



## AG310 SERIES GAS DETECTOR

AG310 series including model GTQ-AF110, GTQ-AF111, AF110-R, AG310, AG311. These gas detectors are suitable for detecting the combustible and toxic gases in hazardous areas. The product adopts the integrated design of sound and light alarm, which can effectively warn all kinds of gas leakage hazards; the smart sensor modular design supports hot plugging and easy maintenance; the product is equipped with an infrared remote control, which can realize completely no cover operation. IP66 protection can be applied to all kinds of bad occasions.

### Features

- integrated design with sound and light alarm.
- The patented sensor module integrates the sensor and calibration information into a replaceable module. Suitable to replace the sensor module without calibration and ready-to-use when connect new sensor module even it's a different gas sensor, much convenient.
- IP66 design with body material in stainless steel and aluminum alloy, suitable for harsh environments.
- High-brightness OLED display, capable to see readings in any angle.
- Built-in three relays(alarm-1, alarm-2, fault), multi-functional control is possible.
- Full English menu, remote control operation.
- Complete product certification (ATEX, SIL, CNEX, CCCF, etc.)

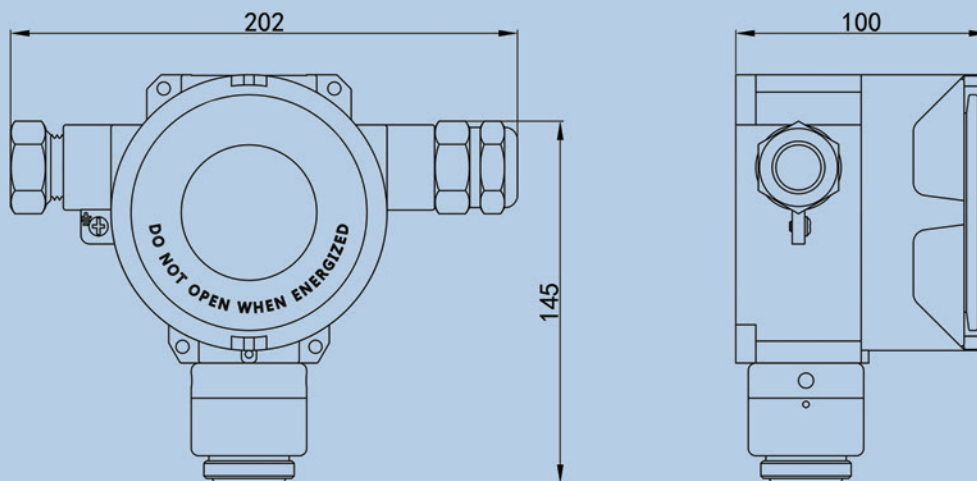
## Specification

Description	Specifications	GTQ-AF110	GTQ-AF111	AF110-R	AG310	AG311
<b>Gas Detected</b>						
Ex	catalytic combustion	●	●	-	-	-
	infrared	-	-	●	-	-
toxic	ECD,IR,PID,semiconductor	-	-	-	●	●
<b>Function</b>						
measure range	see QUICK-SELECTION-TABLE	●	●	●	●	●
response time*	T90≤30S	●	●	●	-	-
	T90≤60/180S	-	-	-	●	●
accuracy*	≤±5%F.S	●	●	●	●	●
repeatability*	≤2%F.S	●	●	●	●	●
<b>Electric</b>						
power supply	18-28VDC(standard 24VDC)	●	●	●	●	●
power consumption	≤3.5W	●	●	●	-	-
	≤2W	-	-	-	●	●
signal output	4-20mA	●	-	●	●	-
	RS485	-	●	-	-	●
wiring	three-wire	●	-	●	●	-
	four-wire	-	●	-	-	●
suitable cable	RVVP3*1.5mm <sup>2</sup>	●	-	●	●	-
	RVVP4*1.0mm <sup>2</sup>	-	●	-	-	●
relay output	3 passive relays (250VAC/5A 30VDC/5A)	●	●	●	●	●
<b>Display &amp; Operation</b>						
display	OLED display	●	●	●	●	●
indicator light	power,fault,alarm-1,alarm-2	●	●	●	●	●
operation method	remote control	●	●	●	●	●
<b>Environment</b>						
ingress protection	IP66	●	●	●	●	●
operating temp.	-40℃~70℃	●	●	●	-	-
	-20℃~60℃	-	-	-	●	●
operating humidity	10~95%RH non-condensing	●	●	●	●	●
operating pressure	80-120kPa	●	●	●	●	●
<b>Structure</b>						
body material	ADC12 aluminum +316L S/S	●	●	●	●	●
close nipple	NPT1/2	●	●	●	●	●
weight	about 2kg	●	●	●	●	●
dimensions	145*202*100mm(H*W*D)	●	●	●	●	●
<b>Certificates</b>						
CPA	2015C563-32	●	●	●	●	●
EX	Exdib II CT6 Gb	●	●	●	●	●
CCCF	073184850122ROM	●	-	-	-	-
	073184850123ROM	-	●	●	-	-
SIL	SIL2	●	●	●	●	●
ATEX	Ex dbib II CT6 Gb	-	-	-	●	●

