Ozone Analyzer

UVOZ-1200

Product Manual

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UVOZ-1200

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Product Instruction

(Touch-screen)

Version：V202001

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Catalogue

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Dear users:

Thank you for using our products.

Please read the instructions carefully before using.

The products can only be used by trained qualified workers.

The adjustment, repair and maintenance must be carried out by authorized personnel designated by the manufacturer.

In order to use correctly & safely, you should operate according to this instruction.

The manufacturer recommends that product labels should be kept intact.

The manufacturers do not recommend to dismantle the product.

The manufacturer recommends that all maintenance & calibration operations should be carried out in accordance with the requirements in the manual.

The manufacturer shall not be liable for any damage or injury caused by improper use of the product.

The manufacturer improve product specifications or modify the contents without prior notice.

If need the latest instruction manual, please contact the manufacturer in time.

We will try best to ensure the accuracy of the instruction. If you find any errors, please contact us with thanks.

Without permission, it is strictly prohibited to copy or copy all or part of the contents.

This instruction includes the structure description, function introduction, wiring mode & operation instructions as well as matters needing attention.

Please read the instructions carefully before using, and keep in convenient place so

as to find out problems quickly.

1. Product Description

Based on Lambert Bill's law, the analyzer of UVOZ-1200 by measuring the change of the intensity of the light signal before and after the UV absorption to calculate the current ozone concentration.The equipment adopts the advanced dual UV light source system with the intelligent management system of the lamp tube and separated photocell technology that enables the analyzer has the characteristics of no leakage, anti high pressure, anti sampling gas impact.

The ozone analyzer has touch screen operation interface, which shows the real-time ozone concentration. And the touch screen is also with pressure & temperature compensation display. For the high concentration (g/Nm3) range, it has the function of flow input, which can display the output of the ozone generator in real time. The core component adopts long-life uv light system with the high light transmittance quartz to prevent zero drifting from affecting the detection accuracy. It’ s no need to close ozone inputing when zeroing to ensure the equipment can run continuously 24 hours.

Application areas: ozone generator manufacturers, municipal water industry, industrial sewage industry, fine chemical industry food and drinking water industry, space disinfection industry, swimming pool disinfection industry, etc.

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Optional range and working mode

Range	Sampling Method	Application Areas
0-300g/Nm^3	Active pressure sampling, with pressure,temperature compensation	Real-time detection of ozone generator outlet concentration
0-100g/Nm^3	Active pressure sampling, with pressure,temperature compensation	Real-time detection of ozone generator outlet concentration
0-50g/Nm^3	Active pressure sampling, with pressure,temperature compensation	Real-time detection of ozone generator outlet concentration
0-1000ppm	Active pressure sampling, or pumping sampling, with pressure, temperature compensation	Real-time detection of ozone concentration in box.
0-100ppm	Active pressure sampling, or pumping sampling, with pressure, temperature compensation	Real-time detection of space or ozone concentration in room.

2.Technical Parameter

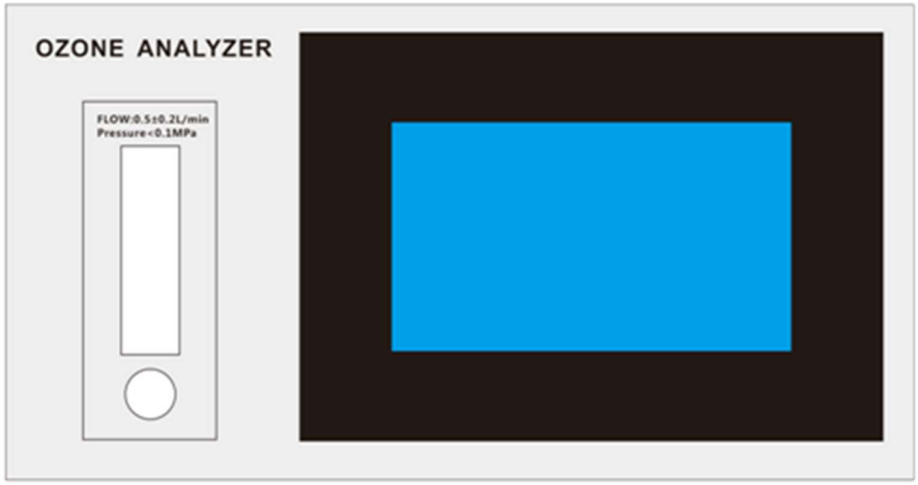
Test range:	☐0-300g/Nm^3	☐0-200g/Nm^3	☐0-150g/Nm^3
	☐0-50g/Nm^3		
Display resolution:	☐0.01g/m remark: 1mg/L=1g/m3=467ppm		
Display unit:	☐g/Nm3 ☐mg/NL		
Sampling Method:	☐active pressure sampling		
Content Interface:	☐ozone concentration ☐temperature compensation		
	☐pressure compensation		
Light Source Life:	About 20000 hours		
Display Interface:	4.3 inch touch screen operation interface		
Auxiliary Function:	temperature & pressure compensation		
Sampling Flow:	0.5L±0.2L/min		
Input Pressure:	<0.1MPa		
Concentration Error :	< 0.5%FS		
Line Deviation :	< 0.5%FS		
Zero Drifting:	<±0.3%.FS		
Response Time:	the signal is 0.03S, showing is 0.3 S.		
Ambient Temperature :	-20～50℃;		
Sampling Caliber of	Bypass samplingΦ6 (6*4mm fast twisting interface)		
Output Mode:	4-20mA		
Relay Signal:	High alarm, Low alarm		
Power Supply:	AC 110-220V 60Hz;		
Dimension:	230mm(height) ×330mm(width)×150mm(depth)		

