Contents

Please read the instruction manual carefully before using the instrument. If there is any dispute, it is subject to the English version of the instruction manual .

Ⅰ Instrument Parts and Accessories, Optional Accessories

1. Spare parts and standard accessories (included)

(1) Main frame

(2) Host

(3) Carrying case

(4) Transparent plastic probe with filter

(5) Alkaline battery (four cells) and rechargeable battery of the suction pump

(6) Charger

(7) Reference Manual

(8) Operation manual

2. Optional accessories and replacement accessories

ASG0128 hydrocarbon filter ASG0500-H hot air detection set

ASG02017 0.82 meter transparent plastic probe with filter

ASG0140 Probe with hose for narrow space ASG0500-P printer

A0156 Dust and water filter set

Calibration Toolbox-Instrument Module Calibration and Calibration Kit

Ⅱ Instrument Introduction

After the host is equipped with the specified sensor, it can be used to detect combustible gas, oxygen content and toxic gas.All mainframes use advanced low-power semiconductor sensors to measure the low explosion limit range of flammable gases, and advanced thermal conductivity sensors are used to measure the volume percentage range of flammable gases. The user can select different gases on the sensor item of the instrument menu and select the gas to be measured expressed in methane or propane. A large LCD display with automatic backlight display function displays the concentration reading of the gas to be measured. The LED display continuously displays the current gas alarm concentration of the instrument. All gases are continuously sampled by internal suction pump.The audible and visual alarm indicates the dangerous situation of the current environment. Live alarm flashes through red

LED flash display, display indication and alarm sound, the flammable gas alarm concentration is from 50% LEL

(2.5% methane or 1.1% propane) to 17% methane (12% propane). The CO alarm value is 35ppm. The oxygen alarm value is set in two ranges below 19.5% and above 23.5%. H2S alarm value is
10ppm.

The instrument is designed to match the safety of the United States, Canada and Europe for use in Group 1, Class 1, Group C and D hazardous environments.

Ⅲ Technical Specification

Sensor Technical Parameter

Type	Resolution	Measuring Range	Accuracy
LEL	0.1%	0-50%	±10%
%gas	0.1%	2.5-100%	±5%
O_2	0.1%	0-25%	±0.2% or 2%**
CO	1ppm	0-2000ppm	±5ppm or 5%**
H_2S	1ppm	0-100ppm	±2ppm or 5%**

Note:* The resolution of% gas volume percentage in the LEL range is 0.01% VOL
** larger value

Ⅳ Features

The instrument is made of durable stainless steel and can withstand the harsh environment in the wild.

The instrument requires four alkaline batteries and rechargeable batteries. The battery lasts for 20 hours. The alarm sound is easily heard from the speaker, which is on the left side of the instrument.The infrared LED is transmitted on the right side of the instrument and can be used to download calibration data and gas readings. The operator can store the measurement data in the instrument's memory.

The dual-row liquid crystal digital display continuously displays all effective measured gas concentrations, as well as the internal operating conditions of the instrument, such as gas flow and battery capacity alarm indications. The red LED on the right will flash under any alarm condition.

Ⅴ Sensor Type and Pump

1. Combustible gas sensor

All instruments use high-sensitivity semiconductor sensors. Through a special circuit and a microprocessor, to control the function and accuracy of the sensor. This sensor can measure methane (natural gas) at concentrations below 10 ppm to 100% LEL. After the concentration is higher than 50% LEL, 1.1% methane or 2.5% propane, it is detected by a high-performance thermal conductivity sensor and expressed by volume fraction content. This sensor can quickly and accurately measure and display high concentrations of gas. All readings are automatically converted between LEL and% volume concentration.

2. Electrochemical sensors (optional)

All instruments when equipped with the following optional sensors, micro-processing and auxiliary circuits will be able to measure the oxygen concentration from 0 to 25% by volume; measure the carbon monoxide concentration from 0-2000ppm, all gas concentrations are displayed on the display screen.

3. Suction pump

This TRAK-III is equipped with a powerful and effective two-speed rotary vane pump. Past the filter set continuous detector protects the pump from external substances. If the previous filter is lost and damaged, an additional internal filter protects the pump from debris. There are audible and visible instructions that will indicate occlusion or improperly installed pump.

Ⅵ Battery Installation and Replacement

The battery replacement is performed after the English letter "BAT LOW" appears. At this time, the low battery warning sound and the green status indicator LED flash. When “BAT LOW” is displayed, the shutdown time reserved by the instrument is about 30 minutes.
Warning: The battery replacement needs to be done in an environment away from flammable gases.

