Online NDIR Flue Gas Analyzer

Type: GASBOARD 3000PLUS

A maximum of 4 gas components
(of NO, SO2, CO, CO2 and O2)
can be measured simultaneously and continuously.

Measurement of 4 components with one unit

Simultaneous and continuous measurement of the concentration of up to 4 gas components.
Excellent prolonged stability.
Compact size and simple operation.
Virtually unaffected by the interference of moisture.

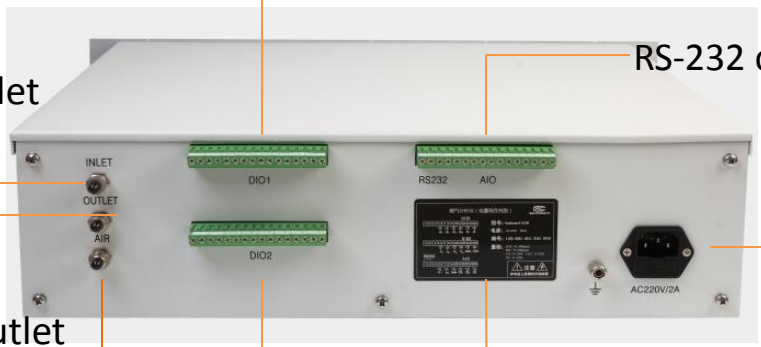
Compact enclose packed with abundant functions

<Front view>

Simple key operation

Enter key
Used to confirm the selected items and numeric values.
Up/down key
Used to switch the items to be selected.
Escape key
Used to return to the previous screen or abort setting midway.

<Rear view>



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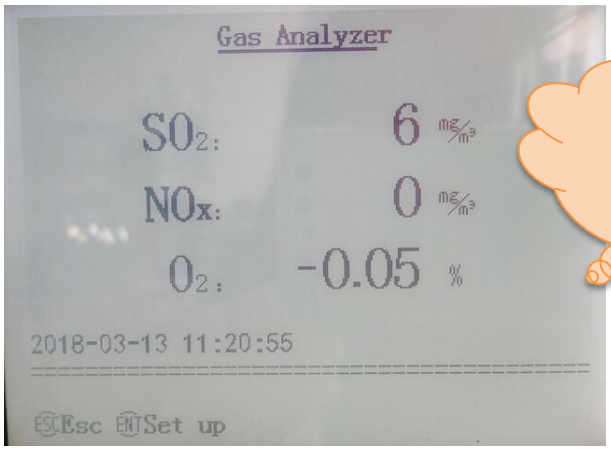
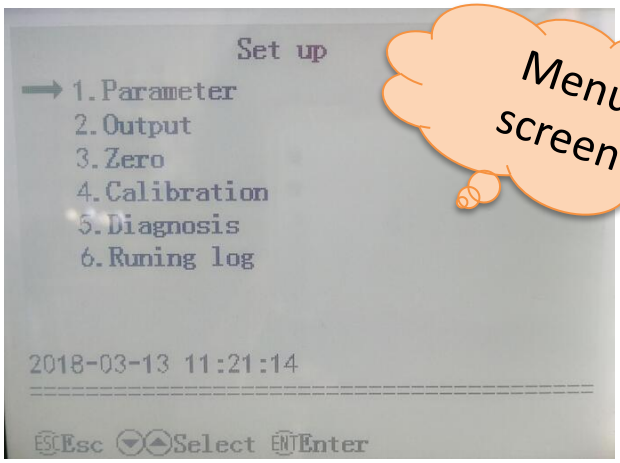
Easy-view large LCD

