TELEDYNE TEST TOOLS
Everywhereyoulook™

T3EL15030xP

Programmable DC Electronic Load

Quick Start Guide

Contents

General Safety Summary

Read the following precautions carefully to avoid any personal injuries, or damage to the instrument or products connected to it. Use the instrument only as specified.

Use only the power cord supplied for the instrument.

Ground the instrument. The instrument is grounded through the ground conductor of the power cord. To avoid electric shock, always connect to grounded outlets. Make sure the instrument is grounded correctly before connecting its input or output terminals.

Observe all terminal ratings and signs on the instrument to avoid fire or electric shock. Before connecting to the instrument, read the manual to understand the input/output ratings.

Do not operate with suspected failures. If you suspect that the instrument is damaged, contact the Teledyne LeCroy service department immediately.

Do not operate in wet/damp conditions.

Do not operate in an explosive atmosphere. Keep

the surface of the instrument clean and dry.

Avoid touching exposed circuits or wires. Do not touch exposed contacts or components when the power is on.

Do not operate without covers. Do not operate the instrument with covers or panels removed.

Use only the fuse specified for the instrument.

Use proper overvoltage protection.

Observe ventilation requirements. Ensure good ventilation. Check the vent and fan regularly to prevent overheating.

Safety Terms and Symbols

The following terms may appear on the instrument:

DANGER: Direct injury or hazard may occur.

WARNING: Potential injury or hazard may occur.

CAUTION: Potential damage to instrument/property may occur.

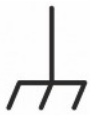
The following symbols may appear on the instrument:

CAUTION
Risk of injury or damage. Refer to manual.

WARNING
Risk of electric shock or burn

Earth Ground Terminal

Protective Conductor Terminal



Frame or Chassis Terminal

ON/ Standby Power

Operating Environment

Temperature: 0 °C to 40 °C

Relative Humidity: 5 to 80% RH at ≤ 30 °C

Altitude: ≤ 2000 m at ≤ 30 °C

Use indoors only.

Pollution degree 2. Use in an operating environment where normally only dry, non-conductive pollution occurs. Temporary conductivity caused by condensation should be expected.

AC Power

Input Voltage & Frequency: 110-220 V ±10% at 50/60 Hz

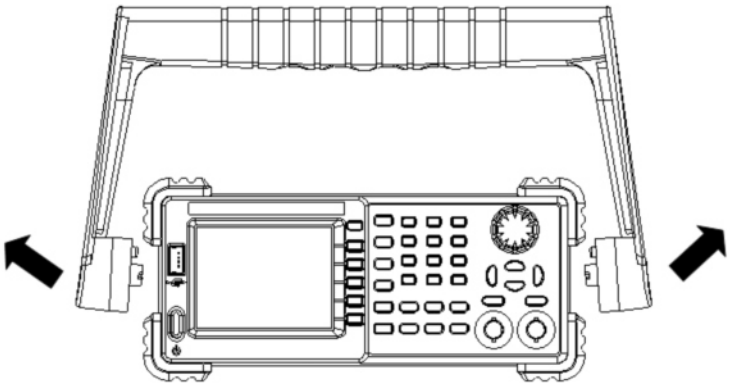
Power Consumption: 50 W maximum

Mains Supply Connector: CAT II per IEC/EN 61010-1:2010, instrument intended to be supplied from the building wiring at utilization points (socket outlets and similar).

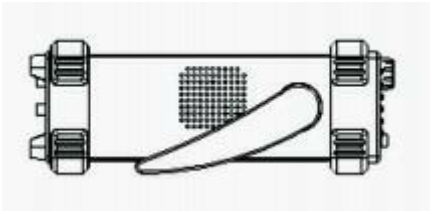
Fuse Type: T315 mA, 250 V

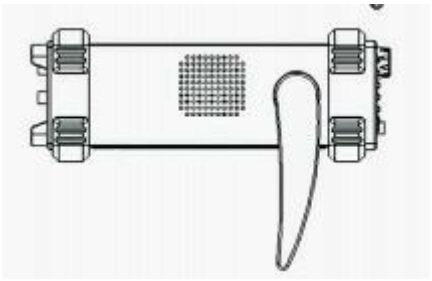
Handle Adjustment

Users can adjust the handle to the required position by pulling the mounting points outward and adjusting the handle position.

