



汉威科技集团

Hanwei Electronics Group Corporation

EGC200 Ethane Identifier Operation Manual



Hanwei Electronics Group Corporation

Thank you for purchasing our products. When you are ready to use this product, please be sure to read this manual carefully and follow the relevant operation steps provided, so that you can fully enjoy the service provided by our company, and avoid damage to the machine or other accidents caused by incorrect operation.

Copyright Statement

The copyright of this operation manual is owned by Hanwei Electronics Group Corporation. Without written permission, any behavior about copy, translate, or store in database or retrieval system of this operation manual is not allowed, including diffuse it through electronic, copy, record or other means.

User service guide

When receiving the device, please check whether the accessories and inspection report certificate are complete. If there is any missing, please contact the vendor or manufacturer immediately.

Within 12 months after the product is sold, under the normal operation by following the requirements of storage, transportation and operating, if the product quality is below the technical index, the user can get free services and repairs through the warranty card.

If you have any query or dissatisfaction about our product and service, product technology, quality, installation & maintenance, service attitude and charging rates, please contact the vendor or manufacturer in time. Your suggestion will be dealt immediately.

Symbol definition

Before using the product, please be familiar with the symbol

definition possible appears in the operation manual:



Attention - It's possible hurting yourself or others.



Caution - It's possible damaging the detector.



Warning - Annotation, use tips or additional information.

Safety Information

Before using the product, please read the following safety information, and follow the related operation requirements.

- Please don't use the instrument which is broken. Please check whether there is crack in the housing or there is short of accessories about the instrument. If it has already broken or short of accessories, please contract the vendor or manufacturer.
- All the operation of this instrument must follow local related regulations or on-site operation procedure requirement.
- It's forbidden to charge, disassembly or replace battery on the dangerous site.
- It's not allowed to expose the instrument to electric shock, strong electromagnetic field or severe continuous mechanical vibration environment.
- Be sure to use the special charger provided by Hanwei Electronics Group Corporation for charging.
- Please use the battery charger in a safe and dry indoor environment. It is absolutely forbidden to charge in dangerous places.
- Prevent the machine from falling from a high place or subject to severe vibrations.
- It is forbidden to disassemble, adjust, repair this equipment or

replace the internal parts of the equipment without permission.

- Any operation inside the instrument must be carried out by professionals. Before operation and maintenance, please read and thoroughly understand the instruction manual.
- It's not allowed to repair the instrument without the permission of the supplier. If the instrument does not work correctly, or is just an error or alarm, please refer to the maintenance section of this instruction manual.

1. Product introduction

EGC200 ethane identifier is an advanced gas inspection equipment developed by our company. Gas chromatographic analysis technology is used to identify the components of leaking gas on site and help inspectors distinguish between natural gas and Biogas.

1.1 Technical features:

- With self-patented miniature chromatographic column, it's more accurate and faster to identify the Ethane gas
- Extendable to IR sensor, full-range detection is possible
- Big-flow pump sampling to realize intelligent self-adjustment
- Multi-stage filtration, suitable for complex environment using
- Compact handheld design, no carrier gas required
- Audible and visual alarming signals
- High-brightness color screen display, convenient operation
- Explosive proof and IP65 design

1.2 Specifications

Measuring gas	Methane, Ethane (Propane)
Detection range	0-10000ppm, accuracy: ± 1 ppm

Response time	$T_{90} < 12s$
Identifying time	$< 180s$
Ethane resolution	10ppm
Working temperature	-20 to $+50^{\circ}C$
Humidity	0-90%RH (no condensation)
Air pressure	800-1200kPa
Power source	3.7V, 6600mAH Li-ion battery
Working time	Battery: $> 8h$ (full charger @ $25^{\circ}C$)
	Built-in pump: $> 10,000h$
Ingress protection	IP65

Note:

- Ethane resolution: It means, under normal working conditions, the equipment has the ability to distinguish ethane from 0.05%vol natural gas with an ethane content of 2%.
- Identifying time: It means, under normal operating conditions, the time required for the device to distinguish the ethane component.

