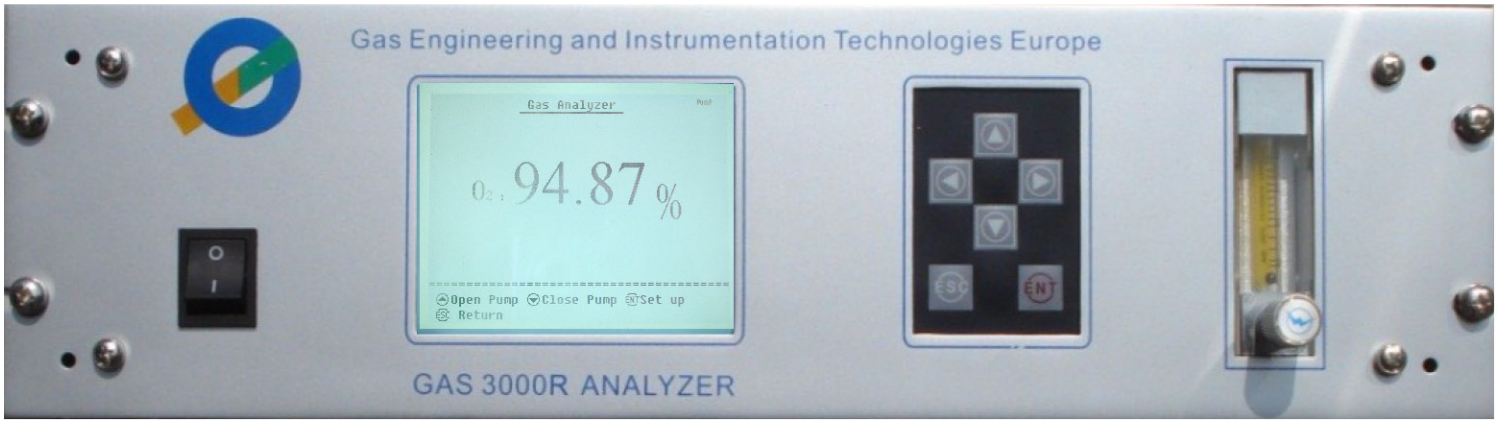
GAS 3070 R Oxygen Paramagnetic analyser



Technical specifications		
Gas measure	O_2	
Measuring principle	Paramagnetic (partial pressure measurement with rotatable glass dumbbell)	
Standard gas Ranges	0-1% / 0-5% / 0-25% / 0-100% vol O_2 (SERVOMEX detector integrated in heated enclosure) 95-100% vol O_2 for pressurized applications (heated MBE detector version)	
Display	LCD (320 x 240), 4 digits, in % vol	
Standard display resolution	00.01%	
Low detection level	0.01% vol O_2	
Repeatability	≤ ± 0.5 % of full scale	
Zero and Span Drift	≤ ± 1% of Full Scale/week Auto-zeroing cycle programmable by software (internal air pump) Note : 4-20mA output is frozen during automatic zeroing cycle + 120 sec.	
Temperature drift	Ambient temperature variation has negligible drift effect on the paramagnetic detectors because both detectors are heated at 50°C (internal detector heating for MBE and integration of SERVOMEX detector in an enclosure with temperature regulation at +50°C)	
Ambient pressure effect	A back pressure regulator is used to avoid measuring accuracy reduction due to Pamb variations	
Response time (T_D + T_{90})	< 10 s (gas flow dependent)	
Warm up time	600 seconds	
Calibration	5 points factory calibration stored in the microprocessor of the gas analyzer 2 points (zero and span) user calibration	
Sample Gas Conditions	Flow rate	Nominal 100 ml/min, regulation by internal flow/pressure regulator Internal gas sampling pump with by-pass circuit available in option
	Inlet pressure	2kPa to 50kPa (20 to 500 mbar rel)
	Outlet pressure	Atmospheric pressure, with back pressure regulator
	Temperature	Max. 50°C
	Quality	Free of 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 with real time data transfer to external PC (software included)	
Analogue output signals	4-20 mA signal per measuring channel	
Digital output signals	2 gas alarm contacts per measuring channel (freely adjustable level)	
Mechanical	19''- 3U rack or desk type	
	Dimensions/weight	L485 x W457 x H 132 mm - Weight : < 10kg
Power supply	220 ±44 VAC - 50Hz ± 1 Hz	
Standard accessories	Power supply cable Real time data transfer software	
Optional accessory	RS232 cable with 1xDB9 connector	

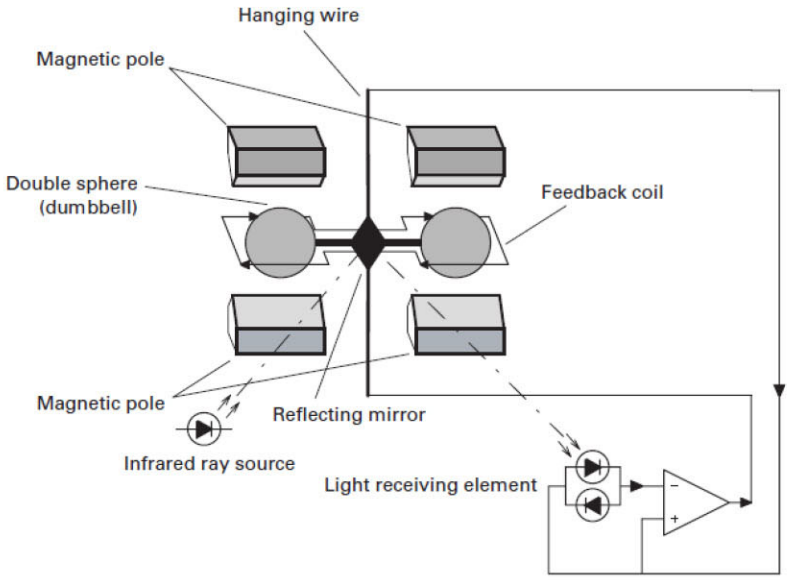
Non contractual pictures and specifications - subject to change without prior notification - Issue -EN15v0

