



General Description

The CP 52 is a versatile commercial preamplifier designed for use in restaurants, bars, health clubs and offices. The CP 52 serves one stereo Zone. One gated Paging Input and four stereo Program Inputs are provided. A Port allows expansion of Page, Program or Zone signals. Three levels of priority are supported:

- Page
- Program Priority
- Non-Priority Program

The Paging Input is summed after Zone Level, Zone EQ and Zone Limiter circuits. If the Page Level Tracks Zone Level switch is *on*, the Page level tracks the Zone Level.

One of four stereo Program Inputs may be selected. Each line level Program Input features an independent Level control.

A gated Program Priority Input is provided. When the rear panel Priority switch is ON and signal is detected at the Priority Input, it overrides any non-priority Program selection. The detector features adjustable Detect Threshold and Release Time controls.

Several levels of security are available. The SC 1.7 is an optional security cover for the entire unit. The SCP 1 is an optional EQ-slider-only security cover. Any front panel control knobs may be removed and replaced with provided hole plugs.



SCP 1 Equalizer Security Cover

ZR 1 Remote Control

The optional ZR 1 wired Remote Control allows Zone Level and Zone Program selection of the CP 52 from within the Zone area. Remote control is initiated by engaging the RMT switch (located on the CP 52 front panel). The ZR 1 may be installed in a standard electrical box as shown in the diagram to the right.

The ZR 1 connects to the CP 52 through a 5-pin Euroblock connector. The remote uses 5 wires with 2 bits for Zone Program selection (active low Gray Code), a common shield/gnd and two wires for ratiometric DC control of Zone Level. Selector logic is active low Gray Code with pull-up provided in the CP 52. Control may be a simple switch closure to GND or 5 volt TTL.

Gated Paging Circuit Features

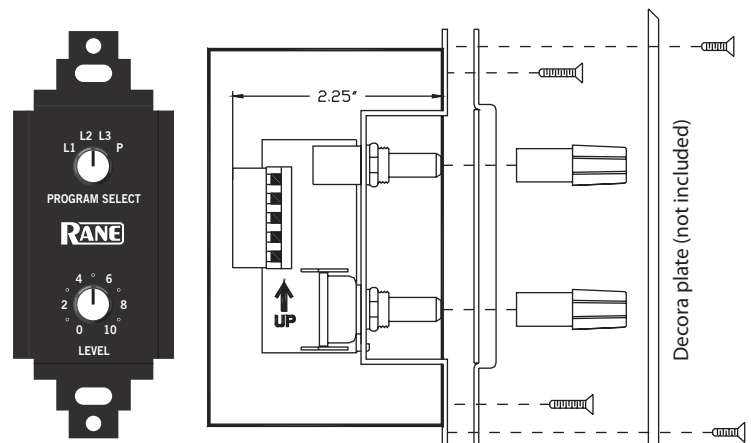
- Mic/Line Selection with Gain Trim
- Phantom Power Switch
- Low / High Cut Filter Switch
- Adjustable Detector Threshold with Active LED
- Paging Level Control
- Switchable Page Level Tracks Zone Level
- Page Input Servo-Locked™ Limiter

Zone Output Features

- Level Control
- 1 of 4 Program Select
- Ducker On/Off with Depth Control
- Output Servo-Locked™ Limiter
- 7-Band Equalizer (± 12 dB)
- Wired Zone Remote Port for Level and Program Selection

