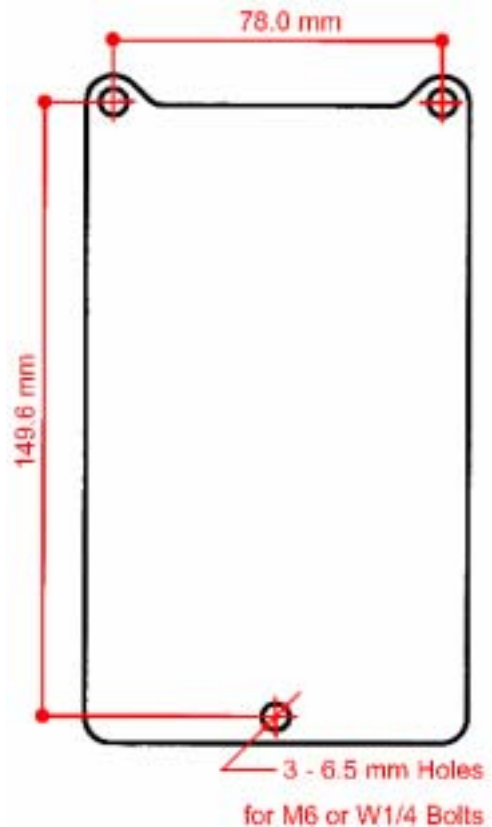


# The Manual of Wall-mount type of Oxygen Detector Model: GTF200-OX

## Installation and Wiring

1. Please read the Security Notifications in detail firstly.
2. The gas detector might install on wall or steel plate, please refer following drawing to make marking then drill the holes. Do not use the gas detector as a drilling template to avoid fault.



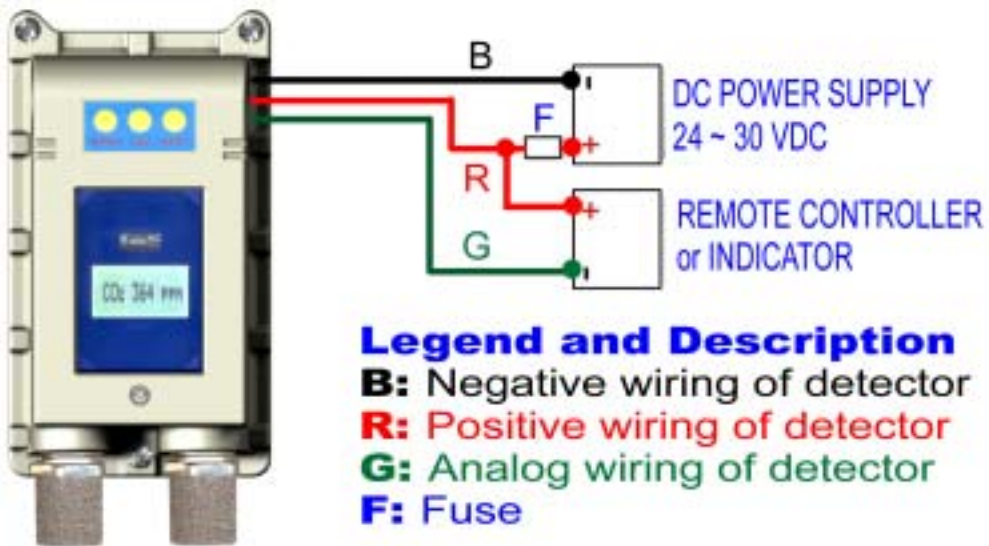
3. Due to the space is very small that is impossible to use wrench. Therefore, to use female expansion bolts on the wall or tap female screws on the steel plate and use external screw (male bolts) that can use the screw driver to install the gas detector and solve spacing problems. M6 sizes of bolts have a good tolerance than W1/4.

