DW-S9000

DATASHEET



The DW-S9000 is a two-channel Class D power amplifier delivering 2 × 4,500 W into 8 Ω, or 13,500 W bridged, from a 1.5U chassis weighing 14 kg. It is the channel-count that matters here: two channels, each with the current capability to drive a large flown array hang or a bank of high-power subwoofers, rather than four channels sharing one supply.

The output stage uses silicon carbide switching devices. SiC junctions tolerate roughly 200 °C against about 150 °C for conventional silicon — close to three times the thermal margin. In the field this is the difference between an amplifier that keeps working through a hot afternoon in a closed rack and one that starts folding back before the headline act.

Lower switching loss also means less heat to remove, which is why the transformer and heatsink can be this small. Power supply and amplifier sections occupy physically separate zones with dedicated cooling between them, and four variable-speed axial fans in two twin banks flank the central heatsink, moving air front to rear. Active power factor correction forces the input current to follow the mains sine wave instead of drawing in pulses — on a shared distro, when LED fixtures switch or air conditioning starts, output regulation holds.

Both side cheeks are single-piece cast aluminium with fin-cut channels — they serve as carrying handles and as passive heatsinks at the same time. External fasteners are recessed hex-head with anti-oxidation plating, so they do not corrode after repeated maintenance access. The metal level controls carry illuminated status rings that stay readable in low stage light.

Key Features

- 2 × 4,500 W into 8 Ω, 2 × 6,750 W into 4 Ω, 2 × 10,125 W into 2 Ω from a 1.5U, 14 kg chassis
- Bridged mode: 1 × 13,500 W into 8 Ω, 1 × 20,250 W into 4 Ω
- Silicon carbide output devices – junction rating around 200 °C against roughly 150 °C for conventional silicon
- Damping factor > 5,000, equivalent to an output impedance of about 0.0016 Ω
- Active PFC across the full mains range – stable output on shared distro and unstable local supply
- Four variable-speed axial fans in twin banks either side of the central heatsink, front-to-rear airflow
- Cast aluminium side cheeks with fin-cut channels serving as both handles and passive heatsinks
- Metal level controls with illuminated status rings, readable in low stage light
- Front-panel display: real-time per-channel temperature and bar-graph signal level, with touch lockout
- Recessed hex-head external fasteners with anti-oxidation plating
- Full protection suite: short circuit, thermal, DC offset, soft start, clip and long-term power limiting

Applications

- Large flown array systems
- High-power subwoofer arrays
- Touring and rental production
- Arenas, stadiums and large halls

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Technical Data

Type	**2-channel Class D switching amplifier, silicon carbide output devices**
Output – dual mode	**2 × 4,500 W @ 8 Ω | 2 × 6,750 W @ 4 Ω | 2 × 10,125 W @ 2 Ω**
Output – bridged mode	**1 × 13,500 W @ 8 Ω | 1 × 20,250 W @ 4 Ω**
Output measurement standard	**1 kHz sine burst, 20 ms on / 480 ms off** **THD 1 %, all channels driven**
Channel modes	Dual (1+/1– each) | Parallel (common input A, independent level) | Bridge (1+/2–) Selected by front-panel touch control
Frequency response	**20 Hz – 20 kHz**
THD	≤ 0.05 % @ 8 Ω / 1 kHz
Signal-to-noise ratio	≥ 99 dB
Damping factor	**> 5,000 (output impedance ≤ 0.0016 Ω)**
Slew rate	45 V/µs
Input sensitivity	Selectable 32 / 35 / 38 / 41 dB
Input impedance	≥ 20 kΩ balanced | ≥ 10 kΩ unbalanced
Inputs	**2 × Neutrik XLR 3-pin balanced, with parallel link outputs**
Outputs	**2 × Neutrik speakON® NL4**
Display / controls	Real-time per-channel temperature and bar-graph signal level Touch lockout | metal level controls with illuminated status rings
Mains supply	**100 – 240 V AC, 50 / 60 Hz | active PFC, PF near unity across range**
Mains connection	Captive AC power cord with moulded strain relief Not detachable | power switch on front panel
Mains protection	No integral circuit breaker – external protection required | soft start
Cooling	4 × variable-speed axial fans in twin banks, front-to-rear airflow Separate physical zones for PSU and amplifier with dedicated cooling between
Thermal headroom	**SiC junction rating ≈ 200 °C vs ≈ 150 °C for conventional silicon**
Protection	Short circuit (<2 Ω, self-recovering) | thermal (self-recovering) | DC offset Soft start | clip limiter | long-term power limiter
Chassis	Pressed steel frame, black powder coating | recessed hex-head fasteners Cast aluminium side cheeks with fin-cut channels – handle and heatsink
Rack format	**19" 1.5U per EIA-310**
Weight	**14 kg | 30.9 lbs**
Certification	CO / CQ per shipment
Warranty / spare parts	26 months | replacement modules available 5 years

