

CX4T



Toroidal Output Transformers—
Provide Full Electrical Isolation and
Meet Worldwide Safety Agency
Approval

**Automatic Two-Speed, High
Efficiency Fan Cooling—**For Quiet
Normal Operation with Maximum
Cooling on Demand

Rear-to-Front Air Flow—Keeps
Equipment Racks Cool

Front Panel Status LED's—Indicate
Clip and Power

Rear Panel Detented Gain Controls—
For Security and Resetability

**Detachable Euro-Style Barrier Strip
Input—**Easy and Economical
Connections

Double Thickness Rack Ears—For
Extra Strength

**Covered Barrier Strip Output
Connections—**Meets Safety Agency
Requirements

**Simple Barrier Strip Connection
Determines Output Mode—**25 V, 70 V,
100 V and Direct Outputs Available
Simultaneously

Built-in 50 Hz Subsonic Filter—
Prevents Speaker Transformer
Saturation With Minimal Effect on
Program Material

The CX4T amplifier is ideal for use in any permanently installed sound system. Designed to meet the specialized needs of high power, high quality audio systems, the CX4T offers the features requested most by contractors and installers from around the world. The CX4T resides in a rugged two rack-space steel chassis approximately 17.9 inches deep. With high quality internal isolation transformers, the CX4T features built-in capability for driving 25, 70 or 100 volt distributed sound systems as well as direct output voice coil loads. Versatile design allows a 25, 70 or

100 volt connection on one channel and a direct connection on the other channel. For maximum flexibility, you can even drive a distributed line and a low impedance load on the same channel at the same time! The CX4T features a built-in 50 Hz subsonic filter that reduces saturation of speaker transformers caused by excessively low frequencies. High output power, versatile loading options, high thermal capacity and rugged reliability make the CX amplifiers ideal for any high quality sound system installation.

LOAD	OUTPUT POWER (Direct Outputs)		OUTPUT POWER (Isolated Outputs)
	45Hz-20kHz, 0.1% THD	1kHz, 1% THD	1 kHz, 0.1% THD
Stereo (W/Ch)			
8Ω	150 watts	170 watts	
4Ω	225 watts	250 watts	
2Ω		350 watts*	
25 volts			150 watts
70 volts			175 watts
100 volts			175 watts
Mono-Bridged			
16Ω	300 watts	340 watts	
8Ω	450 watts	500 watts	
4Ω		700 watts*	
50 volts			300 watts
140 volts			350 watts
200 volts			350 watts

*typical



1675 MacArthur Boulevard
Costa Mesa, California 92626-1468 USA
Phone: 714/754-6175 Fax: 714/754-6174

CX Series

POWER OUTPUT

Direct output, watts per channel, both channels driven	
8 Ω , 45 Hz-20 kHz, 0.1% THD	150
8 Ω , 1 kHz, 1% THD	170
4 Ω , 45 Hz-20 kHz, 0.1% THD	225
4 Ω , 1 kHz, 1% THD	250
2 Ω , 1 kHz, 1% THD*	350
Isolated outputs, watts per channel, both channels driven	
70V or 100V, 1 kHz, 0.1% THD	175
25V, 1 kHz, 0.1% THD	150
Direct Outputs, bridged mono	
8 Ω , 45 Hz-20 kHz, 0.1% THD	450
4 Ω , 1 kHz, 1% THD*	700
Isolated outputs, bridged mono	
50V, 1 kHz, 0.1% THD	300
140V, 1 kHz, 0.1% THD	350
200V, 1 kHz, 0.1% THD	350

DISTORTION SMPTE-IM, less than 0.05%, direct outputs

FREQUENCY RESPONSE

Direct outputs:	-3 dB @ 50 Hz*, -0.2 dB @ 20 kHz
Isolated outputs:	50 Hz*-16 kHz, +0, -3 dB

* Low frequency response is limited by 12 dB/octave 50-Hz high-pass filter.

DAMPING FACTOR 200 (@ direct outputs)

OUTPUT REGULATION 100V-1.0 dB; 70V-1.1 dB; 25V-2.0 dB

NOISE 100 dB below rated output (20 Hz to 20 kHz)

VOLTAGE GAIN
@ direct outputs 35x (31 dB)

INPUT SENSITIVITY, V_{RMS}
for rated power, 8 Ω 0.96

INPUT IMPEDANCE 10K unbalanced, 20K balanced

CONTROLS

Front: AC Switch
Rear: Ch. 1 and Ch. 2 Attenuator Knobs
(11 detents: 0, -2, -4, -6, -8, -10, -12, -14, -18, -24, off)

FRONT PANEL/INDICATORS (per channel)

