# 5201P, 5201P-8, 5251P, 5101P, 5101P-8, 5151P

## TWO INPUT, ONE OUTPUT MIXER CARDS WITH PROGRAMMABLE GAIN CONTROL (PGC)

## DESCRIPTION

The 5201P subgroup of the 5000 Series Audio Processing System consists of six cards as described in Table 1 below. Each card has one or two balanced inputs mixed to one output.

Cards having line level inputs use Model 100L Active Input Modules for input signal processing. Cards having microphone level inputs use Model 150M Active Input Modules for input signal processing. All cards with a '-8' suffix use Model 208S 8 Watt Power Amplifier Module in the output and have the capability of delivering 8 W to an 8 Ω speaker load. All other cards use Model 200L Active Output Modules, with balanced floating outputs, as drivers for the external loads.

Each input includes a Model 120P Programmable Gain Control which maintains an almost constant average output level without the performance compromises of a compressor.

| MODEL | NUMBER OF INPUTS | INPUT LEVEL | NUMBER OF OUTPUTS | OUTPUT LEVEL |
|---|---|---|---|---|
| 5201P | 2 | Line | 1 | Line |
| 5201P-8 | 2 | Line | 1 | Speaker |
| 5251P | 2 | Microphone | 1 | Line |
| 5101P | 1 | Line | 1 | Line |
| 5101P-8 | 1 | Line | 1 | Speaker |
| 5151P | 1 | Microphone | 1 | Line |

Table 1 - Model Descriptions

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# SPECIFICATIONS

## ELECTRICAL

1. Maximum Gain
   - 5201P, 5101P . . . . . 44 dB
   - 5201P-8, 5101P-8 . . . . . 54 dB
   - 5251P, 5151P . . . . . 77 dB
2. Input Gain Range
   - 5201P, 5201P-8, 5101P, 5101P-8 . . . . . –2 dB - +18 dB
   - 5251P, 5151P . . . . . +26 dB - +51 dB
3. Maximum Input Level
   - At Minimum Input Gain
     - 5201P, 5201P-8, 5101P, 5101P-8 . . . . . +22 dBu
     - 5251P, 5151P . . . . . –5 dBu
   - At Maximum Input Gain
     - 5201P, 5201P-8, 5101P, 5101P-8 . . . . . +2 dBu
     - 5251P, 5151P . . . . . –31 dBu
4. Input Impedance
   - 5201P, 5201P-8, 5101P, 5101P-8 . . . . . 10 MΩ in parallel with 1000 pF
     20 Hz - 20 kHz, Balanced
   - 5251P, 5151P . . . . . 12 kΩ, ±5%
     20 Hz - 20 kHz, Balanced
5. Maximum Output Attenuation . . . . . >90 dB
6. Maximum Output Level
   - 5201P, 5101P, 5251P, 5151P . . . . . +10 dBu, min
     $R_L \geq 600\ \Omega$
   - 5201P-8, 5101P-8 . . . . . +8 VRMS, min
     $R_L \geq 8\ \Omega$
7. Output Impedance
   - 5201P, 5101P, 5251P, 5151P . . . . . <0.5 Ω
     20 Hz – 20 kHz, Balanced and Floating
   - 5201P-8, 5101P-8 . . . . . <0.5 Ω
     20 Hz – 20 kHz
8. Frequency Response . . . . . ±.5 dB
   20 Hz - 20 kHz
9. Total Harmonic Distortion, THD
   - 5201P, 5101P, 5251P, 5151P . . . . . <.03%
     +24 dBu, 20 Hz - 20 kHz
   - 5201P-8, 5101P-8. . . . . <.3%
     8 W, $R_L$=8Ω, 20 Hz - 20 kHz
10. Intermodulation Distortion, IMD
    - 5201P, 5101P, 5251P, 5151P . . . . . <.05%
      +24 dBu, 60 Hz/7 kHz
    - 5201P-8, 5101P-8 . . . . . < .3%
      8 W, $R_L$=8Ω, 60 Hz/7 kHz