Rear Panel



rear panel — 2 x speakON NL4 out, 2 x XLR in with parallel link, mode DIP, four variable-speed fans

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Architect Specification

The amplifier shall be a two-channel Class D switching power amplifier employing silicon carbide semiconductor devices in the output stage, housed in a 19-inch 1.5U rack chassis conforming to EIA-310, intended for driving large flown array systems and high-power subwoofers.

Rated output power shall be not less than 4,500 W per channel into 8 Ω, 6,750 W per channel into 4 Ω and 10,125 W per channel into 2 Ω in dual mode, measured with a 1 kHz sine burst of 20 ms duration at 480 ms intervals, at 1 % total harmonic distortion, with all channels driven. In bridged mode the amplifier shall deliver not less than 13,500 W into 8 Ω and 20,250 W into 4 Ω under the same measurement condition.

Channel configuration shall be selectable between dual mode with two independent 1+/1– outputs, parallel mode sharing input A with independent level control per channel, and bridge mode combining both channels to a single 1+/2– output at double power. Mode selection shall be made from front-panel touch controls.

Frequency response shall be 20 Hz to 20 kHz. Total harmonic distortion shall not exceed 0.05 % at 8 Ω and 1 kHz. Signal-to-noise ratio shall be not less than 99 dB. Damping factor shall be greater than 5,000, corresponding to an output impedance not exceeding 0.0016 Ω. Slew rate shall be not less than 45 V per microsecond. Input sensitivity shall be selectable at 32, 35, 38 and 41 dB. Input impedance shall be not less than 20 kΩ balanced and 10 kΩ unbalanced.

The amplifier shall provide two balanced 3-pin XLR inputs with parallel link outputs for distribution to downstream equipment without an external splitter, and two Neutrik speakON® NL4 outputs. A front-panel display shall report real-time per-channel temperature and bar-graph signal level, with a touch lockout preventing accidental adjustment during operation. Level controls shall be metal with illuminated status rings legible under low stage lighting.

The mains input shall accept 100 to 240 V AC at 50 or 60 Hz and shall incorporate an active power factor correction circuit forcing input current to follow the mains sine waveform rather than drawing in pulses, holding power factor near unity and reducing high-order harmonic content, so that output regulation is maintained where switched lighting loads or multiple devices share one supply feed. Mains connection shall be by captive power cord with moulded strain relief; no detachable inlet is fitted and the mains switch shall be on the front panel. A soft start circuit shall limit inrush current. No integral circuit breaker is fitted; overcurrent protection shall be provided by the supply distribution.

Cooling shall be by not fewer than four variable-speed axial fans arranged in twin banks either side of the central heatsink, with front-to-rear airflow to professional rack convention. The power supply and amplifier sections shall occupy physically separate zones with dedicated cooling between them, so that heat from the power supply stage does not affect the amplifier stage. The semiconductor junction temperature rating shall be not less than 200 °C, permitting stable operation at elevated ambient temperature without premature thermal protection.

Protection shall include short-circuit protection activating below 2 Ω and self-recovering, self-recovering thermal protection, DC offset protection, soft start, clip limiting and long-term power limiting against sustained non-programme signal.

The chassis shall be a pressed steel frame with black powder coating resistant to abrasion and corrosion under repeated transport handling. Both side cheeks shall be single-piece cast aluminium with fin-cut channels serving as carrying handles and passive heatsinks. External fasteners shall be recessed hex-head with anti-oxidation plating. Weight shall not exceed 14 kg.

The amplifier shall be supplied with certificate of origin and certificate of quality per shipment, and third-party test reports for output power, THD and damping factor. Replacement modules shall be available for not less than five years. The amplifier shall be the D&L DW-S9000.

References

Full measurement data and loudspeaker presets are available on request – dailycompanyltd@gmail.com