

| Product<br>Name | GAOTek PORTABLE CO DETECTOR                             |
|-----------------|---|
| Product<br>SKU  | GAOTek-CMGD-179   |
| Product<br>URL  | https://gaotek.com/product/gaotek-portable-co-detector/ |

## Contact us: sales@gaotek.com



# GAOTek PORTABLE CO DETECTOR





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## 1. Note

Note: Some incorrect operations will cause damage to the instrument, in order, please adhere to the following notes,

Aimportant: please read the user manual carefully before using it.

AWarning: use non-replacement of the company, may be caused damage to the product.

Warning: If incorrect operation, the lithium battery of the instrument, may esker explosion. Please don't remove the battery or put an identifier.

Warning: To prevent ignition of flammable gases, do not charge the battery in hazardous environments

Warning: Top even ignition of flammable gases, strictly read, understand, and follow the manufacturer's maintenance procedures

△ Do not cover or insert any foreign instrumental arm port, it cannot exist around the foreign body. Otherwise, it will affect the alarm sounds

Alf you find the instrument is not working properly, please contact a trained technician immediately

To prevent damage to the instrument, please turn off the power before opening the cover of the instrument. Disconnect the battery and instrument before repair.

Please Note: Hunan GRII Instrument Co., Ltd. Matching battery (3.7V,3000mAh). Other accessories may reduce the product's safety and reliability! When the charge must be carried out to confirm there is no danger to the environment! For security reasons, the instrument can only be wiped with a damp cloth. This product can only be operated and repaired by professionals, making must be fully read and understand this manual before operating and maintenance.

Dependingonambientairconcentrationsofdifferentinstrumentsatleastonceeverysix

Months should be calibrated



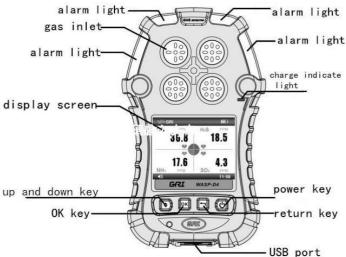
### 2. Basic information of the instrument

WASP-D4 portable composite gas detector is a portable multi-gas detector. It while continuously monitoring four gases: O2, LEL (combustible gas), CO, and H2S. Also, the GRI instrumentprovides four kinds of sensor type customization. Users can be more able to match any of the four according to their need to select the sensor. Each gas concentration degree will be displayed on the TFT color liquid crystal. The instrument provides a user-settable low concentration of self / high alarm and STEL / TWA alarms. The instrument uses a new generation of imported toxic gas sensors, PID photoionization sensors, catalytic combustion of combustible gas sensors, and independent research and development of infrared gas sensors, safe and reliable, providing security for staff poisonous gases and alarm light

dangerous environment

#### 2.1 Appearance of instrument

The instrument includes a display screen, four highlighted alarm LED lights, a charging indicator light, a buzzer, and four action buttons, the display is used to display avariety of test data and instrument status information,



and a charge indicator to indicate charge state. USB interface can be charged, as well as to connect with the host computer. Built-in vibration motor, alarm sounds the alarm with a vibration alarm, allowing users to more easily use in noisy environments.



## 2.2 Features

| Audio Alarm     | For alarm, warning, and parameter modification notification information.    |
|-----------------|---|
|                 | There are two different concentrations of frequency intervalaudio alarms.   |
|                 | Low concentrations of low-frequency, long intervals                         |
|                 | High concentrations of high-frequency, short interval                       |
|                 | If gas concentrations are above the alarm value, the detector will continue |
|                 | high alarm until the gas concentration is below the high alarm value, then  |
|                 | the detector will be converted to a low concentration alarm state until the |
|                 | gas concentration readings below  |
|                 | the low concentration alarm values  |
|                 |   |
| Vibration alarm | In the audio alarm, a vibration alarm will follow the produce, the          |
|                 | instrument vibrate  |
| Visual alarm    | The detector around the instrument is equipped with alarm LEDs, there are   |
|                 | two different gas concentrations frequencies of flashing alarm.             |
|                 | Low concentrations of low-frequency flashing light-emitting diode           |
|                 | High concentrations of high-frequency flashing light-emitting diodes        |
|                 |   |
| USB port        | there is a USB port at the bottom of the instrument which can               |
|                 | communicate with the host computer, PC Calibration                          |
| clamp           | In the back of WASP-D4, you can clip on a belt or the like materials,       |
|                 | to  |
|                 | prevent the instrument falls when on hand                                   |
| Unit Conversion | Ppm and mg/m <sup>3</sup> unit switch,                                      |



