



# D SERIES 200:4T/Ta

## Overview

The unit shall incorporate two core elements: an AVB-capable network interface for control, monitoring and four-channel audio compatible with the Tesira® protocols from Biamp Systems; and a four-channel high-output power amplifier platform. Additional capabilities shall include on-board surveillance and monitoring of critical performance parameters for compliance with international standards for voice evacuation systems. All control and monitoring facilities shall be accessible via Ethernet using an integrated software package that includes Tesira® software, a custom amplifier configuration interface, and additional features to expedite system design, specification and commissioning.

## Tesira® Network Integration

The unit shall integrate seamlessly into the Tesira® audio networking, control and DSP environment as a high-powered expander device. The unit's mute, level and signal invert functions, along with load surveillance, shall be accessible from within the Tesira® software. Four channels of audio input shall be provided via Tesira® using the AVB networking protocol. An optional analog input section shall provide analog failover as well local input to the Tesira® system. The unit's power state management (including auto power-down), GPIO and serial port functions also shall be integrated into the system. Replacement units shall be hot-swappable within the Tesira environment with full configuration transfer.

## Power Amplifier

Maximum total power output shall be 20,000 W or 5,000 W per channel nominal @ 2.67 ohms; output at 4 ohms shall be 4400 W per channel nominal. Maximum output into a 100 V high-impedance distributed system shall be 4700 W. The amplifier topology shall allow flexibility in output power management, with the capability to allocate total available power across output channels as needed for the application. Maximum peak output voltage shall be 194 V and maximum output current shall be 67 A. The amplifier shall incorporate power factor correction (PFC) to reduce requirements on the mains distribution system. Amplifier gain shall be digitally configurable from 22 dB to 44 dB. The unit shall exhibit the following performance parameters: Frequency response shall be 20 Hz – 20 kHz  $\pm$  0.05 dB (1 W into 8 ohms). Dynamic range shall be >114 dB. Propagation delay (server analog input to output) shall not exceed 3.857 ms. The unit shall incorporate a DSP-implemented zero overshoot voltage peak limiter adjustable per channel for voltage threshold and profile. The optional four-channel analog input section shall offer balanced mic/line inputs with 48 V phantom power and 24-bit/48 kHz A-D converters.

## Load Verification and Circuit Protection

The unit shall include facilities for status surveillance and load monitoring consistent with international standards for use in mission-critical voice evacuation systems. Circuits and sensors shall be provided for warning and protection of VHF (very high frequencies), DC at output, over-temperature, open load, excessive current, and voltage peak clipping.

## Connectors and User Interfaces

The rear panel shall provide an Ethernet AVB port (RJ45 connector) for bi-directional audio, control and monitoring data. Optional analog mic/line inputs shall use 3-pole terminal block connectors. A serial control port (DB9 connector) shall facilitate power management, and a GPIO port shall be accessed via a terminal block connector. Output connectors shall be on terminal block connectors with supplied mating connectors accepting cable up to 16 mm<sup>2</sup> (6 AWG). The front-panel user interface shall provide three tri-color LEDs for system status indication (ALARM, ACTIVITY and STATUS); and three channel status indicators (LOAD, AMP, SIGNAL). A soft-touch POWER button shall select ON or STANDBY mode with LED status indication. A soft-touch SELECT button with LED status indicator shall select software functionality.

## Power Supply, Protection and Cooling

The power supply shall be a universal regulated, switch-mode type operating at voltages from 70 – 265 V AC at 45 – 66 Hz. A soft-start circuit shall limit current inrush to 8 A. A software configurable breaker emulation limiter shall safeguard against tripping of AC mains breakers. The unit shall be cooled by temperature-controlled fans with air flow from front to rear.

## Physical

The unit shall be 483 mm (19 in.) wide, 88 mm (3.5 in. /2U) high, and 424 mm (16 in.) deep. Weight shall be 16.5 kg (36 lbs). Finish shall be black painted steel with grey painted steel front and detachable grille. The unit shall be approved for use as specified by CE, ETL (ANSI/UL, CSA), PSE and RCM.

The unit shall be the Lab.gruppen D 200:4T with AVB input only; the Lab.gruppen D 200:4Ta with optional analog inputs.