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11. Signal-to Noise Ratio, S/N
    - 5201P, 5101P . . . . . >95 dB
      Unity Gain, referred to +4 dBu, 22 Hz - 22 kHz filters
    - 5201P-8, 5101P-8 . . . . . >95 dB
      Below 8 W reference, 16 dB gain, 22 Hz - 22 kHz filters
    - 5251P, 5151P . . . . . >76 dB
      Gain = 54 dB, referred to +4 dBu, 22 Hz - 22 kHz filters
12. Common Mode Rejection Ratio
    - 5201P, 5201P-8, 5101P, 5101P-8 . . . . . >60 dB
      CMRR, 20 Hz - 20 kHz
    - 5251P, 5151P . . . . . >80 dB
      CMRR, 20 Hz - 20 kHz
13. Programmable Gain Control Characteristics at Minimum Input Gain Setting
    - Sampling Threshold
      - 5201P, 5201P-8, 5101P, 5101P-8 . . . . . –30 dBu
      - 5251P, 5151P . . . . . –58 dBu
    - Gain Reduction Threshold
      - 5201P, 5201P-8, 5101P, 5101P-8 . . . . . –16 dBu
      - 5251P, 5151P . . . . . –44 dBu
    - Maximum Gain at Gain Reduction Threshold
      - 5201P, 5101P . . . . . 24 dB
      - 5201P-8, 5101P-8 . . . . . 18 dB
      - 5251P, 5151P . . . . . 52 dB
14. Power Requirements
    - Supply Voltage . . . . . ±15 V
    - Typical Current Drain
      - 5201P . . . . . 90 mA
      - 5201P-8
        - Quiescent . . . . . 92 mA
        - 8 W, $R_L$=8 Ω . . . . . 500 mA
      - 5251P . . . . . 94 mA
        - Quiescent . . . . . 96 mA
        - 8 W, $R_L$=8 Ω . . . . . 500 mA
      - 5101P . . . . . 60 mA
      - 5101P-8
        - Quiescent . . . . . 62 mA
        - 8 W, $R_L$=8 Ω . . . . . 500 mA
      - 5151P . . . . . 62 mA
15. DC Voltage Short Circuit Protection
    - 5201P, 5251P, 5101P, 5151P . . . . . Thermistor (Self Resetting)
    - 5201P-8, 5101P-8 . . . . . 1.5 A Pico Fuse

## MECHANICAL

1. Size (maximum Overall Dimensions)
   - Height . . . . . (7.11 cm) 2.8"
   - Width . . . . . (3.18 cm) 1.25"
   - Depth . . . . . (21.3 cm) 8.4"
2. Weight
   - 5201P . . . . . (322 gm) 0.71lb
   - 5201P-8 . . . . . (309 gm) 0.68lb
   - 5251P . . . . . (322 gm) 0.71lb
   - 5101P . . . . . (218 gm) 0.48lb
   - 5101P-8 . . . . . (204 gm) 0.45lb
   - 5151P . . . . . (213 gm) 0.47lb

## ENVIRONMENTAL

1. Operating Temperature Range . . . . . (+32 °F - +131 °F) 0 °C - +55 °C
2. Storage Temperature Range . . . . . (–40 °F - +158 °F) –40 °C - +70 °C

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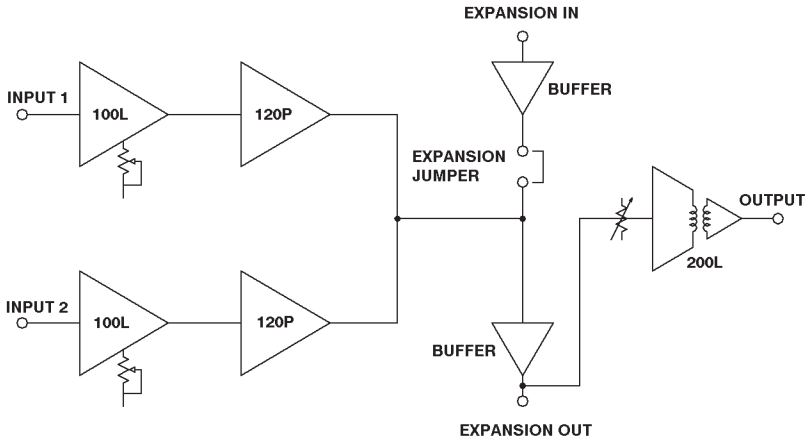


