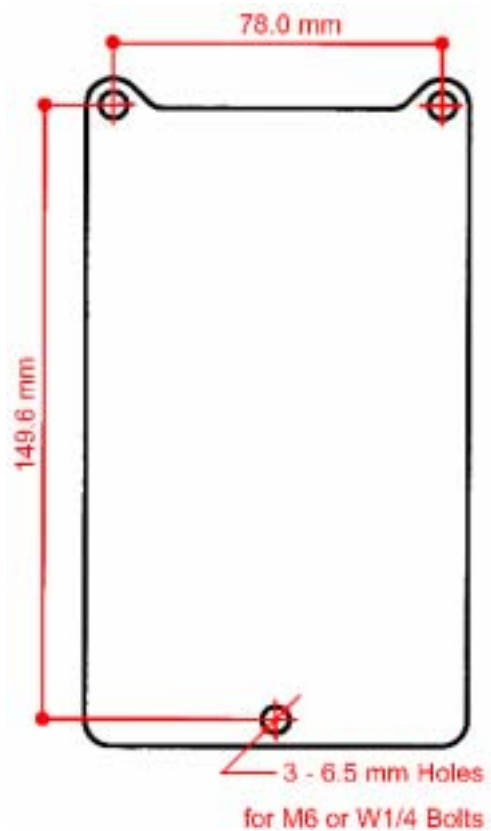


Wall-mount type of Carbon Dioxide Detector Model: GTF220

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.



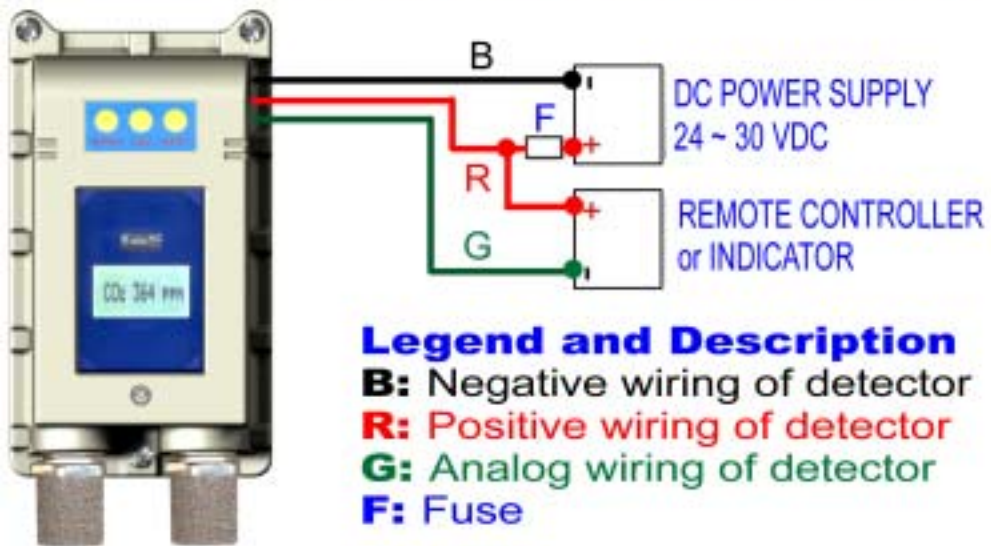
3. Due to the space is very small that is impossible to use wrench. Therefore, to use female expansion bolts on the wall or tap female screws on the steel plate and use external screw (male bolts) that can use the screw driver to install the gas detector and solve spacing problems. M6 sizes of bolts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

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Wall-mount type of Carbon Dioxide Detector Model: GTF220