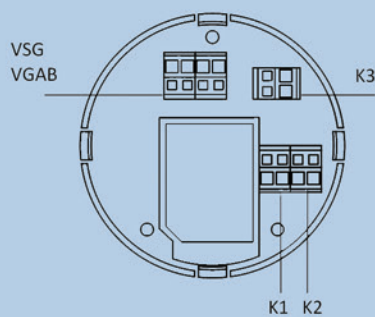
Note:\* refers to there's some difference vary from different gas, please contact the manufacturer for details.



## Dimensions



## Wiring



Terminals	Description
V	24V +
S	4-20mA signal output
G	24V -
A B	RS485 signal output
K1	relay output for alarm-1
K2	relay output for alarm-2
K3	relay output for fault



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## GAS DETECTION SYSTEM

Gas detection system can be widely applied in places such as petrochemical engineering, chemical engineering, steel, metallurgy, pharmaceuticals, electricity, food, and logistics where the monitoring of flammable and toxic gas is needed.

The system is made of gas detector, controller and sound-light alarm, and the gas concentration data will be uploaded to the control panel. The controller collectively displays the gas concentration data of different monitoring points, and the sound-light alarm will be set off in case that any concentration exceeds over the default value. Linkage feature can be realized and the data can be also uploaded to host systems such as DCS/IPC.

