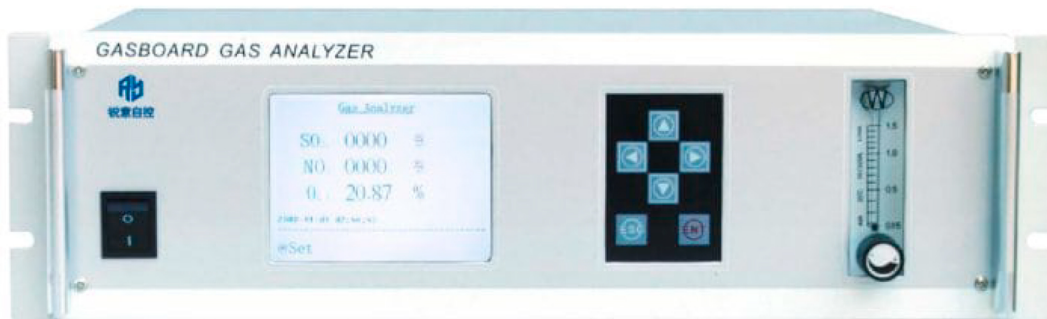


Online Infrared Flue Gas Analyzer

Gasboard 3000

O_2 CO CO_2 SO_2 NO NO_x



Measurement Methods

- **Proprietary Infrared NDIR Detectors**
 - Micro-flow in ppm range: CO, NO, SO₂
 - Dual beam in % volume ranges: CO₂
- **Electrochemical Detector** for O₂ % range (optional paramagnetic sensor)
- **Catalytic Converter** for NO_x in ppm range (NO₂ to NO conversion)

Applications

- ❑ Boiler, furnace exhaust emission gas and combustion efficiency monitoring.
- ❑ Cement production line process and security monitoring.
- ❑ Continuous Emission Monitoring System (CEMS).

General Features

- Adopting micro-flow NDIR gas sensor technology.
- Gaseous water had no effect on SO₂ and NO reading value.
- Sampling flow rate fluctuations had no effect on the measurement results.
- Accurate measurement of low concentration gas.
- Built-in zeroing pump.
- RS232 and 4-20mA output.
- Large LCD display (320 * 240).
- Keyboard interface for set-up and calibration.
- Flow meter with needle valve for gas flow regulation.



Measurement Range and Accuracy

Gas	Min Range	Max Range	Resolution	Full Scale Accuracy	T90(sec)
NDIR micro-flow detector					
NO	0-500PPM	0-5000PPM	1PPM	± 2%	< 10
CO	0-500PPM	0-5000PPM	1PPM	± 2%	< 10
SO2	0-500PPM	0-5000PPM	1PPM	± 2%	< 10
CO2	0-5%	0-100%	0.01%	± 2%	< 10
Paramagnetic detector(optional)					
O2	0-1%	0-100%	0.01%	± 2%	< 12
Industrial electrochemical sensor					
O2	0-5%	0-100%	0.01%	± 3%	< 15

Flue gas analyzer Gasboard 3000 for fast delivery



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Technical Specifications

Enclosure

Dimension	19" - 3U rack enclosure : 485*457*132 mm
Weight	Depending on gas configuration : about 12 Kg
Power supply	220VAC/50Hz or 115VAC/60Hz
Display	LCD 320*240 display

I/O

Analogue	4-20mA linear output signal per measuring channel
Communication	RS232 for real time data download (.txt files) to an external PC (software is part of the delivery)
Digital	3 common relays for default, low and high gas alarms
Gas Alarms	2 gas alarms (low and high) per channel, configurable by software
Configuration and calibration	By software, via key path interface on the front panel

Gas sampling

Pump	External pump is recommended for maintenance and accessibility reasons
Nominal gas flow	0.7 to 1.2L/minute (internal flow regulator 100 ml/min for paramagnetic detector)
Inlet gas temperature	min. 5° C below the lowest gas dew point
Inlet/outlet gas pressure	Atmospheric pressure +/- 10%
Quality	Gas must be dry, free of oil traces and dust particles <1µm

