





COMBUSTION GAS ANALYSER KIGAZ 210

KEY POINTS

-  Long-life O₂ sensor
-  Interchangeable CO-H₂,
NO and CH₄ sensors
-  CO sensor protection by
solenoid valve
-  Auto-zeroing in the flue

- Built-in printer
- Intuitive interface due to icons
- LED on the probe handle to light dark areas
- Single connector
- Interchangeable probe
- 2 Go memory (100 000 measurements)
- Step by step procedure menu (gas flow, inspections)

CONFORMITY AND STANDARDS

Conformity

The analyser is in compliance with the following european directives:

- 2004/108/EC
- 2006/95/EC Low voltage
- 2011/65/EU RoHS II
- 2012/19/EU WEEE

Standards

The analyser is in compliance with the EN 50379-1 and EN 50379-2 standards.



KIGAZ MOBILE Application

FEATURES OF THE INSTRUMENT

| | | | | | |
|------------------------|--|-----------------------------------|---|------------------------------------|-----------------------|
| GAS | - Autozero in the flue - CO sensor protection by solenoid valve | Flue gas CO and ambient max CO | Interchangeable sensors: long-life O ₂ and CO-H ₂ and NO and CH ₄ (optional) | Excess air Losses | Efficiency > 100% |
| PRESSURE | Differential pressure measurement | | Draft measurement | | |
| TEMPERATURE | Ambient temperature | Flue gas temperature | Delta Temperature | DHW temperature 2 thermocouples | Dew point temperature |
| OTHER FUNCTIONS | 15 programmed combustibles ¹ | Adding 5 combustibles by the user | Opacity index | | |

¹Combustibles: Sahara/Fos-sur-Mer Natural Gas, Groningen Natural Gas, Russia/North Sea Natural Gas, Propane, LPG, Butane, Light Oil, Heavy Oil, Bituminous coal, Hard coal, Coke gas, Bio fuel 5 %, Wood 20 %, Wood-chip 21 %, Pellet 8 %

MEASURING RANGE

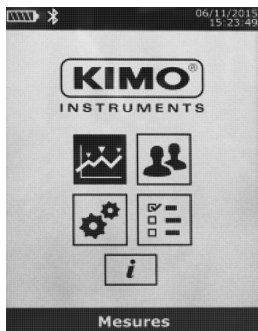
| Parameter | Sensor | Measuring range | Resolution | Accuracy* | T ₉₀ response time |
|--|--------------------------------|---|-------------------------------------|--|-------------------------------|
| Long-life O ₂ | Electro-chemical | From 0 % to 21 % | 0.1 % vol. | ±0.2 % vol. | 30 s |
| CO (with H ₂ compensation) | Electro-chemical | From 0 to 8000 ppm | 1 ppm | From 0 to 200 ppm: ±10 ppm From 201 to 2000 ppm: ±5% of measured value From 2001 to 8000 ppm: ±10% of measured value | 30 s |
| NO | Electro-chemical | From 0 to 5000 ppm | 1 ppm | From 0 to 100 ppm: ±5 ppm. From 101 to 5000 ppm: ±5% of measured value | 30 s |
| Low range NO | Electrochemical | From 0 to 500 ppm | 0.1 ppm | From 0 to 100 ppm: ±2 ppm From 101 to 500 ppm: ±2 % of the measured value | 30 s |
| NO _x | Calculated** | From 0 to 5155 ppm | 1 ppm | - | - |
| CO ₂ | Calculated** | From 0 to 99 % vol | 0.1 % vol | - | - |
| CH ₄ | Semiconductor | From 0 to 10000 ppm From 0 to 1 % Vol From 0 to 20 %LEL | 1 ppm 0.0001 % Vol 0.002 %LEL | ±20 % of full scale | 40 s |
| Flue gas temperature | K thermocouple | From -100 to +1250 °C | 0.1 °C | ±0.4 % of measured value or ±1.1 °C | 45 s |
| Ambient temperature | Internal NTC | From -20 to +120 °C | 0.1 °C | ±0.5 °C | |
| Ambient temperature | Pt100 (1/3 DIN external probe) | From -50 to +250 °C | 0.1 °C | ±0.3 % of measured value ±0.25 °C | 30 s |
| Dew point temperature | Calculated** | From 0 to +99 °Ctd | 0.1 °C | - | - |
| DHW temperature | TcK (external probe) | From -200 to +1300 °C | 0.1 °C | ±0.4 % of measured value or ±1.1 °C | - |
| Differential pressure | Piezoelectric | From -20 000 to +20 000 Pa | 1 Pa | From -20 000 to -751 Pa: ±0.5 % of measured value ±4.5 Pa From 750 to -61 Pa: ±0.9% of measured value ±1.5 Pa From -60 to 60 Pa: ±2 Pa | - |
| Draft | | From -10 to +10 Pa From -1000 to +1000 Pa | 0.1 Pa 1 Pa | From 61 to 750 Pa: ±0.9% of measured value ±1.5 Pa From 751 to 20 000 Pa: ±0.5% of measured value ±4.5 Pa | - |
| Losses | Calculated** | From 0 to 100% | 0.1% | - | - |
| Flue gas velocity | Calculated** | From 0 to 99.9 m/s | 0.1 m/s | - | - |
| Excess air (λ) | Calculated** | From 1 to 9.99 | 0.01 | - | - |
| Efficiency (η _s) | Calculated** | From 0 to 100 % | 0.1 % | - | - |
| Efficiency (η _t) (condensation) | Calculated** | From 0 to 120 % | 0.1 % | - | - |
| Opacity index | External instrument | From 0 to 9 | | - | - |

*All accuracies indicated in this document were stated in laboratory conditions and can be guaranteed for measurements carried out in the same conditions, or carried out with required compensation.