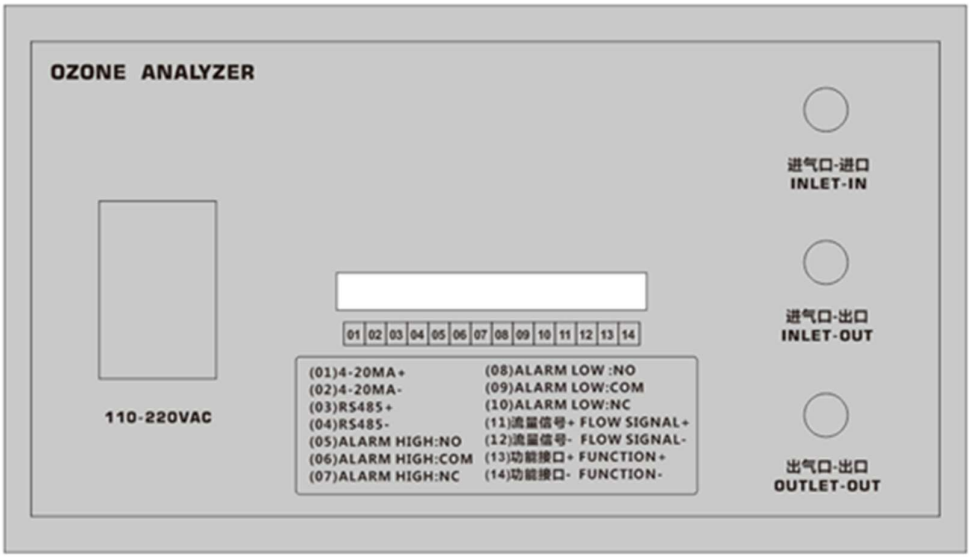
Standard configuration:	☐Antiseptic flowmeter ☐filter

3. Technical Features

Detection method:	dual beam UV photometer absorption method, long life light source system, high measuring accuracy.
The principle	According to Lambert Bill law, measure precisely by photometric absorption principle.
Light Source System	Imported long life UV light source system (wavelength 253.7nm), free warranty for 3 years.
Using method	Indoor installation and use, configure power and signal terminals.
Cuvette System	Seperated optical cuvette with no leakage and anti high-pressure, high-flow rate, impact of sampling gas.
Intelligent Compensation	Built in temperature and pressure compensation and display, with automatic compensation function of light source.
Operation Method	The user can select manual zeroing mode or automatic zeroing calibration according to the running state, and can set up automatic zeroing time.
Interface Display	High-definition touch screen, gas mass flow, real-time display of output
Data display	g/Nm^3, mg/NL (optional)
Output Function	4-20mA
Standard Configuration	Anti-corrosive flow-meter, ozone tail gas destroyer, gas in-putting filter.

4. The Structure





Inlet-In: The ozone analyzer is connected to the inlet of the ozone pipeline in series, treat as an ozone inlet if by-pass sampling.

Inlet-Out: The ozone analyzer is connected to the outlet of the ozone pipeline in series,

this hole will be blocked if by-pass sampling.

