



Operating Manual

ISO9001:2000

Thank you for trusting our company and selecting our products. In order to proper use of the device and avoid any damage caused by incorrect manipulation, please read through this instruction before using it and operate strictly in accordance with the operating manual. Please put this manual in good keep, so that you can timely look it up and receive assistance.

Copyright Statement

- All rights reserved. Without the written permission of the copyright holder Kesa Electronics, any part of the manual can not be copied, translated, saved in a database or retrieval system, or spread by electronic edition & record type.
- On the principle of scientific and technical innovation, Kesa Electronics always dedicated to improving the performance of products. Kesa reserves the right of product improvement without prenotice customer.
- If there is damage caused by user's misuse (such as installation, operation or replacement not following the owner's manual), user must be fully held responsible for any consequence that may arise.
- The appearance of product is subject to practicality.

Service Guides

- Before your usage, please check if the accessories in delivery list are completed. If any part missing or defect, please contact the sales agent or manufacturer immediately.
- During the warranty period (within 12 months of the date of sale), we will be responsible for giving free maintain to the quality problems of breakdown under normal usage.
- For following circumstances, we will provide paid service.
 - a. Damage caused by offending against the rules of operating the device
 - b. Failure caused by maintenance in a non-designated technical service station
 - c. Damage or quality problem caused by accidental reason, such as natural disaster (earthquake, flood, fire, etc), extrusion & collision & break in transit.
- Please show the warranty card for free repair guarantee.
- After the maintenance, please show this manual to the serviceman to fill the enclosed maintenance report and sign on it. Then please kindly give your comment and signature to the service. If you are a company, please stamp on it.
- If any ideas and complaints to our products or service, please do not hesitate to contact us. We will try our best to consider and cope with your suggestion.

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Points for Attention in Application

Please kindly notice below points before your usage,

- Please do not use the damaged gas detector. Before your usage, please check if the housing and accessories are completed. If housing damaged or accessories absent, please contact the sales agent or manufacturer.
- Replacing the components without authority may break the internal security of the device. Please do not disassemble, adjust or repair the device by yourself.
- Do not expose the device to lightning or serious continuous mechanical vibration environment.
- Used batteries and sensors should be disposed by a regular withdrawer or hazardous materials processor. Do not carelessly throw it in the litter bin.
- Do not disassemble or throw the battery in fire, and avoid polarity short trouble, otherwise it will cause a fire or explosion.
- Avoid to splash water, chemical reagent, benzene or gasoline, etc on the device, or suck into the device. It may cause failure or damage.
- Avoid heavy vibrations or dropping the device from high position.
- In order to ensure the measurement precision, we suggest calibrate the device every 6 months.
- Avoid contrived too much impact to the device with high concentration hazardous gas.
- If the sensor was failed or be used for more than 24 months, please stop using it.
- Before your usage please read through the user's manual and use the device in strict accordance with this manual.
- During your usage, if there is any failure which was not mentioned in this manual, please contact the sales agent or manufacturer.

1. Brief Introduction

KT-606 series gas leakage detector is for industrial use with high performance and a wide detecting range, which can detect more than ten types combustible explosive gas. Also, it has below advantages: small figure, simple operation, easy to carry, extension flexible probe tube, high shock resistance. High-resolution STN dot-matrix LCD can provide high-visible display. It is applied to detect methane, natural gas, LPG, coal gas, ethane, propane, acetylene, butane, isobutene, pentane, hexane, halogenated hydrocarbon (methyl chloride, trichloroethane, chloroethylene, etc), alcohols (methanol, ethanol, propanol), ether, ketone (butanone, acetone), hydrogen, methylbenzene and other compound (gasoline, industrial solvent, paint, thinner, refrigerant, abluent, sulfur dioxide, ammonia, hydrogen sulfide, methyl acetate, etc).