**Calculation is made based on the measured values by the analyzer.

TECHNICAL FEATURES

| | |
|---|---|
| Dimensions | Instrument: 331 x 112 x 86 mm; Flue gas: 300 mm ; Cable length: 2.50 m |
| Weight (with battery and protective cover included) | 1060 g |
| Display | LCD 120 x 160 pixels, 50 x 67 mm |
| Keypad | Elastomer keypad; 3 function keys; OK key; 4 direction arrows; ON/OFF key; Escape key |
| Material | Housing and probe: ABS; Probe cable: neoprene; Contact duct: PA 6.6 reinforced 10 % glass fiber |
| Protection | IP40 |
| Communication | Bluetooth® (optional) / USB |
| Power supply / Battery life | Li-Ion battery 6 V 1.5 A / 10 h in continuous operating Voltage of power supply: 100-240 VAC, 50/60 Hz |
| Battery charging time | 10 h |
| Operating / storage temperature | From +5 to +50 °C / From -20 to +50 °C. Altitude: from 0 to 2000 m. |



Analyser menus

| Gaz Nat. Sahara/Fos | | | |
|---------------------|-------|--------------------------|-------|
| O ₂ % | 3.4 | λ | 1.19 |
| CO ppm | 0 | η _s % | 95.5 |
| CO ₂ % | 9.8 | η _t % | 130.8 |
| Ta °C | 25.8 | Q _s | 4.5 |
| Tf °C | 120.5 | NOx(O ₂) ppm | 0 |
| Enreg. Imprim Hold | | | |

Example of analysis



DHW network temperature



Ambient CO checking

INSTRUMENT DESCRIPTION

> Overview



> Connections

External probes connection (Pt100 temperature, CH₄...)



Thermocouples connections
Top view

Flue gas connection



P- pressure plug
P+ pressure plug
Bottom view

Power supply connection
USB connection



Right side view

SUPPLIED WITH

| Model | KIGAZ 210 STD | KIGAZ 210 PRO |
|-----------------------------------|--|--|
| Supplied with | | |
| Number of interchangeable sensors | 2 (long-life O ₂ and CO-H ₂) | 3 (long-life O ₂ , CO-H ₂ and NO) |
| Scalable | Yes: NO or CH ₄ | Yes: CH ₄ |
| Calibration certificate | Yes | Yes |
| Transport bag | Yes | Yes |
| Flue gas probe and its water trap | Yes | Yes |
| Magnetic protective cover | Yes | Yes |
| Differential pressure kit | Yes | Yes |
| LIGAZ-2 software | Yes | Yes |



Transport case



LIGAZ-2 software

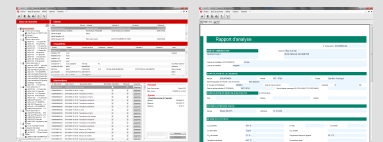
SOFTWARE



The analysers are supplied with the LIGAZ-2 software

The LIGAZ-2 software allows:

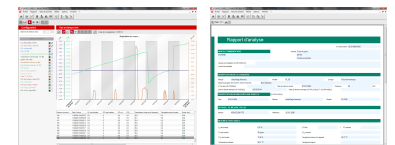
- Database creation (customers, boilers, inspections)
- Inspections downloading and printing
- Synchronisation instrument/PC (customers, boilers, inspections)
- Analyser configuration.



ACCESSORIES*



LOGAZ-2: Software allowing database creation (customers, boilers and inspections), inspections downloading and printing, customisable procedure reports creation, inspection planning, on-site service contracts management (operator planning, customer care) and real-time measurements visualisation and recording.



- **SCOT:** Ambient CO probe



- **SCO2T:** Ambient CO₂ probe



- **SPA 150SP:** Ambient Pt100 probe



- **SKCL 150:** Thermocouple probe



- **SCI:** Ionisation current measurement probe



- **PS-180:** Flue gas with interchangeable contact duct, 180 mm length, use up to 500 °C

- **PS-300:** Flue gas with interchangeable contact duct, 300 mm length

- **PS-750:** Flue gas with interchangeable contact duct in INCONEL, 750 mm length

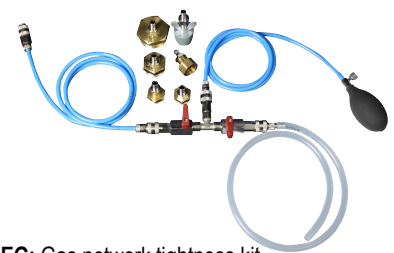
- **PS-1000:** Flue gas with interchangeable contact duct in INCONEL, 1000 mm length



- **SDFG:** Gas leak detection probe (CH₄)



- **PMO:** Opacity pump
Supplied with 50 filters and a reference table



- **KEG:** Gas network tightness kit



Data download and instrument configuration by PC.

Connection to the KIGAZ MOBILE application:

- Graphic visualisation
- Saving
- Exportation under CSV, XML, PDF format
- Reports sending by e-mail



KIGAZ MOBILE application for smartphones and tablets



*See the technical datasheet of accessories for KIGAZ for more details.

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