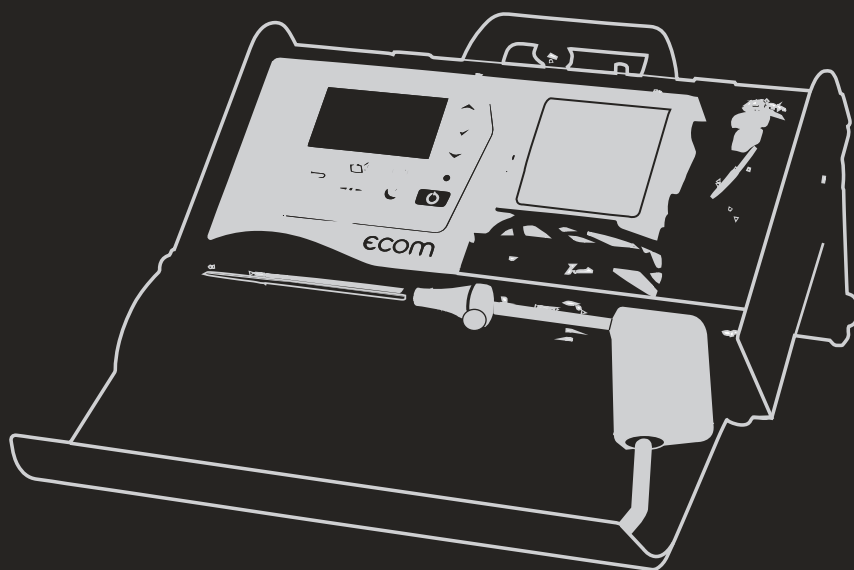


ecom

INTELLIGENT MESSEN!
MEASURE WITH INTELLIGENCE!

ecom[®] CL2

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, SO₂) 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.



EXTREMELY 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.



EXTREMELY 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.



EXTREMELY FAR-REACHING.

ecom analyzers communicate wirelessly: Via Bluetooth 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.



EXTREMELY 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.



EXTREMELY SAFE.

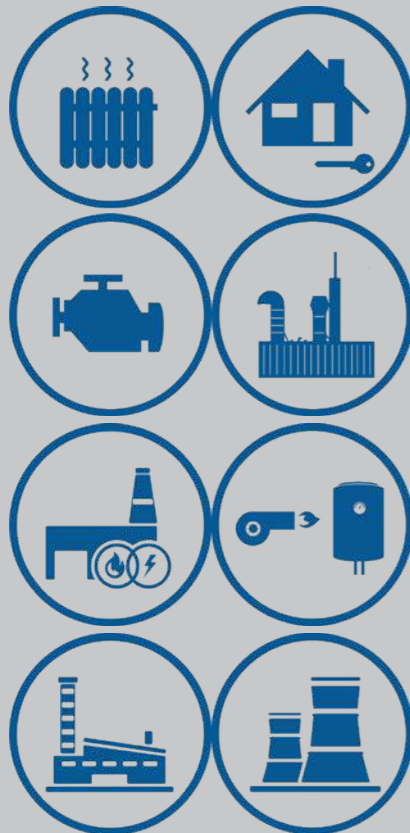
The condensation control protects from moisture. An automatic CO shut-off (flushing of the CO sensor) without interruption of the measuring process ensures the long lifespan of the CO sensor. Each ecom instrument has its own „safety equipment.“



EXTREMELY 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 the 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_x 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. NO₂ and SO₂) 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				CL2
Gas Components		Resolution	Accuracy	max. 3
O ₂	O ₂ (0 - 21 vol.%) - electrochemical	0,1 vol.%	± 0,3 vol.%	✓
CO	CO (n. H ₂ -komp. 0 -2.000 ppm) - electrochemical	1 ppm	± 20 ppm or 5 % of reading*	•
	CO (H ₂ -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 ₂ - 0 - CO ₂ max				✓
Combustion efficiency (ETA)				✓
Excess air (Lambda) - > 1				✓
Losses qA - 0 - 100 %				✓
Dew point - x °C				✓
mg/m ³ - x mg/m ³				✓
mg/KWh - x mg/KWh				✓
O ₂ -reference- x % O ₂				✓
Gas processing				
Electronic condensation monitoring				✓
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				
Thermal quick-printer, integral				✓
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)				✓

