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› Diymore 20A 300W CC CV Step Down Module Instruction Manual

**diymore 012359**

# Diymore 20A 300W CC CV Step Down Module Instruction Manual

Model: 012359

## 1. PRODUCT OVERVIEW

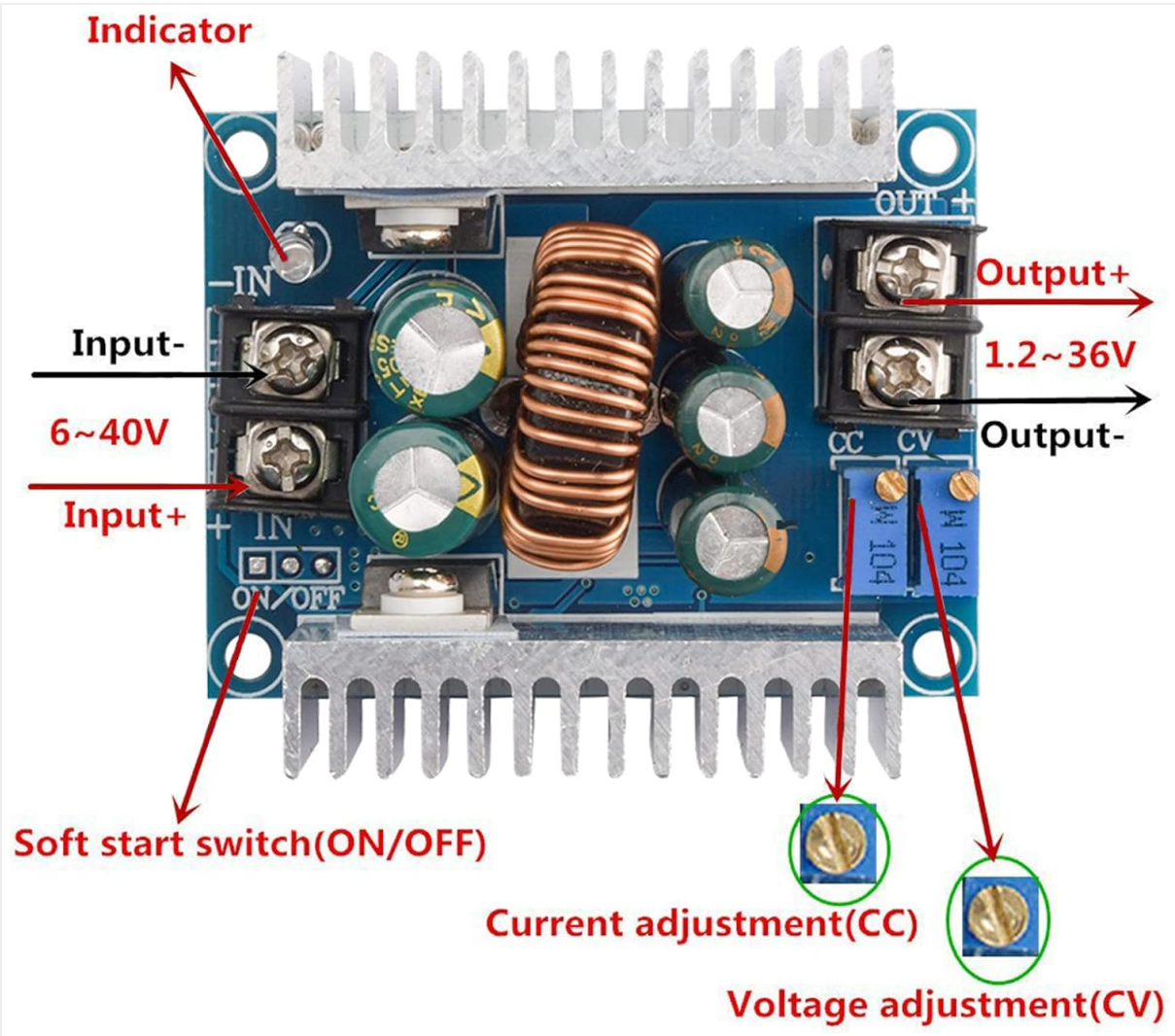
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The Diymore 20A 300W CC CV Step Down Module is an adjustable DC-DC buck converter designed to accurately regulate output voltage and current. It features a wide input voltage range and is suitable for various power supply applications.

- Wide input voltage range: DC 6V to 40V.
- Adjustable output voltage: DC 1.2V to 36V.
- Adjustable output current: Up to 20A.
- High efficiency: Up to 96% (measured at 20A, converting 24V to 12V).
- Equipped with 75V/80A dual MOS tube for large current handling.
- Features high frequency, low resistance electrolytic capacitors for low ripple and stable output.
- Includes two heat sinks for enhanced heat dissipation and extended service life.
- Convenient wiring with large current 30A screw terminals.

## 2. PRODUCT COMPONENTS

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**Figure 1:** Labeled diagram of the Diymore 20A 300W CC CV Step Down Module, showing input/output terminals, indicator LED, soft start switch, current adjustment (CC), and voltage adjustment (CV) potentiometers.

The module includes the following key components:

- **Input Terminals (IN+/IN-):** Connect the DC input voltage (6V-40V).
- **Output Terminals (OUT+/OUT-):** Connect to the load, providing the regulated DC output voltage (1.2V-36V).
- **Indicator LED:** Illuminates when the module is powered and operating.
- **Soft Start Switch (ON/OFF):** Controls the power to the module.
- **Current Adjustment (CC) Potentiometer:** Used to set the constant current limit.
- **Voltage Adjustment (CV) Potentiometer:** Used to set the constant output voltage.
- **Heat Sinks:** Two aluminum heat sinks are installed to dissipate heat generated during operation.


