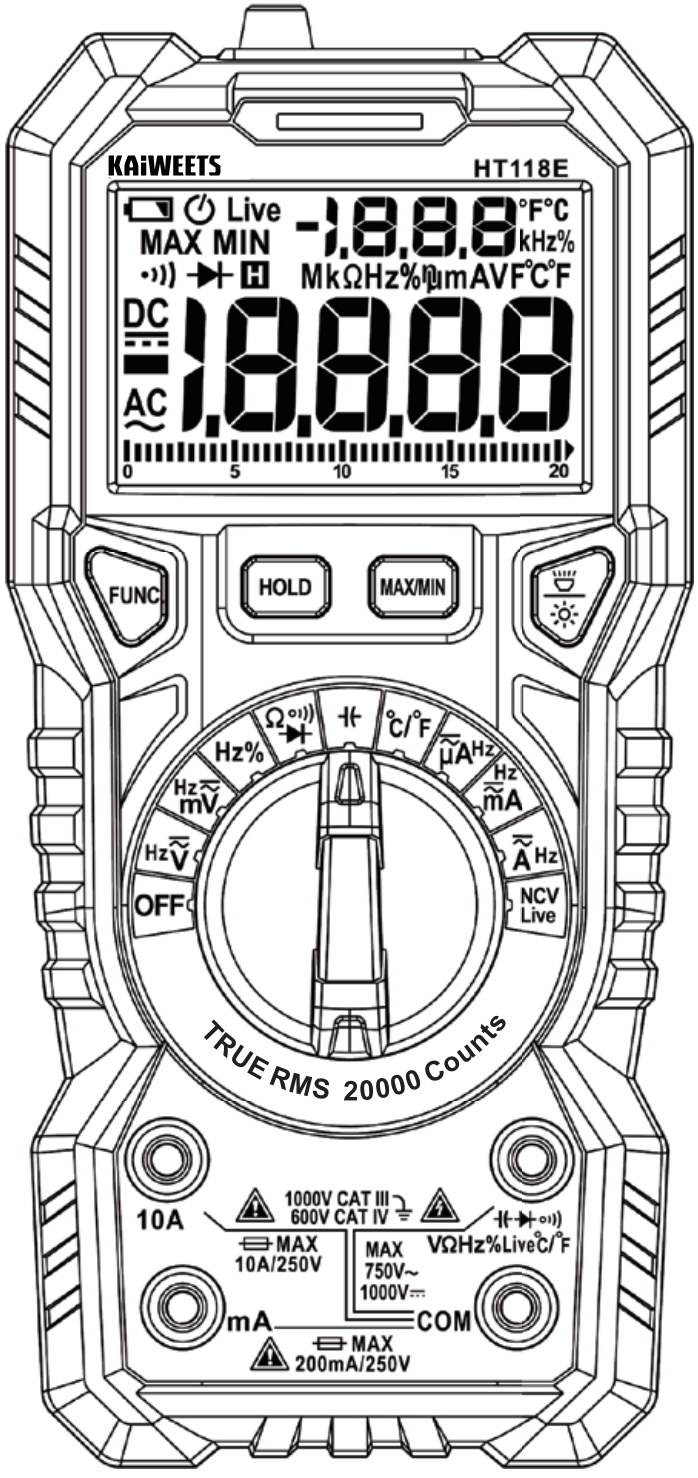



KAiWEETS

# User Manual

## Digital Multimeter

## True-RMS

## Model: HT118E

CE RoHS MADE IN CHINA

Contact us: support@Kaiweets.com

# Safety Instructions

The instrument is designed according to the requirements of the international electrical safety standard IEC61010-1 for the safety requirements of the electronic testing instruments. The design and manufacture of instruments strictly comply with the requirements of IEC61010-1 CAT.IV 600V CAT.III 1000V over-voltage safety standards and pollution level 2.

⚠ **Warning**

**In order to avoid possible electric shock or personal injury and other safety accidents, please abide by the following specifications:**

- Read this manual before using the instrument, and pay special attention to safety warning information.
- Check whether the instrument case is damaged.
- Comply with local and national safety code.
- Please comply with local and national safety code. Wear personal protection equipment (such as approved rubber gloves, masks and flame - retardant clothes, etc.) to prevent being damaged by electric shock and electric arc due to exposed hazardous live conductor.