1.3 Product structure



1	Gas inlet
2	Display screen
3	Data upload
	Charging
4	Fault indicator
5	Functional button
6	Alarm indicator
7	Power button

Note: The above picture is only a schematic diagram for reference.

Please refer to the actual product.

2. Operation instruction

2.1 Functional buttons

Operation of the instrument are through 5 buttons of , , ,

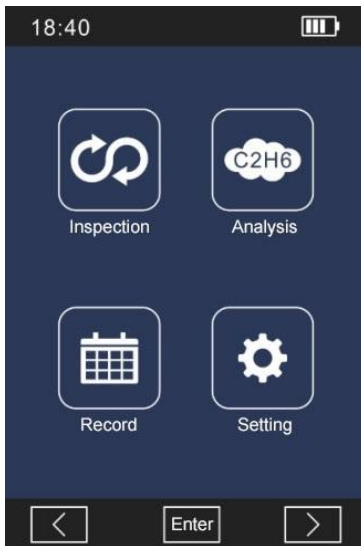
 and . In all operation interfaces, the function buttons realize their functions by single-pressing.

2.2 Power on and power off

When the instruction is power off, press and hold the power button, the instrument will power on. When the instrument is in power on, press and hold the power button, the instrument will power off.

2.3 Main menu interface

Main menus include “Inspection, Analysis, Record and Setting”.



Main menu interface



Inspection interface

2.4 Inspection interface

2.4.1 After entering the inspection interface, press the  button

once, user will see below 3 functions:

PPM---for inspection operations

VOL---for explosion detection or new gas replacement detection

Exit---to return to the main interface

2.4.2 When the gas concentration exceeds the preset alarm value, the instrument will give an audible and visual alarming signals to inform the user.

2.4.3. Mute function

In alarming mode, when pressing  button once, audible alarming signal is canceled, but alarming indicators are still flashing.

2.4.4 Zero calibration

When the screen displays “Zero” icon, put the instrument in the clean air environment. Press  button once. Screen displays “Zero successful”. Then zero calibration is done.

2.5 Ethane analysis

The component difference between natural gas and Biogas is Ethane. The Ethane identifier distinguishes whether the leaked gas is natural gas or biogas by identifying whether Ethane is present. The instrument can identify the composition of Ethane in natural gas with a concentration greater than 500ppm. Moreover, the Ethane identifier has the ability to identify the 3 components of Methane, Ethane, and Propane in a certain concentration of natural gas.

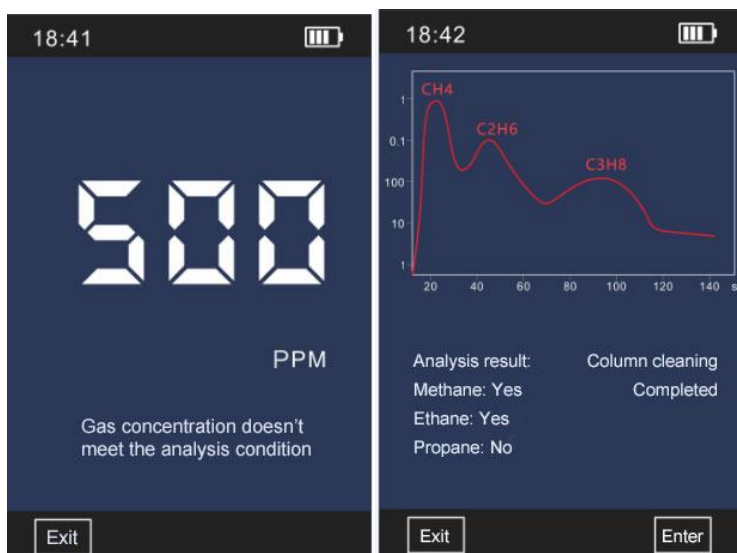
2.5.1 Operation method of Ethane analysis

(1) Connect the sampling tube to the gas inlet of the instrument.

After entering the interface of Ethane analysis, when the gas concentration is higher than 500ppm, the screen will display “Sampling” word and indication voice, Click “Sample” to start sampling.

