



## AGA1010/AGA1010d Paramagnetic Oxygen Analyzer



AGA1010



AGA1010d

The AGA1010 series paramagnetic gas analyzer is based on the characteristics of oxygen with high paramagnetism. It can detect various concentrations of oxygen such as trace oxygen, constant oxygen and purity oxygen. The magnetic mechanical principle has high analysis precision and long service life. It has non-explosion-proof and explosion-proof models and can be used in industrial hazard applications.

### APPLICATIONS



Air separation purity oxygen analysis



Cement, smelting combustion efficiency monitoring



Oxygen monitoring for electrical tar precipitator



Laboratory gas analysis



Oxygen Monitoring for high pressure warehouse

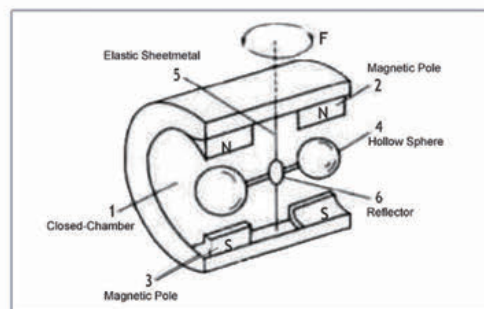


Agronomy, medicine, biology research

## PRINCIPLE

The AGA1010 series paramagnetic gas analyzer is based on the paramagnetic principle of oxygen. In the mixed gas, the magnetic susceptibility of oxygen is several times to hundreds of times higher than other gases, so the magnetic susceptibility of the mixed gas depends almost entirely on the amount of oxygen contained, that is, the oxygen content can be determined according to the magnetic susceptibility of the mixed gas. How many.

Between the two poles of the closed chamber of the sensor, two nitrogen-filled glass spheres (commonly known as dumbbells) are mounted, which are attached to a rotatable coaxial bracket. There is a mirror on the center axis of the dumbbell ball, and the mirror reflects the light beam from the light source to the photoelectric sensor. The oxygen in the gas to be measured is drawn into the magnetic field, causing the force on the sphere to cause the dumbbell ball to rotate. The angle of the mirror changes to change the intensity of the light received on the photoelectric sensor. The control system is configured to enable the photoelectric sensor to receive the strongest The light signal drives the dumbbell ball's electromagnetic coil through the current to restore the dumbbell ball to its original position. The magnitude of this driving current is proportional to the oxygen concentration, which reflects the oxygen concentration.



Principle diagram of Paramagnetic Oxygen Analyzer

### Relative Magnetic Susceptibility (0°C)

Gas Name	Relative Magnetic Susceptibility	Gas Name	Relative Magnetic Susceptibility	Gas Name	Relative Magnetic Susceptibility
O <sub>2</sub>	+100	H <sub>2</sub>	-0.11	CO <sub>2</sub>	-0.57
CO	+36.3	Ne	-0.22	NH <sub>3</sub>	-0.57
AIR	+21.1	N <sub>2</sub>	-0.40	Ar	-0.59
NO <sub>2</sub>	+6.16	water vapor	-0.40	CH <sub>4</sub>	-0.68
He	-0.06	Cl <sub>2</sub>	-0.41		

## FEATURES

- The mechanical dumbbell type paramagnetic principle has high precision, short preheating time, quick response and good linearity.
- Direct measurement of the paramagnetic properties of oxygen with low gas interference.
- Compared to electrochemical sensor, it adopts non-consumable components, the normal lifespan can last over 10 years.
- Trace, constant, purity oxygen, multi-range is optional.
- LCD display, concentration curve, history data and other information display.
- RS485 signal output, relay output, compatible with various control systems.
- Standard 19-inch chassis design(non-explosion-proof) , can be equipped with sampling system for most of working conditions.
- Thick carbon steel casing (explosion-proof type), explosion-proof grade up to ExdIICT6, can be used in explosive hazardous areas.
- Soft boot and watchdog functions, to keep a stable work without crash.

