



USB Buck Boost Converter

Introduction:

It is a multifunctional converter with 3 working modes: PER mode, VAH mode and PWM mode.

PER Mode: Its main function is to output voltage as a constant voltage or constant current power source.

VHA Mode: Measure voltage, current, capacity, energy, time, power, temp and detect fast charge protocol.

PWM Mode: Output PWM signal.

Power Supply (PER) Mode:

Can be used as a constant voltage constant current numerical control buck boost power source.

Parameter:

Input Voltage: DC 3.5-15V

Output Voltage: DC 0.60V-30.00V

Output current: 0.000A-2.000A

Output Power: 15W

Voltage Resolution: 0.01V

Current Resolution: 0.001A

Voltage Accuracy: $\pm 0.3\% + 1$ digit

Current Accuracy: $\pm 0.5\% + 1$ digit

Capacity: 0-999999AH

Energy: 0-999999WH

Time: 0-1000 hours

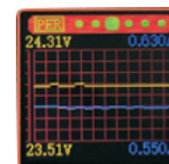
Protection: output short-circuit protection; output anti-backflow protection; over-voltage protection (OVP); over-current protection (OCP); over-power protection (OPP); over-temperature protection (OTP); Input low-voltage protection (LVP); power supply chip protection(OEP),



Main Display Interface



Capacity/Energy /Time UI



Voltage & Current Graph



Protection Function



Fast Charging Protocols



System Parameter Set UI

Communal Interface for 3 Working Modes

Note:

1. When input voltage is 5.0V-5.5V, if output voltage <24V, it can run at full power; if output voltage >24V, please reduce the power, recommend 5W-7W.
2. When input voltage >8V, it can run at full power within the voltage range.
3. When input voltage <5V, please reduce the power. The lower the input voltage, the lower the output power.
4. It is hard for normal 5V charging adapter to output 15W power. So it is hard for normal 5V charging adapter to run the product at full power. If the charger supports fast charging protocol, it is recommended to active the fast charging function so as to run the product at full power.
5. This product supports fast charging protocol QC 2.0/ QC 3.0,

Huawei FCP/SCP, Samsung AFC.

6. This product comes with soft start, no impact on the load when starting.

VAH Mode

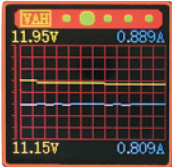
Can be used as a multimeter to measure the voltage, current, power, Ah, Wh, time and temperature; test the discharge time and capacitance of the battery.

Parameter:

- Power Supply Voltage: DC 3.0-15V
- Measurement Voltage: DC 0.00-50.00V
- Measurement Current: 0.00A-3.000A
- Measurement Power: 0.00-150.0W
- Voltage Resolution: 0.01V
- Current Resolution: 0.001A
- Voltage Accuracy: $\pm 0.3\% + 1$ digit
- Current Accuracy: $\pm 0.5\% + 1$ digit
- Capacity: 0-999999AH
- Energy: 0-999999WH
- Time: 0-1000 hours
- Protections: Low-voltage protection (LVP), over-voltage protection (OVP), over-current protection (OCP), over-power protection (OPP).



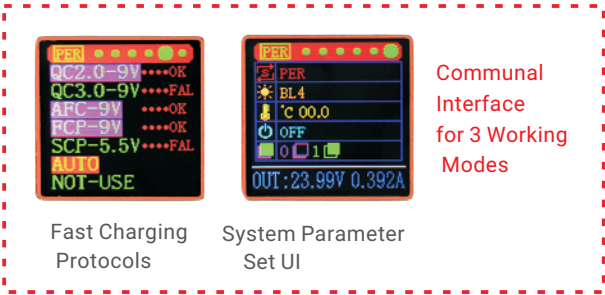
Main Display Interface



Voltage & Current Graph



Protection Function



PWM Mode:

There are 3 modes in PWM Mode:
Normal Mode NOR; Refined Mode FIN; Pulse Mode PUL.

