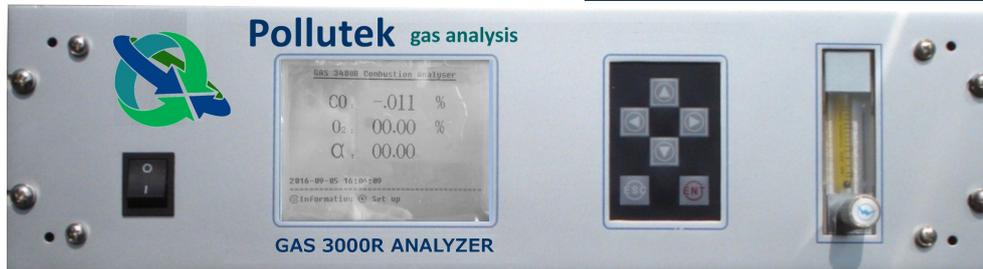


GAS 3400R Series Analyser For Combustion efficiency Control



CO% NDIR + CO₂% NDIR + O₂% + Excess Air (α)



Series **GAS 3400R online analysers** are specific analysers for the control of the combustion efficiency and the optimal adjustment of the air/flue gas ratio to enhance the combustion efficiency of industrial heating appliances, burners, etc...

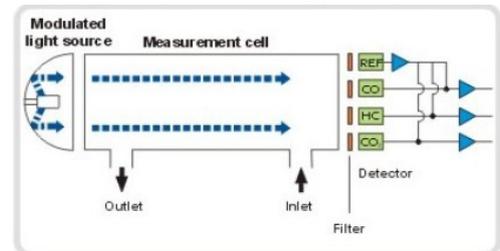
Depending on the requested configuration, they can integrate up to **2 infrared dual beam detectors** for the measurement of CO and CO₂ in %vol and **one galvanic fuel cell (ECD) or one paramagnetic detector (PMG)** for the measurement of oxygen.

Versions with 2 or 3 detectors also calculate and display in real time the Excess Air value (α).

Key features

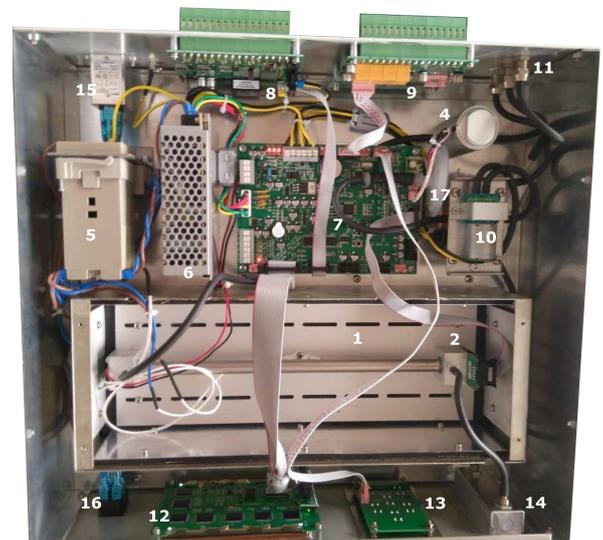
- 1, 2 or 3 gases + Excess Air calculation
- Real time, repeatable and reliable combustion gas measurements
- CO measurement by NDIR technology to cancel the poisoning and overload risks typical to electrochemical sensors.
- Real CO₂ measurement by NDIR technology for the highest accuracy independently of the used fuel type (single or mixtures)
- Long life Industrial O₂ galvanic fuel cell without interferences
- Temperature regulated enclosure for NDIR detectors
- Large LCD display and easy to use tactile keyboard interface
- 4-20mA & relays outputs
- RS232 COM port

Dual beam NDIR technology for CO and CO₂



Internal view

1. Heated enclosure for NDIR detectors
2. Dual beam NDIR CO detector
3. Dual beam NDIR CO₂ detector
4. O₂ galvanic fuel cell (PMG in option)
5. Temperature controller for NDIR
6. Power supply
7. Main Print board
8. RS232/ 4-20mA outputs board
9. Relay outputs board
10. Zero air pump
11. Gas IN/OUT and Air IN connectors
12. Print board LCD display
13. Print board tactile keyboard
14. Flowmeter
15. 220 VAC plug PC type
16. ON/OFF switch
17. 0.2 μ PTFE inline filter on gas inlet



Paramagnetic detector 0-25% vol



Gas analysis solutions

Pollutek gas analysis also supplies industrial gas analysis cabinets for combustion monitoring applications on one or multiple measuring points, including gas sampling, conditioning and controls equipment, communication with a remote client's supervision system or our SCADA supervision software for PC.