Figure 1 - 5201P Block Diagram

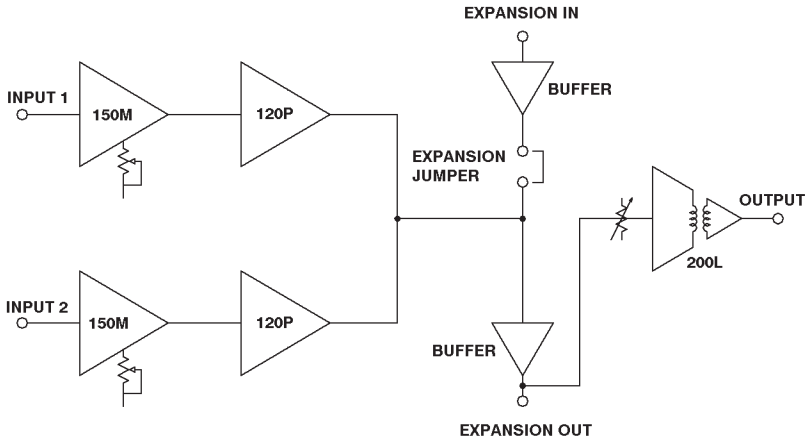


Figure 2 - 5251P Block Diagram

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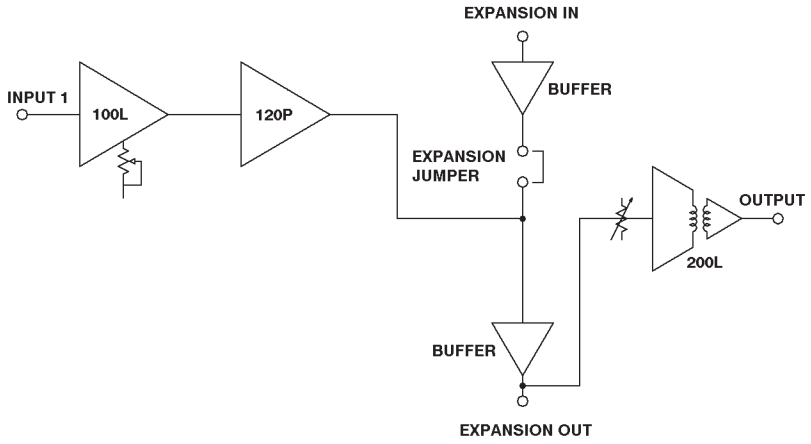


Figure 3 - 5101P Block Diagram

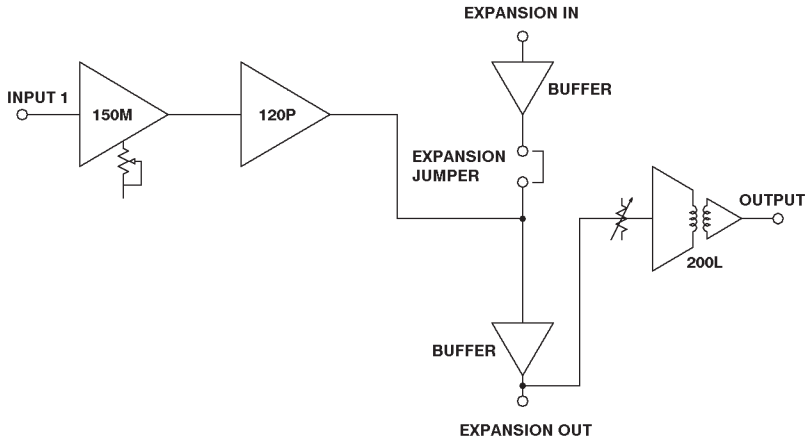


Figure 4 - 5151P Block Diagram

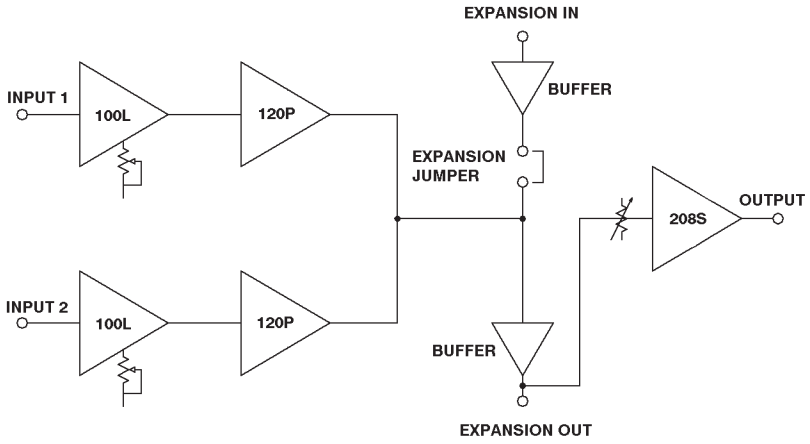


Figure 5 - 5201P-8 Block Diagram

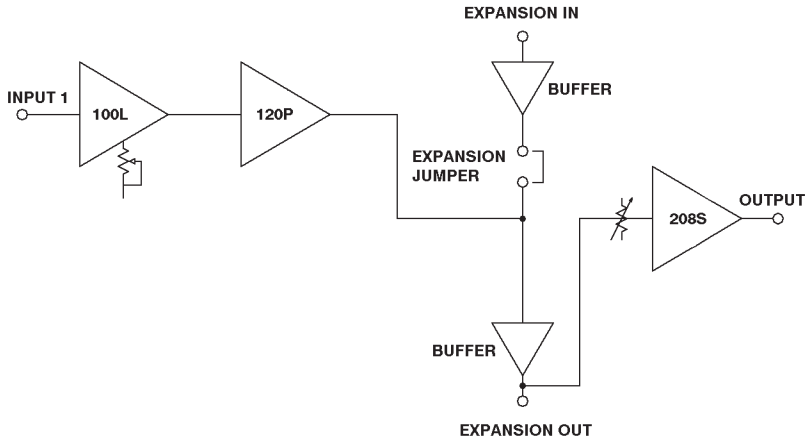


Figure 6 - 5101P-8 Block Diagram

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