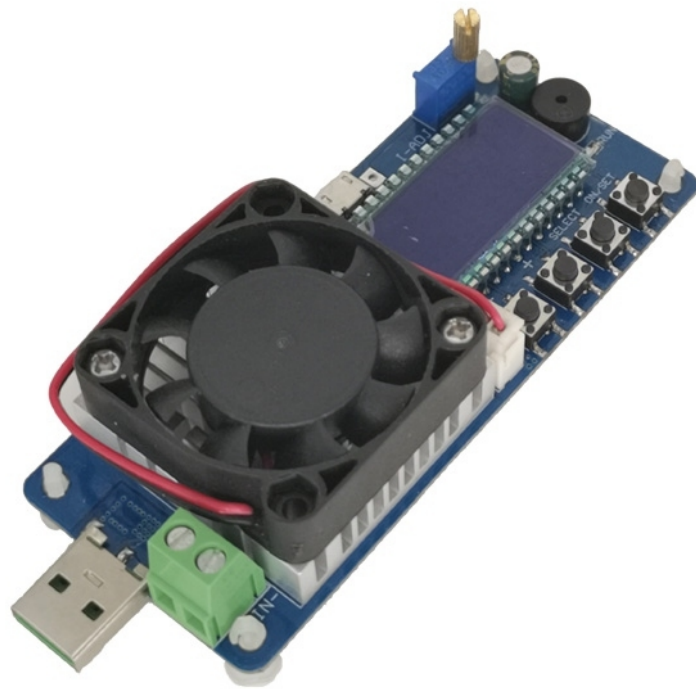


ZK-FX25/35 Electronic Load Tester

User's Manual

versions: V1.0



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Catalogue

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1.General Description

This product is USB electronic load tester. This product has both USB test port and terminal interface, which can meet various needs of customers. This product has liquid crystal display interface, can real-time display information such as voltage and current, friendly interface, simple and easy to understand .

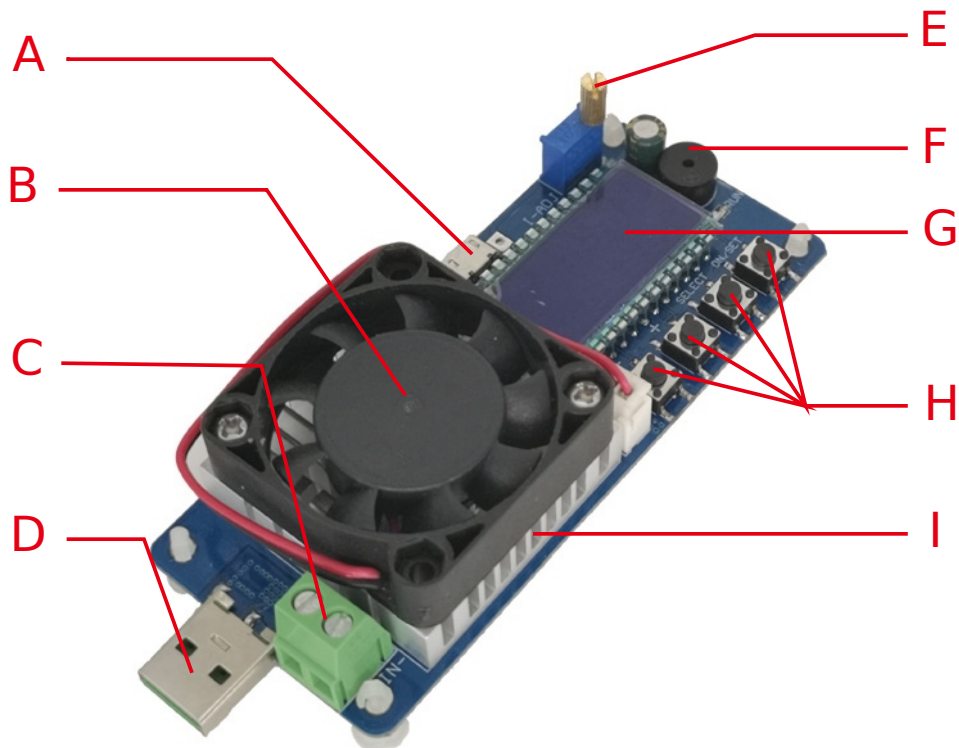
Product features:

- the design of separate power supply is adopted. The measuring circuit and display circuit of the product do not consume the energy of the test port, so the measurement is more accurate and reliable.
- LCD display can display load input voltage, input current, input power, discharge maH, discharge time, product temperature and other information.
- complete protection mechanism, including under-voltage protection, over-voltage protection, over-current protection, over-power protection, over-temperature protection and other protection.
- the current is regulated by a potentiometer with a long handle, which can be rotated by hand without the need for extra tools such as a word knife.
- with voltage and current correction function, to meet the needs of customers with high precision.

2. Technical Parameters

	Fx25	Fx35
Voltage Supply	DC5.0V (anti-reverse connection)	
Voltage Supply	<=200mA	
Input Voltage	DC1.5V-25V (anti-reverse connection)	
Input Current	0.00A-4.00A	0.00A-5.00A
Voltage Accuracy	$(\pm 1\% \pm 1 \text{ unit})$ Can be calibrated	
Current Accuracy	$(\pm 1\% \pm 1 \text{ unit})$ Can be calibrated	
The Cooling Way	Fan with temperature control and Heat sinks	
Fan Speed	6000rpm	8000rpm
Operating Temp	-15°C-50°C	
Under-Voltage	default 1.5V(Adjustable between 1.5v and 24.5v)	
Over-Voltage	default 25.0V(Adjustable between 1.5v and 25v)	
Over-Current	default 4.1A (Adjustable between 1.0A and 4.1A)	default 5.1A (Adjustable between 1.0A and 4.1A)
Over-Power	default 25.5W (Adjustable between 1.0W and 25.5W)	default 35.5W (Adjustable between 1.0W and 25.5W)
Over-Temperature	default 80°C(Adjustable between 40°C and 80°C)	
Size	114mm*43mm*30mm	
Weight	65g	

3. Product Picture



- A– micro-usb for voltage supply (DC5V)
- B– fan
- C– the load input terminal (DC1.5V-25V)
- D– the load USB input port (DC1.5V-25V)
- E– potentiometer that regulates current
- F– buzzer
- G– Liquid crystal display
- H– keys
- I – aluminum heat sink

4. Product Overview

4.1 Function Overview

1. LCD display

In the normal mode, The top line of LCD screen displays the load input voltage and load temperature. Load current, power, capacity and discharge time are displayed downline.

In the protection mode, LCD display protection code.

In the setting mode, LCD displays the setting parameter codes and parameter thresholds.

2. Load current adjustment

The discharge current can be adjusted by potentiometer.

3. Sound-light alarm

When the load starts working, the RUN indicator light is always on and the buzzer does not ring; When the load is off, the RUN indicator does not light and the buzzer does not sound. After entering the protection mode, the buzzer will beep and the RUN indicator will flash.

4. intelligent fan cooling

The fan starts automatically when load discharge power is greater than 10 w or load temperature greater than 40 °C .

5. Automatic statistics of discharge capacity and discharge time

as long as open the load (the RUN light is normally on), it began to statistics. When close the load (the RUN light is not bright), it stop the statistics. statistical data to support electricity storage, only a way to reset the statistics in the LCD panel display discharge capacity, or discharge time, long press the button"-". Before starting the statistics, please clear the statistical data first. The maximum discharge capacity (OAH) and maximum discharge time (OHP) can be set on or off in the setting mode (default off). When the threshold value is on, it is set. the load will automatically close if the threshold value is exceeded, so as to realize the unattended discharge experiment.