## SPECIFICATIONS

<b>Model</b>	AGA1010: non-explosion proof AGA1010d: explosion proof
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### Function

measure range	O <sub>2</sub> : 0-5%/15%/30%/100%VOL customized
principle	paramagnetic
accuracy	±0.1%VOL
resolution	0.01%/0.1%VOL based on the range
repeatability	±0.5%
zero drift	±0.5%FS/7d
span drift	±0.5%FS/7d
response time	≤5s (T <sub>90</sub> )
operating temp.	0°C-40°C
warm up time	≤30min

### Electric

display	Monochrome LCD 320*240
power supply	220VAC/50Hz
power consumption	≤100W
signal output	4-20mA,RS485,and 2 relays

### Sampling

flow rate	<0.2L/min
humidity	0-95%RH
oil mist/ other mist	<2.0mg/ft <sup>3</sup> (filter is required if over 2.0mg/ft <sup>3</sup> )
solid particle	<2.0mg/ft <sup>3</sup> (filter is required if over 2.0mg/ft <sup>3</sup> )

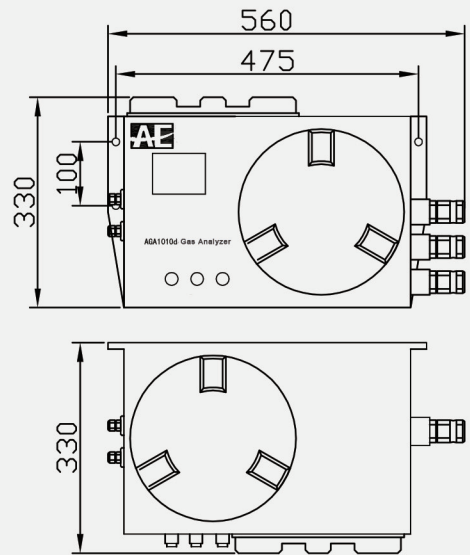
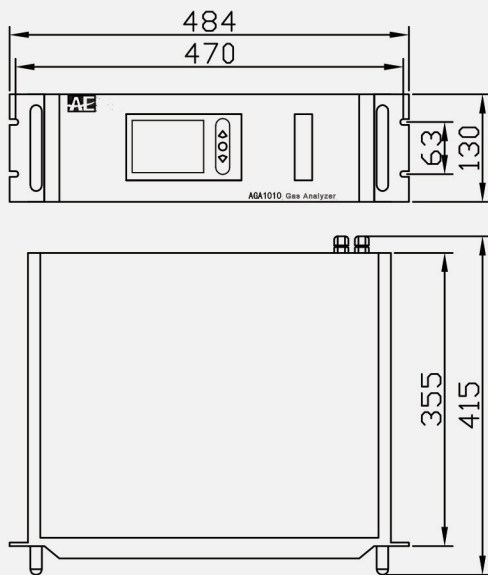
### Structure

connection	AGA1000: CEE power socket 1pc; DB25 signal outlet 1pc; RS485 DB9 adaptor 1pc; φ6 gas inlet 1pc; φ6 gas outlet 1pc AGA1000d: 3 cable(power,signal,relay); φ6 gas inlet 1pc; φ6 gas outlet 1pc
body material	carbon steel
dimensions	AGA1000: 484mm*130mm*415mm (H*W*D) AGA1000d: 560mm*330mm*330mm (H*W*D)
weight	AGA1000: about 9.3kg AGA1000d: about 69kg

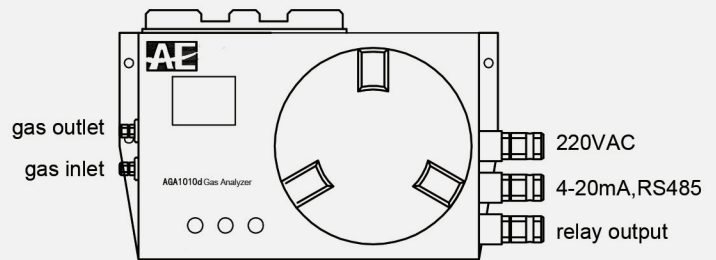
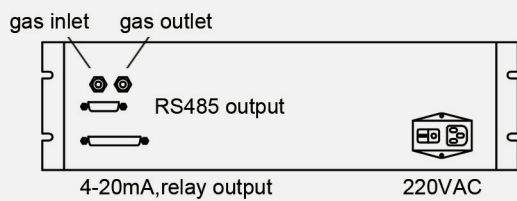
### Certificate

EX	Exd II CT6 Gb
SIL	SIL2

## DIMENSIONS



## CONNECTION



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