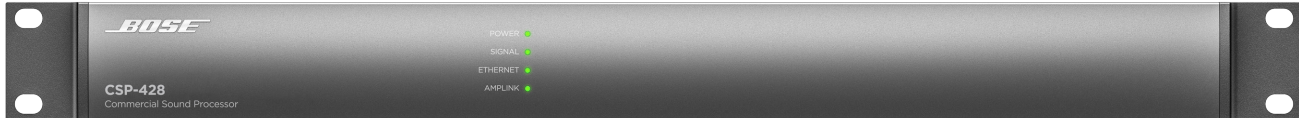


CSP-428

commercial sound processor



Product Overview

The CSP-428 commercial sound processor streamlines sound system installations requiring music and microphone reinforcement with intelligent and intuitive controls. Activate AutoVolume for dynamic sound adjustment and the SmartBass feature for optimal bass levels at any volume.

Its network-based architecture simplifies system setup and control. Connect a standard Cat 5 or Cat 6 cable and use the browser-based interface to quickly set up, manage, and maintain the system in real time—levels, routing, thresholds, and priorities. Alternatively, download the offline configuration utility to program the system without a CSP unit.

The CSP-428 supports up to five discrete listening areas, each manageable by optional ControlCenter digital zone controllers or the ControlSpace Remote app. And with two analog and eight digital output channels, you can assign multiple outputs to a listening area.

The CSP-428 also features enhanced mixing functionality, allowing you to blend the balanced mic/line signal with the RCA inputs in a listening area—for example, a presenter with a microphone mixed with a music source.

Key Features

AutoVolume technology delivers perfect audio levels in any setting, dynamically adjusting the volume in real time (available input and separate AVM-1 microphone required).

Keep your audio perfectly balanced with Opti-Source level management. No more abrupt changes in volume when switching between sources—every input is a consistent level for listening comfort. Plus, Opti-Voice paging delivers smooth transitions between music and announcements.

Enhance the environment with SmartBass technology, an exclusive feature that delivers perfect bass levels—noticeable but not overpowering. Its advanced EQ filters and specialized limiter ensures a balanced low end to fit the acoustics of the room.

Right-sized connectivity for a cost-effective commercial installation—2 × 2 balanced analog inputs and outputs, 2 pairs of summed-mono RCA inputs, 8 control inputs, 1 control output, mute contact, and Bose Professional AmpLink connectivity for simplified digital audio connection to compatible power amplifiers

Intuitive end-user volume control and source selection with optional ControlCenter digital zone controllers (CC-1D, CC-2D, CC-3D, sold separately) and the ControlSpace Remote app

Configure your processor offline using the Bose Professional Configuration Utility—the new settings will upload automatically to the CSP processor when you connect to it later

Easily locate CSP and ControlCenter devices on your network using the Discovery Tool app—identify the devices' IP addresses to use the browser-based configuration utility

Applications

- Retail
- Restaurants
- Hospitality
- Fitness & recreation
- Bars & pubs
- Factories
- Distribution centers & warehouses