- **Instruction in English facilitates operation**

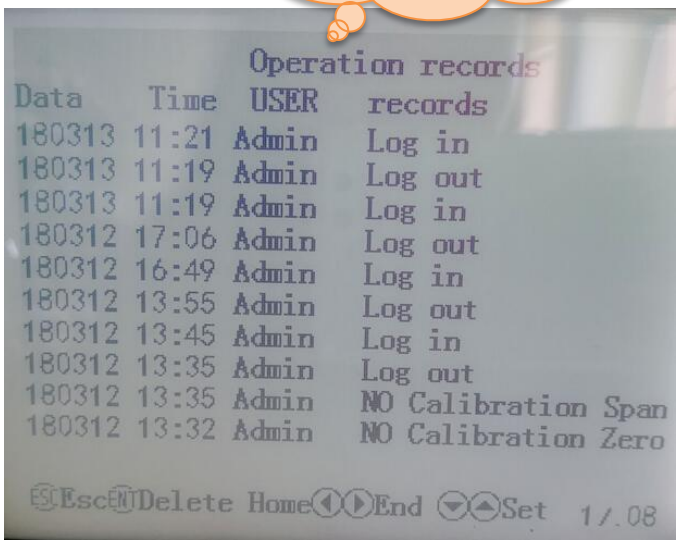


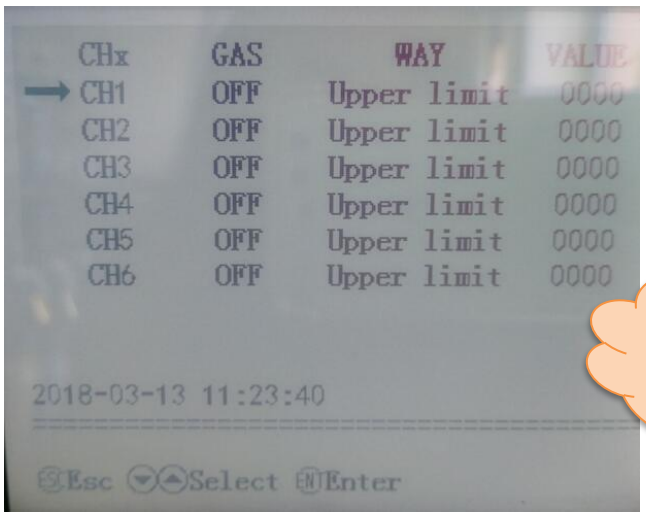
Components display



Menu screen

Operation record

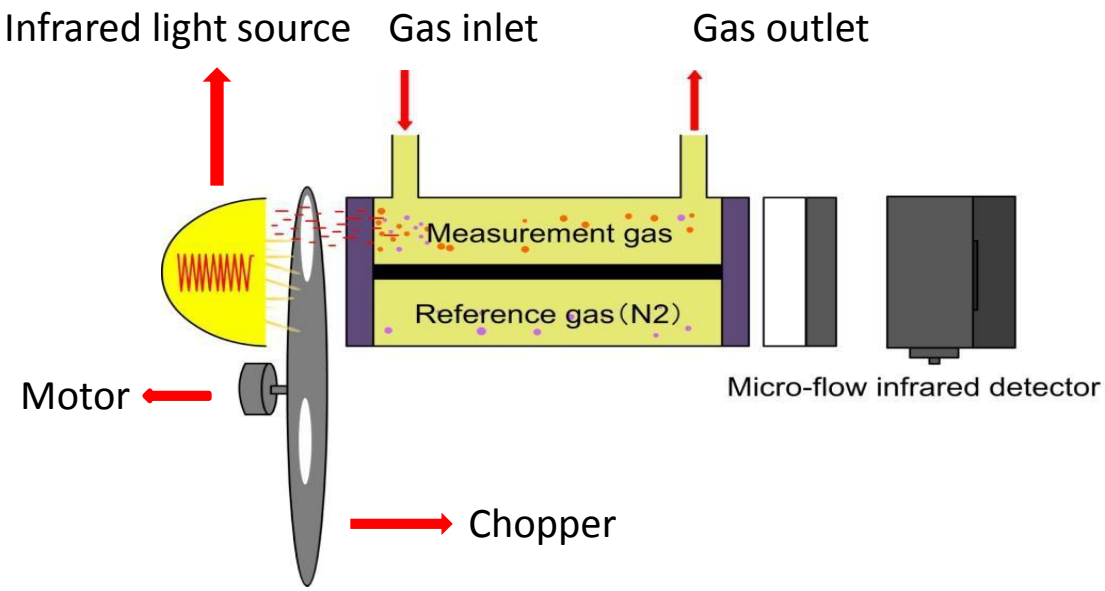




Alarm setting

Adoption of our unique dual-beam infrared sensor

Principle



It adopts dual beams gas cell structure , one of the gas cell is injected measurement gas, another one gas cell is filled with reference gas, then micro-flow infrared sensor output the signal change , comparison between measured gas variation and reference gas signal to get the precise measurement result.

