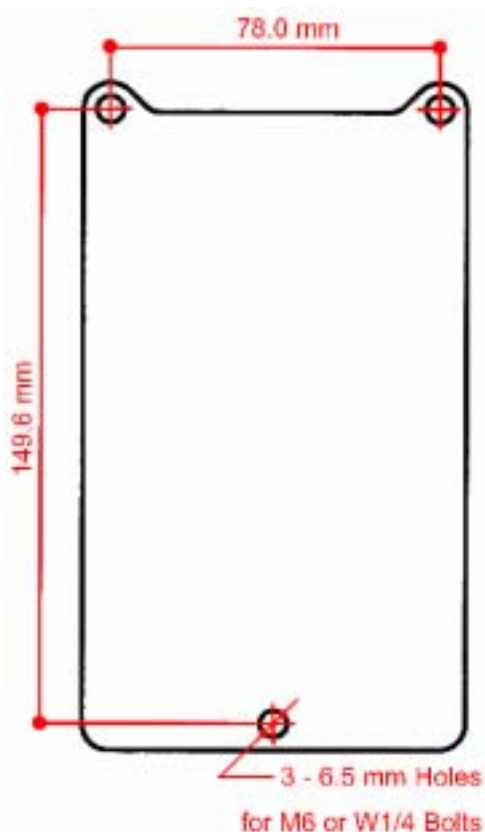


Wall-mount type of Carbon Monoxide Detector

Model: GTF200-CO

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.

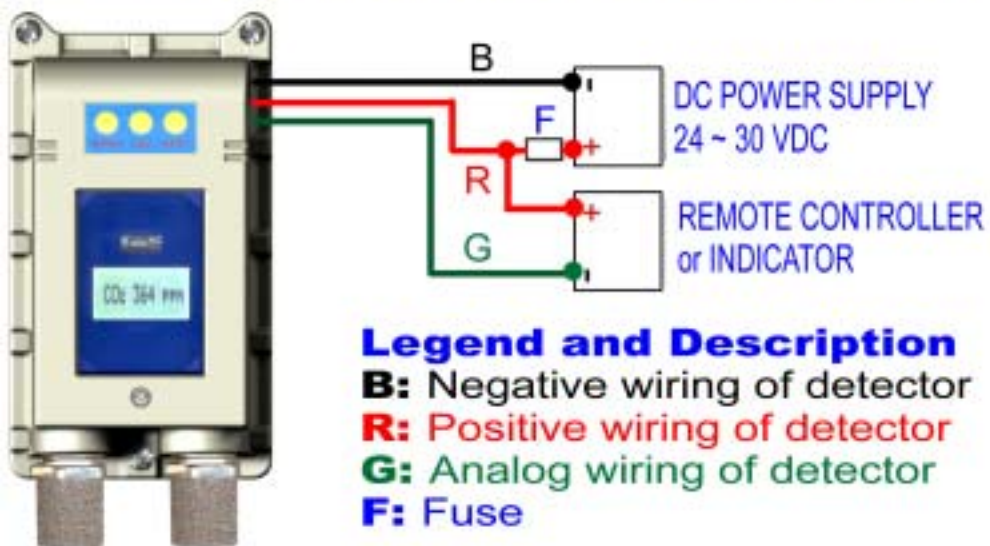


3. Due to the space is very small that is impossible to use wrench. Therefore, to use female expansion bolts on the wall or tap female screws on the steel plate and use external screw (male bolts) that can use the screw driver to install the gas detector and solve spacing problems. M6 sizes of bolts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

Wall-mount type of Carbon Monoxide Detector Model: GTF200-CO

4. Analog output

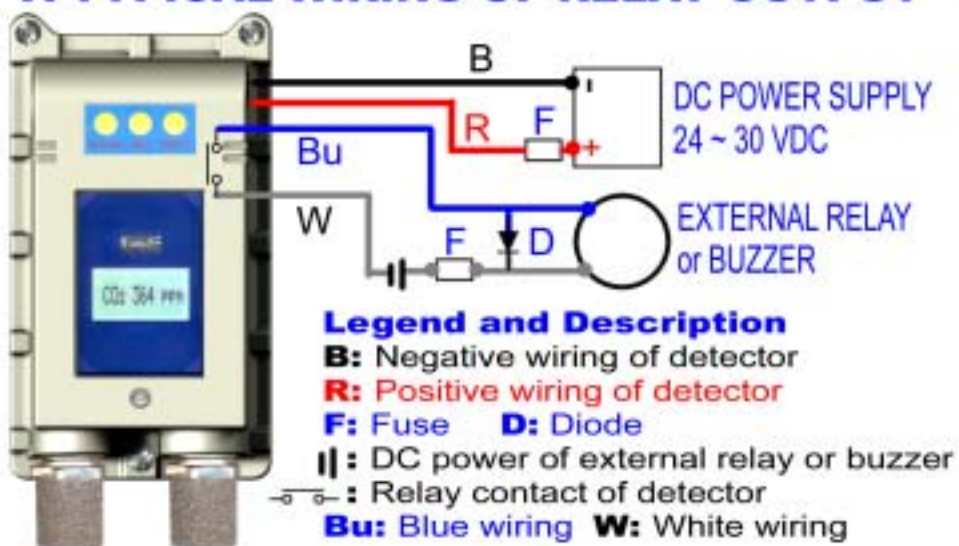
A TYPICAL WIRING OF ANALOG OUTPUT



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 Monoxide Detector

Model: GTF200-CO

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-CO-A	GTF200-CO-R
type	wall-mount	
sensor	electrochemical sensor	
target	carbon monoxide	
sampling method	diffusion	
measuring range	0 ~ 250ppm(standard type) optional range from 0 ~ 50ppm to 0 ~ 1,000ppm	
resolution/accuracy / sampling time	1 ppm / $\pm 3\%$ F.S. / 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 Monoxide Detector