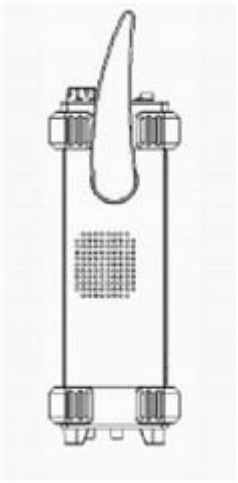


Handle Adjustment





Horizontal Position



Carrying Position

Brief Introduction

The T3EL15030xP series Programmable DC Electronic Load has a 3.5 inch TFT-LCD display, and comes with a simple, user-friendly interface and superb performance specifications. The T3EL150302P comes with an input range of 150 V/30 A @ 200 W. The T3EL150303P comes with an input range of 150 V/30 A @ 300 W. The T3EL15030xP series has a measurement resolution of 1mV/mA. Adjustable current slew rate range is 0.001 A/μs-2.5 A/μs, and it comes with built-in RS232/USB/LAN communication interfaces. Standard SCPI communication protocol is used to establish an intelligent testing platform for applications in various industries, such as the power industry, battery industry, LED lighting, automotive electronics, and aerospace.

- T3EL150302P (Single channel): DC 150 V/30 A, total power up to 200 W
- T3EL150303P (Single channel): DC 150 V/30 A, total power up to 300 W
- 4 Static modes / Dynamic mode: CC/CV/CR/CP
- CC Dynamic modes, continuous, pulsed, toggled
- CC Dynamic mode: 25 KHz, CP Dynamic mode: 12.5 KHz, CV Dynamic mode: 0.5 Hz
- Adjustable current slew rate range 0.001 A/us-2.5 A/us
- Min read-back resolution: 0.1 mV, 0.1 mA
- Measuring speed of voltage and current: up to 500 KHz
- Over current protection test, Over power protection test, Battery test, short circuit and CR-LED test functions
- 4-wire SENSE compensation mode function
- External voltage and current control function
- Voltage, Current monitoring via 0-10V
- 3.5 inch TFT-LCD display, capable of displaying multiple parameters and states simultaneously
- With memory function in case of power-down
- OCP, OVP, OPP, OTP and LRV protection
- Graphical display of waveform Function of Restore library Function of test the rise and fall time base on the voltage V on and V latch functions
- Smart fan control
- Remote control and measurements via PC

The Front Panel

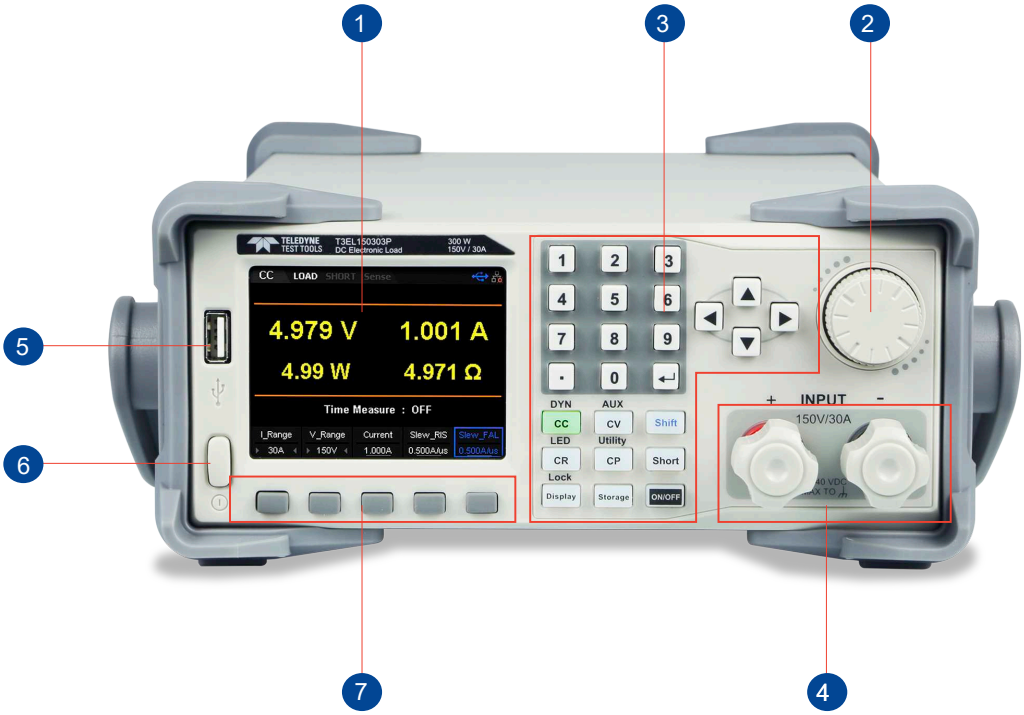


Figure1: The front panel of the T3EL150302P

1 **LCD**

2 **Knob**

3 **Function button and power key**

4 **Input Terminal**

5 **USB interface**

6 **Power key**

7 **Function key**

1. LCD

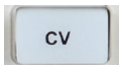
The 3.5 inch TFT-LCD display is used to display system parameter settings, system output state, wave forms, menu options, prompt messages, etc.