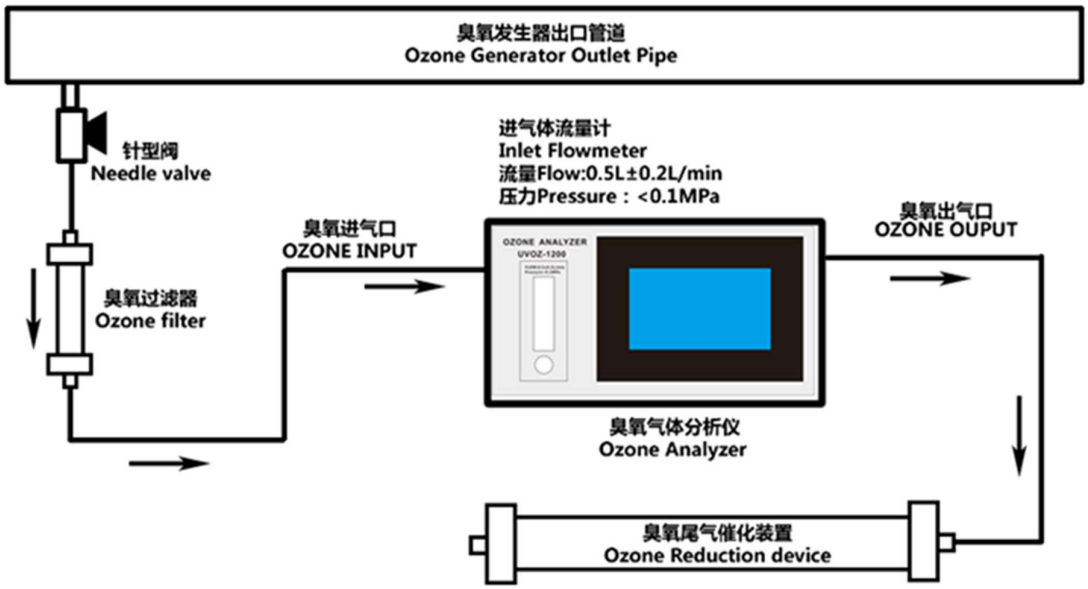
Outlet-Out: Ozone analyzer outlet, with built-in ozone destroyer, can be discharged

indoors, when there is no any ozone gas left.

Signal Terminal Output

(01)4-20MA+ Current signal output	(08)ALARM LOW : NO
(02)4-20MA- Current signal output	(09)ALARM LOW: COM
(03)RS485+ communication interface (Reservation function)	(10)ALARM LOW: NC
(04)RS485- communication interface (Reservation function)	(11)+ FLOW SIGNAL+ (Reservation function)
(05)ALARM HIGH: NO	(12)- FLOW SIGNAL- (Reservation function)
(06)ALARM HIGH: COM	(13)□+FUNCTION+ (Reservation function)
(07)ALARM HIGH: NC	(14)□-FUNCTION- (Reservation function)

5. The connection and process



UVOZ-1200 ozone analyzer-active pressure sampling process diagram

6. Operation instruction

A. Using condition

This analyzer is used for indoor installation and operation. It is recommended to preheat for 5 minutes and then zeroing one time. It can be used online for 24 hours. Please pay attention to safety of power and environment when using. It’ s equipped with UV LED light source monitoring system, and the system will be adjusted according to the brightness of the light source. If zero deviation without ozone, you can manually zeroing to clean. Occasionally, zero deviation occurs, which can be ignored.

B. The cautions

a. This ozone analyzer is used for indoor and the environment should be kept ventilated, dry, no other corrosive gases. In particular, if there is ammonia, hydrogen chloride, hydrogen sulfide and other gases in the environment should be timely protected from corrosion. Any problem caused by this condition is not within the free guarantee.

b. Clean and dry ozone gas must be guaranteed. If need detect the concentration of ozone gas in humid places or with oil, dust, filters (flue gas filters) and dehumidifiers (electronic condensers) must be installed at the inlet of the instrument. Otherwise any problem caused by this condition is not within the free guarantee.

c. It is strictly prohibited to connect the exhaust gas destroyer outlet to the main

pipeline, and the exhaust gas must be emptied or destroyed.

d. If the instrument is not used for a long time, it is necessary to electrify the heater regularly and store the instrument against moisture

e. Exhaust gas destroyer in the working state will be enthusiastic, It' s strictly prohibit hand direct touching. Pay attention to the exhaust gas destroyer will be invalid if long-time in moisture insulation. If found the ozone gas overflow at the outlet, please contact the manufacture to replace it.