Model: GTF200-CO

1. Power on display

After power on, the GTF200-CO carbon monoxide detector will display a series of messages, including welcome, model no and carbon monoxide 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
GTF200-CO-A

Show the model no. (Show it at power on only.)

GTF200-CO-A is a standard type with 4 ~ 20 mA analog output.

GTF200-CO-R is an optional type with relay output.

WARMING-UP
WAIT....

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

CO 14 ppm

Show the concentration of carbon monoxide.

The measuring range would be 0 ppm to 250 ppm in standard type (optional range from 0 ~ 50ppm to 0 ~ 1,000ppm). It may shows >250 ppm while when concentration of carbon monoxide 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 monoxide.

CO 14 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 Limit

50 ppm UP

In the display, press ADJ key, to reset the buzzer 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 Limit

40 ppm UP

In the display, press ADJ key, to reset the flash 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 Monoxide Detector

Model: GTF200-CO

Relay A. L.

35 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.

30 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. Monoxide

Cal. Zero?

<UPDN> + <ADJ>

In the display, press UPDN and ADJ keys at same time, to enter low point 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 7 days. An error operating should loss accuracy.

Cal. Zero

0 ppm

In the display, user has to finish low point calibration.

Press ADJ key, to meet low point concentration of carbon monoxide. User has to ensure in the fresh air.

Press NEXT key to finish calibration and enter next function.

C. Monoxide

Cal. High?

<UPDN> + <ADJ>

In the display, press UPDN and ADJ keys at same time, to enter high point 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 7 days. An error operating should loss accuracy.

Cal. High

250 ppm UP

In the display, user has to finish high point calibration.

Press ADJ key, to meet low point concentration of carbon monoxide. User has to prepare 250ppm+/- 50ppm of carbon monoxide and enter real concentration. 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.

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.

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Wall-mount type of Carbon Monoxide Detector

Model: GTF200-CO

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 carbon monoxide, 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 monoxide.

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

CO 74 ppm

If the concentration of carbon monoxide is higher than the buzzer high limit, the detector will show this display. If the concentration of carbon monoxide is over 250 ppm will show >250 ppm.

Press NEXT key, the buzzer will mute and the display will back to the concentration of carbon monoxide. If the concentration of carbon monoxide 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 monoxide is lower than the buzzer high limit.

4. Warning message

The GTF200-CO carbon monoxide 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.

5. Carbon monoxide

General sources of carbon monoxide:

1. Household: The incomplete combustion generates carbon monoxide easily while using water heater, stove, or fireplace.
2. Parking lot or garage: The exhaust gas from vehicle or engine usually contains carbon monoxide.
3. Smolder or fire: Smolder is an incomplete combustion that usually occurs before fire, in fire, or after fire. It will generate plenty of carbon monoxide.

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Wall-mount type of Carbon Monoxide Detector Model: GTF200-CO

Carbon monoxide is a colorless, odorless, and poisonous gas. It can cause inhaling damage and fatal risk depends on exposed concentration and time. The physiological effects of carbon monoxide are listed in the table3.

Table 3

Concentration of carbon monoxide	Physiological effects
35ppm	Maximum exposure allowed by OSHA in the workplace within eight hours.
200ppm	Mild headache, fatigue, nausea and dizziness within 2-3 hours.
400ppm	Frontal headaches within 1-2 hours. Life threatening after 3 hours.
1,200ppm	Headache, dizziness and nausea within 20 minutes. Death within 1 hour.
2,000ppm	Headache, dizziness and nausea within 5~10 minutes. Death within 1 hour.
5,000ppm	Headache, dizziness and nausea within 1~2 minutes. Death within 25-30 minutes.

Worker, smoker, and living in high altitude residents will be more sensitive to carbon monoxide. A seriously carbon monoxide poisoning may cause death or during recovery get headache, dizziness, losing memory, sick in vision, or mental problems. If brain is seriously damaged may not recover original healthy.

Table 4 the physiological effects of carbon monoxide long-term exposure.

Effect on heart	The employees (e.g. fireman, foundry worker, and engine inspector) will get sick in vessels & heart, such as sick in coronary arteries / heart or abdomen problem.
Deformity & embryology	Severe exposure is negative influence and cause stillborn fetus during pregnancy.
Mutation	According an experiment report indicate damage to the corpuscular chromosome of mouse.
Accumulated toxicity	The carbon monoxide can be drained out from body through breath. After severe exposure, drain out carbon monoxide completely may need to take few hours or one / two days.

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