6. Perfect software and hardware protection mechanism

Software protection threshold are adjustable .After the software is protected, the output is turned off.

Hardware protection:

Module power supply port and load input port are protected against reverse connection.

Software protection:

OVP overvoltage protection (default 25.5V, which can be set by yourself. After overvoltage protection, the RUN indicator flashes and the LCD interface displays OVP);

OCP overcurrent protection (default 4.10A / 5.10A. can be set by

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yourself. After overcurrent protection, the RUN indicator flashes and the LCD shows OCP;

OPP overpower protection (default: 25.5w / 35.5w, which can be set by itself. After overpower protection, the RUN indicator will flash and the LCD will display OPP);

OTP over temperature protection (default is 80 , can set, ask protection after the RUN light is flashing, liquid crystal display OTP);

LVP undervoltage protection (default: 1.5v, you can set it by yourself. After the undervoltage protection, the RUN indicator will flash and the LCD will display LVP. In battery discharge test and other applications, setting an appropriate LVP can effectively prevent the battery from excessive discharge and damage the battery);

7. The load is turned off by default. After power ON, press ON/SET key to start or shut down.

8. All parameters can be set off power storage.

4.2 Operation Overview

1. Detailed operation of potentiometer

Potentiometer is used to adjust the load discharge current, clockwise rotation current increases, counterclockwise rotation current decreases.

2. Detailed explanation of key operation

MODE KEYS	Normal Mode	Protect Mode	Setting Mode
ON/ SET	Short press: switch the load on/off state Long press: enter parameter setting mode	Short press: exit protection mode Long press: null	Short press: switch the on-off state of over capacity and timeout Long press: exit the setting mode
SELECT	Short press: switch the display of current, power, capacity and discharge time Long press: switch the display of voltage and temperature	NULL	Short press: switch the parameters to be set Long press: null
+	NULL	NULL	Short press: set parameter value to increase by one unit Long press: set the parameter value to increase continuous
-	Short press: null Long press: reset when display discharge capacity or discharge time	NULL	Short press: set parameter value to decrease by one unit Long press: set the parameter value to decrease continuously

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4.3 Interface Overview

1、 boot screen

Note: start the machine and display the product model, then enter the normal mode interface.

ZK - FX25



ZK - FX35



2、 normal mode interface

Note: short press the button SELECT to switch the display of current, power, discharge capacity and discharge time in the line below the display screen (display the real-time current when the load is on, display the setting current when the load is off or the potentiometer is operated). Long press the button SELECT, you can switch the display of voltage and module temperature on the top of the display screen.

Vin--Iset Vin--Iin Vin--Pin



Vin--C Vin--TIME-S Vin--TIME-h



Temperature--Iin



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3、 Protection mode interface

Note: when the working parameters of the load exceed the allowable value, enter the protection mode, display the fault code, load off, LED light flashing, buzzer alarm. In the protection mode, press the button ON/SET to exit the protection mode.

under-voltage over-voltage over-current



over-power over-temperature over-capacity



timeout load-failure



4、 Setting mode interface

Note: in normal mode, long press the button ON/SET to enter the setting mode. In the setting mode, long press the button ON/SET to enter the normal mode.

Under the setting interface, press the SELECT button to switch the parameters to be set. Press the button + or - to adjust the parameter size. Under the timeout protection interface or overcapacity protection interface, press the button ON/SET to turn ON or off the timeout protection and overcapacity protection. Timeout protection and overcapacity protection are off by default.

