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› DollaTek 1200W DC Boost Converter Module ELA20599 User Manual

DollaTek ELA20599

DollaTek 1200W High-Performance DC Constant Voltage Boost Adjustable Power Supply Module User Manual

Model: ELA20599

1. INTRODUCTION

This manual provides essential information for the safe and effective use of your DollaTek 1200W High-Performance DC Constant Voltage Boost Adjustable Power Supply Module. This module is designed to convert a lower DC input voltage to a higher, adjustable DC output voltage, with constant current capabilities. Please read this manual thoroughly before operation.



Figure 1: Top view of the DollaTek 1200W DC Boost Converter Module.

2. SAFETY INSTRUCTIONS

- Always ensure correct input and output polarity. Reverse polarity can damage the module.
- Do not exceed the maximum input voltage (60V DC) or output current (18A).
- For output currents exceeding 10A, active cooling (e.g., a fan) is required to prevent overheating.
- Ensure proper insulation to prevent short circuits.
- Handle the module with care to avoid damage to components.
- Keep out of reach of children.
- Disconnect power before making any adjustments or connections.

3. PRODUCT FEATURES

- High-performance DC-DC boost converter.
- Adjustable output voltage (12-83V).
- Adjustable constant current range (0.5-18A).
- Input voltage range: 10-60V DC.
- Maximum input current: 20A.
- Overcurrent protection: 25A max.
- Reverse input protection (150A MOS).
- Low voltage protection (9-50V adjustable).
- Integrated heatsink for thermal management.

4. SETUP AND CONNECTIONS

Before connecting, ensure all power sources are off. Refer to Figure 2 for connection points and adjustment potentiometers.