| Built-in la  | arge                        | Built-in high-capacity flash memory data can be set a s storage   |  |  |  |  |  |
|--|-----------------------------|---|--|--|--|--|--|
| capacity memory interval, automatically store data, and export the data to a compu |                             |   |  |  |  |  |  |
| Multi-language   |                             | Can switch to Chinese or English  |  |  |  |  |  |
| menu display   |                             |   |  |  |  |  |  |
| Easy to carry  | Small, light, easy to carry |   |  |  |  |  |  |
| TFT display  |                             | high resolution, high brightness, display fine  |  |  |  |  |  |
| Safety   | You                         | u can set a password to strict and protect the configuration menu changes,<br>bu must enter the correct password to access and modify<br>e current parameters in the configuration menu |  |  |  |  |  |



## **3. Instrument performance**

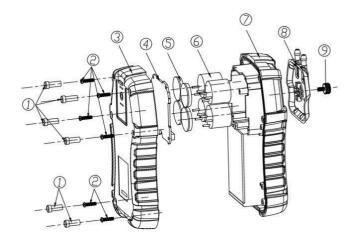
| Product Type          | Portable multi-gas detector  |
|-----------------------|--|
| Sensor type           | Toxic electrochemical, catalytic combustion of combustible gas,<br>PID photoionization, ad hoc research, and development of infrared<br>gas sensor |
| Battery               | Built-in rechargeable lithium battery (3.7V,3000mAh)   |
| Operating hours       | Fully charged for longer than 20 hours   |
| Charging time         | Less than 4 hours  |
| Display               | TFT colorful screen  |
| Alarm                 | Audible alarm, a red LED light alarm, vibration alarm  |
| Keyboard              | 4 keys   |
| Sampling way          | Diffused type  |
| History record        | 30-second intervals can store more than one month's record   |
| Alarm record          | 200 alarm recording, loop record   |
| Calibrate             | 2-point calibration, you can set the nominal concentration   |
| Operating temperature | -2055°C  |
| Working humidity      | 0-95% Relative humidity (non-condensing)   |
| Size                  | 130*80*42mm  |
| Weight                | 300g   |
| Warranty              | 1 year   |



## 4. Product selection

| Selection   | Electrochemic<br>al | Combustion<br>catalytic | PID sensor | Infrared sensor  |
|-------------|---------------------|-------------------------|------------|------------------|
|             | sensor              | sensor                  |            |                  |
| WASP-D4 PRO | • (3 kinds)         | • ( Yes)                | 0          | 0                |
| WASP-D4 PRO | • (4 kinds)         | 0                       | 0          | 0                |
| EC          |                     |                         |            |                  |
| WASP-D4 PRO | • (2 or 3 kinds)    | $\bigcirc$ (optional)   | • (yes)    | 0                |
| PID         |                     |                         |            |                  |
| WASP-D4 PRO | • ( 2 or 3 kinds)   | $\bigcirc$ (optional)   | 0          | • (1 or 2 kinds) |
| IR          |                     |                         |            |                  |
| WASP-D4 PRO | • (1 or 2 kinds)    | ⊙(optional)             | • (yes)    | • (1 or 2 kinds) |
| PID+IR      |                     |                         |            |                  |

## 5. Parts of the instrument assembly drawing



- (1): screw stopper (2): Screw (3): the lower lid (4): Sensor Board
- (5): sensor plate (6): Sensor (7): cover (8): Calibration cover
- (9): Calibration cover fixing screw

## 6. Charge

It should be charged before us and the instrument should be charged via the USB

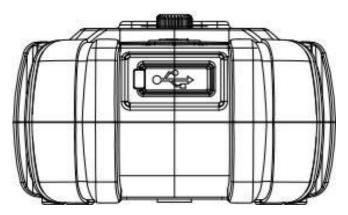
interface. Please pull out the USB soft plug before charging, connect the USB charger, at he

instrument automatically starts charging, The charging indicator light will be red, after full Based in New York City & Toronto, GAO Tek Inc. is ranked as one of the top 10 global B2B technology suppliers. GAO ships overnight within the U.S. & Canada & provides top-notch support thanks to its 4 decades of experience.



turns green.