Features

- ◆ High-resolution STN dot-matrix LCD display
- ◆ Quickly find the gas leakage point
- ◆ Long and flexible gooseneck tube, adjustable detecting range
- ◆ Low-voltage alarm, under-voltage automatic shutdown
- ◆ Failure self-checking function of the sensor
- ◆ Quick preheat, rapid response
- ◆ Frequency variation of audio signal with concentration
- ◆ Zero point self-calibration
- ◆ Black scroll bar display the ratio scale of real time concentration to full range

2. Specifications:

- ◆ Detecting Gas: combustible explosive gas (such as natural gas, LPG, etc)
- ◆ Sensor: semiconductor
- ◆ Detection Range: (calibrated by methane)
0 PPM---1000 PPM & 0 PPM---10000 PPM (optional)
- ◆ Sampling Method: diffusion
- ◆ Sensitivity: better than 50 PPM
- ◆ Working Environment: Temperature: $-10^{\circ}\text{C} \sim 55^{\circ}\text{C}$
Humidity: $\leq 93\%$ RH (non-condensing)
- ◆ Storage Environment: Temperature: $-30^{\circ}\text{C} \sim 60^{\circ}\text{C}$
Humidity: $\leq 93\%$ RH (non-condensing)
- ◆ Warm-up time: $\leq 30\text{S}$
- ◆ Response time: $\leq 10\text{S}$
- ◆ Indication: LCD scroll bar and data display, audio alarm with variation of frequency
- ◆ Charging Duration: ≤ 5 hours
- ◆ Continuous Working Period of the Battery: $>8\text{h}$ (normal working environment)
- ◆ Sensor life: 2 years
- ◆ Power Supply: 3.6VNi-1600mAh nickel-hydrogen chargeable battery
- ◆ Weight: about 300g
- ◆ Dimensions: 180mm \times 72mm \times 35.5mm
- ◆ Outershell material: ABS material
- ◆ Gooseneck Tube material: Aluminum

3. Structure and Function

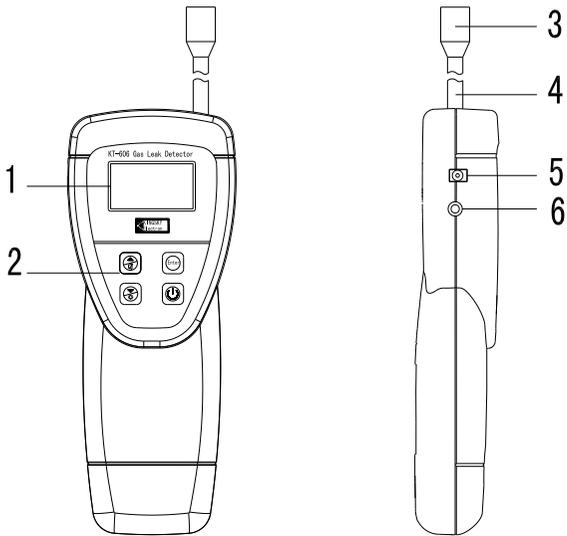


Diagram 1: Structure Diagram

1	LSD Screen	4	Flexible Gooseneck Tube
2	Control Panel	5	Charging Jack
3	Probe	6	Earphone Jack (Self-provided earphone)

4. Operating Instruction

4.1 Preheat and Self-check After Switching On

- 1、 When the device is shutdown and with enough electricity, press and hold the key  for 2 seconds, the device will start up with backlight flashing.
- 2、 After switched on, it will display software version. Then, sensor preheat begins with the prompting message “Sensor warming up Wait please....” and 30-second countdown displays.
- 3、 Sensor self-checking will start after preheat finished. If there is no problem, it will display “sensor OK” and go into standby status; if any detected fault, it will display “Error! Please contact the supplier or factory” and then shutdown.

4.2 Detection Mode

After switched on and went into standby status, below interface will be displayed. The black horizontal scroll bar indicates the ratio of diffused gas concentration to full range; the big font number refers to the current concentration readout value; “PPM” is the unit of measurement; “MAX” indicates detected maximum readout value after this starting up; “×100” indicates present adjusted detecting range is 0 ~ 10000ppm (“×10” indicates detecting range of 0~1000ppm).

For example, in diagram 2, the current detected gas concentration is $75 \times 100 = 7500\text{ppm}$, the MAX detected value is $85 \times 100 = 8500\text{ppm}$.