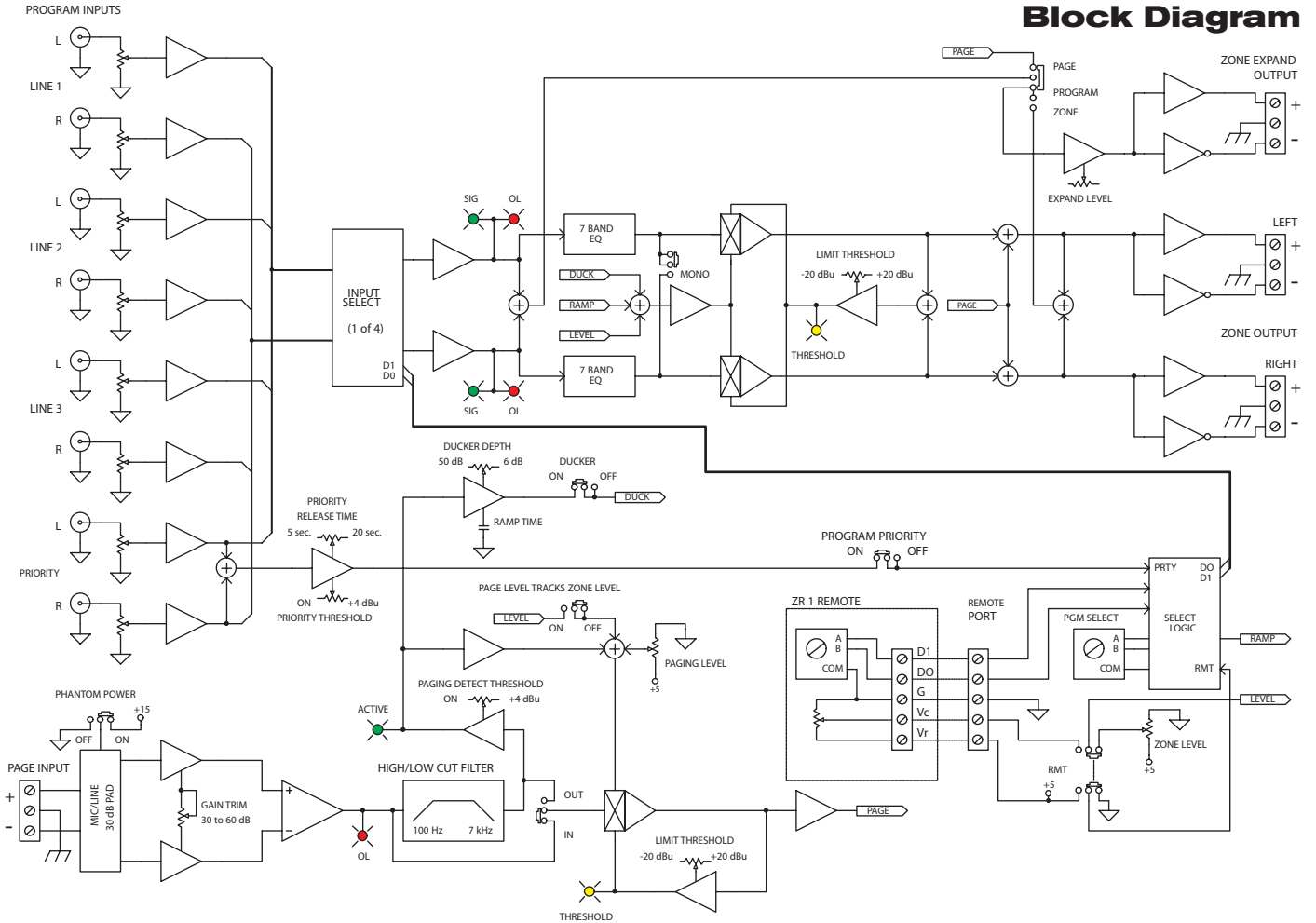
Special Features

- Page Initiated Program Ducking
- Gated Stereo Program Priority Input
- Page/Program/Zone Expansion with Level Control
- UL/CSA/CE and 100/120/230 VAC Remote Power Supplies



