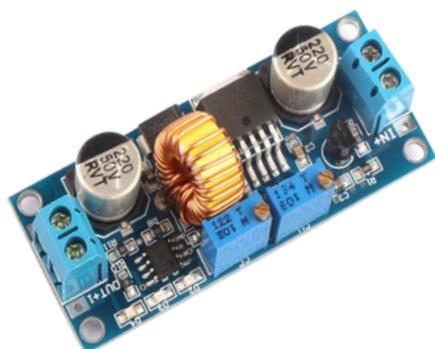


DCDC-RED50-3.5A

50W step down module



This is a high-performance switching buck module with 3.5A current. The module is the second generation of high-frequency switching technology and uses XL4015E1 core chip.

It allows to regulate the voltage and the intensity with two potentiometers, being able to function like step-down, regulator of current and battery charger.

Specifications

Item	Value	Remarks
Description	Step-down (buck)	It can function as battery charger
Power	75W	Input max. If the power to be controlled is greater than 50W, use a heatsink
Input range	4V ~ 38V	
Output range	1.05V ~36V	Output voltage must be at least 1V higher than input voltage and not more than 25V higher than the output
Output current	0 ~ 5A	If input current is higher than 3A a suitable heat sink must be used
Working temperature	-40°C ~ +85°C	If working temperature is > 40°C working power should be reduced or heat dissipation should be improved
Conversion efficiency	<92%	The smaller the difference between the input and output voltage, the higher the efficiency
Dimensions	61.7 x 26.2 x 15 mm	
Weight	25g	
Connection mode	Terminals	
IP	IP20	
Shortcircuit protection	Yes	Current limit to 8A
Input reverse polarity protection	No	
Temperature protection	Yes	
No load current	18mA	The higher the output voltage, and/or the higher the difference between input voltage and output voltage, the higher the no load current
Switching frequency	180KHz	
Output ripple	50mV	
Load regulation	≤0.8%	
Voltage regulation	≤0.8%	

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Operation

A. As a general step-down module **USES** with over-current protecton capability

Input		Output		P(in)	P(out)	Efficiency
V (V)	I (Ah)	V (V)	I (Ah)	W	W	%
37.96	1.00	36.20	1.00	37.96	36.20	95
38.00	1.22	23.81	1.80	46.36	42.86	92
38.00	0.83	11.88	2.30	31.58	27.32	87
38.00	0.25	1.21	3.80	9.39	4.60	49
23.96	1.98	11.97	3.51	47.44	42.01	89
24.00	0.93	5.00	3.50	22.32	17.50	78
24.00	0.66	3.30	3.50	15.86	11.55	73
11.95	2.12	5.00	3.80	25.33	19.00	75
12.00	1.30	3.30	3.50	15.62	11.55	74
4.99	1.18	1.04	3.00	5.89	3.12	53
4.89	1.79	3.29	2.00	8.75	6.58	75

1. Connect the power supply.
2. Without load connected, turn the voltage regulation potentiometer (CV) until the desired output voltage is set.
3. Use an ammeter to measure the short-circuit current (directly at the output) and turn the current regulation potentiometer (CI) until the default current is set as the value of the overcurrent protection.
4. If current value of the multimeter displays 4A, then you can use the module as a constant voltage module with a maximum current of 4A. If current is 4A the red light is on, otherwise the light is offl.

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B. As a battery charger for lithium battery, nickel metal hydride battery

		Li-Ion	LiFePO4	Ni-MH
Power supply	V(V)	5.0	15	15
	I(Ah)	1.5	1.5	0.275
Specifications battery	V(V)	3.7	3.2	1.2
	C(mA)	2600	1500	1800
Conditions at the beginning of the load	V(V) of the battery	3.37	3.1	1.4
	I(Ah) of the battery	1.5	0.7	1.8
Conditions upon completion of loading	V(V) of the battery	4.18	3.7074	
	I(Ah) of charge	0	0.0164	
Duration	Charge (h:min)	03:02:03	2:44:52	1:55:17

Without the constant current module cannot be used to charge the battery, because out of batteries and chargers of electric pressure difference, causes the charging current is too large, resulting in damage to the battery, so from the beginning to use the constant current charging the battery when charging, to a certain degree of automatic switch back to the constant voltage charging.

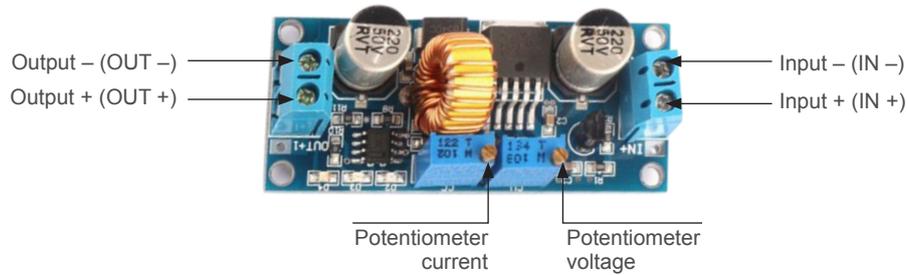
1. Determine the float voltage and charging current you need to charge the battery. In our case, LIR18650-26 of Fullwat. The float voltage is 4.2V and the maximum charge current for normal charge is 1.3A (C/2). For rapid charge, 2A ©.
2. With no-load connected, use a multimeter to adjust the output voltage to the float voltage turning the constant voltage regulating potentiometer.
3. Using 10A current multimeter to measure short circuit output current, turn the constant current adjusting potentiometer to make the output current reach predetermined value of maximum charging current.
4. Connect the battery to start the charging process. The blue LED will light up. During the initial stage of charging at constant current, the red LED will also turn on. When the float charging stage is entered, the red LED will turn OFF.
5. Charging turn lamp current default factory setng is 0.1 times the charging current. The battery during charging current is gradually reduced, gradually converted to constant voltage charging by the constant current charging, if the charging current setting is 1A, then when charge current is less than 0.1A when the blue light of, green light is ON, then the battery is fully charged.

C. As high-power LED constant current driver module.

1. Determine the current and the maximum working voltage you need to drive LED.
2. With no-load connected, use a multimeter to adjust the output voltage to the maximum working voltage of LED turning the constant voltage regulating potentiometer.
3. Using 10A current multimeter to measure short circuit output current, turn the constant current adjusting potentiometer to reach the LED working current.
4. Connect LED to the module.

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50W step down module

Use mode



- First, turn the potentiometer counterclockwise to lower the output voltage. Then connect the source.
- Do not exceed the input power limits.
- Do not exceed the current output limits.
- Do not short-circuit the input and output connections.
- Do not reverse polarity of the input and output connections.
- Set output voltage before connecting load.

Warning!

To prevent fire shock hazard do not expose this appliance to rain or moisture.
Always place the converter in an environment which is:

- Well ventilated.
- Not exposed to direct sunlight or heat source.
- Out of reach from children.
- Away from water/moisture, oil or grease.
- Away from any flammable substance.
- Secure and no risk of falling.