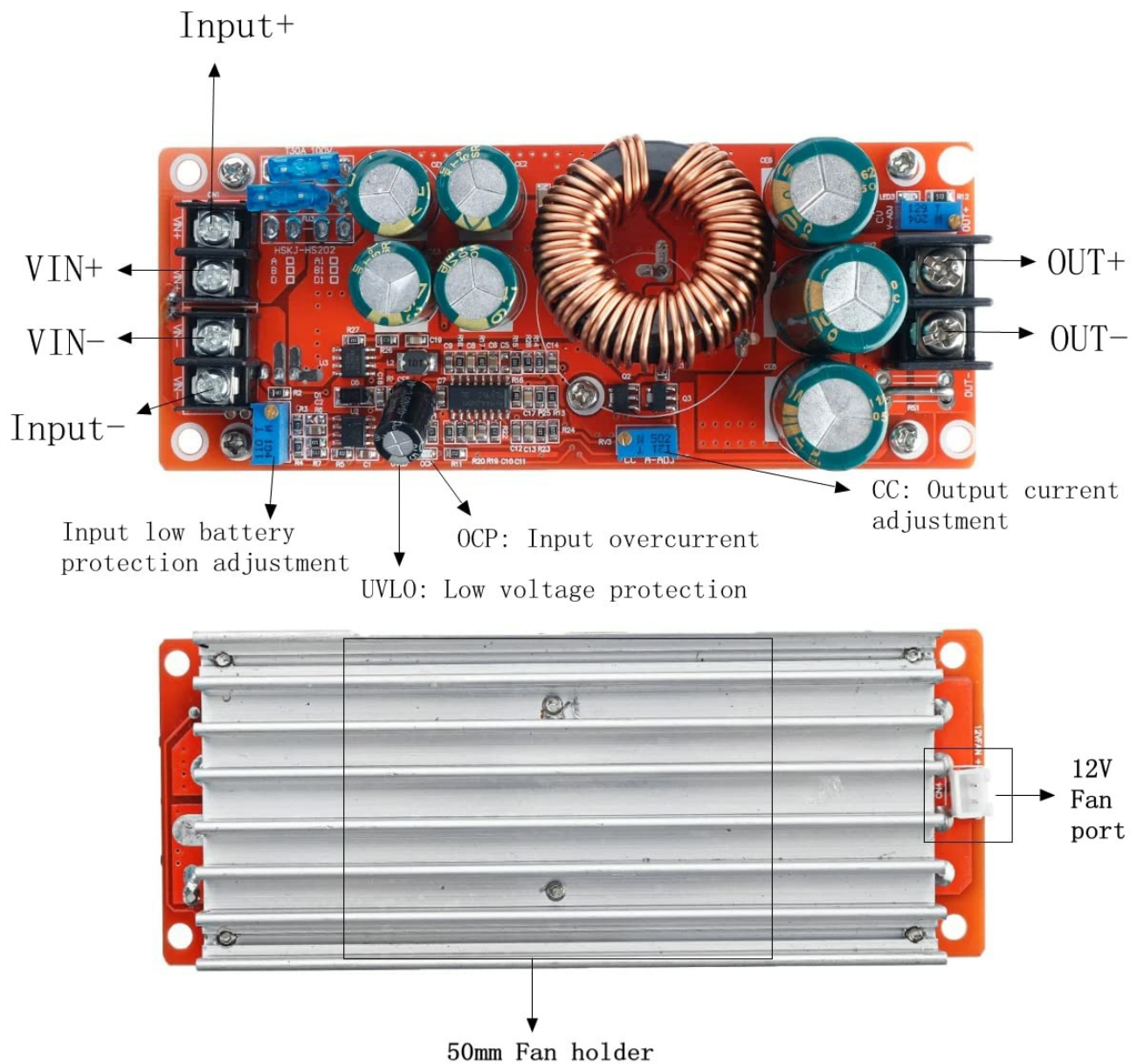


Figure 2: Labeled diagram of the module showing input/output terminals and adjustment potentiometers.

1. **Input Connection (VIN+, VIN-):** Connect your DC input power source (10-60V) to the VIN+ (positive) and VIN- (negative) terminals.
2. **Output Connection (OUT+, OUT-):** Connect your load to the OUT+ (positive) and OUT- (negative) terminals.
3. **Fan Port:** A 12V fan port is available for connecting an external cooling fan. This is highly recommended for continuous operation above 10A output current.



Figure 3: Side view highlighting the integrated heatsink for thermal dissipation.

5. OPERATING INSTRUCTIONS

The module features three potentiometers for adjustment:

- **Output Voltage Adjustment (V-ADJ):** Turn this potentiometer to set the desired output voltage between 12V and 83V. Use a multimeter to monitor the output voltage during adjustment.
- **Output Current Adjustment (CC A-ADJ):** Turn this potentiometer to set the constant current limit. This is useful for charging batteries or driving LEDs. To set, connect a load that draws more current than desired, then adjust until the desired current is reached.
- **Low Voltage Protection Adjustment (UVLO):** This potentiometer sets the input low voltage protection threshold (9-50V). If the input voltage drops below this set value, the module will shut down to protect the input source (e.g., a battery) from over-discharge.

Important Considerations:

- Always verify settings with a multimeter.
- When operating at high power (above 10A output), ensure adequate cooling by connecting a 12V fan to the dedicated fan port.
- The module has built-in overcurrent protection (OCP) at 25A max and reverse input protection.

6. MAINTENANCE

- Keep the module clean and free from dust and debris.
- Ensure good airflow around the heatsink, especially during high-power operation.
- Regularly check connections for tightness and corrosion.
- Avoid exposing the module to moisture or extreme temperatures.

7. TROUBLESHOOTING

- **No Output Voltage:**
 - Check input power supply.
 - Verify input voltage is within the 10-60V range.
 - Ensure correct input polarity.
 - Check if the UVLO (Low Voltage Protection) is triggered. Adjust if necessary.
- **Output Voltage Not Adjustable:**
 - Ensure the V-ADJ potentiometer is functioning correctly.
 - Verify the input voltage is stable and sufficient.
- **Module Overheating:**
 - Reduce output current or power.
 - Ensure proper ventilation.
 - Install an external 12V cooling fan if operating above 10A.
- **Output Current Not Stable/Adjustable:**
 - Ensure the CC A-ADJ potentiometer is functioning.
 - Verify the load is appropriate for constant current mode.