## Safety Operating Procedures

- Remove probe before opening the outer cabinet or battery cover.
- Put your fingers behind the finger protector of the probe.
- Connect the neutral line or the ground line first, then connect the live wire.
- Disconnect the live wire first, then disconnect the neutral line and ground line.
- Replace the battery when it shows low battery indicator.

## Cautions

- Don’t use the instrument around explosive gas, steam or in wet environment.
- The instrument is used with specified category, voltage or current rating.

- Be careful if the measurement exceeds 30V AC true RMS, 42V AC peak or 60V DC.
- By measuring the known voltage to check whether the meter work is normal, if it is not normal or damaged, do not use it again.

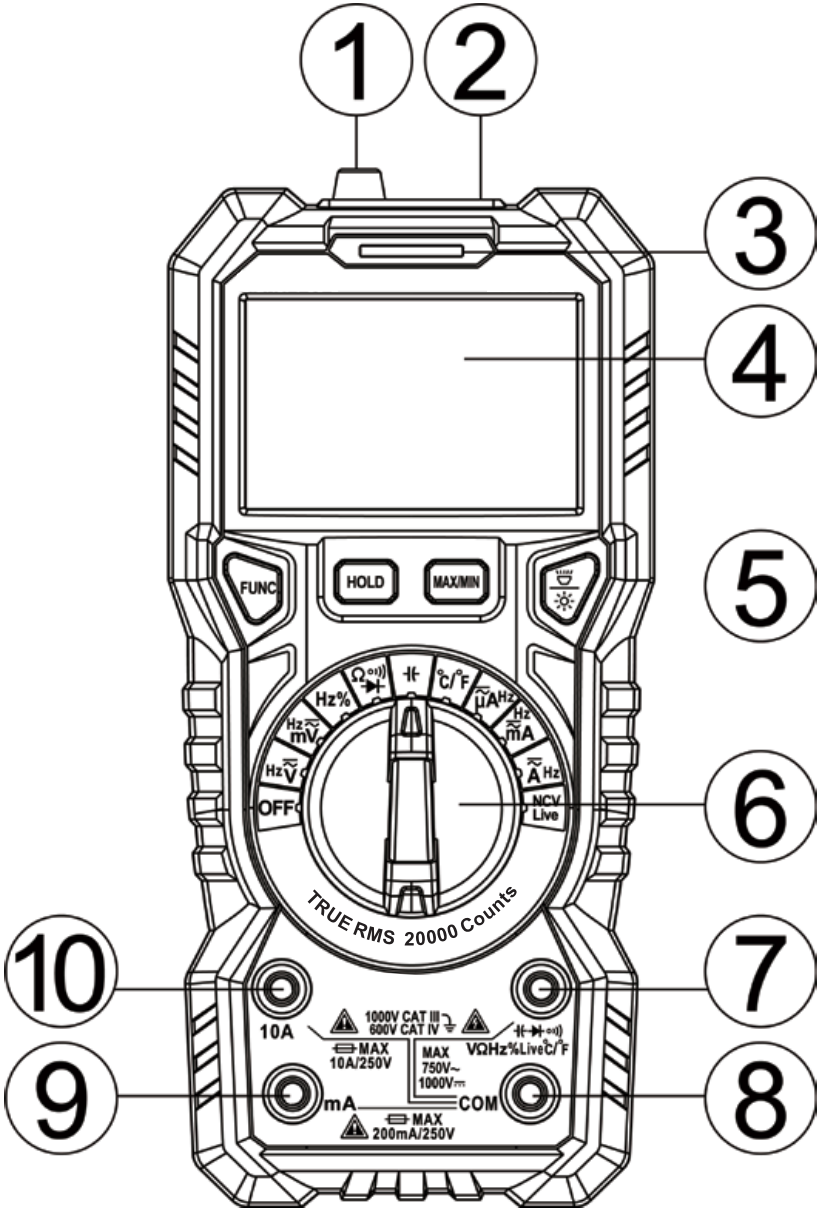
# Product Description

## Safety Symbol Meaning

| | | | |
|---|---|---|---|
|  | Unsafe Voltage |  | Warning |
|  | AC (Alternating Current) |  | DC (Direct Current) |
|  | AC or DC |  | Earth ground |
|  | Fuse |  | Low Battery |
|  | Double insulated |  | Complies with EU directives. |
|  | Do not dispose of this product as unsorted municipal waste. | | |

| | |
|---|---|
| **CAT II** | Suitable for testing circuits directly connected to power points (sockets and similarities) of low voltage power installations. |
| **CAT III** | Suitable for measuring circuits connected to the distribution part of low voltage power supply devices in buildings. |
| **CAT IV** | Suitable for measuring circuits connected to the power supply of low voltage power installations in buildings. |