Open the battery cover and loosen the screw from the bottom of the instrument. Open the cover to remove the battery that needs to be replaced. Put the new battery (4 alkaline batteries No. 1) into the battery compartment, and pay attention to the positive and negative poles of the battery. Re-install the battery compartment cover and tighten the screws with moderate force to avoid damage.

Ⅶ Instrument Operation

The first step: Charge the high-power suction pump before use. The charging socket is in the lower left corner behind the high-power suction pump body. Another head connected to 220V (50 ~ 60HZ) power supply.

Note: Only use the charger provided by Energy to charge the instrument.

Step 2: Connect the round tube between the high-power suction pump and the host. Power on the host.

(Operation according to the operating instructions of the host computer)

Step 3: Open the transparent plastic cover in the lower left corner of the instrument panel, turn on the power switch (ON), the small knob on the left side

of the power switch controls the flow rate of the instrument.

Note: The flow rate of the instrument has been debugged by Energy. Don't change without the instruction.

Step 4: The instrument enters the detection state.

The main unit has 3 operation buttons:

● Left button (POWER / MUTE): switch power supply and switch alarm sound

● Middle button (MENU / BH TESE): Enter the hole test function to assist in identifying underground leaks; enter the user menu and calibration; download and set the clock.

● Right button (ZERO / SAVE): Store measurement data; perform sensor manual zero adjustment.

Tick sounds when the button is pressed

1. Press the "POWER" button (power switch) to start the operation, you will hear a short beep sound.

Warning: Whenever TRAK-III is turned on, it should be in an environment away from combustible gases. To ensure that the instrument is completely zeroed.

2. If there is no display or "BAT LOW" appears on the screen, replace the battery.

3. If the instrument starts normally, the suction pump will start and the display will light up. The instrument then displays:

a. Product name and digital translation.

b. The system checks the pump operation of the unique battery

c. Date and time

d. Serial number of the instrument

e. When "CAL PAST DUE" is displayed, the sensor has exceeded the calibration failure and may need to be calibrated. The warm-up process will continue after the alarm.

f. Preheat the countdown for 10 seconds.

g. Display "AUTO ZERO" to zero all sensors

h. During startup, if some sensors cannot be recovered at all, “FAIL” will be displayed on the display screen of the detector. The green status indicator will be permanently on to indicate that the instrument needs to be repaired.
The preheating process will not be stopped for the above reasons.

i. Display all available readings, the display "X" indicates that the sensor is not installed.

4. The display will indicate the LEL reading by displaying “L” to transition to the volume percentage display. The resolution of all LEL readings is 0.1% LEL or 50 ppm methane.

When the gas concentration exceeds the LEL range, the "L" reading will no longer be displayed. The percent sign “%” and gas type will be displayed. The instrument calibration shows “N” for natural gas or “P” for propane gas. If the instrument is set for a percentage gas concentration reading, then “%” and "N" or "P" is still displayed at any time. When the range is 0-2.5% gas, the display resolution is 0.01%, and the resolution of all gas concentration readings with readings greater than 2.5% is 0.1%.

5. The instrument sometimes requires manual zero adjustment. If preset to the LEL range, zero adjustment will not be possible.

6. Before use, test the sampling system first. Press and hold the stainless steel probe connector inlet. If all the seals are correct, the instrument will display a

red "FLOW BLOCKED ". If the instrument does not display" FLOW BLOCKED "after pressing and holding for 10 seconds, you need to check all the connections of the sampling tube. During the blockage of the suction pump, the prompt sounds every 2 seconds until the suction pump restarts and Airflow is normal.

7. When detecting areas with relatively high temperatures, such as chimney openings, flues, etc., a special accessory-hot air sampling tube is required; connect the interface on this sampling tube to the matching connector on the sensor cap. This connection only needs to be finger-tightened. When doing flue gas detection, it is necessary to add its soot particulate filter and desiccant. Instrument damage caused by the use of uncertified probes cannot be protected by warranty.
Note: Do not hold the steel pipe part of the hot air probe by hand, otherwise it may cause burns.

8. When detecting areas such as garbage, dust, water or embers from a distance, sometimes the sensor cap needs to be replaced or cleaned. As long as the instrument shows that the gas flow is blocked when detecting the sample gas, it is necessary to replace the additional filter. If there is no prompt of airflow obstruction, it means that there is a leak in the sampling part of the instrument, which may cause erroneous test results.