It is almost unaffected by the influence of the external environment like temperature fluctuations, voltage fluctuations, at the same time, it ensure excellent prolonged stability, easy maintenance, and high-precision measurement within 2%FS.

Gasboard 3000PLUS is a good tool for monitoring flue gas lower range.

Why is GASBOARD 3000PLUS

- Technical Benefit

■ Adopting the dual beams infrared sensor structure

It adopts dual beams gas cell structure , one of the gas cell is injected measurement gas, another one gas cell is filled with reference gas, then micro-flow infrared sensor output the signal change , comparison between measured gas variation and reference gas signal to get the precise measurement result.

It affects by smaller interference, at the same time, it ensure excellent prolonged stability, easy maintenance, and high-precision measurement within 2%FS.

■ Micro-flow sensor built-in water compensation adjustment device to eliminate the impact of water vapor on measurement results, especially for SO2, NO.

Because the traditional dual-beam infrared gas sensor technology is affected by the bandwidth of the filter, the infrared absorption peaks have overlap among SO2, NO and water vapor, which has serious cross interference. As the experiment shows that the effect of 4℃ flue gas saturated water vapor on the SO2 and NO measurements are as high as 50-100ppm.

Gasboard-3000Plus built-in special water compensation device. According to the testing and verification, the maximum impact of saturated air on SO2 and NO at room temperature is only 5-8ppm. So it can make sure the measurement accuracy.

■ Eliminating the effects of environmental temperature.

The change of environmental temperature is inevitable, and in order to ensure the stability of infrared flue gas analyzer, temperature correction is usually used to solve the influence of environmental temperature change on instrument measurement results, but only for small air convection and constant environment.

Gasboard 3000PLUS adopts temperature correction and sensor integrated thermostat (built-in thermostat device) to better solve the effects of environmental temperature.

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GASBOARD 3000PLUS Application

- Industrial production process monitoring.
- Industrial combustion efficiency monitoring.
- Desulfurization process monitoring.
- Denitration process monitoring.
- Industrial furnaces.
- Cement plant.
- Industrial coal-fired boiler.
- Monitoring of process control functions.
- Atmosphere monitoring during heat treatment of steel.
- Incinerators.
- CEMS integrator.

