AGA1000/AGA1000d NDIR GAS ANALYZER

NDIR

CO CO$_2$ CH$_4$ SO$_2$

AGA1000

AGA1000d

AGA1000 series infrared gas analyzers realize the gas process monitoring according to the principle of gas absorption in infrared light. The analyzer adopts advanced NDIR principle, high accuracy and sensitive response. It has two options of explosion-proof and non-explosion-proof. It can be used to detect CO, CO2, CH4, SO2 in the fields of iron and steel, petrochemical, natural gas, laboratory, etc.

APPLICATIONS

✔ Natural gas analysis

✔ Bolier gas analysis

✔ Industrial process analysis

✔ Laboratory use

✔ Environment use

✔ Emission gases

Model	AGA1000: Non explosion-proof AGA1000d: Explosion-proof

Function

Measure Range	CO: 0-2000ppm/1%/15%/30%/100%VOL CO$_2$: 0-5000ppm/1%/10%/30%/100%VOL CH$_4$: 0-5%/15%/100%VOL SO$_2$: 0-1000/2000/5000/6000ppm O2: 0-5%/15%/30%(Optional) If any gas or measure range is not in above list, please contact the manufacturer for more details.
Principle	NDIR
Accuracy	±2%F.S
Resolution	1ppm/0.1%/1%VOL based on range
Repeatability	±2%
Zero drift	±2%F.S/7d
Span drift	±2%F.S/7d
Response time	≤10s/T90
Operating temperature	0°C-40°C
Warm-up	≤30min

Electric

Screen	monochromatic LCD 320*240
Power supply	220VAC/50Hz
Power consumption	≤100W
Signal output	4-20mA, RS485, 2 relays

Sampling requirements

Flow rate	0.5L/min
Humidity	0-95%RH
Oil mist / solution mist	＜2.0mg/ft^3 （filering equipment is necessay if it exceeds the range）
Solid particles	＜2.0mg/ft^3 （filering equipment is necessay if it exceeds the range）

Structure

Interface	AGA1000: 1pc CEE plug, 1pc DB25 Signal output plug, 1pc 485 Standard DB9 plug, φ6 inlet, φ6 outlet AGA1000d: 3 cables(power, siganl output, relay), φ6 inlet, φ6 outlet
Body material	Carbon steel
Dimension	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

PRINCIPLE

AGA1000 series gas analyzer is equipped with a high-precision infrared analysis module, which is mainly composed of infrared light, optical path gas chamber, and an infrared detector.

The non-dispersive infrared (NDIR) technology is based on the asymmetric polyatomic molecular gas (such as CO2, NO, etc.) that has selective absorption of infrared light of a specific wavelength to achieve the detection of gas concentration. When infrared light passes through the measured gas, these gas molecules absorb infrared light of a specific wavelength. The decrease in light intensity is proportional to the number of molecules. The relationship between the change in light intensity and the number of molecules is subject to Lambert-Beer (Lambert-Bill). Beer) absorption law, the gas concentration can be determined.
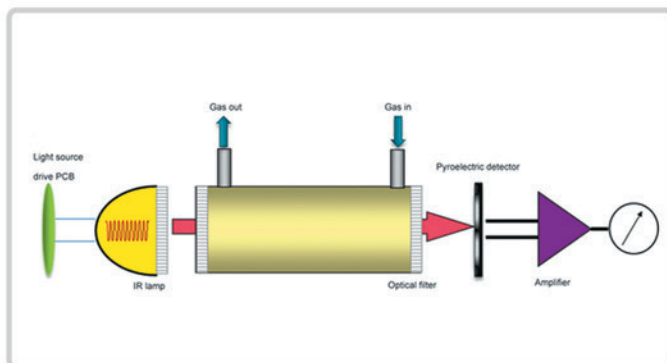
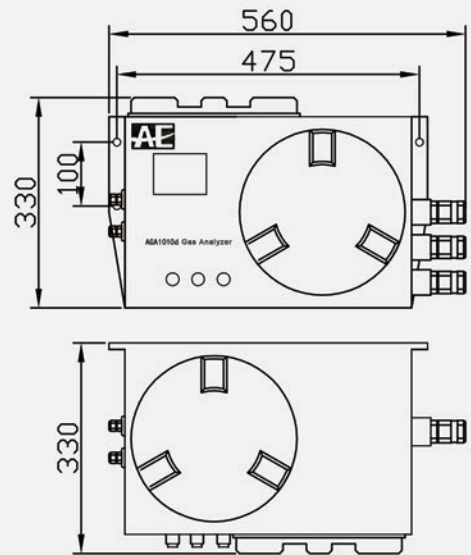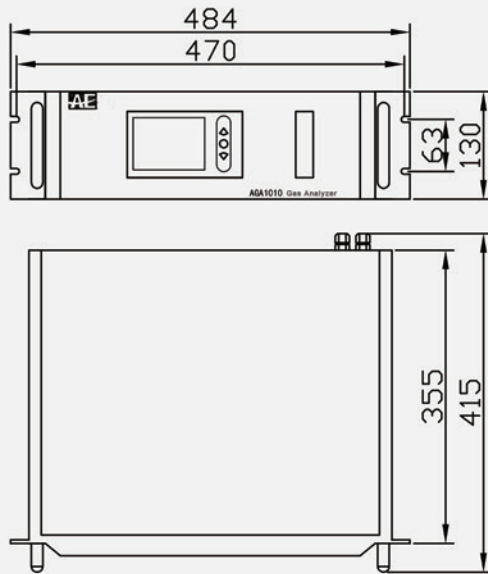### Infrared absorption bands of common gases

