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iDili ET5410A+

iDili ET5410A+ 400W Programmable DC Electronic Load User Manual

Model: ET5410A+

1. Introduction

The iDili ET5410A+ is a 400W programmable DC electronic load designed for testing batteries, power supplies, and chargers. It features a 2.8-inch TFT display and offers various operating modes and protection functions for reliable and precise testing in laboratory and industrial environments.

2. Product Features

- Visual interface display system for simple and convenient operation.
- Data storage retention during power failures.
- Input polarity reverse prompt for enhanced safety.
- PS2 interface for external keyboard data value setting.
- Comprehensive safety protections: overcurrent, overvoltage, overpower, and over temperature.
- Flexible setting of overvoltage and overcurrent parameters for effective load protection.
- Intelligent fan speed control to minimize operational noise.

3. Setup

3.1 Unpacking

Carefully remove the ET5410A+ electronic load and all accessories from its packaging. Verify that all components are present: the electronic load unit, power cord, terminal block, and fuses.



Figure 1: ET5410A+ Electronic Load with included accessories.

3.2 Physical Placement

Place the unit on a stable, level surface with adequate ventilation. Ensure the cooling ports are not obstructed.

3.3 Power Connection

Connect the provided power cord to the AC input on the rear panel of the ET5410A+ and then to a suitable power outlet.

3.4 Load Connections

Connect the device under test (DUT) to the positive (red) and negative (black) terminals on the front panel. Ensure correct polarity.

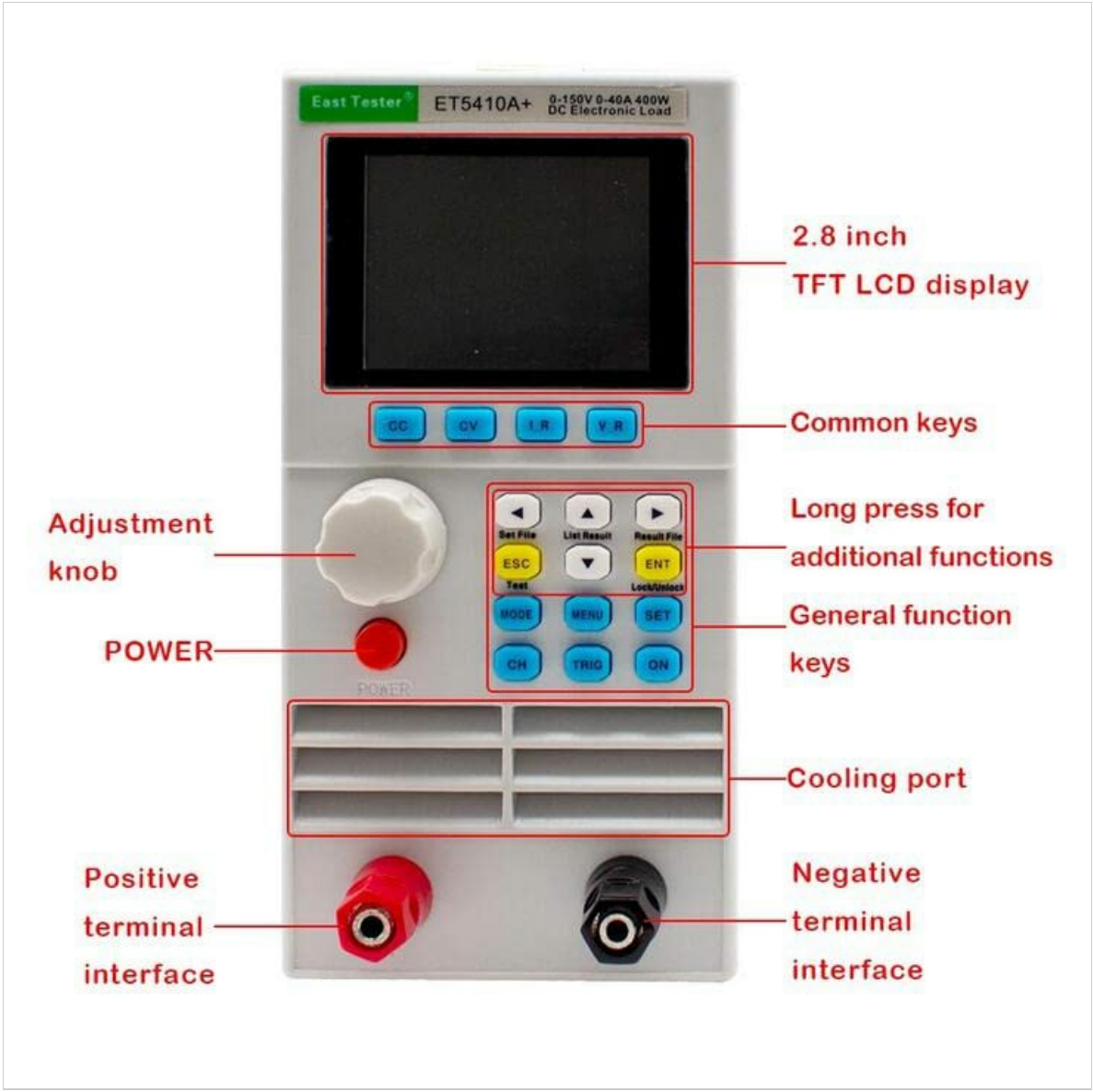


Figure 2: Front panel overview of the ET5410A+ Electronic Load.