(2) When the screen displays “Input clean air”, remove the instrument into the clean air environment.

(3) When the displayed value is smaller than 30ppm on the screen, the instrument will automatically start to analyze.



Note: Sampling function is not available when concentration is smaller than 500ppm.

2.5.2 Result of Ethane analysis

Result	Explanation
Methane: Yes Ethane: Yes Propane: Yes	Sample gas includes Methane, Ethane and Propane
Methane: Yes	Sample gas includes Methane and

Ethane: Yes Propane: No	Ethane
Methane: Yes Ethane: No Propane: No	Sample gas includes Methane only
Methane: Yes Ethane: ? Propane: No	Sample gas includes Methane, no Propane. Ethane is not confirmed
Methane: Yes Ethane: ? Propane: ?	Sample gas includes Methane. Ethane and Propane are not confirmed
Methane: ? Ethane: ? Propane: ?	Abnormal result
Methane: No Ethane: No Propane: No	Sample gas doesn't include Methane, Ethane and Propane

2.5.3 Result saving

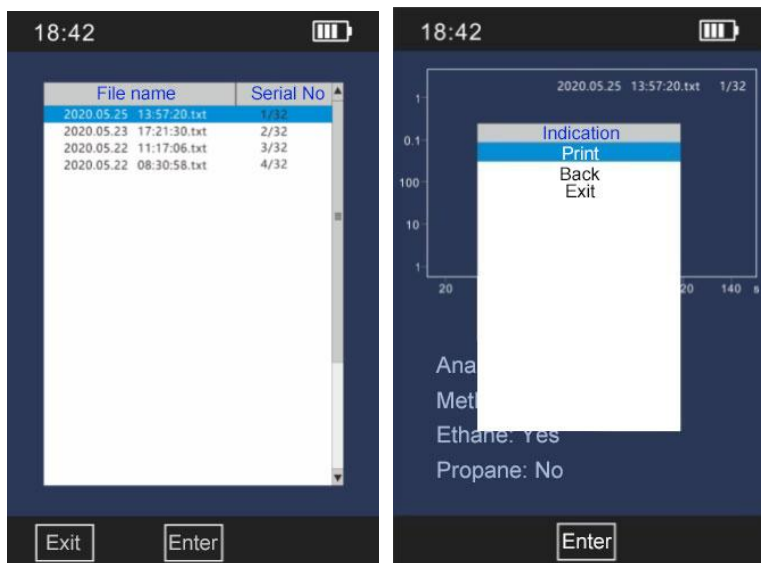
- (1) After Ethane analysis, click "Save" icon to save the result.
- (2) File name is in the format of "2019. 10. 11 10:51:32 .txt".

2.6 Record

In the main menu interface, select "Record" and press  to review the record. Press  and  buttons to select the record.

Press  button to review the details of the selected record. After entering each record review interface, press  button and user can check the details of this record. When pressing "Function", user can print the record through the Bluetooth printer.

Note: Printer is an optional accessory of this device, but not a standard accessory.



2.7 Setting

In the main menu interface, select “Setting” and press  to enter setting interface. Press  and  buttons to select the parameter to be set. Press  button to enter and make settings. Press  button to exit to main menu interface.