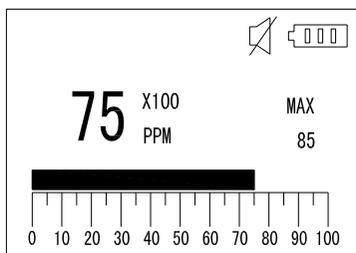


Diagram 2: Display Interface Sample

Detection Method

Hold the device and keep the probe move slowly around the area where may occur leakage. Based on the black scroll bar and prompt tone, user can estimate if there is a leakage. The longer the bar indicates, the higher frequency of alert tones warning, refers to the larger quantity of gas leakage. The exact variable quantity can be shown from the indicated value. The higher value indicated, the larger quantity of gas leakage. If the leakage quantity is too large, and the scroll bar indicates full, please choose the larger detecting range with the key  (refers to article 4.5 select detecting range).

4.3 Alerting Tones On & Off

In standby status, the default setting of alerting tones is on. The higher concentration, the higher frequency of the alerting tones warns. If the working environment is noisy, users can use a pair of earphone.

Press and hold the key  for more than 2 seconds to turn on / off the alerting tones. If the alerting tone was on, the icon  will display in the screen. If muted, the icon  will display.

4.4 Backlight on & off

In standby status, press and hold the key  for more than 2 seconds to turn on / off the backlight.

4.5 Detecting Range Adjustment

User can select the detecting range based on the actual needs. Detecting range 0~1000ppm & 0~10000ppm respectively corresponds to “×10” &

“×100” displayed on the screen. The default detecting range is “×10” (0~1000ppm).

Please select the detecting range by the key  or .

Note: The sensitivity will be higher when the detecting range is smaller. If the leakage gas concentration is not high, please select the lower detecting range “×10” (0~1000ppm); If the black scroll bar indicates full with detecting range of “×10”, it means the leakage gas concentration reached to or over 1000ppm, please select a wider detecting range scale “×100”.

4.6 **Shutting Down**

With device on, press and hold the key  for more that 2 seconds until “Shutting down!” displays. Then the device is switched off.

5. Setting and Calibration

We suggest calibrate the device every 180 days (6 months) to ensure the measurement accuracy.

5.1 **Calibration Procedure**

① In Standby status, press the key  to enter calibration mode. The calibration menu displays as below,

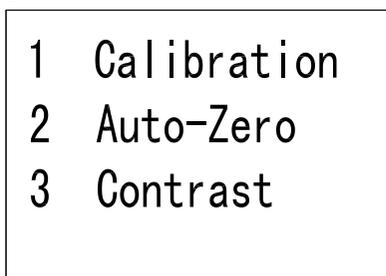


Diagram 3: Calibration Mode Menu

② Select option 1 (1.Calibration), press  key to enter calibration interface directly. In order to ensure the accuracy, calibration should be operated at least 3 minutes later after starting up. Or there will be a countdown of preheat before enter below calibration mode.

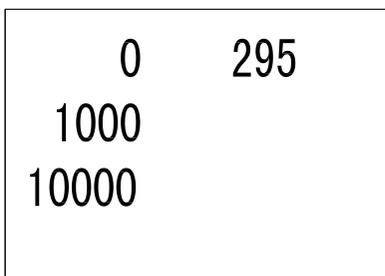


Diagram 4: Calibration Interface

- ③ The device is three point calibration, user may perform any of three point calibration actions in any order. In calibration interface, press the key  or  to select a calibration point. Then, put the device in clear air environment (for 0ppm calibration) or corresponding concentration gas until the calibrated point value become in stable state. Press key  to save the value temporarily. If successfully saved, a character “√” will appear on the screen in the right of the calibrated value option. Now the calibrated point value may change and update, due to the slight change of environment. User can press key  to change the saved value. The new value will be saved as confirmed calibration value.
- ④ Once the three points calibration are all finished, there will be three “√” appear on the screen. Please press the key . Then, on bottom of screen will display “OK!”. Now all the new values have been saved, the calibration is completed. If there is large deviation between calibrated value and theoretical value, prompting message “Error in data ! please recalibration” will be displayed. Soon, the device will return to previous menu.
- ⑤ During the calibration, you can press  key to abort your operation and return to previous menu.