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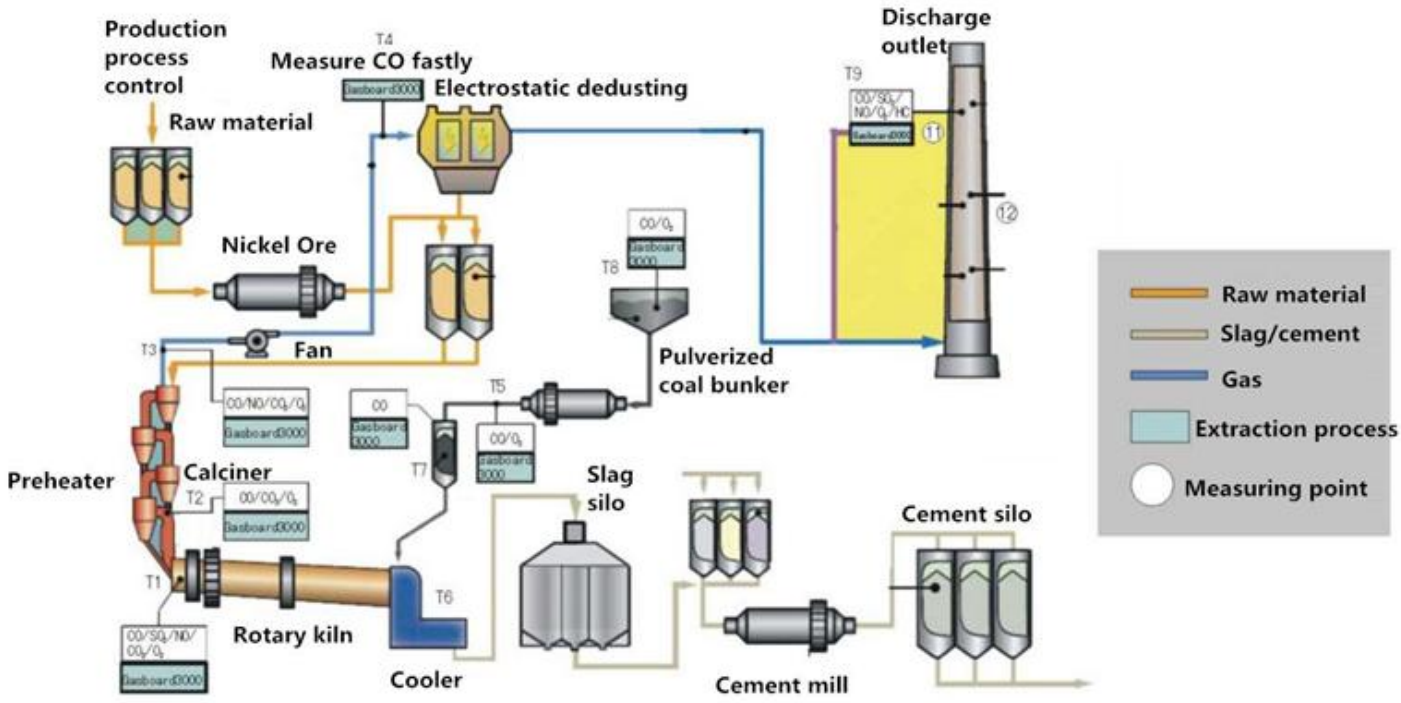
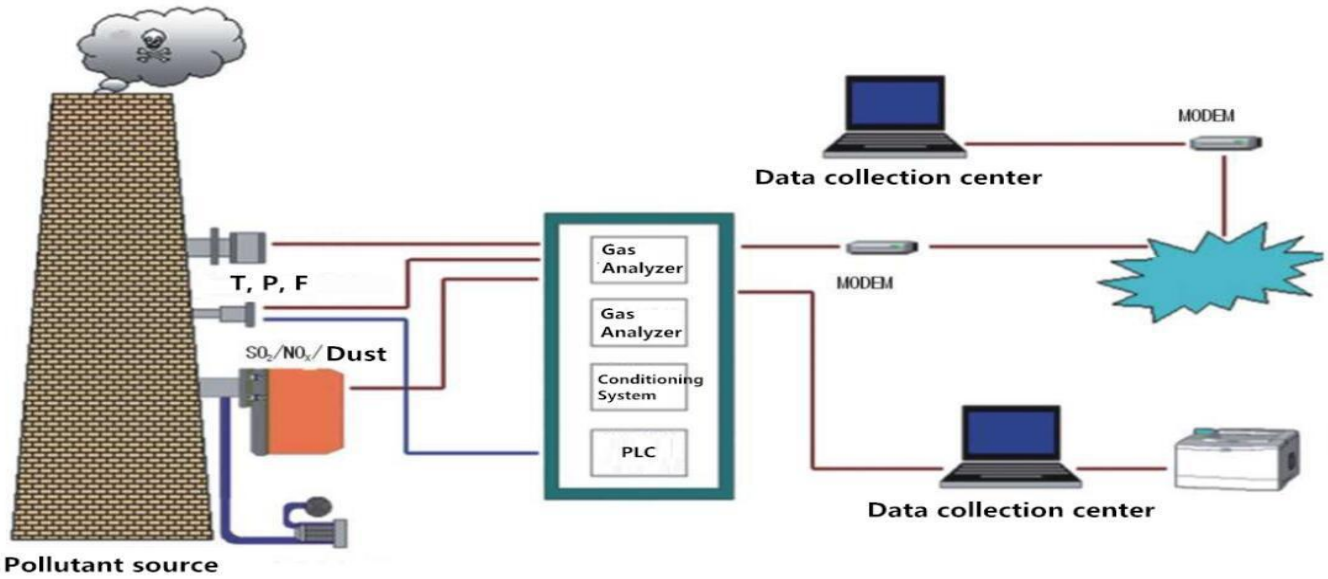
Examples of Application

Example of measurement of exhaust gas from a cement (NO, SO2, CO, CO2, and O2 measurement).