Operating conditions

Temperature operation range	0-50° C
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Relative Humidity	<=95% RH
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Ambient pressure	86-108 kPa
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Response time T90	< 10s (NDIR-TCD) <12s (PMG) < 15s Electrochemical O2
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Warm-up time	30 minutes (NDIR) for full performances < 1h (PMG) for full performances
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Calibration	5 points factory calibration per measuring channel, stored in the memory 2 points (zero and span) user calibration
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Typical Applications

1. Processing monitoring in metallurgy

Places	Use	Range
Entry of coal milling	Safety monitoring	O2: 0-25%
Outlet of coal milling		O2: 0-25%
Outlet of bag dust collector		CO:0-2000ppm O2: 0-25%
Pulverized coal bunker		CO: 0-2000ppm

2. Gas monitoring in cement

Places	Use	Range
Kiln feed end chamber	Efficient controlling Emission reducing	O2: 0-25% CO: 0-3000ppm NO:0-3000ppm
Decomposition furnace outlet		
Preheater outlet	Efficient controlling Emission reducing	O2: 0-25% CO: 0-3000ppm NO:0-3000ppm
High temperature fan outlet		
Kiln outlet dust collecting chamber inlet and outlet	Safety monitoring	CO: 0-2000ppm
Coal mining dust collecting chamber inlet and outlet		CO: 0-2000ppm
Pulverized coal bunker		CO: 0-2000ppm

3. CEMS

Places	Use	Range
Stack	Environmental monitoring	SO2:0-2000ppm NO:0-2000ppm O2:0-25% and CO:0-5000ppm CO2:0-25%



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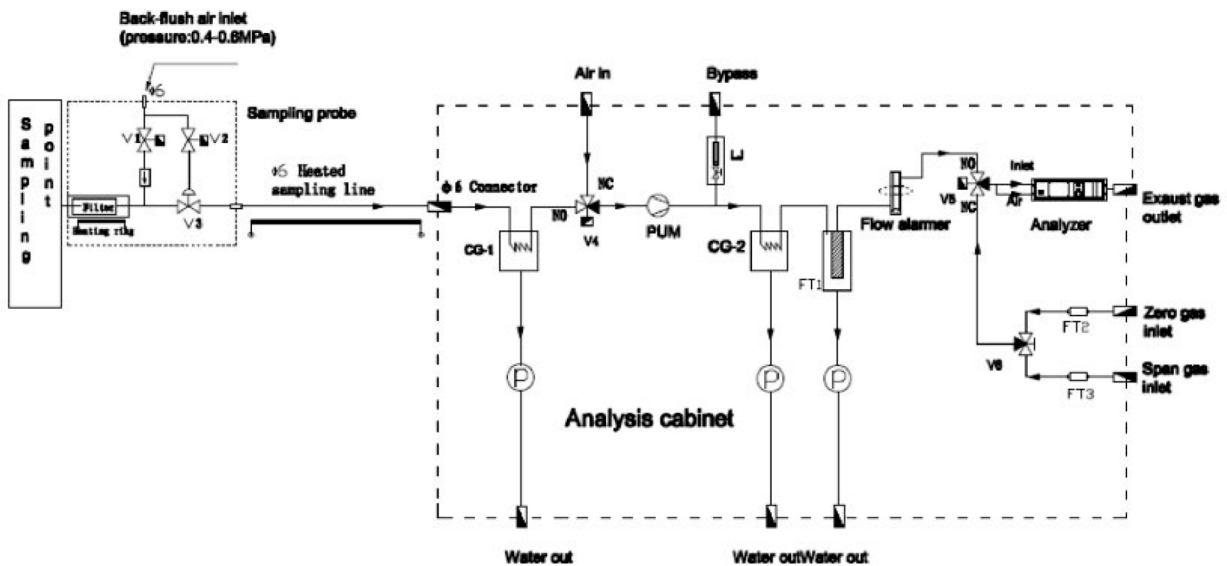
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Online flue gas monitoring system

Gas route diagram



Installation