Parameter:

- Normal Mode NOR
 - Frequency: 1Hz-240kHz
 - Duty ratio: 0-100%, stepping: 1%
 - Amplitude: 0.60-30.00V
- Refined Mode FIN
 - Frequency: 1Hz-24.0kHz
 - Duty ratio: 0-100%, stepping: 0.1%
 - Amplitude: 0.60-30.00V
- Pulse Mode PUL
 - Positive pulse width time: 0-65.535S
 - Negative pulse width time: 0-(65.535-P-T)S
 - Amplitude AMP: 0.60-30.00V
 - Pulse number P-P: 0-99999

Note: The sum of positive and negative pulse width time won't exceed 65.535 seconds. If the number of pulse exceeds 99999, it will display 99999.

NOR: Normal NOR Mode



Frequency Main Interface



Frequency Graph

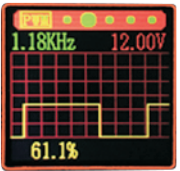


Frequency Parameter Set UI

FIN: Refined FIN Mode



Frequency Main Interface



Frequency Graph

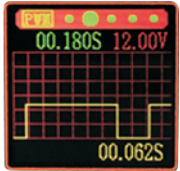


Frequency Parameter Set UI

PUL: Pulse PUL Mode



Pulse Main Interface



Pulse Graph



Pulse Parameter Set UI



Fast Charging Activation Interface



System Parameter Setting Interface

Communal Interface for 3 Working Modes

Temperature:

- Can be switched between °F and °C.
- When connect the external temperature probe, it will automatically switch to detect the external temperature, and the temperature value will display as blue background.

Theme Color:

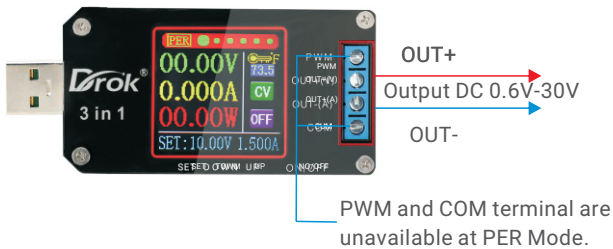
- 64 kinds of color to choose from.
- Short press SET button, select the position to be changed, and short press UP/DOWN button to switch background color and foreground color.

Screen Rotation:

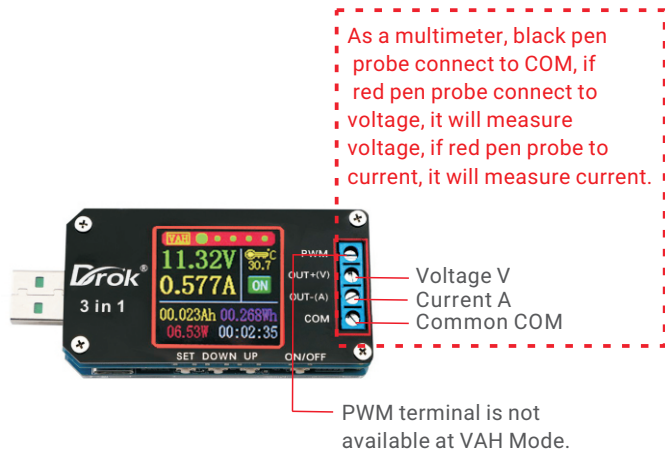
- Supports 4 directions of rotation.
- Long press ON/OFF button for 2 seconds to achieve screen rotation.

Wiring Diagram:

Power Supply PER Mode:

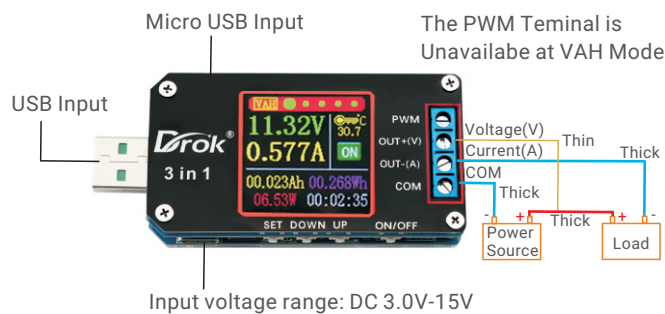


VAH Mode

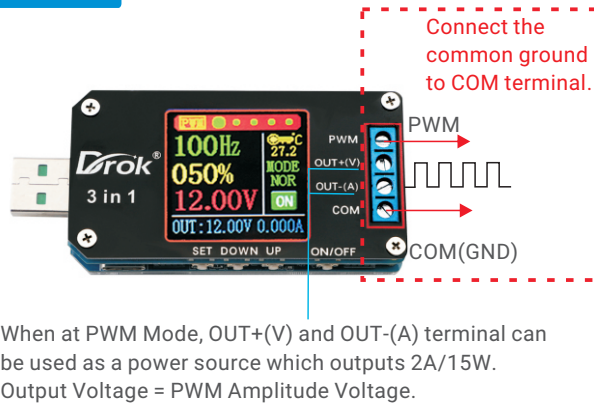


Note: It needs electronic knowledge for users to run the VAH Mode. This item can only measure forward voltage and forward current. Please do not connect wrongly. If connect reversely, it may cause damage to the product.