Gas Detection and Analysis
Industrial Processes Gas Monitoring
Landfill & Environmental Gas Monitoring

GEIT
Gas Engineering and Instrumentation Technologies Europe

G.E.I.T. EUROPE, 3380 Bunsbeek, Belgium, Phone: +32 472 666 465 - Email: sales@geiteurope.com - www.geiteurope.com

Principle of measurement

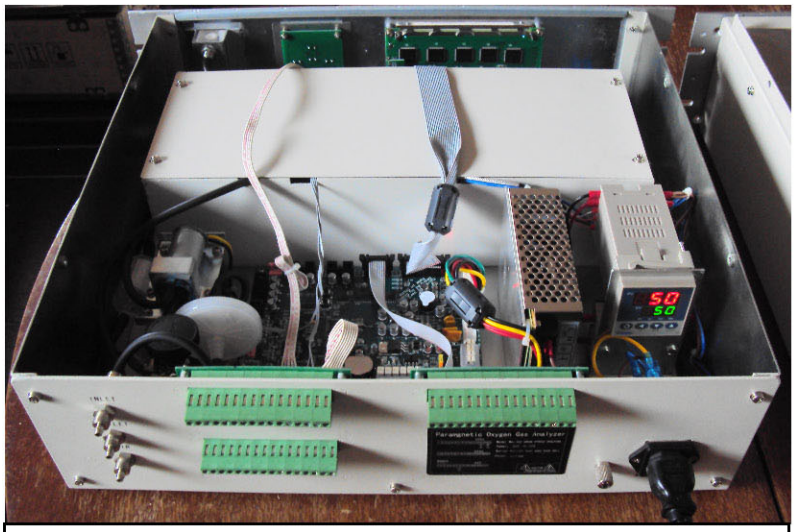


Paramagnetic detector is based on a partial pressure measurement with rotatable glass dumbbell. Oxygen is attracted into a strong magnetic field. Most other gases are not.

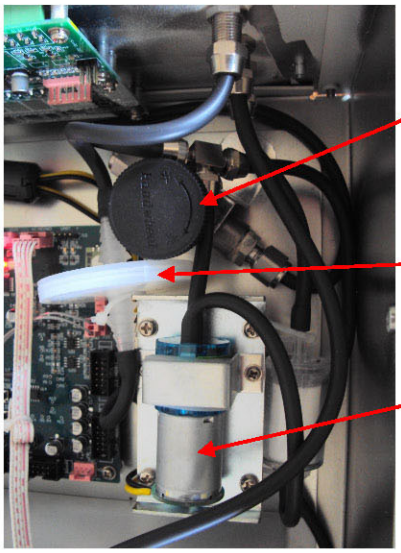
Two nitrogen filled glass spheres are mounted on a rotating suspension within a magnetic field. In absence of oxygen both spheres are kept in balance in an inhomogeneous magnetic field. When oxygen molecules flow there, the molecules are pulled toward the stronger magnetic field zone and the spheres are moved away from the zone. The resulting deviation of the spheres is detected with the light source, reflecting mirror and light receiving element, and a current is flowed through the feedback loop to control so that the spheres can return to the initial balanced state.

The current flowing through the feedback loop is proportional to the oxygen concentration within the gas mixture. Oxygen concentration is thus converted into an electric signal.

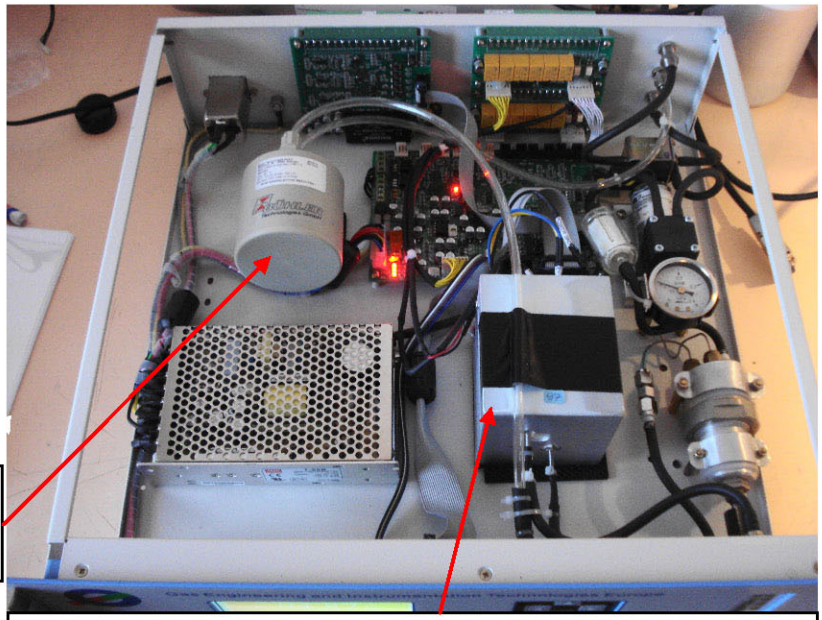
Internal view and components



Internal view of GAS 3070 R $PMGO_2$ with SERVOMEX detector integrated in a temperature controlled enclosure



Servomex paramagnetic detector



Internal view of paramagnetic Analyser
for range 95-100% with heated MBE PMG detector