

DC power for desktop PCs

PVS-DCATX-500 • 16–60 V DC INPUT • UP TO 500 W

A compact DC-to-ATX converter for compatible battery-powered desktops. Replaces the AC conversion stage of a conventional PC supply; installation, power budgeting and cooling must be designed for the complete system.



CORE SPECIFICATION	RATING / REQUIREMENT
DC input	16–60 V DC; one input channel. Never connect directly to a 12 V battery.
Combined output	Up to 500 W. Maximum output is optimised for 48 V input; available power decreases above or below 48 V.
Cooling	Forced airflow required at maximum load. For fanless use, reduce the +12 V load until the PSU remains below 65°C.
Efficiency	Manufacturer headline: >96%. No published efficiency curve or load-specific guarantee.
Size / standard	125 × 63 × 31 mm with heatsink and backplate; Intel ATX 2.01. Verify case mounting/bracket.

INPUT & INSTALLATION

Use a protected battery or regulated DC source that stays within 16–60 V throughout charging and discharge. Do not connect an uncontrolled solar-panel output. Select cable, connector, fuse and battery protection ratings for the actual current and installation. A 500 W output would require about 10.9 A at 48 V and an assumed 96% efficiency; this calculation is not a measured operating point.

Electrical limits & connections

OUTPUT RAIL	MAXIMUM LOAD	PEAK LOAD	REGULATION
+12 V	40 A	45 A	±1.5%
+5 V	6 A	8 A	±1.5%
+3.3 V	6 A	8 A	±1.5%
+5 V standby	2.5 A	3 A	±1.5%
−12 V	0.05 A	0.1 A	±5%

Rail maxima are not additive: respect the 500 W combined limit. Peak loading must not exceed 60 seconds. GPU transients and the input-dependent output limit must be included in the system budget.

CABLES & CONNECTORS

CONNECTION	QUANTITY	CABLE LENGTH
Motherboard ATX 24-pin	1	350 mm
CPU EPS 4+4-pin	1	420 mm
GPU PCIe 6+2-pin	2	420 mm
SATA power	3	300 mm
Peripheral 4-pin	1	Not specified
DC input: 7.4 × 5.0 mm jack to 6-pin	1	400 mm

TEMPERATURE & PROTECTION

Operating ambient: −10°C to +70°C. Maximum output derates linearly above 40°C. Input over-voltage protection: 60.2–60.5 V (normal input must remain at or below 60 V). Over-current limits: +12 V, 40–45 A; +5 V / +3.3 V, 8–10 A. Overload shutdown latches off above 110–160% of rated output. These protections do not replace battery-side fusing or a battery management system.

SYSTEM COMPATIBILITY

The 500 W rating is not a guarantee for every gaming PC. Check sustained demand, startup/transient loads, connectors, cooling and battery voltage. No ATX 3.x or 12VHPWR compatibility is claimed. This is an open-board component; enclosure, bracket and system peripherals are not included in the illustrated use cases.

DOCUMENT BASIS

PVShop technical summary of the supplier’s published manual, reviewed 12 September 2026. Model cross-reference and source are retained in the product record. Efficiency is a supplier claim, not an independent PVShop test. Runtime examples on the product page are separately labelled calculations.