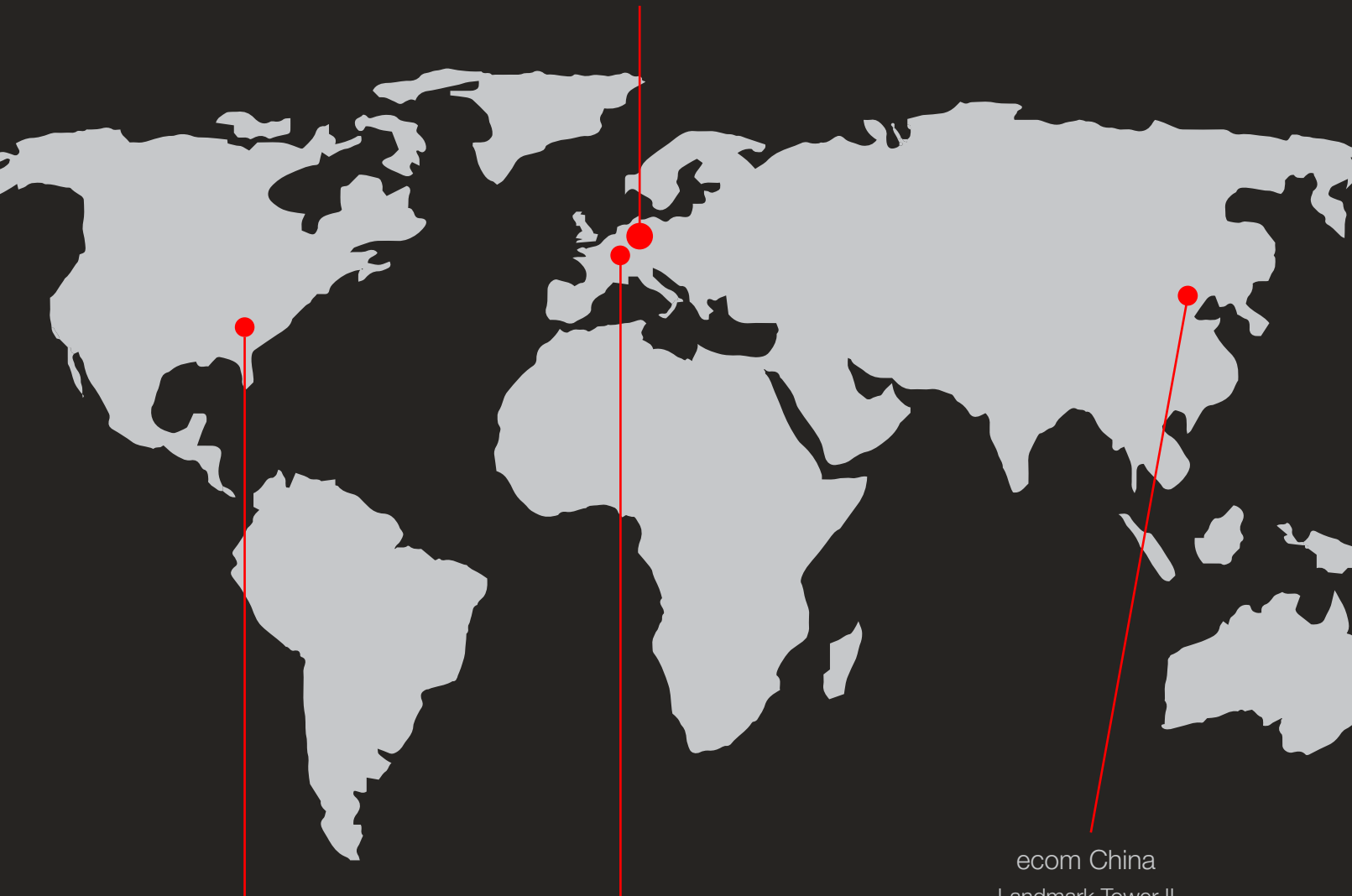
For probe type Ø 8 mm, with flexible tube center piece. Is placed on the probe seats for measurements at difficult to reach, angled measuring openings.

Other accessories on demand.

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