# Multimeter Features




① NCV probe

② Flashlight

③ Red / Green Light

④ LCD display (bicolored)

⑤ Function Keys

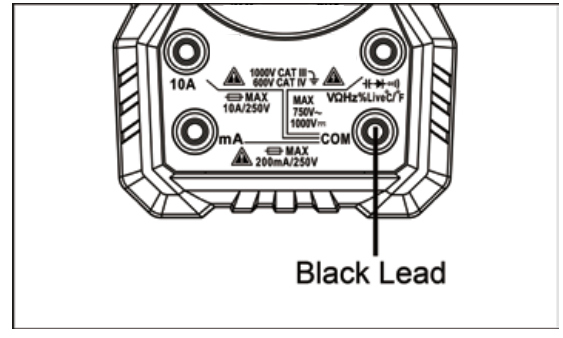
⑥ Rotary Switch

⑦ V-Terminal VΩHz%Live

⑧ COM Terminal

⑨ mA, uA Terminal

⑩ 10A Terminal



## Function Keys

| | |
|---|---|
|  | Press the FUNC button to select the appropriate measurement function. |
|  | Press the ”HOLD” key, hold the data for easier recording. Press the button again to remove the hold function. |
|  | Press the MAX/MIN key to enter the MAX/MIN mode. In this mode, the multimeter will capture the highest/lowest reading it records.<br>Long-press this button more than 2 seconds to exit the Max/Min Modes. |
|  | Backlight: Press once to turn on the display backlight. Press once more to turn off backlight. |
| | Flashlight: Long-press more than 2 seconds, to turn on/off the flashlight. |

## Install or replace the battery

If the“  ”symbol appears on the display, the battery should be replaced immediately. Disconnect the test leads and turn off the meter. Remove the rubber sleeve and the screws on the back to replace the battery.
After that, re-apply the compartment cover and reinstall the screw firmly.

## Sleep Mode

The Meter automatically enters sleep mode if there is no operation in 15 minutes to save battery energy. Pressing any button or turning the rotary switch awakes the Meter.

If you press the "FUNC." button and turn on the meter, the sleep mode will be deactivated. After restarting, the meter will restore Sleep Mode.

# Measurement Operation

### DC/AC voltage measurement

⚠ Don't use it to test voltage over DC1000V or AC750V, the instrument may be damaged. Always test known voltage with the meter before using to confirm the instrument function is intact.

1) Turn the rotary switch to " Hz V " and select DC/AC voltage function by "FUNC."
2) Insert the red lead in " VΩHz%Live " terminal, insert the black lead in "COM" terminal.
3) Connect the test leads to the source or load to be measured.
4) Read LCD display, when measuring AC voltage the frequency is displayed simultaneously.

Note: When the measuring voltage is over 80V, the orange backlight will illuminate.

## DC/AC voltage mV measurement

⚠ Don't use it to test voltage over DC 250V, the instrument may be damaged. Always test known voltage with the meter before use to confirm the instrument function is intact. Always test known voltage with the meter before use to confirm the instrument function is intact.

1) Turn the rotary switch to “ Hz≂ mV ” and select DC/ AC voltage function by "FUNC." key.
2) Insert the red lead in “ VΩHz%Live ” terminal, insert the black lead in “COM” terminal.
3) Connect the test leads to the source or load to be measured.
4) Read LCD display, when measuring AC voltage the frequency is displayed simultaneously.

## Frequency/Duty measurement (Hz%)

1) Turn the rotary switch to “Hz%” .
2) Insert red lead in “ VΩHz%Live ” terminal, insert the black lead in “COM” terminal.
3) Connect the test leads to the source or circuit in parallel to be measured, measure the frequency and duty.
4) Read the measurement result on the screen.