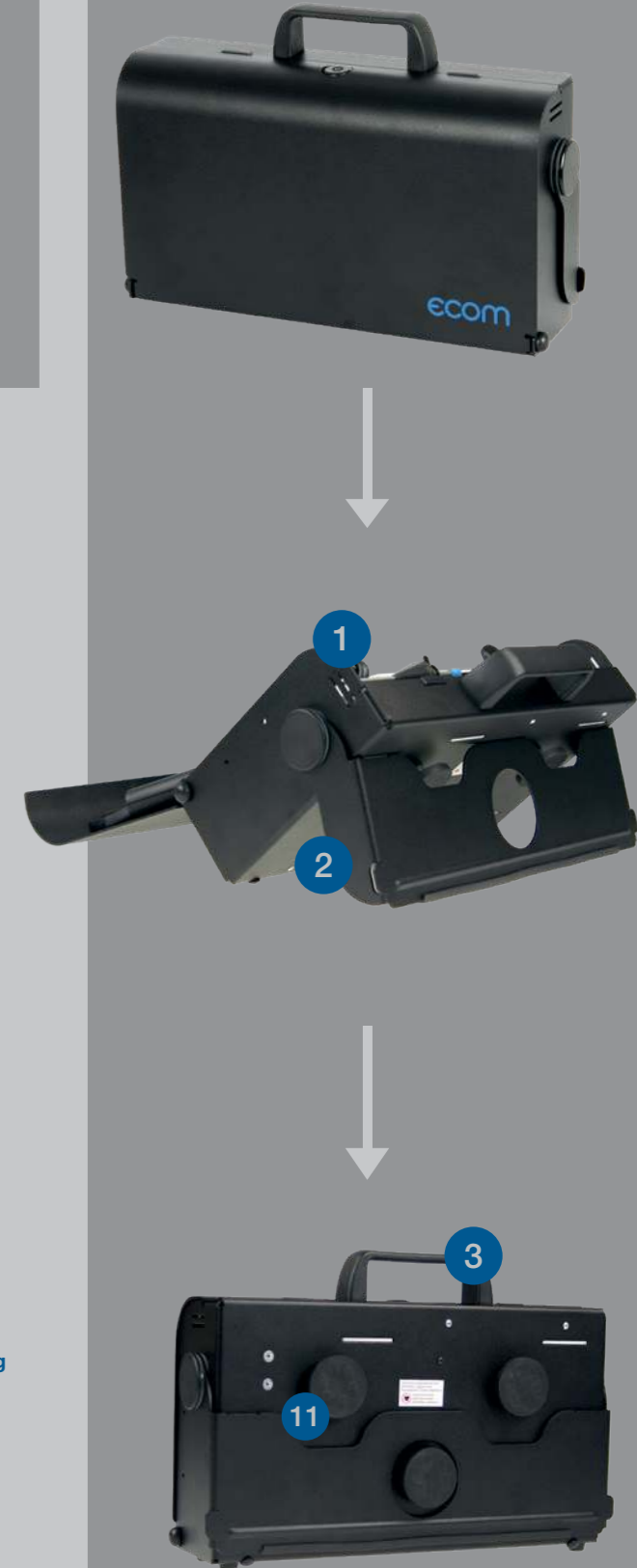
* the higher value prevails



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

ecom® CL2

FLUE GAS ANALYZER



ecom-CL2 COMPACT FLUE GAS ANALYZER

- O₂ / CO Longlife sensors
- Up to three sensors possible
- Automatic CO-shutoff and flushing (without interruption of measurement)
- Robust aluminum protective housing with stable carrying handle and shoulder carrying strap
- Operation as wall-mounted device: back magnets for mounting on all metal surfaces
- Operation as floor standing instrument: folding tilt stand
- Condensate trap with electronic condensation monitoring and fine dust filter
- Complete with sampling probe (220 mm length), with fixation cone and 3-chamber sampling tubing (2,2 m)
- T-Room sensor with cable, fixation cone and fixation magnet or alternatively T-Room stick (depending on the variant)
- Integrated thermal fast printer
- Integral LiFePo4 high performance battery with long lifecycle
- Charge of battery with closed protective housing
- Calibration certificate
- Wireless data interface (e.g. for connection to a smartphone or tablet)

ADDITIONAL OPTIONS

- NO sensor

Measurable Gases



■ = Base; ■ = Optional EC

Dimensions Closed lid (W x H x D) 340 x 230 x 95 mm
Open lid (W x H x D) 340 x 350 x 180 mm

Weight app. 3 kg (complete)

- 1 Slot for carrying strap
- 2 Folding tilt stand
- 3 Robust, ergonomic carrying handle
- 4 Fixation clips for optional probe extension
- 5 LCD-Display with backlight
- 6 Fixation clips for T-Room sensor
- 7 Thermal printer
- 8 Serial interface
- 9 Elektronic condensate trap
- 10 Sampling probe with fixation cone and 3-chamber sampling tubing
- 11 Three strong fixation magnets



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.



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, mmH₂O, psi, mmHg
- Measurement range: ± 200 hPa, ± 2038 mmH₂O, ± 2.9 psi, ± 150 mmHg
- Resolution: 0.01 hPa / 0.01 mmH₂O / 0.01 psi / 0.01 mmHg
- Accuracy: approx. 1%
- Overload: 300 hPa / 3060 mmH₂O / 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. CH₄, Response time: < 2 seconds
- Backlit bargraph
- Display approx. 20 x 7 mm
- 1-14 bars (10 bars = approx. 1000 ppm CH₄)
- 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



T-Room stick

PT 2000 resistance temperature sensor for measuring the room temperature directly on the device.