CLIP: Red LED
POWER: Green LED

REAR PANEL/CONNECTORS (each channel)

Input: Euro-style detachable header
Output: Covered barrier strips

COOLING 2-speed fan, with back-to-front air flow

AMPLIFIER PROTECTION

Output Averaging™ short circuit protection, open circuit, ultrasonic, RF, thermal muting
Stable into reactive or mismatched loads

LOAD PROTECTION Turn-on/turn-off muting, DC-fault

OUTPUT CIRCUIT TYPE Class AB complementary linear stage

POWER REQUIREMENTS: 100, 120, 220-240 VAC, 50/60 Hz

POWER CONSUMPTION

Normal operation: 1/8 power @ 4 Ω per channel
Worst case continuous program: 1/3 power @ 2 Ω per channel
Maximum: full power @ 2 Ω per channel
Multiply current by 0.5 for 220-240 VAC operation

DIMENSIONS

Faceplate Width Standard 19" (48.3 cm) Rack Mounting
Chassis Depth 17.9" (45.5 cm) deep (to rear support ears)
Faceplate Height 3.5" (13.3 cm)

WEIGHT Shipping-46 lb; 21 kg; Net-40 lb; 18.2 kg

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The amplifier shall contain all solid-state circuitry, using complementary silicon output devices in a Class AB output circuit. The amplifier shall operate from 50-60 Hz AC power, with internal taps for selecting voltages 100, 120, or 220-240 VAC. The amplifier shall operate from a normal household AC outlet, drawing less than 500 VA when driven with random program material at 1/8 rated power into four ohm loads. The amplifier shall be supplied with a single molded AC cord having an appropriate AC plug for the intended operating voltage.

The amplifier shall employ forced-air cooling with a two speed fan for minimum acoustic noise. Air flow shall be from rear to front to avoid temperature rise inside the rack. Rack mounting shall be possible without clearance necessary between amplifiers for ventilation. The amplifier shall be capable of continuous operation at 1/8 power, into four-ohm loads, for ambient temperatures up to 104 F (40 C).

The amplifier shall contain two independent channels, with separate AC transformer secondaries, power supplies, and protection systems. All protection systems shall be self resetting upon removal of fault, and the remaining channel shall continue to operate. Each channel shall have independent protective circuitry against open circuit, short circuit, or mismatched loads. Each channel shall monitor temperature of its heat sink and shall trigger fan speed boost, and if necessary, signal muting to prevent excessive temperature rise. Each channel shall have on-off muting, acting for three seconds after turn-on, and within 1/4 second after turn-off or loss of AC power. Each channel shall have DC fault protection for the load. Fault fuses shall be adequately large to prevent nuisance blowing at any output power the amplifier is capable of delivering.



Each channel shall have the following controls and displays: A rear panel Gain control and front panel displays consist of a green LED power-on indicator and a red LED showing true amplifier clipping. The output connectors for each channel shall be shrouded barrier strip connectors. The standard input panel shall provide detachable Euro-style header connections for each channel. Inputs shall be electronically balanced, with a minimum impedance of 10 kilohms per side, and a common mode rejection of at least 50 dB from 20 Hz to 20 kHz.

Internally-mounted toroidal output transformers shall provide electrically isolated output taps for 25, 70, and 100 volt distributed lines. The direct amplifier output shall also be available to drive voice coil loads. The use of voice coil and distributed line operation is independent on each channel. It is possible to use both the direct and isolated outputs simultaneously on a single channel, as long as the total power rating of the amplifier is not exceeded. A built-in 50 Hz, second-order subsonic filter shall be provided to reduce saturation of speaker transformers, due to excessive low frequency program material. The filter is non-defeatable and affects all outputs.

Each channel shall be capable of meeting the following performance criteria with both channels driven: Sine-wave output power of 150 watts into eight ohms, and 225 watts into four ohms, 50 Hz to 20 kHz, with less than 0.1% THD. Frequency response at 3 dB below rated power shall be -3 dB at 50 Hz and -0.2 dB at 20 kHz. The voltage gain shall be 35, equivalent to 31 dB, and the input sensitivity shall be 0.96 V_{RMS} . The signal to noise ratio over the range of 20 Hz to 20 kHz shall exceed 100 dB. IHF damping factor shall exceed 200 for the direct outputs. Output regulation, of the isolated outputs, shall not exceed 1.0 dB at 100 volts, 1.1 dB at 70 volts and 2.0 dB at 25 volts.

The amplifier chassis shall occupy two rack spaces, with provision for securing the rear corners. Depth from mounting surface to tips of rear supports shall be 17.9" (45.5 cm).

Weight shall not exceed 40 lbs. (18.2 kg). The amplifier shall be the QSC Audio Products Model CX4T.