Heated gas sampling line

Industrial stack-mount gas sampling unit

with heated filter and optional filter blow-back function



Technical specifications

Model	Configuration	Sensing technology	Min/Max range	Resolution
GAS 3410R	CO%	NDIR (dual beam)	CO : 0-2% / 0-30%	0.01%
GAS 3411R	O ₂ %	PMG (paramagnetic)	O ₂ : 0-25%	
GAS 3421R	CO% + O ₂ + Excess air	NDIR + PMG		
GAS 3420R	CO% + O ₂ + Excess air	NDIR + ECD (galvanic fuel cell)		
GAS 3430R	CO% + CO ₂ % + O ₂ + Excess air	2 NDIR +PMG	CO ₂ : 0-5% / 0-30%	
GAS 3430R	CO% NDIR + CO ₂ % NDIR + O ₂ ECD + Excess air	2 NDIR + ECD		

No poisoning and overload risk of the CO detector

The NDIR CO detector cannot be poisoned or damaged by overload of CO gas.

Real CO₂ measured value

No air flushing circuit is needed to purge the sensor in case of CO gas overload as it is usually the case with combustion analysers implementing CO electrochemical sensor.

No interferences on O₂ measurement

The NDIR CO₂ detector provides real time, reliable and accurate CO₂ measurements whatever the type of fuel is used. We don't rely on CO₂max theoretical numbers.

No effect of ambient temperature variations

Both the galvanic fuel cell and the paramagnetic detector for oxygen measurement are not interfered by other background gases present in combustion fumes, even in high concentrations and long exposure time.

Display

NDIR detectors are integrated in an heated enclosure with auto-regulation at 50°C to provide higher stability and prevent the remaining water vapour after gas cooling from condensing.

Precision

LCD (320 x 240), 4 digits, in ppm or % vol

Repeatability

≤ ±2% of Full Scale

Zero Drift

≤ ±1% of Full Scale

Warm up time

< ±1% of Full Scale/day

Auto zero function

800 seconds (30 minutes for full specifications of before performing an user calibration)

(with air pump & solenoid valve)

Auto-zeroing on ambient air during the last 100 seconds of the warm-up time

Response time (T₉₀)

Note : PMG detector is excluded from the auto-zeroing

Gas sampling

Manual or programmable zeroing function on ambient air or N₂ (PMG) via setting menu

Calibration

Note : 4-20mA outputs are frozen during the zeroing cycle + 120 sec.

≤ 15 s

Sample Gas Conditions

With external pump (Internal pump available in option)

5 points factory calibration stored in the microprocessor of the gas analyzer

2 points (zero and span) user calibration

Flow rate Nominal 1L/min (0.7 to 1.2 L/min)

Inlet pressure 20 to 50 mbar, to be kept constant

Outlet pressure Atmospheric pressure

Temperature Max. 50°C

Quality Clean and dry gas (no dust, water vapor and oil traces)

Operation conditions

T_{AMB} 0 to 50°C

P_{AMB} 86 to 108kPa (860 to 1080 mbar)

R_H ≤ 95%

Communication interface

RS232/485 with proprietary communication protocol

Analogue output signals

4-20 mA signal per gas channel and for Excess air calculation

Digital output signals

2 gas alarm contacts per gas channel (freely adjustable level)

Mechanical

19" - 3U rack or desk type

Dimensions/weight L485 x W457 x H 132 mm - Weight : < 12kg

Power supply

220 ±44 VAC - 50Hz ± 1 Hz (Power cable delivered)

Options

Internal gas sampling pump operated by keyboard or external power contact

Real time data transfer software / RS232cable / RS232-USB cable adapter

Non contractual pictures and specifications - subject to change without prior notification - Issue EN17v0



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