under-voltage over-voltage over-current
threshold threshold threshold



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over-power threshold over-temperature threshold timeout ON



timeout ON over-capacity OFF over-capacity ON



voltage calibration current calibration

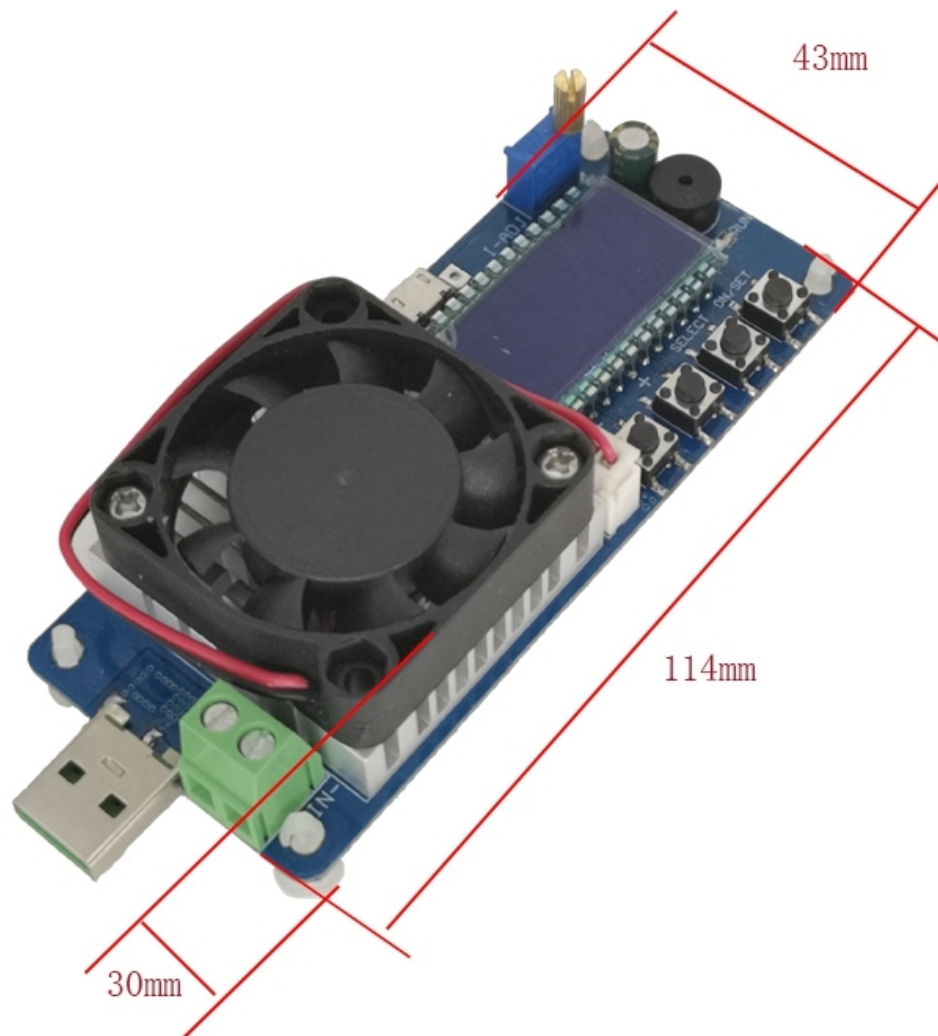


4.4 Application Example



5. Product Appearance

5.1 Board Dimension Figure



6. Matters Need Attention

6.1 Please read the manual carefully before using the product ! If the module is damaged due to wrong use, or the device is removed without permission, it shall not be returned or replaced.

6.2 Power supply voltage shall use 5V DC power supply, do not use AC power !!! If the voltage is over voltage, the module will be burnt after power on.

6.3 The voltage of the load input shall be between DC1.5V-25V, and the current shall be below 4A(ZK-FX25) or 5A (ZK-FX35).

6.4 The load input port cannot be shorted, otherwise the product will be burnt.

6.5 Pay attention to the module shall not be affected by moisture, shall not make the components on the circuit board short-circuit, shall not touch the pins and pads of the components on the board by hand.

6.6 Disclaimer: this product is not allowed to be used in medical, life-saving, flammable, explosive and other fields and occasions. Our factory will not assume any responsibility for the consequences caused thereby.