4. Analog output

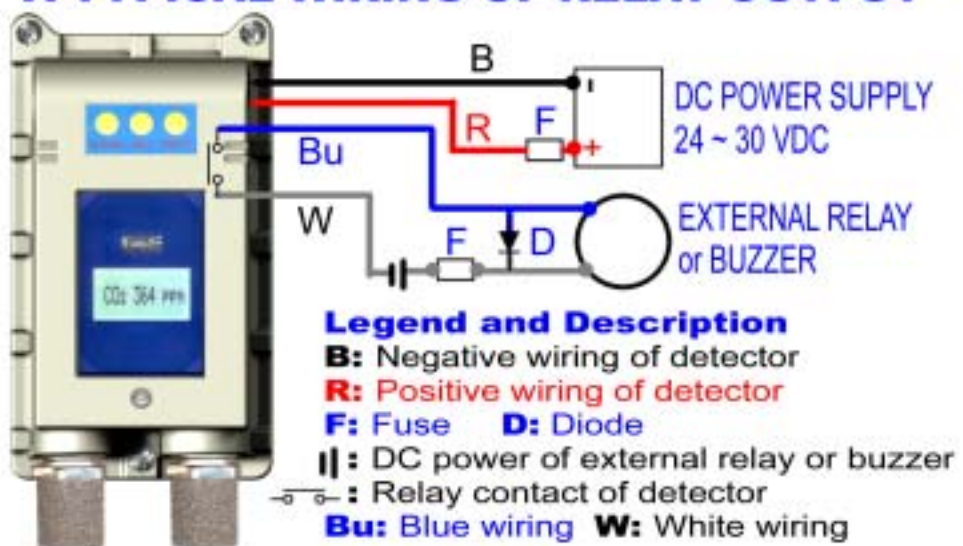
A TYPICAL WIRING OF ANALOG OUTPUT



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 mm² 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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Wall-mount type of Carbon Dioxide Detector

Model: GTF220

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	GTF220-A	GTF220-R
type	wall-mount	
sensor	solid electrolyte	
target	carbon dioxide	
sampling method	diffusion	
measuring range	350 ~ 8,000ppm	
resolution/accuracy / sampling time	1 ppm / $\pm 5\%$ F.S. (350 ~ 5,000ppm) / continuity	
alarm level	high 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 3W	
ambience temperature	0 ~ 45 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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Wall-mount type of Carbon Dioxide Detector

Model: GTF220

1. Power on display

After power on, the GTF220 carbon dioxide detector will display a series of messages, including welcome, model no and carbon dioxide concentration in ppm.

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

WELCOME

M O D E L ... A 0 3
G T F 2 2 0 - A

Show the model no. (Show it at power on only.)
GTF220-A is a standard type with 4 ~ 20 mA analog output.
GTF220-R is an optional type with relay output.

WARMING-UP
WAIT....

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

CO₂ 364 ppm

Show the concentration of carbon dioxide.
The measuring range would be 350 ppm to 8,000 ppm. **It may shows >8,000 ppm while concentration of carbon dioxide is higher than above range.**

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 carbon dioxide.

CO₂ 364 ppm

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.
3500 ppm 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.
350 ppm 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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Wall-mount type of Carbon Dioxide Detector

Model: GTF220

Flash H. L.

1100 ppm 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.

350 ppm 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.

950 ppm 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.

800 ppm 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.

C. Dioxide
Cal. Zero?

<UPDN> + <ADJ>

In the display, if press UPDN and ADJ key at the same time, the detector will execute calibration function. The calibration will take 10 minutes in the period time; here the detectors will access the lowest detecting value to make a basis of 350 ppm of carbon dioxide. **In order to get good basis and to avoid the breath affect consequence, the operators have to leave and come back again after 10 minutes. It is necessary to provide a fresh air condition while the period time; if not, user have to prepare the standard air (CO₂=350ppm, O₂=21 vol.% and N₂=79 vol.%).** After completing calibration, the display will back to the concentration of carbon dioxide.
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 7 days. An error operating should loss accuracy.

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.

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.

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Wall-mount type of Carbon Dioxide Detector Model: GTF220

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 carbon dioxide, 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 carbon dioxide.

3. Alarm message

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

High Alarm
CO2 1368 ppm

If the concentration of carbon dioxide is higher than the buzzer high limit, the detector will show this display. If the concentration of carbon dioxide is over 8,000 ppm will show >8,000 ppm.

Press NEXT key, the buzzer will mute and the display will back to the concentration of carbon dioxide. If the concentration of carbon dioxide is still higher than buzzer high limit, this message and audible alarm will come again after 30 seconds that will disappear until the concentration of carbon dioxide is lower than the buzzer high limit.

Low Alarm
CO2 600 ppm

If the concentration of carbon dioxide is lower than the buzzer low limit, the detector will show this display.

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

4. Warning message

The GTF220 carbon dioxide 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.

Temp. High

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

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