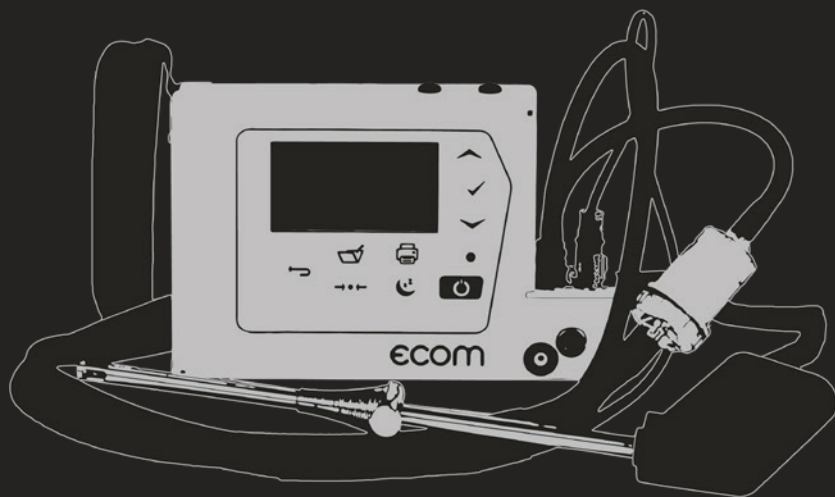


ecom

**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.

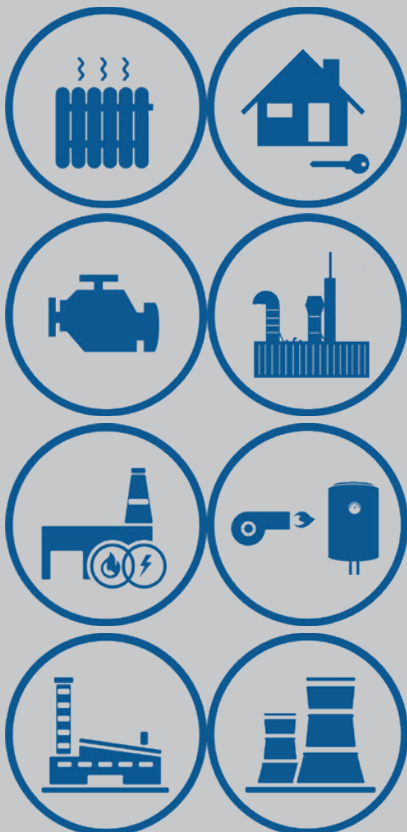
The condensation control protects from moisture. An automatic CO shut-off (flushing of the CO sensor) without interruption of the measuring process ensures the long lifespan of the CO sensor. Each ecom instrument has its own „safety equipment.“



## 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 handcraft, 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

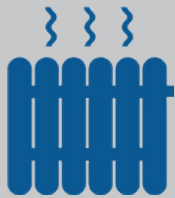
√ Standard • Optional

| Flue gas analyser model   |  |            |                                  | B      |
|---|--|------------|----------------------------------|--------|
| Gas Components  |  | Resolution | Accuracy                         | max. 3 |
| <b>O<sub>2</sub></b>  | O <sub>2</sub> (0 - 21 vol.%) - electrochemical              | 0,1 vol.%  | ± 0,3 vol.%                      | √      |
| <b>CO</b>   | 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*      | √      |
| <b>NO</b>   | NO (0 - 5.000 ppm) - electrochemical                         | 1 ppm      | ± 5 ppm or 5% of reading*        | •      |
| Additional Measurements   Display Options                               |  | Resolution | Accuracy                         |        |
| <b>T-Gas</b>  | 0 - 500 °C   | 1 °C       | ± 2 °C or 1,5 % of the reading*  | √      |
| <b>T-Air</b>  | 0 - 99 °C  | 1 °C       | ± 1 °C                           | √      |
| <b>Pressure  ΔP</b>   | ± 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

# ecom<sup>®</sup> 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)

### 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)

#### Measurable Gases



● = Base; ● = Optional EC



ACCURATE



ROBUST



SAFE



FAR-REACHING



COMPLETE



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



- 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



# 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<br>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<br>* 1.2µA  MIN                                | Measurement of flame signal and comparison with minimal value.  |
| Rest time TSA<br>3.9 sec                                   | Check if flame occurs immediately or with delays.   |
| Current error<br>Flame signal during<br>straylight check ! | Indication of current disturbance source as well as of 5 past disturbances.   |
| Start-ups counter<br>664                                   | Determination of burner starts.   |



## 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

## 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.



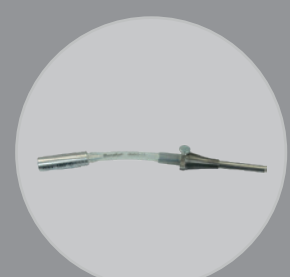
### T-Room-probe (PT 2000)

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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