Warning: DO not charge and replace the battery in a hazardous environment! When the battery voltage is less than the operating voltage, the instrument will automatically shut down. In this case, the instrument cannot boot, you must connect



When the battery is less than 20% and less than 10% of the buzzer sounding, the power indicator on the LCD screen has a red low-battery warning symbol, when the battery is running out, the instrument automatically shuts down, and low on the LCD Auto power off 3 seconds countdown.

Important notice! After the battery is depleted and needs to be charged, do not open the instrument!

#### 7. Battery use

Note: prohibit users from replacing the battery unauthorized, if the battery needs to be replaced, please contact the technical support of the GRI instrument.

Battery performance is affected by many factors, including sensor type,temperature using the instrument, and the chosen and used functions or settings.

To achieve optimal battery performance, observe the following rules:1, a new

battery or unused battery takes a long long time to charge;

2, charging, keep the battery at or near room temperature;

3, high temperature, exposure, and other factors will reduce battery life, try to



avoid this type of environment.

4, after long-term use, the battery will gradually wear out and need to be charged because of a long time, this is normal. But if you find the instrument using the normal charging time significantly reducing the charging time increases, you need to buy original batteries or batteries approved by the Company, inferior parts can damage equipment and cause danger! since the battery is for a long time on hold or when battery power is low, insert the charger after a period required to properly display the charging interface, users wait.

Note: Please take care of the environment and your safety, do not be discarded anywhere! WARNING: The battery short circuit in any form may cause serious consequences explosion, fire, or personal injury!

#### 8. Instrument startup and shutdown

#### Start UP

Press and hold the power button for more than three seconds, and the instrument automatically turns on. after seeing the following screen image the instrument is turnedon. Boot into, speaker alarm, after shaking started, the instrument self-test 90s, shows the concentration detection interface, thus, the whole process has been completed.

Tip: When you turn the instrument buzzer sound is very loud, you can hold a finger on the buzzer sound hole center to decrease the volume. During normal use, please do not block the sound hole!

Note: If the battery power is low, the power shortage prompted information,



the instrument automatically shuts down into hibernation.



Self-check instrument performance, and preheat. If the following conditions, press the power button for 3 seconds to restart the device.

- The buzzer does not sound
- Vibration alarm does not work
- · LED does not light
- Indicating an error

After restarting, if the information is still there, please contact technicalsupport.

Shutdown

In addition to the instrument preheat mode, regardless of whether the instrument is in any other mode, hold down the switch button for 5 seconds, release the button, thescreen is off, and the instrument is turned off.

#### 9. Operation of the instrument

#### 9.1 Overview of operation

Instrument during normal use, there are two modes of operation: normal mode, and program mode. Conventional mode is the mode to enter after the start of the instrument, also called measurement mode. After booting the instrument automatically enters the normal mode to measure gas concentration and displays the current measured gas concentration. Programming mode: After entering the modemenu in programming mode, you can change various parameters of the instrument. In the programming mode, you can zero and span calibration. Under normal circumstances, you can use the normal mode.

#### 9.1.1 Conventional mode

Normal mode: The instrument enters the normal mode boot default, in the normal mode, the instrument real-time display of gas concentration measurement, the measuring data recording. Within this mode, you can display the battery power, gas type, current real-time concentration, concentration units, and time. As shown below:





## 9.1.2 Programming mode

Programming Mode: In measurement mode, press the [OK] key to enter the programming mode. 6 sub-menus display the programming mode, enter each menu, and you can make various types of parameters.



Enter the programming mode, the cursor appears in the first item "Calibration" and press [up and down] keys to move the cursor to the next item, press the [OK] key to enter the submenu. Press the [Back] key to return to the measurement mode.