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# The Manual of Wall-mount type of Oxygen Detector Model: GTF200-OX

## 4. Analog output

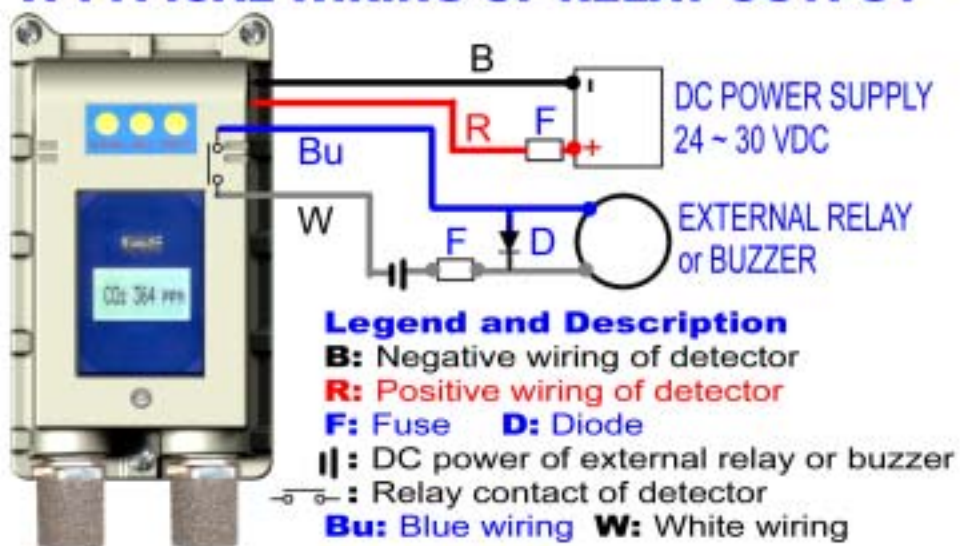
### A TYPICAL WIRING OF ANALOG OUTPUT



A recommend fuse is 0.2 A in the above.

## 5. Relay output

### A TYPICAL WIRING OF RELAY OUTPUT



A recommend fuse is 0.2 A, the diode could be 1N4002 or 1N4004 in the above.

6. In order to meet waterproof, the wiring material and parts should be met the requirement also.
7. The wiring size is not less 0.5 mm<sup>2</sup> or 20 AWG. In the case of long-distance wiring, to apply bigger size or 30 VDC power is better.
8. The detector attached wiring connectors and shrink sleeves for the wiring. Due to spacing problems, do not use

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# The Manual of Wall-mount type of Oxygen Detector

## Model: GTF200-OX

electrical tape. For the connecting the wires, to solder them is better than using connectors that do not cut wires while replace or reinstall to avoid shortage of wires length.

9. There are two 1/2" NPT female connectors which might use one normally. Please blind the other with tape seal.

### Specifications (Specification maybe changed without notice)

model	GTF200-OX-A	GTF200-OX-R
type	wall-mount	
sensor	zirconia's sensor	
target	oxygen	
sampling method	diffusion	
measure range	3.0 vol%    25.0 vol%	
Resolution / accuracy / sampling time	0.1 vol% / ±0.5 vol% / continuity	
alarm level	high and low alarm resetable	
analog output	4    20 mA max. load resistance 500 ohm	N/A
relay output rating	N/A	single pole normal open relay with self-hold function 30VDC, 1A
buzzer / flash lamp	available	
backlight alphanumeric LCD	available	
construction	dustproof and waterproof ( meet to IP65)	
size	193 mm x 91 mm x 40 mm	
net weight	about 700 g	
power supply	24    30 VDC	
power consumption	about 5W	
ambience temperature	0    40 degree in Celsius	
ambience humidity	less 95%RH and non-condenser	
packing size	about 208 mm x 156 mm x 68 mm	
gross weight	about 1,100 g	

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# The Manual of Wall-mount type of Oxygen Detector Model: GTF200-OX

## 1. Power on display

After power on, the GTF200-OX gas detector will display a series of messages, including welcome, model no and oxygen concentration (vol%).

G A S T E C H  
W E L C O M E

WELCOME

M O D E L ... A 0 3  
GTF200-OX-A

Show the model no. (Show it at power on only.)  
GTF200-OX-A is a standard type with 4 ~ 20 mA analog output.  
GTF200-OX-R is an optional type with relay output.

WARMING-UP  
WAIT....

It's warming up now, please wait. (Show it at power on only.)

Oxygen  
20.6 %

Show the concentration of oxygen.  
The measuring range of oxygen is 3.0 vol% to 25.0 vol%. If the concentration of oxygen is lower than 3.0 vol%, the LCD display will show < 3.0%. If the concentration of oxygen is higher than 25.0 vol%, the LCD display will show > 25.0%. The measuring resolution is 0.1 vol% / accuracy  $\pm 0.5$  vol%.

