



100% Calibration



Super-Efficiency



Shock-Proof



Safety First



Wireless Communication



All Inclusive



Cool but Dry



Lotus Effect

## ecom-EN2 The All-rounder Flue Gas Analyzer Family

The ecom-EN2 is an all-rounder in flue gas analysis - on the one side small and compact, on the other side on the top of technology, upgradeable with many options and simply an instrument fun to work with.

### Ti Techingenium

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## ecom-EN2

### Product Features

- Up to 4 gas sensors (Longlife)
- $\pm 100$  hPa differential pressure measurement
- Integral thermal quick-printer
- Soot measurement via soot pump (option)
- Backlit display
- Electronic condensate monitoring
- Professional gas preparation by mini Peltier cooler equipment with automatic condensation evacuation (option)
- 3-chamber tubing, coaxial sampling probe
- Special tubing with Teflon sleeve e.g. for  $\text{NO}_x$  and  $\text{SO}_2$  measurements (option)
- T-Room sensor with magnet for easy fixation on metal surfaces
- Emission, temperature and draught measurement without plug connection change
- Integral module for data storage on MM card (card optional)
- Wireless Bluetooth or Wi-Fi data transfer module (option)
- ecom PC software free of charge
- Comprehensive accessory program

### Measured values

- $\text{O}_2$  (0-21%)
- CO (0-4000 ppm)
- Gas temperature (0-500°C)
- Air temperature (0-99°C)
- Pressure ( $\pm 100$  hPa)
- Differential pressure ( $\pm 100$  hPa)

### Options:

- CO extended range (0-10.000 ppm)
- CO% measurement (0-63.000 ppm)
- $\text{NO}$  measurement (0-5000 ppm)
- $\text{NO}_2$  measurement (0-1000 ppm)
- $\text{SO}_2$  measurement (0-5000 ppm)
- Differential temperature

### Calculated Values

$\text{CO}_2$ ,  $\text{CO}_{(\text{undiluted})}$ ,  $\text{NO}_x$ , losses, efficiency (0-120%), dew point, mg/kWh, mg/m<sup>3</sup>, adjustable  $\text{O}_2$  ref.

### Display

- LC display, 79 x 53 mm, 240 x 160 dots
- Graphic-capable
- Backlit for optimal reading also in the dark

### Sampling Probe

- Coaxial probe 220 mm
- 3-chamber tubing 2.6 m
- Fixation cone with teflon heat-protective part

### Measurement Gas Preparation

- Quick gas transport (measurement values available promptly)
- Condensate trap with fine dust filter
- Electronic level monitoring
- Electric Peltier cooler with automatic condensate evacuation (option)

### Operation Safety Features

- Temperature trend indication for core stream search
- CO switch off without measurement interruption by exceeding of preset limit value



**NEW:** Wireless data transfer via WiFi

- Automatic fresh air purging by CO exceeding
- Automatic fresh air purging after measurement
- Integral flow meter for optical control of pump performance
- Electronic condensate monitoring
- Longlife sensors

### Printer

- Thermal quick-printer 58 mm
- Matrix printer for long-lasting and non-fading documentation of measurement results (option)

### Data Processing

- Remote data view & saving / printer start via ecom-R (option)
- Data logging function
- Data storage on optional MM card (card optional)
- Bluetooth or Wi-Fi interface at choice (option)
- Storage and illustration of disturbance diagnosis data provided via cable connection by ecom-AK read-out head
- Data exchange with ecom PC software

### Connections

- Multifunctional interface
- USB interface for data transfer

### Power Supply

- Battery/Mains power
- Including external charger



**NEW:** ecom-R remote monitor with data storing / printing capabilities by distance

### Transport

- Aluminium-framed transport case with length-adjustable shoulder carrying strap
- Under-case for extra storage (optional)

### Dimensions / Weight

- Approx. 400 x 260 x 175 mm (L x H x W)
- Approx. 6 kg (complete)

### For the perfect measurement of $\text{NO}_x$ , $\text{SO}_2$ and other water-soluble gases:

- 100% calibration (climatic chamber)
- lotus effect (special PTFE tubing for gas transport)
- super efficiency (quick gas conveyance through performing pump)
- dry cooling (perfect gas preparation via mini Peltier cooler)