### 3. TECHNICAL SPECIFICATIONS

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Feature	Specification
Brand	diymore
Model	012359
Input Voltage	DC 6V - 40V
Output Voltage	DC 1.2V - 36V (Adjustable)
Output Current	Max 20A (Adjustable)
Output Power	Max 300W
Efficiency	Up to 96%
Mounting Type	PCB Mount
Current Rating	15 Amps, 20 Amps
Specification Met	UL

## 4. SETUP AND INSTALLATION

### 4.1 Wiring Diagram



**★ ★ ★ Is there a product operating manual?**  
We have placed the wiring map in the product details for your reference, if you still don't solve your problem, please contact us.

**★ ★ ★ Wanting to use this to step 18v down to 12v to power a small heat element that can draw up to 7 amps. Is this unit too much at 20 amps?**  
15A is the upper limit. At 7A you are only using around half of it's max current rating. If the heat sink feels like it's getting too hot, maybe you need to mount another heat sink to the current ones already on the device.

**★ ★ ★ Can this project charge lithium ion batteries?**  
Can be charged, but need to add diode anti-flow in output terminal

**★ ★ Why are most questions speaking about a max source of 23v when description shows 6-40v?**  
Active cooling would be required.

**★ ★ Do I have to adjust the current if I just want to adjust the output voltage?**  
Yes

**★ When i got it i plugged in everything correctly and it doesn't turn. How?**  
If the led is on it is working

**Figure 2:** Wiring connections for the Diymore Step Down Module, illustrating input (6V-40V) and output (1.2V-35V) connections, along with the ON/OFF switch and voltage adjustment (V-ADJ).

Follow these steps to correctly wire the module:

- Input Connection:** Connect your DC power source (6V-40V) to the 'IN+' (positive input) and 'IN-' (negative input) terminals. Ensure correct polarity.
- Output Connection:** Connect your load to the 'OUT+' (positive output) and 'OUT-' (negative output) terminals. Ensure correct polarity.

3. **Soft Start Switch:** The module includes an ON/OFF switch for controlling power.

## 4.2 Initial Adjustment

Before connecting a sensitive load, it is recommended to adjust the output voltage and current:

1. **Voltage Adjustment (CV):** With the module powered on and no load connected, use a voltmeter to measure the output voltage. Turn the 'CV' (Voltage Adjustment) potentiometer clockwise to increase the voltage or counter-clockwise to decrease it until the desired output voltage (1.2V-36V) is reached.
2. **Current Adjustment (CC):** To set the constant current limit, first set the output voltage lower than your desired current test voltage. Then, connect an ammeter in series with a suitable load (e.g., a power resistor or LED array) to the output. Adjust the 'CC' (Current Adjustment) potentiometer until the desired current limit (up to 20A) is displayed on the ammeter.

## 5. OPERATING INSTRUCTIONS

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Once the module is correctly wired and adjusted, it can be used to power your devices. The module will maintain the set output voltage and current within its operational limits.

- The indicator LED will be lit when the module is receiving input power and functioning.
- The soft start switch allows for controlled power-up and shutdown.

## 6. SAFETY GUIDELINES

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Observe the following safety precautions to ensure safe operation and prevent damage to the module or connected devices:

- Always ensure correct input and output polarity before powering the module.
- Do not exceed the maximum input voltage of 40V or the maximum output current of 20A.
- When there is a significant difference between the input and output voltage, reduce the power and current to prevent overheating.
- Ensure adequate ventilation around the module, especially when operating at higher power levels, to facilitate heat dissipation from the heat sinks.
- Avoid short circuits on the output terminals.
- Handle the module with care to prevent damage to electronic components.

## 7. MAINTENANCE

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The Diymore Step Down Module requires minimal maintenance. Periodically check the following:

- **Cleanliness:** Keep the module free from dust and debris, especially around the heat sinks, to ensure efficient cooling.
- **Connections:** Verify that all wiring connections are secure and free from corrosion.
- **Heat Dissipation:** Ensure the module is installed in an environment that allows for proper airflow around the heat sinks. If operating under heavy load, consider adding active cooling (e.g., a fan).

## 8. TROUBLESHOOTING

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If you encounter issues with your module, consider the following:

- **No Output/Module Not Powering On:**

- Check if the input voltage is within the specified range (6V-40V).
- Verify that the input connections are secure and have correct polarity.
- Ensure the soft start switch is in the 'ON' position.
- Check if the indicator LED is lit. If not, there might be an issue with the input power or the module itself.
- **Incorrect Output Voltage:**
  - Adjust the 'CV' (Voltage Adjustment) potentiometer using a voltmeter to set the desired output voltage.
  - Ensure the load is not drawing excessive current, which could cause voltage drop.
- **Incorrect Output Current:**
  - Adjust the 'CC' (Current Adjustment) potentiometer with an ammeter and a suitable load to set the desired current limit.
  - Verify that the load's resistance is appropriate for the desired current at the set voltage.
- **Module Overheating:**
  - Reduce the load current or power if the module is operating near its maximum limits, especially with a large input-output voltage difference.
  - Improve ventilation around the module. Consider adding a cooling fan for continuous high-power operation.

## 9. WARRANTY AND SUPPORT

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Diymore is committed to providing high-quality products and customer satisfaction.

- **Warranty:** This product comes with an 18-month warranty.
- **Returns:** You may return the product for any reason within 30 days of purchase for a refund or replacement.
- **Customer Support:** For any questions, technical assistance, or support, please contact Diymore customer service. We offer 24-hour customer support.