2. Knob

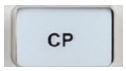
When setting parameters, rotate the knob to increase or decrease the value of the digit at the cursor. When browsing the setting object, sense, voltage and current protection, store or read files and switch modes etc, rotate the knob to quickly move the cursor or switch options.

3. Function Buttons

Press the button to enter the constant current mode. Enter DYN mode by pressing the shift button at the same time.



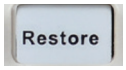
Press the button to enter the constant voltage mode. Enter AUX mode by pressing the shift button at the same time.



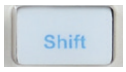
Press the button to enter the constant power mode. Enter Utility mode by pressing the shift button at the same time.

Press the button to enter the constant resistor mode. Enter LED mode by pressing the shift button at the same time.

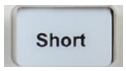
Press the button to enter Display mode. Enable key lock function by pressing the shift button at the same time.



Press the button to use the Restore function.



Press the button to allow a button's secondary function to be selected.



Press the button to enter the Short function.

Use the right, left, up, down buttons to move the cursor in that direction or select the appropriate field.

0-9 Select the appropriate numerical digit.

Decimal point.

Push to Enter a value.

The 5 softkeys select the appropriate function in the interface.

4. Input Terminal

Physical input connections for the external circuit under test.

5. USB interface

Interface port used to insert USB device. Supports FAT32 file system formats.

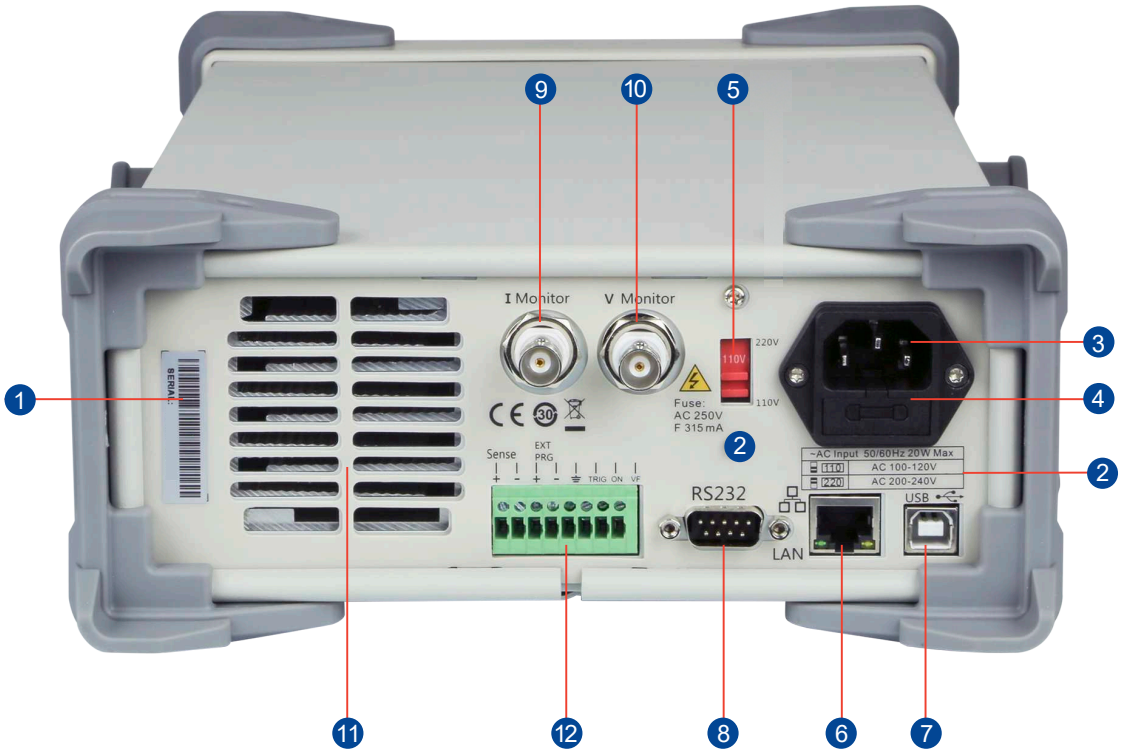
6. Power key

Turns the instrument On or Off.