## Resistance / Continuity / Diode measurement

⚠ When measuring diode on the line, disconnect the power supply and discharge all the high-voltage capacitors. Otherwise, the instrument may be damaged.

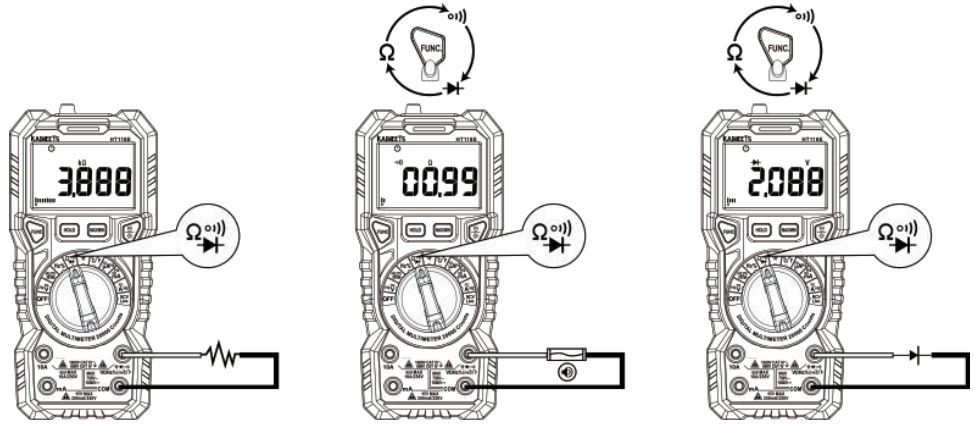
1) Turn the rotary switch to “ Ω ” and select Resistance / Continuity / Diode measurement function by "FUNC."

2) Insert the red lead in “ VΩHz%Live ” terminal, insert the black probe in “COM” .

3) Connect the test leads to the source or circuit in parallel or diode to be measured. Touch the diode anode with the red lead, the black lead contacts the diode cathode.

4) Read the measurement result on the screen.

| | | |
|---|---|---|
| ⊣◀ | It displays the approximate forward voltage value of the diode. | Max. test current: 1.2mA<br>Max. test voltage: 3.0V<br>Overload protection： 250V |
| ◦)) | Resistance < 30Ω, the buzzer sounds and the indicator lights up green.<br>30Ω < Resistance < 60Ω, the buzzer doesn't sound and the indicator lights up red. | Max. test voltage: 1.0V<br>Overload protection: 250V |



## Capacitance measurement

⚠ When measuring Capacitance on the line, disconnect the power supply and discharge all the high-voltage capacitors. Otherwise, the instrument may be damaged and may be struck by electric shocks.

1) Turn the rotary switch to “ ⊣⊢ ”.
2) Insert the red lead in “ VΩHz%Live ” terminal, insert the black lead in “COM” terminal.
3) Contact the probe to the measured circuit or Capacitance, measure the resistance.
4) Read the measurement result on the screen.

## Temperature Measurement

⚠ Don't touch the charged object when measuring temperature.

1) Turn the rotary switch to the “ °C/°F ”.
2) Insert the K-Type thermocouple into the meter. The thermocouple's positive (red) is inserted into the "VΩHz%Live" input, and the negative end (black) is inserted into the "COM" input.
3) Carefully touch the end of the thermocouple to the object being measured. Wait for the temperature reading to settle, then record the result from the LCD display.

## DC/AC current measurement

⚠ To avoid damaging the instrument or equipment, check the fuse before measuring and ensure that the measured current does not exceed the rated maximum current; use the correct input.

1) Turn the rotary switch to "$\tilde{\mu}A^{Hz}$" or "$\tilde{m}A^{Hz}$" or "$\tilde{A}^{Hz}$" and select AC or DC current function by "FUNC." key.

2) Insert the red lead in "mA" terminal (current < 200mA) or "10A" terminal (current < 10A) , insert the black lead in "COM" terminal.

3) Disconnect the power of the tested circuit; connect the meter to the circuit under test, then turn on the circuit power supply.

4) Read the measurement result on the screen. When measuring AC current, the frequency is displayed on LCD simultaneously.

Note: When the measuring current is over 1A, the orange backlight will illuminate.