There are six function main menus in programming mode, each for parameter setting, gas calibration, alarm settings, language settings, history, and system settings. And other functions. The main menu and sub-menu content in programming mode are as follows:

| ¥                 | đ            |               | 00       | settings.  | ×          |
|-------------------|--------------|---------------|----------|------------|------------|
| 1. gas type       | 1. zero      | 1. lower      | Language | 1. history | 1. Address |
|                   |              | value alarm   | setting  | record     | setting    |
| 2decimal          | 2. Range     | 2. high value |          | 2. alarm   | 2. backlit |
|                   | calibration  | alarm         |          | record     | light      |
| 3. Range          | 3. restore   | 3. STEL       |          | 3. clear   | 3. backlit |
|                   | default      |               |          | record     | time       |
| 4. gas unit       | 4. ADC value | 4. TWA        |          | 4. store   | 4. time    |
|                   |              |               |          | interval   | setting    |
| 5. channel        | 5. calibrate | 4. Sound      |          | 5. store   | 5. display |
| address           | period       | setting       |          | capacity   | definition |
| 6. display        |              | 6. vibrate    |          |            |            |
| location          |              | alarm         |          |            |            |
| 7.<br>calibration |              |               |          |            |            |
| time              |              |               |          |            |            |
| 8. calibrate      |              |               |          |            |            |
| period            |              |               |          |            |            |



#### 9.2 Instrument menu operation

#### **9.2.1 Calibration settings**

Instrument calibration mode is as follows: for each gas individually calibrated, select calibration channel by menu, please adhere to calibration rules to calibrate, or you may not succeed!



#### 9.2.2 Zero calibration:

Calibration conditions: before zero calibration put the sensor in pure nitrogen at least 60s. Then in the calibration sub-menu to select the zero calibration, press the [OK] key to pop up a dialog box, and select whether zero calibration (the default is no). Press the [up and down] keys to select, "OK" to perform a zero calibration, and press the[OK] key to zero calibration, if the buzzer sounds, it means the calibration was successful. At the same time, Dynamic displays the current value of the option value, and the Zero calibration menu displays current gas concentration values.

Range Calibration: The instrument needs to be calibrated at the standard gas concentration. Like. the same as zero calibration, range calibration should be placed in standard gas at least 60s, press the [OK] key to pop up a dialog box, and select whether to

scale calibration (the default is no). Press the [up and down] keys to select, Press "OK" to



range calibration, and press the [OK] key to range calibration. Hearing the buzzer sound means range calibration was successful. Restore Default: to restore calibration parameters to the factory set. NOTE: Before calibrating restore the default setting first. ADC value: dynamic display of the current environment ADC value. NOTE: Read-only cannot be modified. The concentration values.

## 9.2.3 ALARM SETTINGS

Low alarm:

(1) Press [up and down] to select the location of figures, and numbers from 0-9, and up to 9, press[up and down]key to return to 0;

(2) Press the [ok]key to move the cursor to the next digit;

(3) Enter the desired number, and press the [OK] key for 3 seconds to save the parameters, when they hear the buzzer sounding and the index light long bright means the data programs or parametric programming is unsuccessful, the specific cause of failure Please refertoAppendix1;

(4) If you do not want to modify the data, press the [return] key;

High alarm: high alarm and low alarm modification methods modify the same way. Note: The low alarm value cannot be greater than the high alarm value;

STEL alarm: STEL alarm modification methods are the same as the low alarm modification;

TWA Alarm: The TWA alarm modification method is the same as the low alarm modification;

Sound settings:

(1) Press the [up and down] key to select whether to turn off the buzzer sounds; ON buzzer is on, OFF is off the buzzer

(2) Press the [OK] key to confirm modifying parameters;



### 9.2.4 Vibration alarm:

The vibration alarm modification method is the same as the sound settings modification.

#### 9.2.5 Language Setting

The measuring instrument supports Chinese, and English displays, modifying methods the same as the sound settings.

#### 9.2.6 History

(1) history: Press the [up and down] key to scroll up and down to view. Data format: Time (year, month, day, hour), concentration;

(2) Clear History: Clears all historical data measurement;

(3) Storage interval: Set a data recording interval (30-240), unit: seconds;

(4) Memory capacity: Displays the current historical data memory percentage share of total capacity.

#### **9.2.7 Parameter settings**

for Instrument displaying measured gas type, precision, and other

parameters.

1 gas type: Select the type of gas detected.

2, the decimal point: select the measurement accuracy. (Optional0-4decimalplaces)

3, gas range: modify the instrument range.

4. Gasunit: Select the unit of measurement instrument. (PPM

,mg/m<sup>3</sup>,%LEL,%,%VOL)

5, SN: sensor number.