VAH Mode when used for charging discharging:



PWM Mode:



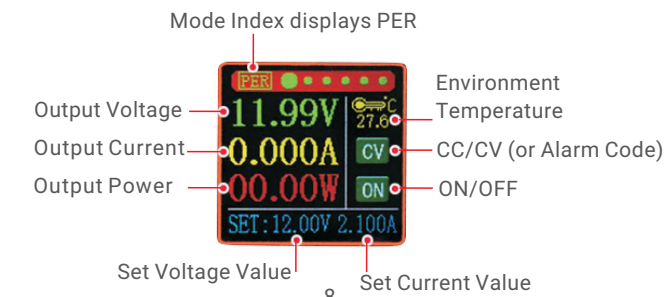
Note: Please do not connect the wires wrongly at each mode, otherwise it will cause damage to the product.

Interface & Button Introduction:

Power Supply PER Mode:

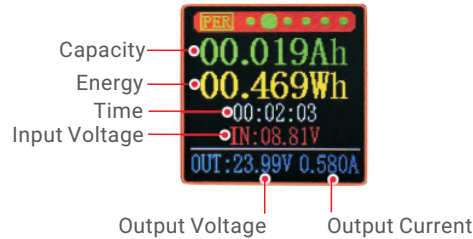
- Short press "ON/OFF" button to turn on/off power supply output.
- Long press "ON/OFF" button for 2 seconds can rotate the screen. Support 360° 4 directions of rotation.
- Short press "UP/DOWN" button can move to the next page.

a. Main Display Interface:



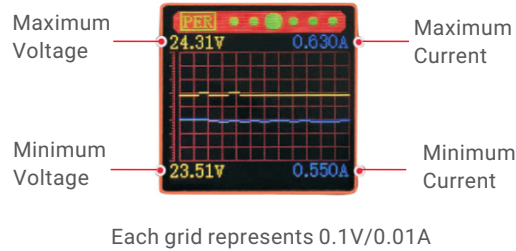
- Short press SET button to activate the parameter to be set (voltage/current);
- Short press SET button to switch between “select all” and “select any bit”;
- If select all, all parameter will display as blue background, press “UP/DOWN” to switch to set voltage/current;
- If select any bit, the corresponding bit will display as blue background, press “UP/DOWN” to set the parameter, “UP/DOWN” button supports long press for adjusting rapidly.
- After finish setting, long press “SET” button for 2 seconds or no key operation for 6 seconds it will automatically save the parameter and exit the setting.

b. Capacity/Energy/Time Recording Interface:



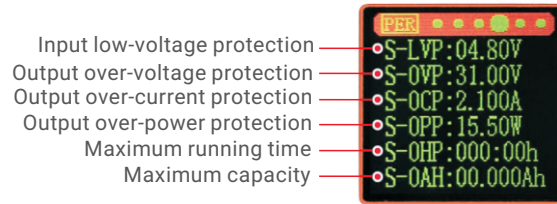
- Short press “SET” button to select all “capacity/energy/time”, the corresponding parameter will display as blue background, press “UP/DOWN” to switch the parameter to be cleared. After selecting, short press “SET” button to clear the corresponding parameter; after selecting. Long press SET button for 2s or last 6s for no key operation, it will automatically exit.
- After turns on output, it will automatically start to record, after turns off power, it will stop recording.

c. Voltage & Current Graph Interface:



At this interface, SET button is invalid.