Gas	Molecular formula	Range of infrared absorption band/μm			Absorbption rate/%		
carbon monoxide	CO	4.5-4.7			88		
carbon dioxide	CO_2	2.75-2.8	4.26-4.3	14.25-14.5	90	97	88
methane	CH_4	3.25-3.4	7.4-7.9		75	80	
sulfur dioxide	SO_2	4.0-4.17	7.25-7.5		92	98	

Note: The table only lists the commonly used bands with strong absorption, and does not represent the actual band of the infrared analyzer.
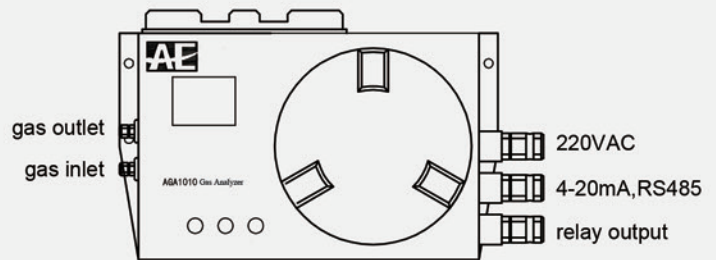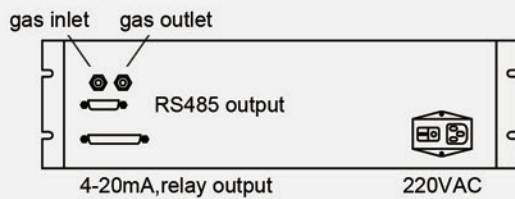
FEATURES

- Support multi-component analysis, three gases in one analzyer at most (customized measure range).
- oxygen analysis is optional.
- The imported infrared light with a long lifespan, not less than 100,000 hours and high stability.
- The optical device electrical modulation with high stability, which will not be affected by vibration.
- The chamber adopts extrusion thermoforming technology, with high concentricity and accuracy.
- Low influence by temperature, high resolution.
- LCD screen, concentration curve, historical data and other information display.
- RS485 signal output, multi-level relay output, compatible with various control systems.
- The standard 19-inch case (AGA1000) design can be used with sampling systems for various working conditions.
- Exd �II CT6 explosion-proof design can be used in explosive hazardous areas.
- Soft start and watchdog function, the program is stable.

484
470
63
130
355
415
560
475
330
100
330

AGA1010 Gas Analyzer

AGA1010d Gas Analyzer

gas inlet   gas outlet

RS485 output

4-20mA,relay output   220VAC

gas outlet
gas inlet

AGA1010 Gas Analyzer

220VAC

4-20mA,RS485

relay output

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