6, TVOC: TVOC gas type. (Only for TVOC gas)

Note: These men use encrypted menu factory technical personnel have operating authority,

the user on lyre ad permissions.,



## 9.2.8 SYSTEM SETTINGS

It is used to set the address, the backlight parameters, and the time.

Addressing:

- (1)
- (2) (1) Press [up and down] to select a digital value, from 0-9. When the digital reaches 9, press the [up and down] key to return to 0; Note: The address range is 1-255.
- (3) (2) Press [OK] key to move the cursor to the next digit;
- (4) (3) Enter the desired number, and press [OK] for three seconds to save the parameters. When the buzzer sounds and the green index light after a long bright means that data programming was successful, or unsuccessful, For the specific cause of the failure, please refer to Appendix 1;
- (5) (4) If you do not want to modify the data, press the [return] key. Backlight brightness: (1) Press the [up and down] key to adjust the backlight brightness level.
- (6) 1) (2) Press [OK] to confirm the change in backlight brightness; (3) If you do not want to modify the data, press the [return] key. Backlight time: (1) Press [up and down] keys to adjust the backlight time; Note: in minutes. (2) Press [OK] to confirm the change backlight time; (3) If you do not want to modify the data, press the [return] key. Time setting: Press [OK] key to set the time in hours to set an example, the same as other settings (1) Press [up and down] to increase the cursor up and down digits; (2) Press [OK] key to move the cursor to the next digit; Enter the desired number, and press [OK] for three seconds to save the parameters, when they hear the buzzer sounding and the green index light after a long bright means Data programming was successful, or unsuccessful, the specific cause of failure, please refer to Appendix1;

(8) If you do not want to modify the data, press the [return] key; after the time setting, press the [return]key to return.

## 10. Instrumentfaultandtroubleshooting

| Fault   The possible reason and resolution |  |  |  |  |  |
|--|--|--|--|--|--|
| Can't start up                             | Cause: battery power off, battery failure  |  |  |  |  |
|  | Resolution: charging and replace batteries |  |  |  |  |



| Reading too large too   | Reason: calibration failure, calibration error        |
|-------------------------|---|
| small                   | Resolution: recalibration                             |
|                         | Reason: buzzer, LED, vibration alarm, buzzer or plug  |
| Sound, light, and       | Solution: contact the customer service center, remove |
| vibration alarm failure | blockage  |
|                         |   |
| Instrument              | Cause: Memory failure                                 |
| Programming             | solve: Contact the company technician fortech support |
| unsuccessful            |   |



## **11. Quality assurance**

We can guarantee that with GRI Instrument's portable gas detector, there will be no defects in materials or workmanship undern or maluses within its deadline.

| Туре    | Name            | Display | Backli<br>t | LED   | Buzzer | Vibrat<br>e   | grade   |
|---------|-----------------|---------|-------------|-------|--------|---------------|---------|
|         | Button operate  | NO      | Open        | No    | 1short | NO            | Highest |
| Operate |                 |         |             |       | sound  |               | 1       |
|         | Operate         |         | Open        | Light | 1long  | <b>500</b> ms | 2       |
|         | successful      |         |             |       | sound  |               |         |
|         | Operate failure | FALL    | open        | flash | 2short | 300ms         | 3       |
|         | A1valueerror    | E1      | Open        | Flash | 2      | 300ms         | 4       |
|         |                 |         |             |       | short  |               |         |
|         |                 |         |             |       | soun   |               |         |
| error   |                 |         |             |       | d      |               |         |
|         | A2 value error  | E2      | Open        | flash | 2short | 300ms         | 5       |
|         |                 |         |             |       | sound  |               |         |
|         | Range value     | E3      | Open        | flash | 2short | 300ms         | 6       |
|         | error           |         |             |       | sound  |               |         |
|         | Zero calibrate  | E4      | Open        | Flash | 2short | 300ms         | 7       |
|         | error           |         |             |       | sound  |               |         |
|         | Range calibrate | E5      | Open        | Flash | 2short | 300ms         | 8       |
|         | error           |         |             |       | sound  |               |         |



| • | TWA value  | E6 | Open | Flash | 2short | 300ms | 9  |
|---|------------|----|------|-------|--------|-------|----|
|   | error      |    |      |       | sound  |       |    |
|   | STEL value | E7 | Open | Flash | 2short | 300ms | 10 |

The above warranty includes sensors and, a battery. These devices in 1 year from the first time date of shipment, or do not exist materials or workmanship defects from the first time used in one year. due to being the priority. In an accompany Ing instrument product GRI text material except otherwise stated.

