

36387-PS

35W Buck-Boost DC/DC Converter with Current Limit

Snap-in, 35W adjustable buck-boost converter power supply with constant voltage and adjustable current limit & Soft Start.

Adjustable protection for:

Undervoltage (LVP), Overvoltage (OVP), Overcurrent (OCP)

Over Power W (OPP), Over Capacity Ah, Over Power (OPH), Max Operating Time (OHP)

Dual 4 digit Backlit LCD Display

Input Voltage: DC 5V-30 V DC

(Recommend that the Input voltage is > 7 V)

if < 7 V, the output power available will decrease)

Output Voltage: 0.5-30VDC

Output Current: 4A max (Power Limited ~35W/50W Fan cooled)

Accuracy: Voltage: 1% + 1 LSD Resolution: 0.01 V

Current: 1.5% + 3 LSD Resolution: 0.001A

Operating Temperature: -20°C to 40°C (-4°F to 104°F)

Working Frequency: 180KHz

Conversion efficiency: ~ 88%.

Input Undervoltage (LVP): Adj. 4.7-30VDC, (default 4.7 V)

Output Overvoltage (OVP): Adj. 4.8-30VDC, (default 31 V)

Overcurrent (OCP): Adj. 0.5A-4.2A range (default 4.2A)

Over Power W (OPP): Adj. 1W-50W (default: 50W)

Overtemperature (OTP): 100 °C

Max Capacity (OAH): 4 range Adj. 9.999/99.99/999.9 & 9999 Ah

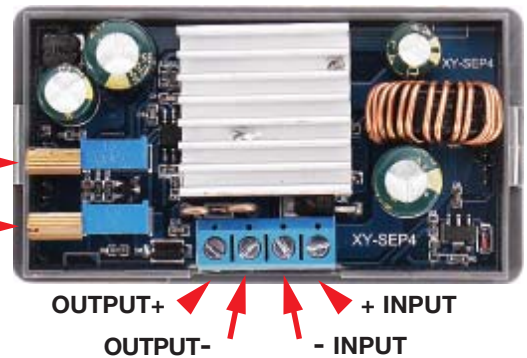
Max Energy (OPH): 4 range Adj. 9.999/99.99/999.9 & 9999 Wh

Max Run Time: (OHP): 00:00-99.99 (HH:mm)

L: 79mm **W:** 42mm **D:** 35mm **WT:** .2



VOLTAGE
ADJ. →
CURRENT
ADJ. →

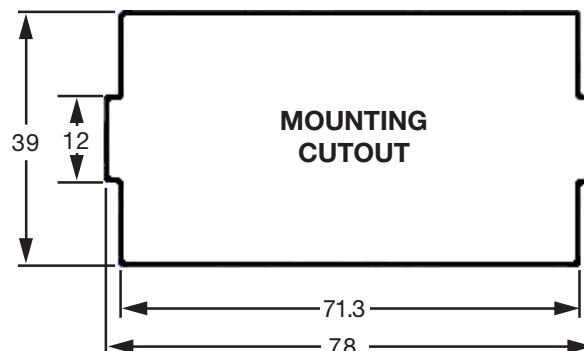


WARNING: DO NOT SHORT CIRCUIT INPUTS TO OUTPUTS

REMEMBER: This is a DC to DC Converter: $\text{Power In} = \text{Power Out} \times \text{Efficiency} (\sim 85 \text{ to } 88\%)$

Power= Volts X Amps SO: Source Power Supply must be able to provide the necessary Power

Example: For 24V Out @ 1A Power= 24W, Therefore Input Power must be greater than 29W (24W/0.85%)



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GENERAL

1: Short Press: Momentary (Press & Release)

2: Long Press: Press & Hold for >"listed" sec. OR Display Changes (Release after)

NOTE: Normal default is Upper Display is Output Voltage. Lower is Current

NOTE: See Instructions Below to Set Up Power ON Defaults

Normal Mode

1: Short Press the "⏻" ON/OFF button: Turns Output On or Off (Alternate Action)

2: To Switch between "Input Voltage" or "Output Voltage" on Top Display line, Short Press the "⬆" UP button
Display will show "IN" Upper Left for Input Voltage otherwise display shows the Output Voltage. (Alternate Action)

3: Short Press the "⬇" DOWN button to Scroll through Lower Display Measurements
Starts Current "A", then Power "W"-Capacity "Ah"-Energy "Wh"- Discharge Time "h" (MM:ss) in corner.