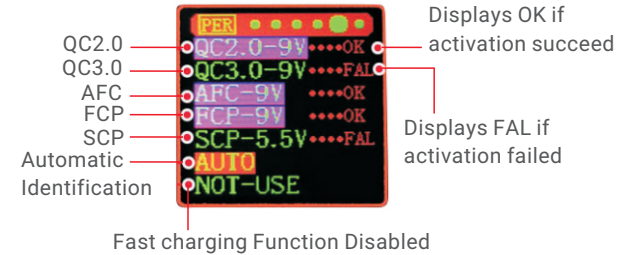
d. Protection Function Setting:



- Short press SET button to activate the parameter to be set;
- Short press SET button to switch between parameter and the bit;
- After selecting the parameter, the parameter will display as blue background, press UP/DOWN button to switch the parameter to be set;
- After selecting any bit, the corresponding bit will display as blue background, press UP/DOWN button to set the value, UP/DOWN button supports long press for adjusting rapidly;
- After finish setting, long press SET button for 2s or last 6s for no key operation, it will automatically save the setting and exit.
- Input low-voltage protection LVP: default 4.8V, adjustable, minimum 2.5V;

- Output over-voltage protection OVP: default 31V, adjustable;
- Output over-current protection OCP: default 2.1A, adjustable;
- Output over-power protection OPP: default 15.5W, adjustable;
- Maximum running time OHP: enabled when the value is not 0, when the running time reaches the set value, the product will automatically cut off output;
- Maximum capacity OAH: enabled when the value is not 0, when the capacity reaches the set value, the product will automatically cut off output.

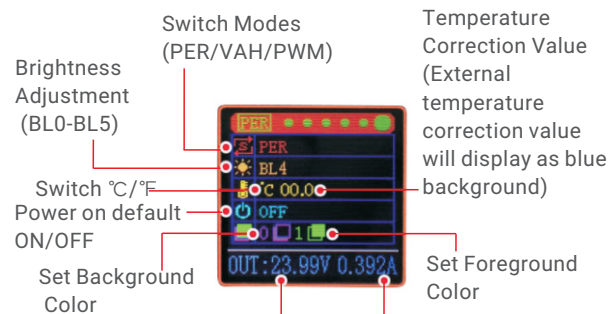
e. Fast Charging Activation Interface:



- Short press SET button to select the fast charging mode to be activated, press UP/DOWN button to switch the fast charging mode to be activated, after selecting, the corresponding mode will display as blue background; after selecting, short press SET button to activate the fast charging protocol, long press SET button for 2s or no key operation for 6s, it will automatically exit the selecting mode and save the setting, and once again trigger the mode currently selected.
- AUTO: Automatically identify the fast charging protocol the adapter supports, after identifying, the fast charging protocol will display as purple background.

Note:As the charging adapters update frequently,
it cannot guarantee 100% successful activation.

f. System Parameter Setting Interface:



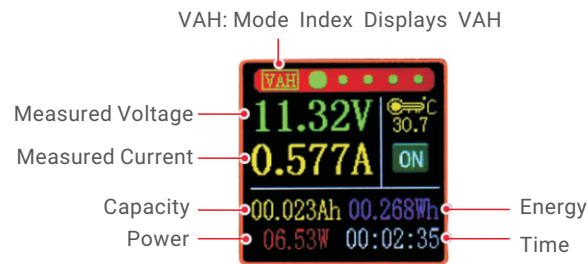
Power Supply Mode/PWM Mode	Output Voltage	Output Current
Voltage-ammeter Mode:	Measurement Voltage	Measurement Current

- Short press SET button, select/switch the parameter to be set. After selecting, the parameter will display as green background, press UP/DOWN button to set the value.
- After finish setting, long press SET button for 2s or no key operation for 6s. it will automatically exit the setting and save the setting.

VAH Mode

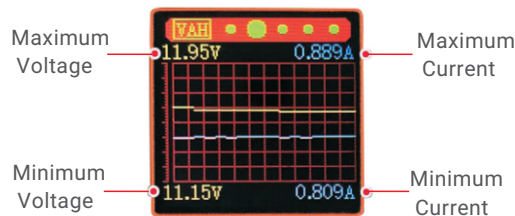
- Short press ON/OFF button can turn on/off measurement.
- Long press ON/OFF button for 2s can rotate the screen. Support 360° 4 directions of rotation.
- Short press "UP/DOWN" button can move to the next page.

a. Main Measurement Interface:



Button operations are the same as the Power Supply Mode "Capacity/Energy/Time Recording Interface".