## 12. Instrument alarm information :

|          | error               |           |      |       | sound |       |    |
|----------|---------------------|-----------|------|-------|-------|-------|----|
|          | Normal off          | Power OFF | Open | Light | 1long | 500ms | 11 |
|          |                     |           |      |       | sound |       |    |
| Turn off | Lower power<br>off  | Low OFF   | Open |       | 1long | 500ms | 12 |
|          | 011                 |           |      |       | sound |       |    |
|          | Storage fault       | F2        | Open |       |       | 300ms | 13 |
|          | Data invalid        | F3        | open |       |       | 300ms | 14 |
|          | Circuit             | F4        | Open |       |       | 300ms | 15 |
|          | abnormal            |           |      |       |       |       |    |
|          | Outside IC<br>fault | F5        | Open |       |       | 300ms | 16 |
|          | Probe               | F6        | Open |       |       | 300ms | 17 |
|          | abnormal            |           |      |       |       |       |    |
|          | Communicatio<br>n   | F7        | Open |       |       | 300ms | 18 |



|         | abnormal              |      |      |       |     |         |    |
|---------|-----------------------|------|------|-------|-----|---------|----|
|         | Power                 | F8   | Open |       |     | 300ms   | 19 |
| Worning | abnormal<br>Calibrate | D1   | Onon |       |     | 300ms   | 20 |
| Warning | expires               | DI   | Open |       |     | 5001118 | 20 |
|         | NO calibrate          | D2   | Open |       |     | 300ms   | 21 |
|         | Sensor expire         | D3   | Open |       |     | 300ms   | 22 |
|         | Sensor                | D4   | open |       |     | 300ms   | 23 |
|         | overload              |      |      |       |     |         |    |
|         | Overworking           | D5   | Open |       |     | 300ms   | 24 |
|         | scope                 |      |      |       |     |         |    |
|         | Battery low           | D7   | Off  |       |     | NO      | 25 |
|         | Record full           | D8   | Open |       |     | 300ms   | 26 |
|         |                       |      |      |       |     |         |    |
|         | Overrange             | OVER | Open | Flash | 2/s | 300ms   | 28 |
|         | A2orhigh              |      | Open | Flash | 2/s | 300ms   | 29 |
|         | alarm                 |      |      |       |     |         |    |
|         |                       | red  |      |       |     |         |    |

|         | Alorlower  |           | Open | Flash | 1/s | 300ms | 30 |
|---------|------------|-----------|------|-------|-----|-------|----|
| Alarm   | alarm      | Orange    |      |       |     |       |    |
| Alailli | STEL alarm |           | Open | Flash | 2/s | 300ms | 31 |
|         |            | Red Flash |      |       |     |       |    |