5.2 Automatic Zero Calibration

The device has function of automatic zero calibration after staring up. The default setting of this function is off.

- ① Enter the menu interface as diagram 3.
- ② Select option 2 (2. Auto-zero) and press key  to enter the setting menu as below,

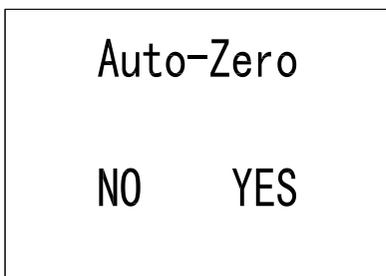


Diagram 5: Auto-zero Setting Interface

- ③ To press the key  or  can select “NO” or “YES” to adjust the automatic zero calibration function off or on.
- ④ Press the key  to save the data. The setting will take effect after next starting up.
- ⑤ During the setting, you can press  key to abort your operation and return to previous menu.

5.3 **Screen Contrast Control**

The default setting of contrast is suitable for most situations. If you need to adjust the contrast, please operate as below procedure,

- ① Enter the menu interface as diagram 3.
- ② Select option 3 (3. contrast) and press key  to enter the contrast control interface as below,

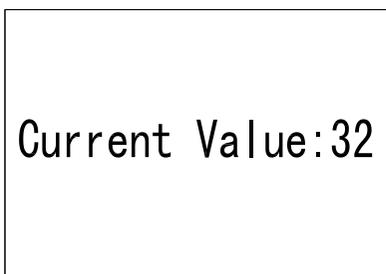


Diagram 6: Contrast Control Interface

- ③ Press the key  or  to adjust the value. The higher the value, the higher the contrast, the darker the color displays.

- ④ After your adjustment, please press the key  to save the data. The setting takes effect immediately without restart.
- ⑤ During the setting, you can press  key to abort your operation and return to previous menu.

6. Battery and Charging

6.1 Battery Capacity Indication

	Fully Charged	 (flashing)	Empty. Please charge up. Or the device will automatic shutdown .
	Remainder		
	Battery Low		

6.2 Charge Up

In power off status, connect the battery charger to 220V AC power supply, with the charger plug into the charging jack of the device. Now, the indicator on charger is red, a dynamic icon of charging appears on the screen. When the indicator turned green, do not finish charging at once. We suggest continue charging it for a period.

Caution:

- ◆ Do not charge in dangerous field, it may damage the device, even cause a fire or explosion.
- ◆ If the device shutdown automatically, please charge up as soon as possible.
- ◆ Do not put a non-rechargeable battery in the battery compartment and charge up. It may cause weeping, explosion or fire.

7. Sensor Replacement

Under normal operating conditions, the performance life of sensor is about 2 years. If the sensor fault or life ends, please contact the sales agent or manufacturer to provide a replacement and direction.

8. Common Malfunctions and Settlement

Fault Symptom	Malfunction Analysis	Suggested Settlement
Fail to power on & automatic shutdown after switch on.	Battery voltage is low.	Please charge up.
No response to the detected gas.	Preheat time	Wait until preheat finished.
	Sensor failure	Replacement of sensor.
Prompting message “ Error! Please contact the supplier or factory ”, and then shutdown.	Sensor failure	Replacement of sensor.
Prompting message “ Sampling value is too high ”.	The gas concentration is too high.	Put the device in clear air environment to check if it can get right. If irreparably, please replace the sensor.
Prompting message “ Sampling value is too low ”	Sensor output signal is too weak.	Put the device in a higher concentration environment to check if it can get right. If irreparably, please replace the sensor.
Prompting message “ Key(s) pressed down, please stop ”	Some keys are pressed carelessly or failed.	Stop pressing the key. If irreparably, please contact the distributor or the

pressing ” displayed after switch on.		manufacturer.
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Maintenance Report				
Date	Repairing Code	Serviceman	Client Confirmation	Remark