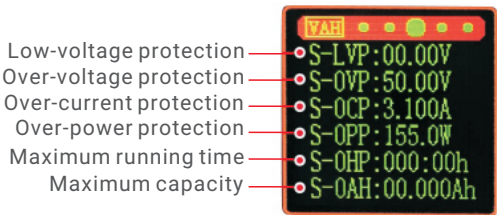
b. Measurement Graph Interface:



Each grid represents 0.1V/0.01A

At this interface, SET button is invalid.

c. Protection Function Setting:

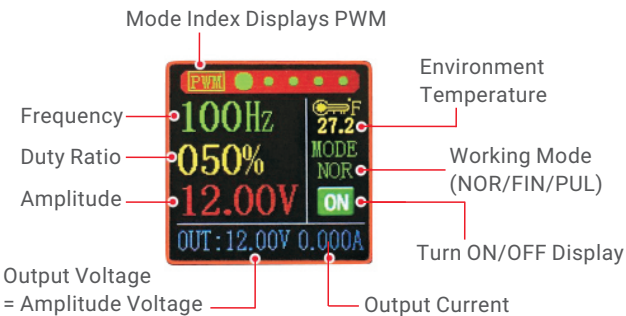


- Button operations are the same as the Power Supply System "Protection Function Setting".
- Low-voltage protection LVP: default 0.0V, adjustable;
- Over-voltage protection OVP: default 50V, adjustable;
- Over-current protection OCP: default 3.1A, adjustable;
- Over-power protection OPP: default 155W, adjustable;
- Maximum running time OHP: enabled when the value is not 0, when the running time reaches the set value, the product will automatically cut off output;
- Maximum capacity OAH: enabled when the value is not 0, when the capacity reaches the set value, the product will automatically cut off output.

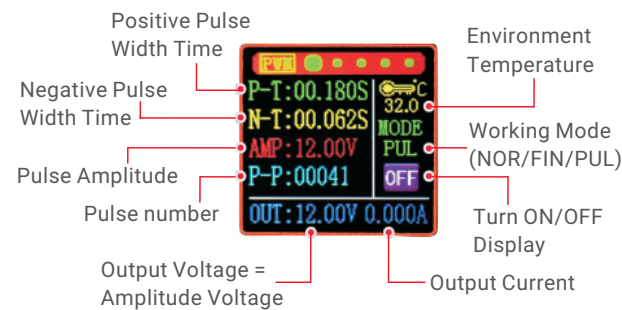
PWM Mode:

- Short press ON/OFF button can turn on/off PWM output.
- Long press ON/OFF button for 2s can rotate the screen. Support 360° 4 directions of rotation.
- Short press "UP/DOWN" button can move to the next page.

a. Frequency Main Interface (Normal NOR Mode /Refined FIN Mode):



b. Frequency Main Interface (Pulse Interface):



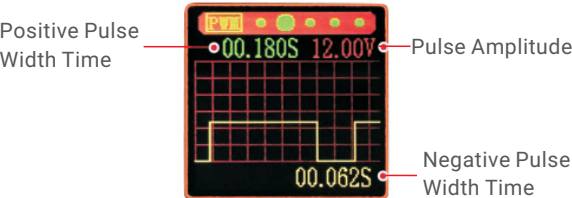
Button operations are the same as the Power Supply Mode "Main Display Interface".

c. Frequency Graph Interface (Normal NOR Mode /Refined FIN Mode):



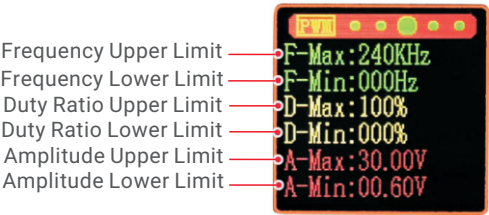
Each grid represents voltage 5V

d. Frequency Graph Interface (Pulse Graph Interface):



Each grid represents voltage 5V

e. Frequency Parameter Setting Interface (Normal NOR Mode/Refined FIN Mode):



f. Frequency Parameter Setting Interface (Pulse Parameter Setting Interface):



- Button operations are the same as the Power Supply Mode "Protection Function Setting".
- Refined FIN Mode and Pulse PUL Mode button operations are the same as Normal NOR Mode.

Recommend Product on Amazon:



DC Wireless Voltage Regulator

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