2.7.1 Column cleaning

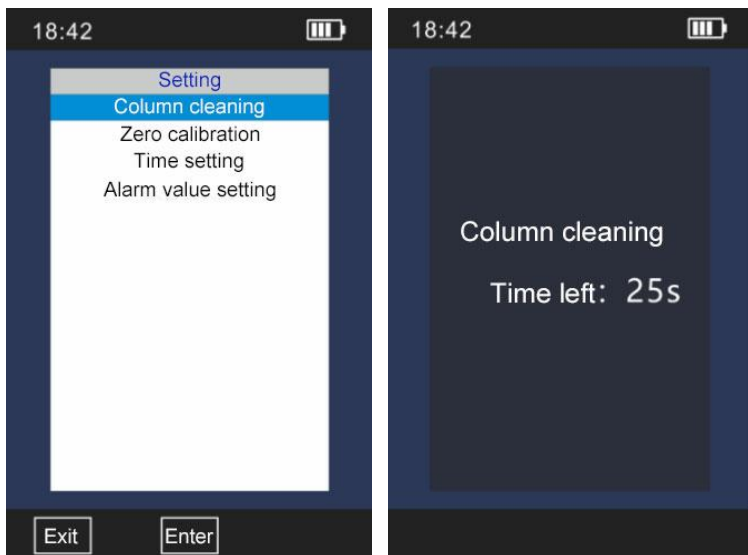
Put the instrument in the clean air. Select “Column cleaning” and press  button to start. Keep inputting clean air. After cleaning is done, the instrument exits to the main menu interface

automatically.



Warning: During column cleaning, no operation is allowed.

Keep the instrument power on.



2.7.2 Zero calibration

Select “Zero CAL” and press  button, the instrument will start zero calibration automatically. After completion, the screen will display “Calibration succeeds”. Then the instrument exits to the setting menu interface.



Warning: Put and keep the instrument in the clean air environment for some time before making zero calibration, so as to ensure the calibration accuracy.

2.7.3 Time setting

Select “Time setting” and press  button to enter time setting

interface. Press  and  buttons to select year, month, date, hour, minute to be set. After selecting, press  and  buttons to adjust the figure. Press  button to confirm the setting. Instrument will update the time and exit to the setting interface.

2.7.4 Alarm setting

Select “Alarm setting” and press  button to enter alarm setting interface. Press  and  buttons to select the item to be set. After selecting, press  and  buttons to adjust the figure. Press  button to confirm the setting. Instrument will update the setting and exit to the setting interface.



2.8 Charging

Connect the charger to the AC220V power supply, and then connect the round charging plug of the charger to the charging port of the instrument to charge. The battery logo on the screen displays the charging status.



Warning:

- Charging must be carried out in a dry and safe place, where temperature should not exceed 50℃.
- After charging, please remove the charger from the instrument.
- Be sure to use the special charger provided by Hanwei Electronics Group Corporation so as to avoid hazard happening.

3. Bluetooth printer

3.1 Printer introduction

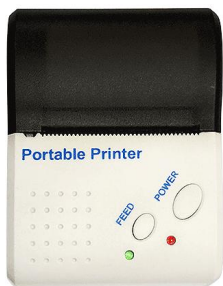
The printer has 2 buttons and below is the instruction of them:

POWER: Press and hold it for 3 seconds to power on or power off.

FEED: To feed the printing paper when the printer is power on.

3.2 Replacement of printing paper

- Open the paper chamber.
- Put the printing paper inside. The clean surface of the printing paper is placed facing the operator, and the printing paper is slightly drawn out,
- Close the paper chamber.
- Tear off extra or irregular printing paper along the zigzag of the paper exit.



3.3 Charging

- During charging, red LED indicator keeps lighting.
- When fully charged, red LED flashes.

3.4 Result printing

- Before printing, press and hold "POWER" button for 2 seconds. Red LED indicator lights and the printer powers on.
- In the "Ethane analysis" interface, select "Record" and print

 button to enter record interface.

- Press  and  buttons to select the Spectrogram data to be printed. Press  button to enter printing interface.

- Press  button to select "Bluetooth print" to start printing. During printing process, green LED indicator is lighting. After printing, green LED indicator is off.
- If no need printing, then select "Back" to the last interface or "Exit" to the main menu interface.

4. Daily maintenance

Ethane identifier is a low-maintenance and safe-operation detection instrument. There are few works for daily maintenance.

4.1 Replacement of the hydrophobic filter

The sampling tube of the instrument contains a hydrophobic filter which can prevent dust and water vapor from entering the instrument. Before power on, the user need to check the filter status. If it is covered with dust or water vapor, it needs to be replaced, otherwise the sampling efficiency will be affected, and the analysis result will be affected.

Note: The side of the filter without lettering faces the direction of the metal quick-connect connector, as shown in the photo below.