Now with
Mixing Capability
& Offline Editing

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Technical Specifications

INTEGRATED DSP			
Signal Processor/CPU	32-bit fixed/floating-point DSP + Arm, 456 MHz		
Maximum Calculation	3.6 GIPS / 2.7 GFLOPS		
Audio Latency	900 μ s (analog in to analog out)		
A/D and D/A Converters	24-bit		
Sample Rate	48 kHz		
AUDIO PERFORMANCE SPECIFICATIONS			
Frequency Response	20 Hz – 20 kHz (+0.3 dB/-0.5 dB)		
THD+N	< 0.01 % at +4 dBu (A-weighted, 20 Hz – 20 kHz)		
Channel Separation (Crosstalk)	< -105 dB at +4 dBu input and output level, 1 kHz		
Dynamic Range	> 115 dB (A-weighted, 20 Hz – 20 kHz, analog through)		
AUDIO INPUTS			
Input Channels	4 analog inputs (2 unbalanced, 2 balanced)		
	Inputs 1 and 2	Input 3	Input 4
Connectors	RCA pairs	3-pin Euroblock	4-pin Euroblock with dedicated GPI for paging
Type	Unbalanced, mono-summed	Balanced, mic/line	Balanced mic/line or 600 Ω paging input
Sensitivity Options (via Configuration Utility)	-10 dBV	-70 / -60 / -50 / 0 / +4 dBu -10 dBV with selectable phantom power	-70 / -60 / -50 / 0 / +4 dBu -10 dBV with selectable phantom power
Input Impedance	12 k Ω at 1 kHz (with or without phantom power active)		
Maximum Input Level	+24 dBu (THD+N < 0.3%, 20 Hz – 20 kHz, 0 dB gain)		
Equivalent Input Noise	< -119 dBu (22 Hz – 20 kHz, 150 Ω input, 64 dB gain)		
Phantom Power	+48 V, open circuit, 10 mA max per channel, selectable per input, 80 mA max across all channels		
AUDIO OUTPUTS			
Output Channels	10 (2 analog, 8 digital via AmpLink)		
	Analog Output 1	Analog Output 2	Digital Outputs
Connectors	3-pin Euroblock	3-pin Euroblock	RJ-45
Type	Balanced line level	Balanced line level, or fully-isolated output for music on hold for 600 Ω telephone systems (activated in configuration utility)	48 kHz, 8-channel digital audio over AmpLink
Output Impedance	66 Ω		
Maximum Output Level	+24 dBu (THD+N < =0.3%, 22 Hz – 20 kHz)		

For additional specifications and application information, visit BoseProfessional.com. Specifications are subject to change. 11/2024

TECHNICAL DATA

CSP-428

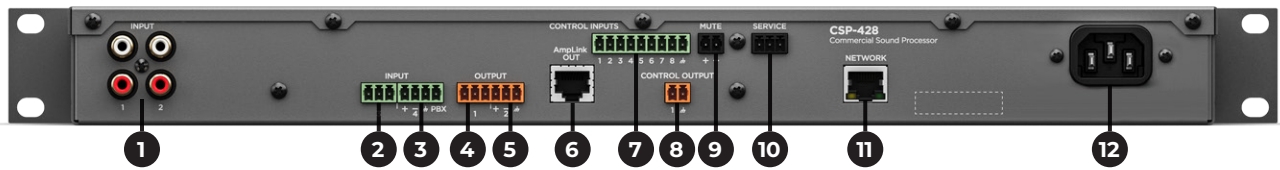
commercial sound processor

CONTROL INPUTS	
Inputs (Control)	8 digital inputs, 2 k Ω internal pull-up resistor to 5 V, green 3.81 mm pitch connector (9-pin)
Mute (Control)	1 digital input, 2 k Ω internal pull-up resistor to 5 V, black 3.81 mm pitch connector (2-pin)
Digital Input Voltage	0 V to 3.3 V (threshold voltage = 1.6 V)
CONTROL OUTPUTS	
Outputs (Control)	1 digital outputs, orange 3.81 mm pitch connector (2-pin)
Output Voltage	High: 8 V (open circuit), 2.5 V @ 10 mA. Low: < 1 V @ 100 mA, push-pull
Output Current	10 mA source, 100 mA sink (24 VDC max external supply voltage)
INDICATORS AND CONTROLS	
LED Status Indicators	Power/Status, Signal, Ethernet, AmpLink
Audio Signal Indication	Green (-60 to -20 dBFS), Yellow (-20 to -2 dBFS), Red (-2 dBFS to Clip)
ELECTRICAL SPECIFICATIONS	
Mains Voltage	85 VAC – 264 VAC, 50/60 Hz
AC Power Consumption	< 30 W typical, over all mains voltages, (PSU maximum < 45 W)
Mains Connector	IEC 60320-C14 (inlet)
Power Dissipation	~22 W (75 BTU/hr / 19 kcal/hr)
PHYSICAL	
Dimensions (height x width x depth)	44 x 483 x 215 mm (1.7 x 19.0 x 8.5 in)
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)
Cooling System	Active, side venting with fan
Humidity	80% (without condensation)
GENERAL	
Configuration Software	Browser-based configuration utility
Network Control	Ethernet (RJ-45), 10/100 Mbps
PRODUCT CODES	
US, 120 V	808453-1110
EU, 230 V	808453-2110
JP, 100 V	808453-3110
UK, 230 V	808453-4110
AU, 240 V	808453-5110