## NCV test

1) Turn the rotary switch to the " NCV Live " and switch to NCV test function by "FUNC." key, the meter will display "NCV".

2) Then NCV probe gradually approaches the detected point.

3) When the meter senses weak AC signals, the green indicator lights up and meter beeps slowly.

4) When the meter senses strong AC signals, the red indicator lights up and meter beeps fast.

## Live test

⚠ In order to avoid possible accidents such as electric shock or personal injury, please follow the safety regulations.

1) Turn the rotary switch to the " NCV Live " and switch to live test function by "FUNC." key, the meter will display "LIVE".

2) Insert the red lead in " VΩHz%Live " terminal, then the probe contact to the test point.

3) When the meter senses weak AC signals, the green indicator lights up and meter beeps slowly.

4) When the meter senses strong AC signals, the red indicator lights up and meter beeps fast.

## General Specifications

| | |
|---|---|
| Display Measurements | 20000 counts, True - RMS |
| Safety / Compliances | CAT III 1000V ; CAT IV 600V |
| Maximum Voltage | DC1000V/AC750V |
| Fuse protection | μA/mA: F200mA /250V Fuse |
| | 10A: F10A /250V fuse |
| Measurement Speed | 3 times per second |
| Range | Auto |
| Battery | 2 x 1.5V AA Batteries |
| Temperature & Humidity | Operating: 0℃～40℃, <80% RH, ＜10℃ non condensing |
| | Storage: -10～60° C, <70% RH, batteries removed |

## Accuracy Specifications

Reference condition: environment temperature 18°C to 28°C, relative humidity not above 80%.

Accuracy: ± (% reading + word).

## DC/AC Voltage

| Voltage | Range | Resolution | Accuracy | Input impedance | Maximum input voltage |
|---|---|---|---|---|---|
| DC Voltage | 200mV | 0.01mV | ±(0.08%+5) | 10MΩ | 1000V DC |
| | 2V | 0.0001V | | | |
| | 20V | 0.001V | | | |
| | 200V | 0.01V | | | |
| | 1000V | 0.1V | | | |
| AC Voltage | 200mV | 0.01mV | ±(0.5%+25) | 10MΩ | 750V AC |
| | 2V | 0.0001V | | | |
| | 20V | 0.001V | | | |
| | 200V | 0.01V | | | |
| | 750V | 0.1V | | | |
| | Frequency Response: 40Hz ~ 1kHz TRMS | | | | |

## DC/AC Current

<table>
<tr><th>Current</th><th>Range</th><th>Resolution</th><th>Accuracy</th><th>Overload protection</th><th>Maximum input current</th></tr>
<tr><td rowspan="6">DC Current</td><td>200μA</td><td>0.01μA</td><td rowspan="4">±(0.5%+5)</td><td rowspan="6">μA/mA: F200mA/250V fuse<br>10A: F10A/250V fuse</td><td rowspan="6">μA/mA: 200mA<br>A: 10A</td></tr>
<tr><td>2000μA</td><td>0.1μA</td></tr>
<tr><td>20mA</td><td>0.001mA</td></tr>
<tr><td>200mA</td><td>0.01mA</td></tr>
<tr><td>10A</td><td>0.001A</td><td>±(0.8%+15)</td></tr>
<tr><td rowspan="6">AC Current</td><td>200μA</td><td>0.01μA</td><td rowspan="4">±(0.8%+25)</td><td rowspan="5">μA/mA: F200mA/250V fuse<br>10A: F10A/250V fuse</td><td rowspan="5">μA/mA: 200mA<br>A: 10A</td></tr>
<tr><td>2000μA</td><td>0.1μA</td></tr>
<tr><td>20mA</td><td>0.001mA</td></tr>
<tr><td>200mA</td><td>0.01mA</td></tr>
<tr><td>10A</td><td>0.001A</td><td>±(1.0%+25)</td></tr>
<tr><td colspan="5">Frequency Response: 40Hz ~ 1kHz TRMS</td></tr>
<tr><td colspan="6">Note：When measuring more than 1A current, the continuous measurement can’t exceed 30 seconds.</td></tr>
</table>