## 2. Settings

The following operating procedure describes the settings. In the operation, press NEXT key or idle 3 minutes, the display will back to the concentration of oxygen.

O<sub>2</sub> 20.6 %

In the display, press NEXT key to enter next function.

TEST ALARM

In the display, press ADJ key, the buzzer and flash lamp will action. Press ADJ key again, they will stop. (The relay will make action in TEST ALARM also, if detector model has relay output.)

Press NEXT key to enter next function.

Buzzer H. L.

O<sub>2</sub> 23.5% UP

In the display, press ADJ key, to reset the buzzer high limit. The last words of last row might show UP, press ADJ key will increase the setting limit. Press UPDN key, the word will change to DN; press ADJ key will decrease the setting limit.

Press NEXT key to enter next function.

Buzzer L. L.

O<sub>2</sub> 19.5% UP

In the display, press ADJ key, to reset the buzzer low limit. The last words of last row might show UP, press ADJ key will increase the setting limit. Press UPDN key, the word will change to DN; press ADJ key will decrease the setting limit.

Press NEXT key to enter next function.

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# The Manual of Wall-mount type of Oxygen Detector Model: GTF200-OX

## Flash H. L.

O2 23.0% UP

In the display, press ADJ key, to reset the flash high limit. The last words of last row might show UP, press ADJ key will increase the setting limit. Press UPDN key, the word will change to DN; press ADJ key will decrease the setting limit.  
Press NEXT key to enter next function.

## Flash L. L.

O2 19.7% UP

In the display, press ADJ key, to reset the flash low limit. The last words of last row might show UP, press ADJ key will increase the setting limit. Press UPDN key, the word will change to DN; press ADJ key will decrease the setting limit.  
Press NEXT key to enter next function.

## Relay A. L.

O2 19.9% UP

In the display, press ADJ key, to reset the relay action limit. The last words of last row might show UP, press ADJ key will increase the setting limit. Press UPDN key, the word will change to DN; press ADJ key will decrease the setting limit.  
**Note: this function is available in relay output model only.**  
Press NEXT key to enter next function.

## Relay R. L.

O2 20.2% UP

In the display, press ADJ key, to reset the relay release limit. The last words of last row might show UP, press ADJ key will increase the setting limit. Press UPDN key, the word will change to DN; press ADJ key will decrease the setting limit.  
**Note: this function is available in relay output model only.**  
Press NEXT key to enter next function.

## Oxygen Calibration ?

<UPDN> + <ADJ>

In the display, press UPDN and ADJ keys at same time, to enter calibration function.  
Press NEXT key to jump calibration function and enter next function.

**Warning! Except necessary, do not execute calibration. It is necessary to execute calibration after power on 24 hr. An error operating should loss accuracy.**

## Calibration

O2 20.9% UP

In the display, user has to finish calibration.

Press ADJ key, to meet ambience concentration of oxygen. In the fresh air, 20.9% is a recommended value. But in some place, user might use a portable oxygen detector to know the concentration of oxygen. During the calibration the concentration of oxygen must be between 18.0% and 23.5%. The last words of last row might show UP, press ADJ key will increase the calibrating value. Press UPDN key, the word will change to DN; press ADJ key will decrease the calibrating value.

Press NEXT key to finish calibration and enter next function.

## Analog Output Calibration ?

<UPDN> + <ADJ>

In the display, press UPDN and ADJ keys at same time, to enter calibration function.  
Before the calibration, user needs prepare an ampere meter and makes series into analog current loop.

Press NEXT key to jump calibration function and enter next function.

**Warning! Except necessary, do not execute calibration. It is necessary to execute calibration after power on 24 hr. An error operating should loss accuracy.**

**Note: this function is available in analog output model only.**

# The Manual of Wall-mount type of Oxygen Detector Model: GTF200-OX

## Calibration

4 mA UP

In the display, user has to finish calibration.

The last words of last row might show UP, press ADJ key will increase the current output. Press UPDN key, the word will change to DN; press ADJ key will decrease the current output.

Press NEXT key to finish calibration of 4 mA and enter next function.

## Calibration

20 mA UP

In the display, user has to finish calibration.

The last words of last row might show UP, press ADJ key will increase the current output. Press UPDN key, the word will change to DN; press ADJ key will decrease the current output.

Press NEXT key to finish calibration of 20 mA and enter next function.