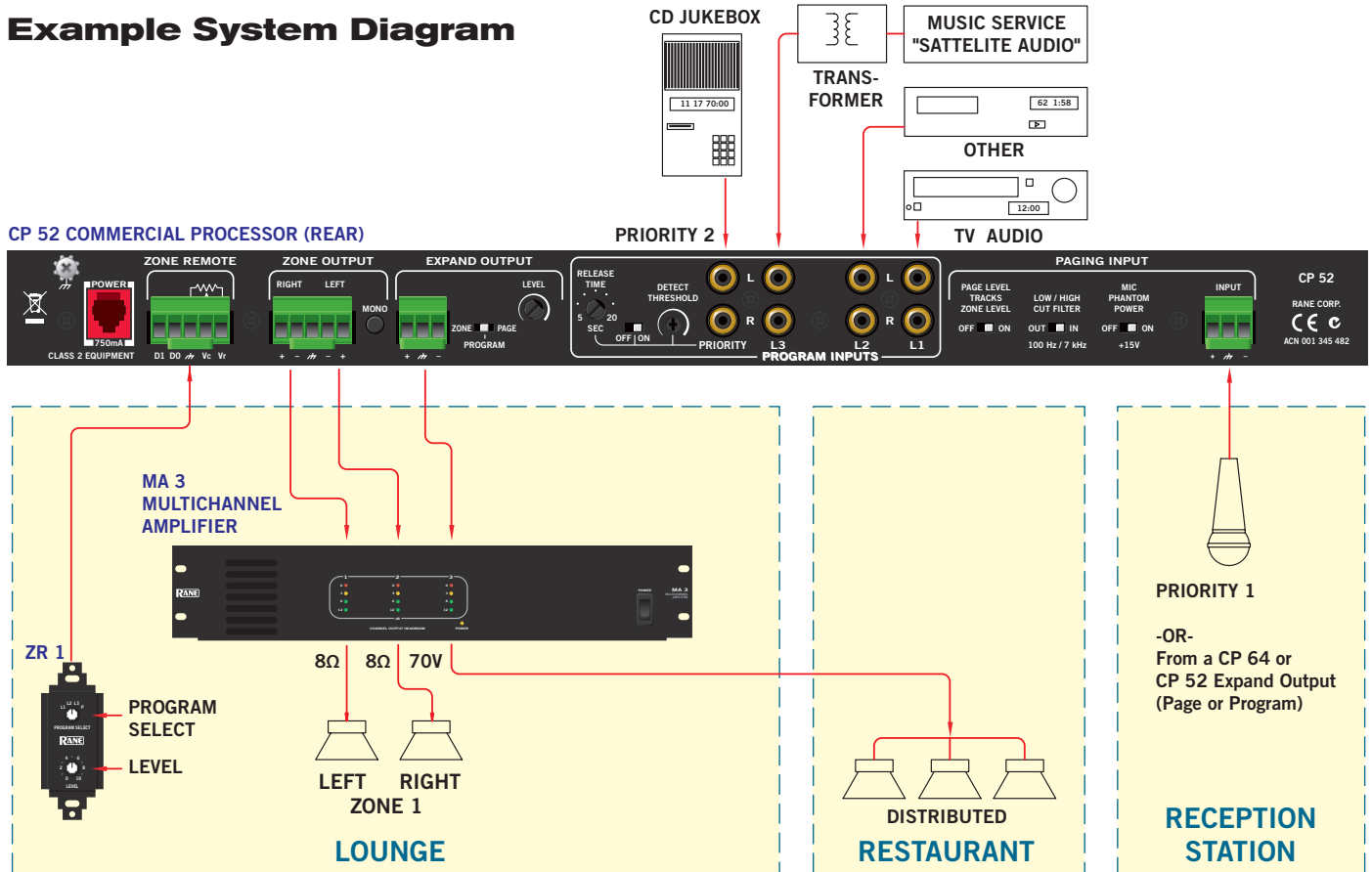
Parameter	Specification	Limit	Units	Conditions/Comments
MIC/LINE PAGING INPUT				
.....Input Type	Balanced			Instrumentation amplifier
.....RFI Filter	Yes			
.....Gain range	+30 to +60	2	dB	Continuously adjustable
.....Frequency Response	30 to 40k	typ	Hz	Maximum gain, +0, -3 dB
.....Input Referred Noise	-125	1	dBu	Gain: 60 dB, Rs:150 Ω , BW: 20 kHz
.....CMRR	40	min	dB	20 Hz to 20 kHz
.....THD+NS	.05	.01	%	Gain: 30 dB, +4 dBu out, 1 kHz, BW: 80 kHz
.....Phantom Power	+15	4%	VDC	
.....“Mic” Input impedance	500	1%	Ω	Each leg to ground
.....Line Pad	30	1	dB	Defeats phantom power
.....“Line” Input impedance	14.5k	1%	Ω	Each leg to ground
.....Signal Detector Range		typ	dBu	Continuously adjustable
.....Signal Detector Attack	10	typ	msec	Fixed; 10 dB overdrive
.....Signal Detector Release	3	typ	sec	Fixed
.....Overload Detector	+16	1	dBu	4 dB before clipping
.....Low Cut / Hi Cut Filters	100 & 7k	5	Hz	Selectable In/Out
.....Paging Zone Level Adjust	Off to 0		dB	
.....Page Limiter: Threshold Range	-20 to +20	typ	dBu	Continuously adjustable
.....Attack Time	20	typ	msec	For a 10 dB step; fixed
.....Release Time	250	typ	msec	For a 10 dB step; fixed
.....Ratio	15:1	typ		Soft knee
PROGRAM INPUTS				
.....Number of Inputs	Four			All controls duplicated for each input
.....Input Type	Unbalanced			Stereo
.....Input Level Adjust	Off to 0		dB	RCA connector
.....Frequency Response	10 to 50k	typ	Hz	+0, -3 dB
.....Input Impedance	10k	20	Ω	
.....Priority Program Input				
.....Input Detector Range		typ	dBu	On rear panel; factory set to -50 dBu
.....Release Time Range	5 to 20	typ	sec	On rear panel; factory set to 15 seconds
.....Attack Time	50	typ	msec	For a 20 dB step; fixed
OUTPUTS: Type				
.....Zone Out Gain: Program In	Balanced			Euroblock connector
.....From Page Inputs	16	1	dB	100 k Ω load
.....Expand Out Gain: Zone	6	1	dB	
.....From Page or Program In	16	1	dB	100 k Ω load
.....Frequency Response	6	1	dB	
.....S/N	10 to 40k	typ	Hz	+0, -3 dB
.....THD+N	84	min	dBr	re +4 dBu; BW: 20 Hz-20 kHz
.....Crosstalk	.1	max	%	+4 dBu, 1 kHz, BW: 80 kHz
.....Output Impedance	-75	max	dB	1 kHz, Rs: 25 Ω , (L/R)
.....Zone Maximum Output	100	1%	Ω	Each leg
.....Expand Maximum Output	20	typ	dBu	RL: 600 Ω
.....Signal Present	24	typ	dBu	RL: 2 k Ω
.....Overload Detector	-20	typ	dBu	Maximum
.....Ducker: Depth Range	+16	typ	dBu	4 dB before clipping
.....Ramped Release	-50 to -6	typ	dB	Continuously adjustable
.....Limiter: Threshold Range	10	typ	sec	To full output level
.....Attack Time	-20 to +20	typ	dBu	Continuously adjustable
.....Release Time	20	typ	msec	For a 10 dB step; Fixed
.....Ratio	250	typ	msec	For a 10 dB step; Fixed
	15:1	typ		Soft knee