■ FUNCTION

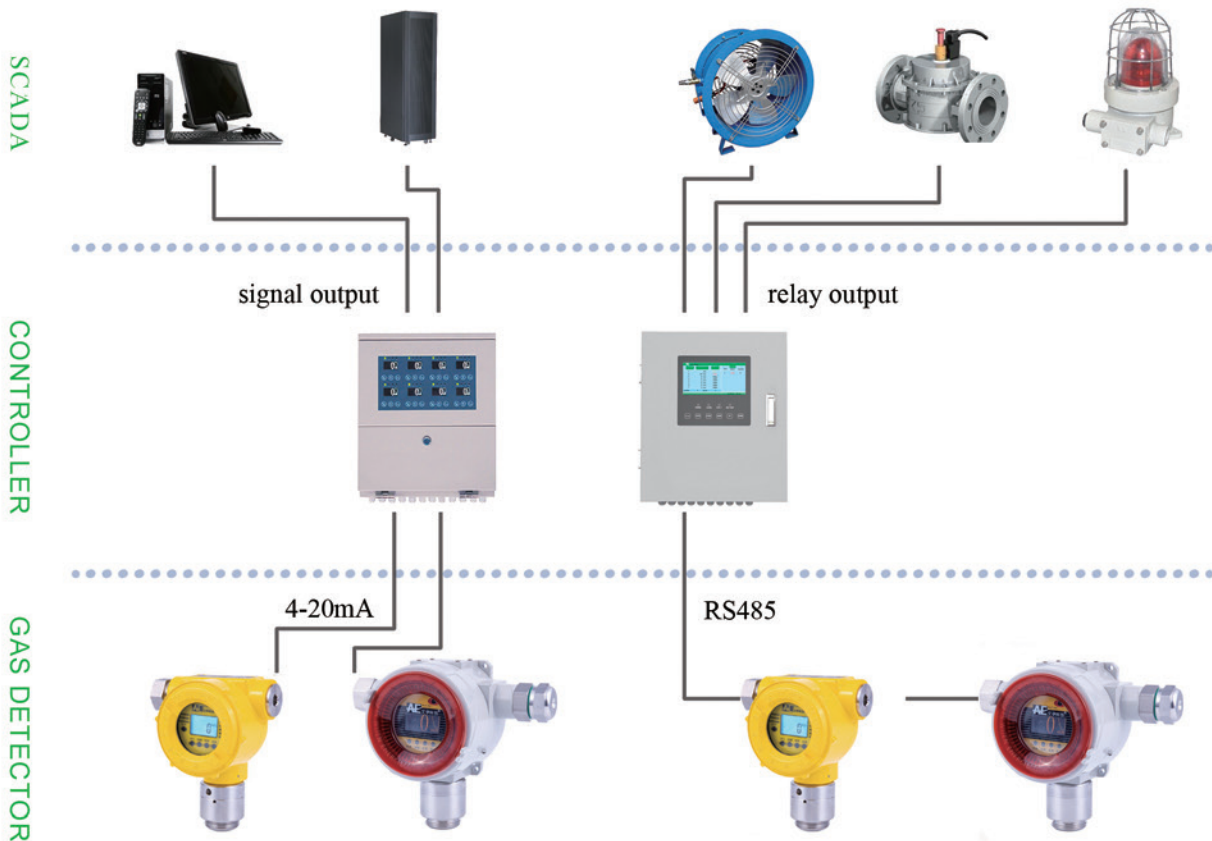


DIAGRAM of GAS DETECTION SYSTEM

1. gas detector

The gas detector is fixed in areas such as the workshop, warehouse, and storage tank for real-time monitoring of the concentration of flammable and toxic gases.

2. zone control

The controller collectively displays the gas concentration, and the sound-light alarm will be set off in case that any concentration exceeds over the default value.

3. The interlock control

It comes with relay output and fault output for the performing of automatic fan, spray, valve, and alarm.

4. The host computer

Standard 4-20mA and RS485 signal output, compatible with host computers such as DCS/PLC/IPC.



## SELECTION GUIDE

QUICK SELECTION TABLE 1 -- FIXED GAS DETECTOR

Description	AG310 series					AG210 series				AG200 series		
	GTQ-AF110	GTQ-AF111	AF110-R	AG310	AG311	AG210	AG211	GTQ-Anr-A	GTQ-Anr-D	AG200	Anr-N	Anr-S
<b>Gas detected</b>												
combustible gas-catalytic	●	●	-	-	-	-	-	●	●	-	●	●
combustible gas-infrared	-	-	●	-	-	-	-	-	-	-	-	-
toxic gas-electrochemical	-	-	-	●	●	●	●	-	-	●	-	-
toxic gas-PID	-	-	-	●	●	●	●	-	-	●	-	-
toxic gas-infrared	-	-	-	●	●	●	●	-	-	●	-	-
toxic gas-semiconductor	-	-	-	●	●	-	-	-	-	-	-	-
<b>Display</b>												
OLED	●	●	●	●	●	-	-	-	-	-	-	-
LCD	-	-	-	-	-	●	●	●	●	-	-	-
<b>Signal output</b>												
4-20mA	●	-	●	●	-	●	-	●	-	●	●	-
RS485	-	●	-	-	●	-	●	-	●	●	-	●
<b>Wiring</b>												
three-wire	●	-	●	●	-	●	-	●	-	●	●	-
four-wire	-	●	-	-	●	-	●	-	●	●	-	●

Note:

1. ● means available, - means unavailable;
2. both oxygen and toxic gas are detected in electrochemical principle, so the toxic gas includes oxygen in the above table.

QUICK SELECTION TABLE 2 -- CONTROL PANEL

Description	AGS1600F	AGS1000	AGS1000B	AGS1000D	JUDD	JUDD-S
<b>Gas detected</b>						
combustible gas	●	●	●	●	●	●
toxic gas	-	●	●	●	●	●
<b>Display</b>						
LCD	●	●	●	●	-	-
OLED	-	-	-	-	●	●
<b>Signal input</b>						
4-20mA	●	●	●	●	●	●
RS485	-	●	●	●	-	-
<b>Wiring</b>						
three-wire	●	●	●	●	●	●
four-wire	-	●	●	●	-	-
<b>Channels</b>	4	1-64	1-64	1-64	1-8	32-128
<b>Installation</b>						
wall-mounted type	●	●	●	●	●	-
cabinet type	-	-	-	-	-	●
<b>UPS</b>	-	-	●	-	-	-
<b>Explosion-proof</b>	-	-	-	●	-	-

Note: The channels of AGS1000, AGS1000B, AGS1000D, JUDD, JUDD-S can be customized.