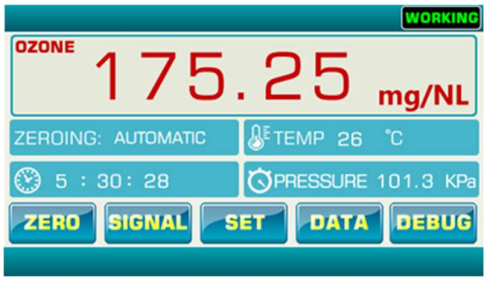
f. The inlet connection pipe should use the PTFE material.

g. The manufacturer's air filter can only filter dust particles. If user needs to detect the ozone gas with oil mist, water mist and other media, please contact the manufacturer in time to customized pre-treatment device.

C. Operation interface

(high concentration 0-300g/Nm³ 0-200g/Nm³ 0-100g/Nm³ 0-50g/Nm³)

main interface-normal display function



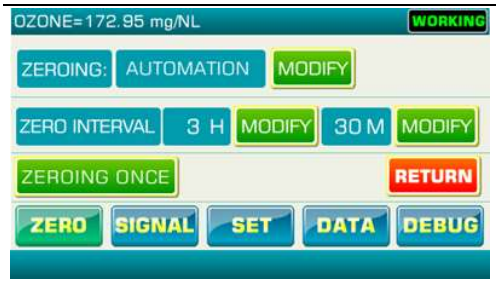
The upper right corner of the main interface will display "detection state", "calibration in progress" and "error" words.

Detection state: running detection status

Calibration in progress: The instrument is undergoing zero-calibration operation

Error: The ozone analyzer has malfunction. Please contact the manufacturer in time.

Zeroing menu



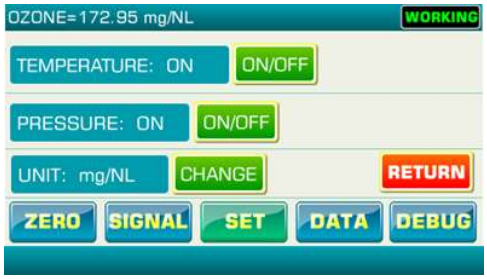
Users can choose "manual zeroing" and "automatic zeroing" mode according to the situation. Automatic zeroing interval time can be set according to the user needs. Manufacturers recommend automatic zeroing time is 2-5 hours. Press the "manual zeroing once" button , the ozone analyzer performs a zeroing operation.

Signal menu

Users can set up "high alarm points" and "low alarm points" according to their situation. The instrument with two sets of relay signal output, users can connect two sets of NO, COM, NC relay signals.

When using relay signals, it should be noted that relay signals should be DC power input with a maximum of 24V.Try to avoid direct access to relay signals by 220VAC.

Set menu



a. Users can set "temperature compensation" to bring values to "open" and "close" locations which with ozone concentration calculations.

b. Users can set "pressure compensation" to bring values to "open" and "close" locations which with ozone concentration calculations. This instrument pressure transmitter support pumping sampling and active pressure compensation.

c. Users can choose the unit as below according to the situation:

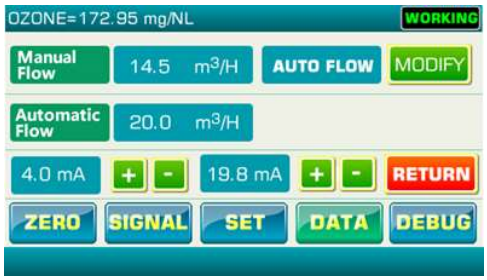
g/Nm^3	g/Nm^3 & g/m^3 NTP The two units express the same meaning
mg/NL	mg/NL& mg/L NTP The two units express the same meaning

Additional explanation:

The units of g/Nm^3 & g/m^3 NTP mean the ozone concentration at the standard temperature (20℃ probably) and the standard pressure (101.325 KPa).g/m^3 NTP (NTP- normal temperature and pressure, STP- standard temperature and pressure)

g/Nm^3 is an expression of international expression. The display follows the international practice and adopts the expression mode of g/Nm3 concentration.

Output calculation function



The meaning of production calculation: according to the product of mass flow rate and ozone concentration of inlet/outlet of ozone generator to calculate the real-time output. The flow settings can be divided into "automatic gas-flow " and "manual gas-flow".

Automatic Flow Settings: Users need to connect the 4-20MA signal of the

electronic flow-meter (electronic vortex flow-meter or mass flow-meter) to the acquisition port of the ozone analyzer, input the 20MA signal of the electronic flow-meter to the measurement range, and set the pressure compensation coefficient of the flow manually (mass flow-meter can be set 1.0) to convert the current flow to mass flow.