7. Function key

Used to select different interface functions.

The Rear Panel



1. Unit Serial Number

Label with the instrument serial number.

2. AC input voltage description

The specified input voltage, frequency, and fuse rating.

3. AC power socket

The socket of AC input power.

4. Fuse

The line power input fuse (Please refer to 2 the AC input voltage description).

5. AC line power selection switch

AC Input Voltages: 110/220 V. The default setting when delivered is set to 220V. Disconnect from the input power before adjusting. Set to your local power line voltage.

6. LAN interface

Use to connect to the local network by RJ45 interface.

7. USB device

Connects the instrument (as “slave” device) to external USB device (such as, USB storage device or external computer).

8. RS232 interface

Connect to the computer via 9-pin RS232 cable.

9. Analog current monitor output

User can observe the DUT output current level by connecting to an oscilloscope to monitor the current level.

10. Analog voltage monitor output

User can observe the DUT output voltage level by connecting to an oscilloscope to monitor the current level.

11. FAN

12. Sense terminal, External control terminal, PWM output terminal

Terminals used in conjunction with various external functions.

Connect Power

The T3EL15030xP electronic load supports a variety of AC line power input values. For each line voltage, the rear panel voltage selector settings are to be set according to the table below:

AC Power Input	Voltage Selector
110 Vac ± 10% 50/60Hz	 110V
220 Vac ± 10% 50/60Hz	 220V

Please connect the power carefully by following the steps below:

1. Check the input power

Ensure that the AC line power to be connected to the instrument meets the requirements in the above Table.

2. Check the voltage selector at the rear panel

Make certain that the voltage selector setting located at the rear panel of the instrument matches the actual input voltage.

3. Check the fuse

When the instrument leaves the factory, the specified fuse is installed. Please check to verify the fuse matches the actual input voltage according to the "Input Power Requirements" on the rear panel of the instrument.

4. Connect the power

Connect the instrument to the AC power source using the power cord provided in the accessories. Then press the button  to turn on the electronic load.

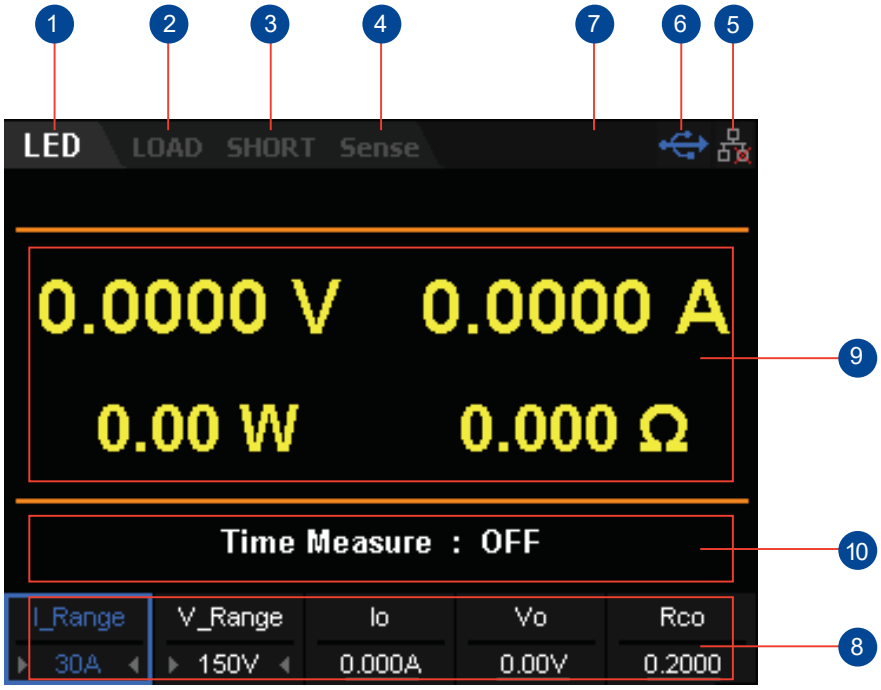
WARNING

Before switching on the input power supply voltage, please disconnect the power supply before setting the voltage selector to the appropriate position.