Block Diagram



EQUALIZER: Boost/Cut RangeISO Center Frequencies UNIT: Agency Listing120 VAC model230 VAC model POWER SUPPLY: Agency Listing120 VAC model230 VAC model100 VAC model Power Supply Requirements Maximum Current UNIT: ConstructionSizeWeight SHIPPING: SizeWeight Note: 0 dBu = 0.775 Vrms	±12 1 1/3 Class 2 Equipment UL / CSA CE-EMC CE-Safety Exempt UL CSA CE-EMC CE-Safety Built to JIS 18 VAC w/ center tap 750 All Steel 1.75"H x 19"W x 8.5"D 5 lb (w/o power supply) 4.5" x 20.3" x 13.75" 9 lb	.5 typ 10%	dB oct Vrms mA	National Electrical Code Exempt Class 2 equipment EMC directive 89/336/EEC Per Article 1 of LVD 73/23/EEC File No. E88261 File No. LR58948 EMC Directive 89/336/EEC LV Directive 73/23/EEC Japan only model RS 1 rms current from remote supply 1U (4.4 cm x 48.3 cm x 21.6 cm) (2.3 kg) (11.5 cm x 52 cm x 35 cm) (4.1 kg)
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Example System Diagram



Architectural Specifications

The CP 52 Processor shall provide a gated paging input, three line-level non-priority program inputs and one gated line-level priority program input. One stereo zone shall be served. A port with independent level control shall be provided for mono page, program or zone signal output. A wired remote control port shall be provided for zone program selection and level.

The page input shall use a 5-pin euroblock connector. Fully adjustable paging controls shall include page level, switchable phantom power, 30 dB mic/line input pad plus 30 dB gain trim, gate and limiter with threshold controls, low/high cut filter switch, and a switch linking page level to zone level.

Each program input shall have stereo RCA jacks and an independent level control. The gated program priority input shall have adjustable threshold and release time controls.

Zone outputs shall use 5-pin euroblock connectors. Zone controls shall include program select, switchable ducker with depth, graphic equalizer, Servo-Locked™ Limiter with threshold control, and mono output switch.

The ZR 1 wired remote port shall use a 5-pin euroblock connector. Remote logic shall be active low gray code with internal pull-up. Remote level control shall be ratiometric DC control with 5 volt reference.

The unit shall be exempt from agency safety requirements and powered from a Rane RS 1 UL listed, CSA certified remote power supply (meeting CE-EMC requirements for 230 VAC). The chassis shall be constructed entirely from cold-rolled steel, and mount into a standard EIA relay rack occupying one rack space. Reliability and efficiency are to be primary considerations.

The unit shall be a Rane Corporation CP 52 Commercial Processor.

Available Accessories

- ZR 1 Zone Source/Volume Remote Control
- SC 1.7 Security Cover (full front panel)
- SCP 1 Equalizer section only Security Cover
- Hole Plugs (individual control security, 6 provided)