9. In the detection area, the specific sensor will update the displayed value when encountering gas. In addition, if the concentration of combustible gas encountered reaches the set value, there is
The LED indicator will flash. If any sensor has an alarm condition, that is, the preset alarm value is reached, the LED indicator will flash and emit an alarm sound. In addition, the gas reading will flash when the alarm is exceeded.
Note: These instruments have cross-sensitivity to many different gases. Jain has

always been committed to creating a cross-sensitivity table for combustible gas sensors based on methane calibration. Although other sensor receivers also have cross-existence, they are relatively limited. For the latest relevant information, please call Anager.

10. Press the left button MUTE and release it to turn off the alarm sound. To turn on the alarm sound, press again. If the flammable gas reading exceeds the alarm range, the number on the display will flash. The red indicator light flashes to indicate that the operator is in a potentially dangerous situation.

11. Can assist in accurately finding underground gas leak points. Refer to the BH TEST section of the menu operation chapter in this manual.

12. At any time, the operator can use the "SAVE" key to store the displayed data, this function can record all readings for future download. The memory capacity is set to 6 times at the factory, and can also be adjusted from 1 to 16 times. The first data downloaded is the reading of the last test.

13. If the gas detected by the instrument is inconsistent with the gas used for calibration, the reading may show "NSR". For example: If the instrument is calibrated with natural gas, then "NSR" is likely to indicate the detection of a gas heavier than air (such as gasoline, propane, carbon monoxide, etc.). If the meter is calibrated with propane, “NSR” is likely to indicate that the detected gas is lighter than air (such as hydrogen, helium, methane or natural gas).

14. Using necessary accessories, you can sample and detect some inaccessible places, such as confined spaces or fuel gas. During the sampling process, the corresponding reading may change. When the gas concentration reaches the preset alarm value, an audible and visual alarm will be generated.

15. When the light in the use place is dim, the automatic backlight function of the instrument will be turned on to illuminate the reading and facilitate the detection;

16. When turning off the instrument, keep pressing the left button for 5 to 6 seconds until “POWER DOWN” appears. The instrument will turn off.

Ⅷ Instrument Calibration（contact Energy）

Ⅸ Probe Test

The penetration test function can be used to assist in accurately finding the underground leak of gas. This function will continuously sample for 45 seconds and display the current value and the maximum reading.
Steps for conducting hole test:

1. In the general inspection state, press the "BH TEST" key to open the hole test function. If you continue to press the "BH TEST" key for 5 seconds, it will switch to the user menu section.
2. Press the left button to return to the general detection status.

Install a sampling tube connector at the end of the sensor cover to prepare the sampling tube or probe for the next hole detection test.

4. Press "BH TEST" (the middle button, the suction pump will stop and display "BAR HOLE

TEST, START ", and then insert the probe into the probe hole.

Press the middle button again, the suction pump will be turned on, and the words "BH PUMP ON" will be displayed, and the remaining time of the

sampling test will also be displayed.

6. After the test is completed, the suction pump will be turned off and the word "BH PUMP OFF" will be displayed. The current concentration is indicated by "% ON", and the peak (or cumulative concentration) value will be indicated by "% PK". These two readings will stay on the display until the "ZERO" key on the right is pressed to clear the gas in the probe system. All such readings are displayed in%.

7. Press the "ZERO" button on the right until all readings become%, you can start another hole test. Press and hold the "ZERO" button on the right and start timing.
8. Press the left button to return to the general detection state.

"NSR" means that the measured gas is inconsistent with the calibration. When looking for such leaks, you can enter the "GAS TYPE SELECTION" state in the menu. Best choice
"PROPANE" detects heavy hydrocarbon leaks; it is best to select "NATURAL" to detect methane (natural gas, coke oven gas). When natural gas and heavier hydrocarbon gas
(Eg gasoline or propane), it may be necessary to use a hydrocarbon filter.

Ⅹ Maintenance and Repair

The filter of the high-power suction pump is located in a transparent plastic cavity on the right side of the high-power suction pump. It can effectively prevent the suction pump from sucking dust into the host, so the filter module needs to be checked frequently. Observe the color change of the white film in the transparent plastic cavity. If the color changes to yellow, the film must be

replaced immediately (this film is a consumable product, provided by Energy) to ensure that the pump body is not blocked.

Follow the steps.

Step 1: remove the garbage and debris outside the filter cavity.

Step 2: Loosen the 4 screws and remove the front cover.

Step 3: Remove the filter membrane and black O-ring.

Step 4: Clean the filter cavity.

Step 5: Insert new filter membrane and O-ring.

Step 6: Reinstall the front cover and tighten 4 screws.