TWA alarm
Open
Flash
1/s
300ms
32

Orange flash
Image fl

## 13. Electro-chemical sensor order and parameter table:

| Selection | Gas type | Range     | Lower<br>alarm<br>value | High alarm<br>value | TWA<br>value | STE<br>L<br>value | Unit |
|-----------|----------|-----------|-------------------------|---------------------|--------------|-------------------|------|
| W4-LEL    | LEL      | 0-100%LEL | 25                      | 50                  |              |                   | %LEL |
| W4-CO     | CO       | 0-500PPM  | 35                      | 200                 | 35           | 200               | PPM  |
| W4-H2S    | H2S      | 0-50PPM   | 10                      | 15                  | 10           | 15                | PPM  |
| W4-NH3    | NH3      | 0-100PPM  | 25                      | 50                  | 25           | 35                | PPM  |
| W4-SO2    | SO2      | 0-20PPM   | 2                       | 5                   | 2            | 5                 | PPM  |
| W4-NO2    | NO2      | 0-20PPM   | 3                       | 5                   | 5            | 5                 | PPM  |
| W4-CL2    | CL2      | 0-20ppm   | 0.5                     | 1.0                 | 0.5          | 1.0               | ppm  |
| W4-Br2    | Br2      | 0-20ppm   | 0.1                     | 0.5                 | 0.1          | 0.5               | ppm  |
| W4-CLO2   | CLO2     | 0-20ppm   | 0.1                     | 0.2                 | 0.1          | 0.3               | ppm  |
| W4-PH3    | PH3      | 0-5ppm    | 0.3                     | 1.0                 | 0.3          | 1.0               | ppm  |
| W4-HCL    | HCL      | 0-20ppm   | 2.0                     | 5.0                 | 2.0          | 5.0               | ppm  |
| W4-HBr    | HBr      | 0-20ppm   | 2.0                     | 5.0                 | 2.0          | 5.0               | ppm  |
| W4-HCN    | HCN      | 0-100ppm  | 4.7                     | 10.0                | 4.7          | 10.0              | ppm  |
| W4-H2O2   | H2O2     | 0-100ppm  | 1.0                     | 3.0                 | 1.0          | 3.0               | ppm  |
| W4-ETO    | ETO      | 0-20ppm   | 1.0                     | 5.0                 | 1.0          | 5.0               | ppm  |
| W4-CH2O   | CH2O     | 0-5ppm    | 0.1                     | 0.3                 | 0.1          | 0.3               | ppm  |
| W4-COCL2  | COCL2    | 0-1ppm    | 0.1                     | 0.3                 | 0.1          | 0.3               | ppm  |
| W4-NO     | NO       | 0-100ppm  | 25                      | 50                  | 25           | 50                | ppm  |
| W4-SiH4   | SiH4     | 0-50ppm   | 2.0                     | 5.0                 | 2.0          | 5.0               | ppm  |
| W4-O3     | 03       | 0-5ppm    | 0.1                     | 0.3                 | 0.1          | 0.3               | ppm  |
| W4-H2     | H2       | 0-1000ppm | 200                     | 500                 | 200          | 500               | ppm  |
| W4-O2     | O2       | 0-25%vol  | 19.5                    | 23.9                |              |                   | %    |



| W4-  | C2H4 | 0-200ppm | 20 | 50 | 20 | 50 | ppm |
|------|------|----------|----|----|----|----|-----|
| C2H4 |      |          |    |    |    |    |     |

## 14. PID sensor order and parameter table:

| Order<br>number  | Label<br>color | Range | resolution | Response<br>time | Lower<br>Alarm<br>value | High<br>alarm<br>value | TWA<br>value | STEL<br>value |
|------------------|----------------|-------|------------|------------------|-------------------------|------------------------|--------------|---------------|
| W4-PID-<br>10000 | green          | 10000 | 1000ppb    | <3sec            | 1000                    | 4000                   | 800          | 2000          |
| W4-PID-<br>2000  | purple         | 2000  | 500ppb     | <3sec            | 200                     | 600                    | 100          | 400           |
| W4-PID-200       | red            | 200   | 50ppb      | <3sec            | 20                      | 60                     | 40           | 100           |
| W4-PID-20        | yellow         | 20    | 5ppb       | <3sec            | 2                       | 8                      | 5            | 10            |
| W4-PID-2         | blue           | 2     | 0.5ppb     | <3sec            | 0.5ppm                  | 1.0ppm                 |              |               |

## Sensor order and parameter table:

| Order<br>number      | Gas<br>type | series | Model<br>number | Range         | resolution    |
|----------------------|-------------|--------|-----------------|---------------|---------------|
| W4-<br>IRCH4-5       | CH4         | А      | CH4/A-5         | 0-5% VOL      | 0.01%VO<br>L  |
| W4-<br>IRCH4-<br>100 |             |        | CH4/A-100       | 0-<br>100%VOL | 0.1%VOL       |
| W4-<br>IRCO2-1       |             |        | CO2/A-1         | 0-1% VOL      | 0.001%V<br>OL |
| W4-<br>IRCO2-10      | CO2         | А      | CO2/A-10        | 0-<br>10% VOL | 0.01%VO<br>L  |
| W4-<br>IRCO2-20      |             |        | CO2/A-20        | 0-<br>20% VOL | 0.01%VO<br>L  |
| W4-<br>IRCO2-<br>100 |             |        | CO2/A-100       | 0-<br>100%VOL | 0.1%VOL       |



| W4-<br>IRHC-5   | HC | А | HC/A-5   | 0-5%VOL       | 0.01%VO<br>L |
|-----------------|----|---|----------|---------------|--------------|
| W4-<br>IRHC-100 |    |   | HC/A-100 | 0-<br>100%VOL | 0.1%VOL      |