QUICK SELECTION TABLE 3 -- GAS DETECTED

Gas	Measure Range	Principle	Resolution	GTQ-AFI10	GTQ-AFI11	AFI10-R	GTQ-Amr-A	GTQ-Amr-D	Amr-N	Amr-S	AG310	AG311	AG210	AG211	AG200
EX	0-100%LEL	Catalytic	1%LEL	●	●	-	●	●	●	●	-	-	-	-	-
Combustible gas	0-100%LEL	Catalytic	1%LEL	-	-	●	-	-	-	-	-	-	-	-	-
EX	0-100%LEL	Infrared	1%LEL	-	-	-	-	-	-	-	-	-	-	-	-
O <sub>2</sub>	0-30%VOL	Electrochemical	0.1%VOL	-	-	-	-	-	-	-	●	●	●	●	●
Oxygen	0-30%VOL	Electrochemical	0.1%VOL	-	-	-	-	-	-	-	●	●	●	●	●
CO	0-1000µmol/mol	Electrochemical	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Carbon monoxide	0-1000µmol/mol	Electrochemical	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
H <sub>2</sub> S	0-100µmol/mol	Electrochemical	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Hydrogen sulphide	0-100µmol/mol	Electrochemical	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
CL <sub>2</sub>	0-10µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Chlorine	0-10µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
SO <sub>2</sub>	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Sulphur dioxide	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
NH <sub>3</sub>	0-100µmol/mol	Electrochemical	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Ammonia	0-100µmol/mol	Electrochemical	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
NO	0-250µmol/mol	Electrochemical	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Nitric oxide	0-250µmol/mol	Electrochemical	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
NO <sub>2</sub>	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Nitrogen dioxide	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
HCL	0-30µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Hydrogen chloride	0-30µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
O <sub>3</sub>	0-1µmol/mol	Electrochemical	0.01µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Ozone	0-1µmol/mol	Electrochemical	0.01µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
C <sub>2</sub> H <sub>4</sub> O	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Ethylene oxide	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
CH <sub>2</sub> O	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Formaldehyde	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
CH <sub>3</sub> OH	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Methanol	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
PH <sub>3</sub>	0-5µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Phosphine	0-5µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
H <sub>2</sub>	0-1000µmol/mol	Electrochemical	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Hydrogen	0-1000µmol/mol	Electrochemical	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
F <sub>2</sub>	0-1µmol/mol	Electrochemical	0.01µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Fluorine	0-1µmol/mol	Electrochemical	0.01µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
HF	0-10µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Hydrogen fluoride	0-10µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
HCN	0-50µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Hydrogen cyanide	0-50µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
COCL <sub>2</sub>	0-1µmol/mol	Electrochemical	0.01µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Phosgene	0-1µmol/mol	Electrochemical	0.01µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
AsH <sub>3</sub>	0-1/20µmol/mol	Electrochemical	0.01µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Arsenic hydride	0-1/20µmol/mol	Electrochemical	0.01µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
SiH <sub>4</sub>	0-50µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Silane	0-50µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
C <sub>3</sub> H <sub>3</sub> N	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Acrylonitrile	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
CS <sub>2</sub>	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Carbon disulfide	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
C <sub>2</sub> H <sub>5</sub> OH	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Ethanol	0-20µmol/mol	Electrochemical	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Sulfur hexafluoride	0-1000µmol/mol	Infrared	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
SF <sub>6</sub>	0-1000µmol/mol	Infrared	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
CH <sub>4</sub>	0-5%/100%VOL	Infrared	0.1%VOL	-	-	-	-	-	-	-	●	●	●	●	●
Methane	0-5%/100%VOL	Infrared	0.1%VOL	-	-	-	-	-	-	-	●	●	●	●	●
CO <sub>2</sub>	0-5%/100%VOL	Infrared	0.1%VOL	-	-	-	-	-	-	-	●	●	●	●	●
Carbon dioxide	0-5%/100%VOL	Infrared	0.1%VOL	-	-	-	-	-	-	-	●	●	●	●	●
C <sub>7</sub> H <sub>8</sub>	0-20µmol/mol	PID	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Toluene	0-20µmol/mol	PID	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
C <sub>8</sub> H <sub>10</sub>	0-20µmol/mol	PID	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Xylene	0-20µmol/mol	PID	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
C <sub>6</sub> H <sub>6</sub>	0-20µmol/mol	PID	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Benzene	0-20µmol/mol	PID	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
C <sub>2</sub> H <sub>4</sub> O <sub>2</sub>	0-1000µmol/mol	PID	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Acetic acid	0-1000µmol/mol	PID	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
Volatile organic compounds	0-20µmol/mol	PID	0.1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●
	0-1000µmol/mol	PID	1µmol/mol	-	-	-	-	-	-	-	●	●	●	●	●

Note: 1. Any gas that not mentioned above, just contact AIYI Technologies for further information; 2. 1µmol/mol=1ppm

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