WARNING

To avoid electric shock, please ensure that the instrument is correctly grounded.

User Interface



1. Displays the load's mode
2. Displays the load's state
3. Displays a Short state
4. Remote sense mode
5. LAN connection icon
6. USB connection icon
7. Keyboard lock
8. Setting value
9. Measured input values
10. Voltage slew rate

To Power on the instrument

After the instrument is connected to the power source, press the Power key at the left bottom of the front panel to turn on the instrument. When the instrument is turned on, it will undergo a self-test. If the instrument passes the self-test, the welcome interface is displayed; otherwise, self-test failure information will be displayed. If a failure occurs please contact Teledyne LeCroy.

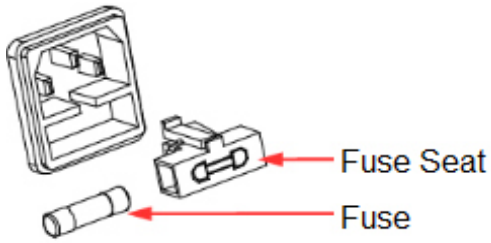
Fuse Replacement

The specifications of the fuse are relative to the actual input line voltage, shown in the table below. You can also refer to the rear panel “Input power requirement”.

Input voltage	Fuse specification
110 VAC	T315 mA / 250V
220 VAC	T315 mA / 250V

To replace the fuse, please follow the steps below:

1. Turn off the instrument and remove the power cord.
2. Insert a small straight screwdriver into the slot at the power socket and gently pry out the fuse seat.



3. Adjust the power voltage selector manually to select the correct voltage scale.
4. Take out the fuse and replace it with the specified fuse (to check the relationship between the input voltage and the fuse specification, refer to the “Input power requirement” on the rear panel).
5. Re-insert the fuse holder into the power socket (please pay attention to the alignment).

WARNING

To avoid personal injuries, unplug the power supply before replacing the fuse. To avoid electric shock or fire, select the proper power supply specification and the correctly rated fuse.

Troubleshooting

The following are some common failures and their solutions. If the problem persists after following the listed steps, please contact **Teledyne LeCroy**.

1. The instrument cannot power up.

(1) Check whether the power source is correctly connected.

(2) Check whether the power switch at the front panel is on.

(3) Remove the power cord and check whether the voltage selector is at the proper setting, whether the specification of the fuse is correct and whether the fuse is intact. If the fuse needs to be changed, refer to "**To Replace the Fuse**".

(4) If the problem remains, please contact **Teledyne LeCroy**.

2. The USB device cannot be identified.

(1) Check whether the USB device is correctly working.

(2) Check whether the USB Host interface of the electronic load is correctly working.

(3) Make certain to use a Flash U-disk. This electronic load cannot support hard drive disk devices.

(4) Make certain to use FAT32 system format.

(5) Restart the electronic load then insert the USB device.

(6) If the problem remains, please contact **Teledyne LeCroy**.

3. The electronic load is working incorrectly.

(1) Check whether the input connection wiring is correct.

(2) Check whether the power is turned on.

(3) Check whether the value of the conduction voltage.

(4) Check whether the load settings for power, voltage and current meet the requirements.

(5) If the problem remains, please contact **Teledyne LeCroy**.

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ABOUT TELEDYNE TEST TOOLS

Company Profile

Teledyne LeCroy is a leading provider of oscilloscopes, protocol analyzers and related test and measurement solutions that enable companies across a wide range of industries to design and test electronic devices of all types. Since our founding in 1964, we have focused on creating products that improve productivity by helping engineers resolve design issues faster and more effectively. Oscilloscopes are tools used by designers and engineers to measure and analyze complex electronic signals in order to develop high-performance systems and to validate electronic designs in order to improve time to market.

The Teledyne Test Tools brand expands on the Teledyne LeCroy product portfolio by adding a comprehensive range of test equipment solutions for its customers. The new range of product solutions deliver engineers with a broad range of quality test solutions that enables speed to market product validation and design. More and more designers, engineers and lecturers are relying on Teledyne Test Tools to meet their testing, education and electronics validation needs with confidence and within budget.

Location and Facilities

Headquartered in Chestnut Ridge, New York, Teledyne Test Tools and Teledyne LeCroy have sales, service and development subsidiaries in the US and throughout Europe and Asia. Teledyne Test Tools and Teledyne LeCroy products are employed across a wide variety of industries, including semiconductor, computer, consumer electronics, education, military/aerospace, automotive/industrial, and telecommunications.

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