8. SPECIFICATIONS

Parameter	Value
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Parameter	Value
Input Voltage	10-60V DC
Input Current	20A max
Overcurrent Protection	25A max
Operating Current	15mA
Output Voltage	12-83V (adjustable)
Output Current	18A max (add cooling fan if >10A)
Constant Current Range	0.5-18A ($\pm 0.3A$)
Reverse Input Protection	Yes (150A MOS)
Low Voltage Protection (UVLO)	9-50V (adjustable)
Frequency	150kHz
Short Circuit Protection	Yes
Dimensions	130 x 52 x 53 mm
Manufacturer	DollaTek
Product Reference	ELA20599

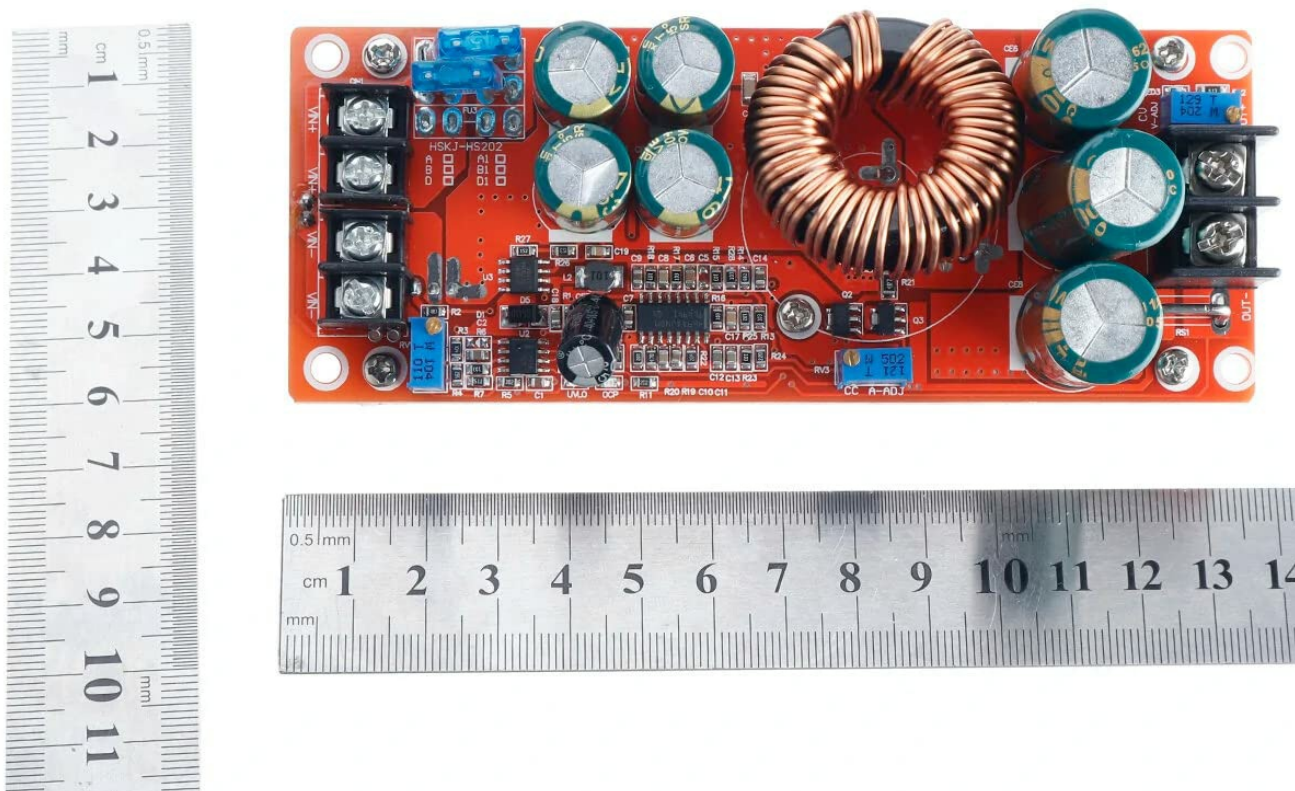


Figure 4: Module dimensions shown with a ruler.

9. WARRANTY AND SUPPORT

Specific warranty information for this product is not provided in the available data. For support or warranty inquiries, please contact your retailer or the manufacturer, DollaTek, directly. Keep your purchase receipt as proof of purchase.

Spare parts availability and software update guarantees are not available for this product.

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