Probe prefilter

Metal filter with the smallest filter pores; ideal for preventing that solid exhaust gas components enter into the probe/ the flue gas tract.



Filter plate

Multi-level gas preparation. Consisting of condensate trap, cartridge for filter floss, Silicate gel and activated carbon.



CO multi-hole probe

For measurement of CO concentration according to KÜO.



Ring slot multi-hole probe

For measurements on concentric exhaust systems, with three easily exchangeable sealing plugs (measuring aperture from Ø 5 to 25 mm).



Contact sensor

For forerun and backrun temperature measurement with the exhaust gas measuring instrument.



T-Room probe (PT 2000)

For recording the room or intake temperature - e.g. for concentric exhaust systems.



Soot pump set

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



Probe extension

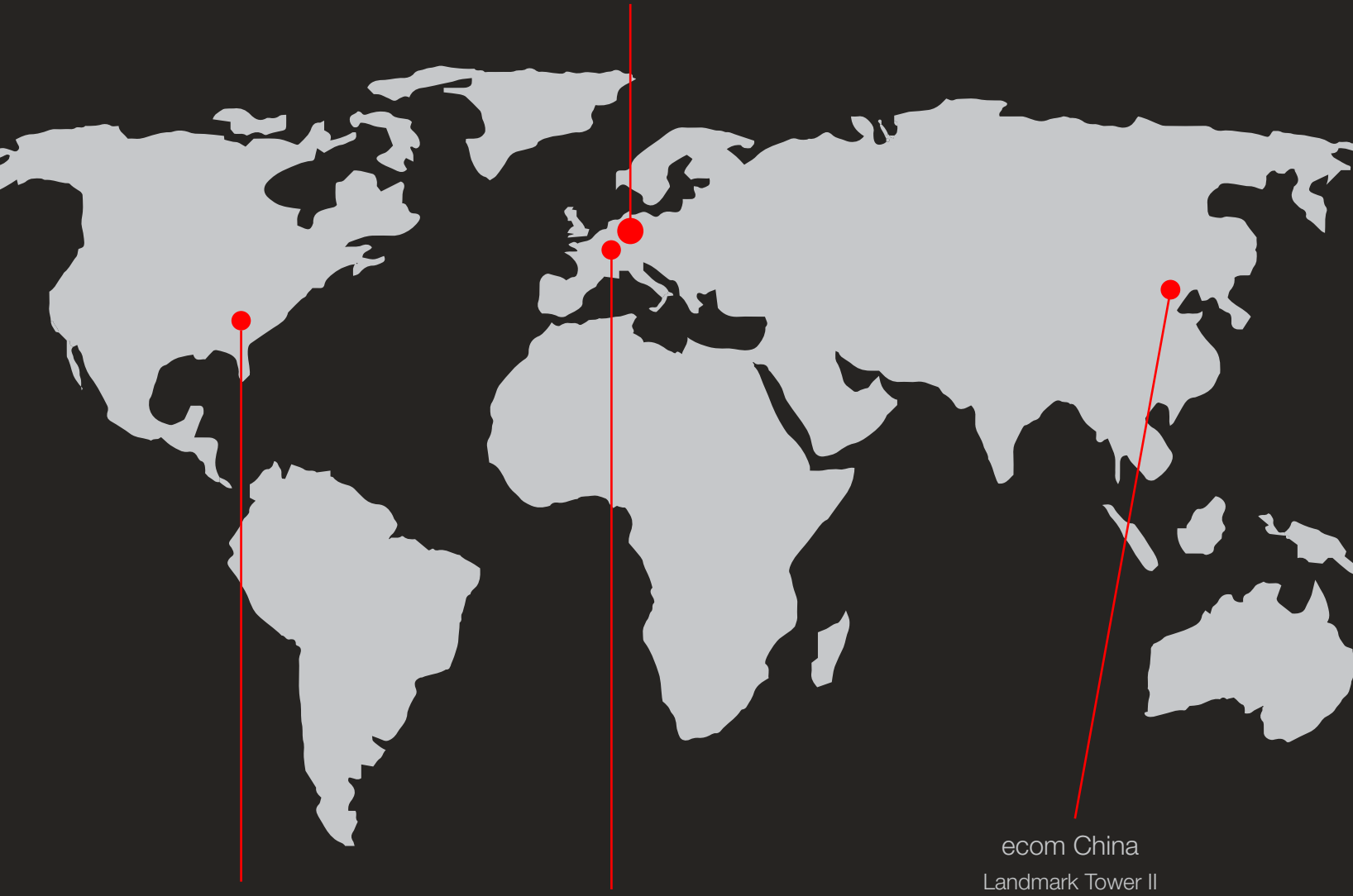
For probe type Ø 8 mm, with flexible tube center piece. Is placed on the probe seats for measurements at difficult to reach, angled measuring openings.

Other accessories on demand.

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