4.2 Other matters needing attention

- After using, put the instrument back into the carrying case. Store the battery after fully charged to ensure the battery's service life.
- Wipe the instrument with a clean rag when necessary.
- Replace the hydrophobic filter in time after long-term use.
- If the instrument has been stored for a long time or have not been used for a long time, the battery should be charged regularly to ensure the service life of the battery.
- The suggested storage temperature is 0°C-+50°C.

5. Product features and accessories

5.1 Product features

According to real demand, the instrument can integrate below two types of gas sensors:

Application	Product type	Detection range (CH4)	Sensor type
Inspection Ethane analysis	Normal	0-1000ppm	SC
Inspection Ethane analysis Full-range detection	OEM	0-100VOL% 0-100LEL%	SC, IR

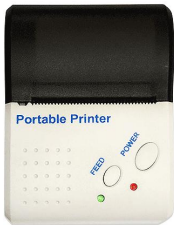
Note:

SC --- means semi-conductor sensor

IR --- means infrared sensor

5.2 Accessories

Item	Picture
Sampling tube ● Telescopic probe (totally 1 meter) ● Hydrophobic filter (0.45um) ● Metal quick connector ● Variable-diameter quick connector	
Instrument charger ● Input: 100-240V, 50Hz, 0.6A ● Output: 6.5V, 2.5A	

Bluetooth printer (optional) ● Thermal printer ● Battery: 1500mAh, 7.4V	
Printer charger (optional) ● Input: 100-240V, 50Hz, 0.6A ● Output: 9.0V, 1.5A	
Printing paper (optional) ● Thermal type ● 57*50mm	

6. Trouble shooting

Problem	Possible reason	Solution
Suction power of pump is reducing	Filter is blogged with dust	Replace the filter with a new one
Gas path failure	Sampling tube and filter are in water or blocked.	Replace the filter with a new one
Displayed result is small when tested with	Poisoned by gases such as H ₂ S, sensor sensitivity decreases	Re-calibrate the instrument in time

standard gas	in a short period of time; or the baseline of the sensor drifts.	
Displayed result is too small when tested with standard gas	The performance of the sensor periodically decays or the sensor is permanently poisoned.	Re-calibrate the instrument in time or repair the instrument by professional staff
Printer can't print	1. Printing paper is used up. 2. Bluetooth is not connected successfully	1. Replace the paper with a new one. 2. Restart and reconnect the printer.

7. Precautions

- It is forbidden to charge, disassemble and replace batteries in hazardous areas. Please use the battery charger in a safe and dry environment.
- Do not expose the instrument to electric shock, strong electromagnetic field or severe continuous mechanical vibration environment.
- Be sure to use the special charger provided by Hanwei Electronics Group Corporation for charging.
- A lithium battery is included in the instrument. Do not mix used batteries with garbage. Used battery should be disposed by a qualified recycler or hazardous material disposal company.
- Prevent the instrument from falling from a high place or subject to severe vibrations.
- The installation of this machine must comply with the national

electrical and local electrical installation regulations. Otherwise, it may cause serious personal injury.

- It is forbidden to disassemble, adjust, repair this equipment or replace the internal parts of the equipment without permission.
- Any operation inside the instrument must be carried out by professionals. Before operation and maintenance, please read and thoroughly understand the instruction manual.
- Do not try to repair the instrument. If the instrument does not work correctly, or is just an error or alarm, please refer to the maintenance section of this instruction manual.

8. Warranty condition

- Before leaving the factory, all the components of the instrument have been professionally inspected and verified by our technicians.
- In the case of correct operation, we provide a one-year quality warranty for the whole instrument.
- Consumables such as filters and printing paper are not included in the warranty.
- Damage to the gas sensor or other key components caused by incorrect or improper operation is not included in the warranty.
- If the instrument fails due to incorrect operation or an environment that does not meet the conditions of use or does not meet the purpose of use and testing, the required repairing need to be charged. In this case, according to the specific situation of the failure, the approximate maintenance cost will be notified to you before the maintenance!

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