## Resistance/Capacitance

| | Range | Resolution | Accuracy | Overload protection |
|---|---|---|---|---|
| **Resistance** | 200 Ω | 0.01 Ω | ±(1.0%+15) | 250V |
| | 2k Ω | 0.0001k Ω | | |
| | 20k Ω | 0.001k Ω | | |
| | 200k Ω | 0.01k Ω | | |
| | 2M Ω | 0.0001M Ω | | |
| | 20M Ω | 0.001M Ω | | |
| | 100M Ω | 0.01M Ω | ±(3.0%+25) | |
| **Capacitance** | 2nF | 0.0001nF | ±(4.0%+50) | |
| | 20nF | 0.001nF | | |
| | 200nF | 0.01nF | | |
| | 2uF | 0.0001uF | | |
| | 20μF | 0.001μF | | |
| | 200μF | 0.01μF | | |
| | 2mF | 0.0001mF | | |
| | 20mF | 0.001mF | | |

## Frequency/Duty

| | Range | Resolution | Accuracy | Voltage sensitivity | Overload protection | Minimum Measurement Frequency |
|---|---|---|---|---|---|---|
| **Frequency** | 200Hz | 0.01Hz | ±(1.0%+30) | 100mV RMS | 250V | 5Hz |
| | 2kHz | 0.0001kHz | | | | |
| | 20kHz | 0.001kHz | | | | |
| | 200kHz | 0.01kHz | | | | |
| | 2MHz | 0.0001MHz | | 0.8V RMS | | |
| | 10MHz | 0.001MHz | ±(3.0%+30) | | | |
| **Duty** | 1-99% | 0.1% | ±(3.0%+30) | / | | |

### Voltage mV measurement frequency

1) Measuring range：10Hz~100kHz　2) Sensitivity：>10mV RMS, sine wave

### Voltage V measurement frequency

1)Measuring range：10Hz~20kHz　　2) Sensitivity：>0.5V RMS, sine wave

### Current measurement frequency

1)Measuring range：10Hz~20 kHz

2)Voltage Sensitivity

uA：>100uA RMS, sine wave ; mA：>10mA RMS, sine wave ;　A：>1A RMS, sine wave

## Temperature

| | Range | Resolution | Accuracy |
|---|---|---|---|
| ℃ | -40℃~0℃ | 0.1℃ | ±3℃ |
| | 0℃~400℃ | | ±(1.0%+2℃) |
| | 400℃~1000℃ | | ±2.0% |
| ℉ | -40℉~32℉ | 1℉ | ±6℉ |
| | 32℉~752℉ | | ±(1.0%+4℉) |
| | 752℉~1832℉ | | ±2.0% |
| **Note**：Accuracy does not include thermocouple probe error. | | | |

# Maintenance

## Clean

If there's dust on the terminal or the terminal is wet, it may cause measurement error. Please clean the instrument according to the steps below:

1) Switch off the power supply and remove the test probe.

2) Shake out the dust accumulated in the input terminal. Wipe the outer cabinet with a damp cloth and mild detergent. Wipe contacts in each input terminal with a clean cotton swab soaked in alcohol.

## ⚠ WARNING

Always keep the inside of the instrument clean and dry to avoid electric shock or instrument damage.

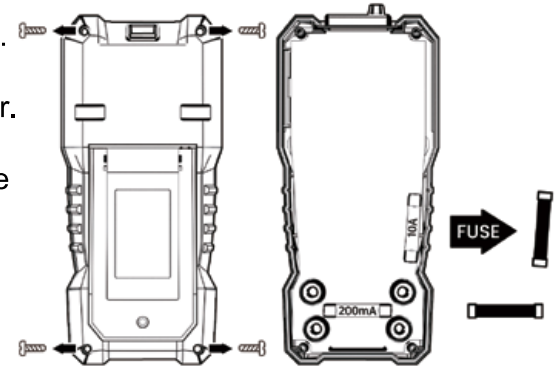
## Replace the Fuse

1) Turn off the power supply of the instrument, and remove the probe on the instrument.

2) Use screwdriver to unscrew screws fixing the back cover, and remove the back cover.

3) Remove the burnt fuse, replace with new fuse of the same specifications, and ensure that the fuse is clamped in the safety clip.

4) Install the back cover, fix and lock it with screw.



# 3 Years Warranty

## 3 years warranty

support@Kaiweets.com

@kaiweetstools

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Shenzhen Wanhe Innovation Technology Co., Ltd.

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