Manual Flow Settings: According to the data of glass rotor flow-meter or vortex flow-meter, users can convert the current flow into mass flow. The instrument can calculate the current real-time output of ozone generator in real time according to the input flow of users.

Parameter menu

The data value of the parameter menu is the same as the parameter value of the ozone analyzer performance judged by the technician of the factory. Calibration value is the manufacturer technical personnel factory correction data when the parameters are adjusted, can be modified (entering password). It is not recommended users try to modify. (Calibration value<130).

System: "normal" or "error" is judged by the pollution degree of the light pool, so as to determine whether the ozone analyzer can work properly.

Debug menu

Debugging mode menu is the basic settings and for adjusting parameters. Users do not try to enter the password menu, when the password error reached a certain times, the instrument will automatically locked with blue screen.

E. Communication instructions

a.4-20MA signal output

The 4-20MA signal output is an active output. Users can directly access data acquisition equipment such as single chip computer or PLC. Never load voltage to the 4-20MA signal port.

b. RS-485 communication (Selection function)

Communication mode：Modbus-RTU(RS－485)；
Communication parameters：115200，8，N，1；
Data format：Hexadecimal Receive, Hexadecimal Send

Read data:			
Address	**Command**	**Send data**	**Return data**
1	LAMP-M	01 03 00 01 00 01 D5 CA	01 03 02 15 82 36 B5
2	LAMP-R	01 03 00 02 00 01 25 CA	01 03 02 15 18 B6 DE
3	DATA-Z	01 03 00 03 00 01 74 0A	01 03 02 03 DD 78 ED
4	DATA-A	01 03 00 04 00 01 C5 CB	01 03 02 03 D4 B8 EB
5	RANGE	01 03 00 05 00 01 94 0B	01 03 02 07 D0 BB E8
6	COEFFICIENT	01 03 00 06 00 01 64 0B	01 03 02 05 DC BA 8D
7-8	CONCENTRATION	01 03 00 07 00 02 75 CA	01 03 04 40 17 0A 3D 98
Remark:Single precision floating point number :2.35			
9-10	Concentration hexadecimal	01 03 00 09 00 02 14 09	01 03 04 00 00 01 20 FA
Remark :hexadecimal value 0X0120 Decimal value 288 Concentration 2.88			
Write data:			
Address	**Command**	**Send data**	**Return data**

100	ZEROING	01 10 00 64 00 01 02 00 01 6F B4	01 10 00 64 00 01 40 16

Read register value:

01	03	00 02	00 01	25 CA
485 address	Function code	Register address	Register quantity	CRC check code

Return data

01	03	02	15 18	B6 DE
485 address	Function code	Number of bytes	Register value	CRC check code

Write register：

01	10	00 64	00 01	02	00 01	6F B4
485 address	Function code	Register address	Register quantity	Number of bytes	Register value	CRC check code

Return value:

01	10	00 64	00 01	40 16
485 address	Function code	Register address	Register quantity	CRC check code

7. The maintenance

In the normal using, the actual service life depends on the site environment. It is recommended to calibrate the analyzer once every 18 months by return factory (calibration is free, the user bears the return and transportation fee). In the harsh environment, it is recommended to calibrate the sensor once every 12 months to ensure the validity of the test data. Maintenance items as the following:

A. Whether there is leakage in the intake system; whether the gas connection pipe is worn; whether the connector is fastened.

B. There is no loosening or breakage of the power supply line and socket.

C. Whether there is leakage inside of the analyzer, whether can smell the ozone gas.

D. Other abnormal problem.

If any of the above problem occur, please inform the manufacturer as soon as possible.

8. The cautions

A. It is strictly prohibited to disassemble and assemble the equipment. The labels must be kept intact in use, otherwise there will be no guarantee.

B. The maintenance must have professional person to operate.

C. Do not arbitrarily disassemble, and avoid unnecessary damage when opening the equipment.

D. Keep the equipment clean, do not touch the screen with hard objects to prevent scratching the screen.

E. Turn off the power supply and prevent moisture when the equipment is close.

F. In case of abnormal situation, switch off the power supply & cut off the gas source immediately, and please contact the manufacturer in time.

9. The storage

The instrument should be stored in a well-ventilated, dry and non-corrosive environment with ambient temperature of - 10℃ ~ + 40℃, , relative humidity not exceeding 80%. The sampling gas with a relative humidity of not more than 80% , and the gas temperature should be of - 50℃ ~ + 80℃.

10.Term of validity

The life of the product depends on the aging degree of the electronic device. After replacing the aging electronic device, the product can be used normally.