Example of measurement of exhaust gas from a boiler or refuse incinerator (NO, SO2, CO, CO2, and O2 measurement). – CEMS integration



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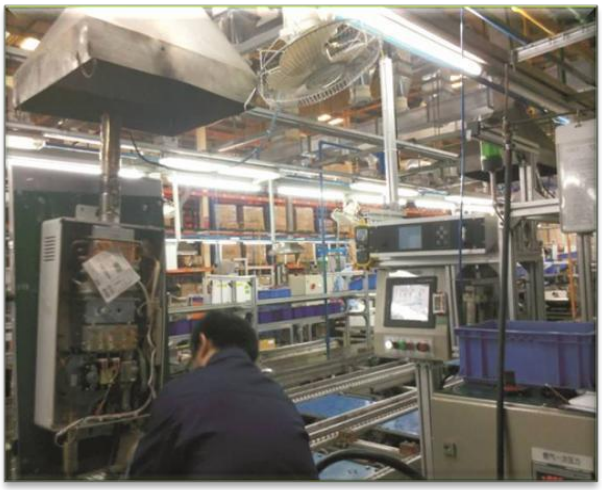
Project Reference



GASBOARD 3000PLUS Features

■ Standard 19’’ 3U industrial enclosure design, easily to be integrated into different kind of gas monitoring systems.

■ With LCD display to indicate all data index and tactile keypad easy for operation.

■ Integrated RS232 or RS485 (optional) digital output and 4-20mA analog output, easy to be acquired by project center controlling system and satisfy the continuous monitoring demand.

■ Equipped with sample gas flow meter and needle valve to regulate the inlet gas flow and internal gas filter to protect the gas sensor from impurities.

■ With constant temperature enclosure for NDIR sensors to avoid influence by temperature fluctuation and improve the measurement accuracy.

■ Auto-zeroing function with built-in auto-zero pump, efficiently decrease the calibration frequency.

■ Easy maintenance because of single-beam sensor the measurement unit is simple with no need for optical adjustment.

■ The software has many function, such as automatic zeroing, self-diagnosis, alarm setting and so on.

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GASBOARD 3000PLUS Major specification

Measurement principle	SO2, NO, CO, CO2: Dual -beam NDIR		
	O2: Electrochemical		
Measurable component and range	Measured components	Minimum range	Maximum range
	SO2	0-200ppm	0-500ppm
	NO	0-200ppm	0-500ppm
	CO	0-300ppm	0-500ppm
	CO2	0-5%	0-25%
	O2	0-5%	0-25%
Measurement range can be customized.			
Accuracy	SO2,NO,CO,CO2 : 2%FS		
	O2: 3%FS		
Repeatability	1%FS		
Response time (T90)	15s (90% response from gas inlet)		
Sample gas flowmeter	Built-in		
Ambient temperature	−5℃ to 45℃		
Relative humidity	≤ 95% non condensing		
Structure	Structure Indoor type with steel case		
Mounting method	19” rack mount, panel mount, desktop		
Power supply	110 to 220 VAC, 50/60 Hz		
Dimension	485*457*132 mm (L*W*H)		
Mass	Approximately 18kgs		
Measured gas condition			
Flow rate	0.7-1.2L/min		
Temperature	0-50℃		
Pressure	2-50kPa		
Dust	Particle size: 1μm or smaller		

Who We Are ……

Hubei Cubic-Ruiyi Instrument Co., Ltd. was established in2003, is a research and development, manufacturing and marketing high-tech enterprise in one. We are specialized in development, production and sales of various kinds of flue gas analyzers, syngas analyzers, biogas analyzers, automobile emission gas analyzers, ultrasonic gas flowmeters and total solutions. We offer comprehensive support package to all customers for all of our products.

Cubic-Ruiyi keep developing on performance upgrading, technology improving, to make biogas monitoring more innovative and user-friendly. Our aim is make every effort to promote renewable energy and environment protection development.

Cubic-Ruiyi Is a subsidiary company of Wuhan Cubic (www.gassensor.com.cn).

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