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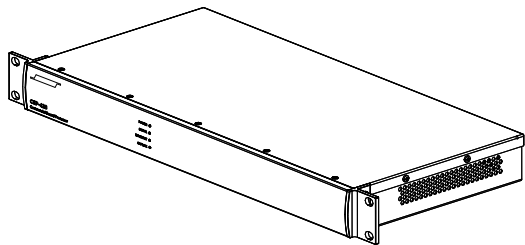
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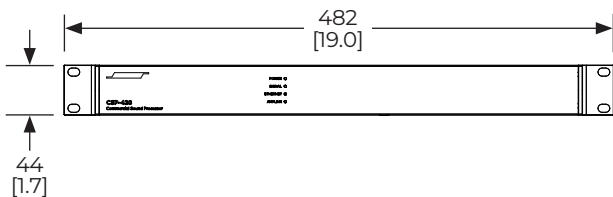


1. **RCA inputs** — 2 summed-mono pairs for connection to unbalanced sources
2. **Balanced inputs** — 2 balanced analog mic/line inputs with selectable +48 V phantom power
3. **PBX input** — Dedicated paging control input for 600 Ω telephone systems
4. **Balanced outputs** — 2 balanced analog line outputs
5. **MOH output** — Standard balanced output or source for 600 Ω music-on-hold telephone system, configured by software
6. **Amplink output** — 8-channel digital audio output for use with supported Bose Professional amplifiers
7. **Control inputs** — 8 digital control inputs for push-to-talk microphone triggering
8. **Control output** — Control output for use with third-party devices (triggering via ControlSpace Remote only)
9. **Mute** — Contact closure connection that upon trigger will mute all outputs, NO default
10. **Service port**
11. **Network** — Ethernet connection (RJ-45) for accessing the onboard configuration utility, or for connecting ControlCenter digital controllers via a PoE network switch
12. **AC mains receptacle** — Power cord connection (IEC 60320-C14 inlet)

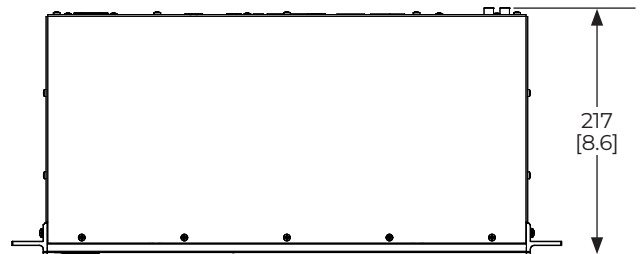
Dimensions ⁶



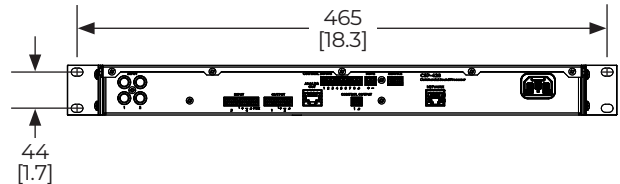
Front View



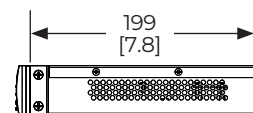
Top View ⁷



Rear View



Side View ⁷



6. Dimensions are shown in millimeters over inches.
7. Dimensions apply to both left and right sides.

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