EN 50379-2 and 1st BimSchV approved

Item no.	Description
1080000	<b>ecom-EN2, super-efficient flue gas analyser with O<sub>2</sub> and CO</b> (H <sub>2</sub> -compensated) Longlife sensors. Fitted in aluminium-framed transport case, complete with sampling probe 220 mm incl. thermocouple with fixation cone, 3-chamber tubing (2.6 m), T-Room sensor with cable incl. fixing cone with magnet, integral thermal quick-printer, power supply charger, automatic CO switch off and fresh air purge (without measurement interruption) electronic condensate monitoring, consumables kit, operation manual on USB drive, calibration certificate –issued after 100% calibration into calibration chamber.PC software for data management downloadable free of charge from www.rbr.de
1080100	<b>ecom-EN2, super-efficient flue gas analyser</b> , as above but <b>with electronic Peltier cooler and automatic condensation evacuation</b>
100161	<b>NO measurement (0 - 5.000 ppm)</b>
100162	<b>NO<sub>2</sub> measurement (0 - 1.000 ppm)</b>
100163	<b>SO<sub>2</sub> measurement (0-5000 ppm)</b>
100267	<b>Special 3-chamber sampling tubing</b> , recommended for NO <sub>x</sub> and SO <sub>2</sub> measurement. Slim inner diameter – high flow speed. Length 3.5 m. Under-case recommended for storage.
100164	<b>CO% measurement (0 – 0-63.000 ppm)</b>
50102221	<b>CO enhanced ppm measurement range (0-10.000 ppm)</b>
100233	<b>Tubing for differential pressure measurement (1.5 m)</b>
56421	<b>Under-case</b> - additional storage space for soot pump, temperature sensors, gas leak detector, pressure meter, working tools, etc. – Basic height, dim. approx. 400 x 90 x 175 mm (L x H x W)
56508	<b>Under-case</b> - additional storage space for soot pump, temperature sensors, gas leak detector, pressure meter, working tools, etc. – Double height, dim. approx. 400 x 150 x 175 mm (L x H x W)
102350	<b>ecom-R</b> remote control and monitoring unit - For data view, data remote recording & printout via Bluetooth.LCD display, dim. ca. 70 x 38 mm, backlit, graphic-capable. With rear magnet for fixation on metal surfaces. Powered by 2 one-way batteries 1.5 V AA Mignon, incl. protection pouch. Dim.: approx. 145 x 80 x 45 (W x H x D). Also upgradeable on existing analysers.
102469	<b>MM card, 2 GB</b> - pre-formatted for use with ecom analysers
56532	<b>Data cable, USB</b> – for connection analyser to PC
100946	<b>Set MM card + data cable USB</b> (at price-attractive rate)
100745	<b>Bluetooth module</b> , for wireless data transfer to PC
103448	<b>Wi-Fi module</b> , for wireless data transfer to PC resp. mobile end units – more info on www.rbr.de
101769	<b>8-channel analogue output box</b> for external logging/recording units (V / mA), incl. mains power pack, cable to analyser, RS 232 cable and software (download from www.rbr.de)
10166	<b>T-Room probe</b> – Length 260 mm with 3 m cable
12019	<b>Contact sensor, room temperature (PT 2000)</b> , for differential temperature measurement. Range: -20 to 100°C; resolution: 0,1°C measurement uncertainty: ± 1°C; pipe diameter up to: 100 mm; cable length: 3 m
12021	<b>Contact sensor</b> , gas temperature (Ni/CrNi), for differential temperature measurement. Range: -20 to 100°C; resolution: 0,1°C measurement uncertainty: ± 1°C; pipe diameter up to: 100 mm; cable length: 3 m
50538	<b>Soot pump set</b> - Consisting of soot pump, soot comparison scale, tube of piston grease, socket wrench and 200 soot papers
100235	<b>Fixation for soot pump</b> – integrated in case cover
100965	<b>Universal CO multi-hole probe</b> – telescopic, 80–280 mm
100943	<b>Universal O<sub>2</sub> multi-hole probe</b> – telescopic (80-280 mm) with three easily exchangeable sealing plugs for measurement openings from ø 5 to 25 mm.
30000460	<b>Car charger cable</b> – for instrument charging via cigarette lighter
100920	<b>Dynamic pressure measurement</b> – Range: 0-50 m / sec; accuracy: ± 0.2 m/s or ± 1% of measurement value; resolution: 0.1 m/s. Data valid only by use of Prandl / Pitot tube (not included)
30004115	<b>Dynamic pressure measurement probe, length 250 mm</b> – Range: up to 3 m / sec; accuracy: ± 2.5% of measuring range final value. With tubing/cable approx. 2.5 m and fixation cone.
100930	<b>Dynamic pressure measurement probe, length 1000 mm</b> – Range: up to 3 m / sec; accuracy: ± 2.5% of measuring range final value. With tubing/cable approx. 2.5 m and fixation cone.
100814	<b>Gas washing bottle</b> for solid combustibles measurement - For pre-filtering of the dust-soiled gas, gas surface widening thru bubble formation and dilution of sensor-damaging organic compounds (mini Peltier cooler compulsory; non-suitable for NO <sub>x</sub> resp. SO <sub>2</sub> measurement)
100813	<b>Mini filtering plate</b> for ecom-EN2 consisting of water trap, filtering wool cartridge, silica beads cartridge and activated carbon cartridge. Gets hooked at instrument case (item can be stowed in under-case). Incl. connection hoses.
20011620	<b>Filtering case</b> consisting of water trap, large filtering wool cartridge, large silica beads cartridge, large activated carbon cartridge. Incl. connection hoses.

perfect NO<sub>x</sub>  
+ SO<sub>2</sub>  
measurement