## Life Time

29 DAYS

In the display, user can read out the used life time of detector. Normally, the sensor of detector has 1,000 days life time. It is necessary to renew the sensor beyond that.

**Note 1:** due to QC procedure, the used life time might be more than 1 day, but it should be less than 30 days.

**Note 2:** Life time meter count up during power on only. If the detector is idle for a long time, or used in an environment with high concentration of oxygen, frequentative power on and off, the lifetime will be shortened even the meter less than 1,000 days.

Press NEXT key; the display will back to the concentration of oxygen.

### 3. Alarm message

The concentration of gas is lower than buzzer low limits or higher than the buzzer high limit, the detector not only has audible alarm but also provide clear alphanumeric alarm message for users.

#### High Alarm

O2 24.0%

The oxygen high alarm and the concentration of oxygen is 24.0 vol%.

If the concentration of oxygen is over 25.0 vol% will be indicated > 25.0%.

Press NEXT key, the buzzer will mute and the display will back to the concentration of oxygen. If the concentration of oxygen is still higher than buzzer high limit, this message and audible alarm will come again, that will disappear until the concentration of oxygen is lower than the buzzer high limit.

#### Low Alarm

O2 18.3%

The oxygen low alarm and the concentration of oxygen is 18.3 vol%.

If the concentration of oxygen is less 3.0 vol% will be indicated <3.0%.

Press NEXT key, the buzzer will mute and the display will back to the concentration of oxygen. If the concentration of oxygen is still lower than buzzer low limit, this message and audible alarm will come again, that will disappear until the concentration of oxygen is higher than the buzzer low limit.

### 4. Warning message

The GTF200-OX gas detector may auto-off under low or high specified voltage. [If the gas detector is auto-off, it cannot work for detection.](#) At some of case, the detector cannot work but will provide warning message which reminds user to check the detector or its system.

#### Power Low

Due to input voltage lower than specified, the detector cannot work.

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# The Manual of Wall-mount type of Oxygen Detector Model: GTF200-OX

Temp. High

Due to ambience temperature higher than specified, the detector cannot work.

## 5. Oxygen concentration in the air

Fresh air consists of oxygen, nitrogen, argon, and carbon dioxide. The contents of fresh air are listed in the table1.

Table 1

Contents	Molecular weight	Content vol %
Oxygen (O <sub>2</sub> )	32.0	20.99
Nitrogen (N <sub>2</sub> )	28.02	78.03
Argon (A)	40.0	0.94
Carbon dioxide (CO <sub>2</sub> )	44.0	0.03
Others	-	0.01
<b>Air</b>	<b>28.95</b>	<b>100.0</b>

For a healthy person, the tissue level of the body is not less than 18.5 vol%. If the tissue level is lower than 18.5 vol%, some anoxic symptoms will appear. The physiological effects of anoxia are listed in the table2.

Table 2

Con. of oxygen	Physiological effects
12-16%	Breathing increases, pulse rate up and impaired coordination.
10-14%	Breathing further increases in rate and depth, poor coordination and judgment, lips slightly blue.
6-10%	Mental failure, fainting, unconsciousness, ashen face, blueness of lips, nausea and vomiting.
Under 6%	Coma in 40 seconds, followed by convulsions, breathing failure and death.

## 6. Setting the alarm of oxygen

1. It is our suggestion to set the low level of oxygen alarm at 19.5vol% for early warning of carbon monoxide poisoning. This value is suitable user who stays or works in confined space and uses fireplace, water heater, engine generator or any combustion activities. In such cases, oxygen will be consumed faster than normal and carbon monoxide will also be generated more than normal.
2. In a confined space without combustion activities such as using fireplace, water heater, and engine generator. The 18.5 vol% will be the lowest level of oxygen to avoid oxygen-deficient.
3. In other places, such as laboratory or gas (e.g. nitrogen) storage yard, the leakage of asphyxial gas will reduce the content of oxygen and cause oxygen-deficient also. User should set the low alarm according to the kind of stored gas.
4. The GTF200-OX also provides high alarm of oxygen in 23.5 vol%. The high alarm has various meanings such as leakage of oxygen or other dangerous that depend on the detecting place. In case of high alarm occurring, it may leakage of oxygen storage tank or other unknown dangers. User should not enter such place where occurs oxygen alarm before recognizing the status.

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