3.5 Initial Power-On

Press the **POWER** button on the front panel to turn on the unit. The 2.8-inch TFT display will illuminate.

4. Operating Instructions

The ET5410A+ offers various operating modes for different testing requirements. Familiarize yourself with the front panel controls:

4.1 Front Panel Controls

- **2.8 inch TFT LCD display**: Shows current settings, measurements, and status.
- **Adjustment knob**: Used to modify parameter values.
- **Common keys (CC, CV, IR, VR)**: Select common operating modes.
- **General function keys (MODE, MENU, SET, ON)**: Access menus, settings, and turn the load on/off.
- **Long press for additional functions**: Some keys have secondary functions accessible by a long press (e.g., Set File, List Result, Lock/Unlock).

4.2 Selecting Operating Modes

1. Press the corresponding mode key (e.g.,**CC** for Constant Current, **CV** for Constant Voltage, **CR** for Constant

Resistance, **CP** for Constant Power).
2. Use the **MODE** button to cycle through available modes if dedicated buttons are not present or for advanced modes like Tran Test or Battery Test.

4.3 Setting Parameters

1. Once a mode is selected, use the adjustment knob to navigate between parameters on the display.
2. Rotate the knob to change the value of the selected parameter.
3. Press **ENT** to confirm the setting.

4.4 Load ON/OFF

- Press the **ON** button to activate the electronic load.
- Press the **ON** button again to deactivate the load.

4.5 Safety Features

The unit includes overcurrent, overvoltage, overpower, and over temperature protection. These parameters can be configured via the **MENU** or **SET** options to protect the device under test and the electronic load itself.

5. Maintenance

5.1 Cleaning

Regularly clean the exterior of the unit with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure no liquids enter the device.

5.2 Ventilation

Keep the cooling ports clear of dust and obstructions to ensure proper airflow. The intelligent fan control system helps maintain optimal operating temperature.

5.3 Fuse Replacement

In case of a power surge or internal fault, the fuse may blow. Refer to the specifications for the correct fuse type and rating. Disconnect the power cord before attempting to replace the fuse.

6. Troubleshooting

6.1 No Power

- Check the power cord connection to both the unit and the wall outlet.
- Verify the power outlet is functional.
- Check the fuse on the rear panel; replace if blown.

6.2 No Load Current/Voltage

- Ensure the load is turned **ON**.
- Verify connections to the DUT are secure and correct.
- Check if any protection features (OV, OC, OP, OT) have been triggered. Reset if necessary.

6.3 Incorrect Readings

- Ensure proper calibration (if applicable, refer to advanced manual).

- Check for loose connections.

6.4 Fan Noise

The unit features intelligent fan speed control. Increased noise during high load conditions is normal as the fan speeds up to dissipate heat. If noise is excessive or constant at low loads, ensure cooling ports are clear.

7. Specifications

The iDili ET5410A+ offers precise control and measurement capabilities as detailed below:

Table 1: ET5410A+ Technical Specifications

Category	Parameter	Value
Rated Input	Power	400W
	Input Voltage	0-150V
	Input Current	0-40A
CV Mode	Range	0.1-19.999V, 0.1-150.00V
	Resolution	1mV, 10mV
	Accuracy	±(0.05%+0.02%FS)
CC Mode	Range	0-3.000A, 0-40.00A
	Resolution	1mA, 10mA
	Accuracy	±(0.05%+0.05%FS)
CR Mode	Range	0.05Ω-1 kΩ, 1 kΩ-4.5 kΩ
	Resolution	10mΩ, 100mΩ
	Accuracy	±(0.1%+0.5%FS)
CP Mode	Range	0-400W
	Resolution	10mW
	Accuracy	±(0.1%+0.5%FS)
Tran Test	Mode	CC, CV
	T1&T2	50ms-60s
Battery Test	Discharge Mode	CC, CR
	Maximum Discharge Capacity	9999Ah
	Resolution	1mA, 10mA, 10mΩ, 100mΩ

Figure 3: Detailed technical specifications for the ET5410A+.

Table 2: ET5410A+ Protection Scope

Protection Type	Threshold
Over Voltage Protection (OV)	>21V OR >155V over voltage protection
Over Current Protection (OC)	>3.1A or >42A over current protection
Over Power Protection (OP)	410W
Over Temperature Protection (OT)	85°C

Figure 4: Protection thresholds for the ET5410A+.

7.1 Physical Dimensions and Weight

- **Package Dimensions**: 15.75 x 11.81 x 7.87 inches
- **Item Weight**: 9.46 pounds
- **Item Model Number**: ET5410A+



Figure 5: Physical dimensions of the ET5410A+ Electronic Load.

8. Warranty and Support

For warranty information and technical support, please refer to the documentation included with your product or contact the manufacturer directly. Keep your purchase receipt for warranty claims.

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