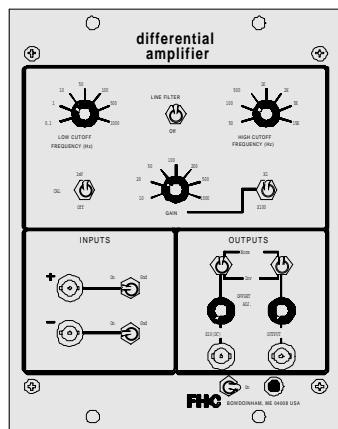
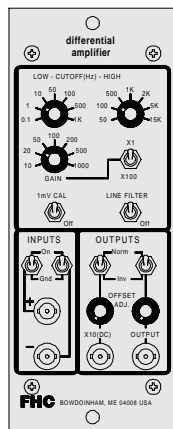


Differential Amplifiers

- DC AND AC OUTPUTS
- WIDE GAIN RANGE (10 - 100,000)
- SHARP (-12dB/OCTAVE) HIGH AND LOW CUTOFF FILTERS
- LINE FILTERS (50 OR 60HZ) PROVIDED
- CONVENIENT SWITCHES FOR OUTPUT POLARITY REVERSAL AND INPUT GROUNDING
- COMPACT SIZE WITH BUILT-IN POWER SUPPLY (74-20-3)
- UP TO 4 ADDITIONAL CHANNELS (74-20-1 CAN BE POWERED BY ONE 74-20-3)



74-20-3 (with Power Supply)

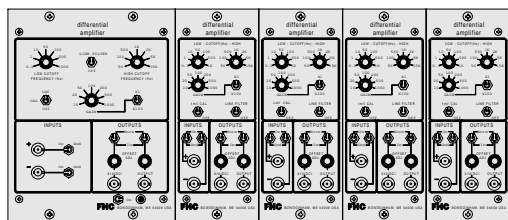


74-20-1 (without Power Supply)

The 74-20-3 **Differential Amplifier** represents a new standard of low noise, high impedance amplification suitable for a variety of biological applications. State-of-the-art integrated circuits have enabled us to lower noise and increase bandwidth, while, at the same time, adding features that make recording more convenient.

Built-in low and high cutoff filters allow the investigator to reject signals outside the spectrum of interest. Additionally, a sharp notch filter can be introduced to eliminate interference from power lines. The voltage gain of the system is adjustable from 10 to 100,000 in thirteen calibrated steps. An internal 1mV calibrator is available to ensure gain accuracy.

Offset and polarity controls are provided for both the DC (fixed gain=10) and AC (variable gain and bandwidth) outputs



A 5-channel system (one 74-20-3 plus four 74-20-1) occupies 7" of height in a standard 19" instrument rack

The 74-20-3 is packaged in a modular cabinet which occupies only 5 1/2" x 7" when mounted in a standard rack, or it can stand alone on the bench top. It includes a built-in, line powered 115-230V, 50-60Hz supply.

For applications requiring multiple channels of amplification, a smaller version, catalog number 74-20-1, is available without a built-in power supply. Up to four of these smaller units may be powered from one 74-20-3.

Total system gain from x10 to x100,000 and wide output dynamic range makes interfacing with data acquisition or storage equipment convenient.

SPECIFICATIONS

- Input:** Differential
- Input Impedance:** 10⁹Ohms
- Input Bias Current:** 25nA
- Common Mode Rejection:** 95dB at 60Hz
- Gain, (DC Output):** x10
- Gain (AC Output):** x10 to x100,000 in 13 calibrated steps
- Frequency Response (DC output):** DC - 35KHz
- Frequency Response (AC Output):** .1Hz - 15KHz (-3dB)
- Filter Cutoff Slopes:** -12dB/Octave
- High Cutoff Ranges (Hz)(-3dB):** 50, 100, 500, 1K, 2K, 10K, 15K
- Low Cutoff Ranges (Hz) (-3dB):** .1, 1, 10, 50, 100, 1000
- Input Dynamic Range:** ±1V
- Output Dynamic Range:** ±10V
- Offset Adj., DC:** Adjustable through ±6V
- Offset Adj., AC:** Adjustable through ±2V
- Cal Signal:** 1000Hz square wave provided equivalent to 1mV at input
- Line Filter:** 50 or 60Hz (specify), -40dB attenuation

FRONT PANEL CONTROLS

- Line Filter:** 2-position toggle switch to activate 50 or 60Hz (specify) notch filter, -40dB attenuation.
- Low Cutoff (Hz):** 7-position rotary switch for selecting low cutoff filter frequency (-12dB/octave slope).
- High Cutoff (Hz):** 7-position rotary switch for selecting high cutoff filter frequency (-12dB/octave slope).
- Cal:** 2-position toggle switch for introducing a 1000Hz square wave equivalent to 1mV at input. This calibration signal is available only at the selectable-gain (AC) amplifier output.
- Gain:** 7-position rotary switch that, together with the Gain Multiplier switch, provides fixed calibrated gain control in 13 steps from x10 to x100,000.
- Gain Multiplier:** 2-position toggle switch setting the range of operation for the GAIN rotary switch.
- Output Polarity, DC:** 2-position toggle switch controlling the polarity of the x10 (DC) amplifier output.
- Output Polarity, AC:** 2-position toggle switch controlling the polarity of the selectable-gain (AC) amplifier output.
- Input Grounding:** Individual 2-position toggle switches for both inputs, permitting grounding of the amplifier inputs.
- Offset Adj., DC:** 1-turn potentiometer for adjusting offset at the x10 (DC) amplifier output.
- Offset Adj., AC:** 1-turn potentiometer for adjusting offset at the selectable-gain (AC) amplifier output.
- Power:** 2-position toggle for activating line voltage (indicator LED provided). (74-20-3 only)

ORDERING INFORMATION

- 74-20-1 Differential Amplifier
- 74-20-3 Differential Amplifier with Power Supply