Set Default Output Status At Power Up: Long Press "⏻" ON/OFF button:

1: Lower Display will show the NEXT state (If output was ON at power Up; Display will show OFF and at the next power up output will be OFF)

2: After ~5sec Display will revert to normal

Adjusting Output Voltage & Current

Both Output Voltage and Current Limit Potentiometers are Located on Back of Unit

1: Connect Input Power Source

Set Output Voltage (CV):

A: Turn Output "ON"

B: Locate the "Voltage" (CV) Adjustment Potentiometer **on the back of unit.**

Turn Clockwise to Increase Output Voltage; Counterclockwise to Decrease Output Voltage

2: Set Set Current Limit (CC)

A: Turn Output "OFF"

B: Short-circuit Output terminals

C: Turn Output "ON"

D: Locate the "Current" (CC) Adjustment Potentiometer **on the back of unit.**

Turn Clockwise to Increase Output Current; Counterclockwise to Decrease Output Current

E: Turn Output "OFF"

F: Remove Short from Output Terminals

G: Connect to Load

The CC constant current (current limiting) potentiometer is adjusted to make the output current reach a overcurrent protection value. (For example, when the current value is set at 3.000A, the maximum current available is 3A, When the current reaches 3A, the Display shows "CC", otherwise will display "CV"

Note: Due to the output current sense resistance, there is a voltage drop of 0-0.2V depending on the load connected. When the current is high, there will be a voltage drop. This is normal.



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SET PARAMETER LIMITS

- 1: Long Press the “” SET button Until upper Display shows “LUP” (~5sec)
A: Lower Display is the present setting.
- 2: Short Press the “” SET button to scroll through the settings.
- 3: At each parameter the Lower Display will Flash the present setting
A: To change the value; Short Press the “” or “” button to Increase/Decrease value (Hold Button for Fast Set)
B: Press “” SET button to continue scrolling
- 4: Set the Maximum Capacity (OAH) / Maximum Energy (OPH) / Maximum Run Time Modes
Note: When the functions of OAP, OPH and OHP are **Disabled**, the power supply will automatically **Record** the Capacity, Energy and Run Time. When the functions are **Enabled**, the output will automatically turn Off and the Function will Flash when the limit is reached.
When OHP is Enabled, the running time of the power supply is Countdown mode.
A: Press the “” ON/OFF button to Enable or Disable that function, when disabled, display shows “----”.
B: Set OAH: When display shows OAH; Press and Hold the “” ON/OFF button until decimal point shifts (~5sec) to change the Capacity range.
 - 1: The Decimal Point will shift upon each Press-Hold-Release (9.999Ah / 99.99Ah / 999.9Ah / 9999Ah)
 - 2: To change the value; Short Press the “” or “” button to Increase/Decrease value (Hold Button for Fast Set)
 - 3: Short Press “” SET button to go to next function
- C: Set OPH: SAME AS “B” ABOVE
- D: Set OHP: When display shows OHP; Short Press the “” button, Display will show present value setting or if disabled, shows “--:--”. In either case, Both Hour digits will flash. This action is alternating, Enable/Disable
 - 1: To change the Hour value; Short Press the “” or “” button to Increase/Decrease value (Hold Button for Fast Set)
 - 2: To adjust Minutes; Press the Press “” SET button The display will flash both Minute digits, To change the value; Short Press the “” or “” button to Increase/Decrease value (Hold Button for Fast Set)
- 5: **Set dAt** Function: provides choice of displaying data for either a single Output ON/Off cycle or Multiple ON/OFF cycles
 - A: DAT0: Displays the Capacity (Ah), Energy (Wh) and Run Time (h) of the previous ON cycle only
Current Data for Ah, Wh & h stops recording at Output OFF.
Resets to “0”s at next Output ON (Does not store) Resets to zero at application of input power (Does not store)
 - B: DAT1: Displays the Capacity (Ah), Energy (Wh) and Run Time (h) of the previous ON cycle, and any subsequent ON/OFF cycles. (Accumulates)
Continues recording whenever Output is ON (Accumulated (Total) Data for Ah, Wh & h)
Resets to zero at application of input power (Does not store)
 - C: Selecting **dat** (Data Set 0 or 1):
 - 1: Long Press the “” SET button Until upper Display shows “LUP” (~5sec)
 - 2: Short Press the “” SET button to scroll through the settings until Display shows “dAt”.
Display Flashes Present setting (0 or 1)
 - 3: Press the “” or “” button to switch between 0 & 1 (Alternate action on either)
- 6: When finished setting, Press & hold the “” SET button until display reverts to Normal to exit and save automatically.
NOTE: This can be done at anytime to Exit SET Mode.



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Display Calibration:

Over time, cycling and use; the calibration of the display may drift;

To calibrate this unit:

Use a calibrated DC Volt & Amp Meter & Power supply

A: Input:

- 1: Connect a power source & calibrated Volt meter to the Input and set a value.
- 2: Long Press the “” UP button to enter Calibration Mode
- 3: Press “” SET button to scroll “Output, Input & Current”
Stop at “Input”
- 4: Short Press “” or “” button to Increase/Decrease value (Does not support Fast Set)

B; Output:

- 1: Connect the calibrated Volt meter to the output.
- 2: Press “” SET button to scroll “Ouput, Input & Current”
Stop at “Ouput”
- 4: Short Press “” or “” button to Increase/Decrease value (Does not support Fast Set)

B; Output Current:

- 1: Connect a load and a calibrated Ammeter to the output.
- 2: Press “” SET button to scroll “Ouput, Input & Current”
Stop when Current (Lower) Display Flashes
- 4: Short Press “” or “” button to Increase/Decrease value (Does not support Fast Set)

Long Press “” SET button to Exit Cal Mode



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