

Differential Amplifier

The AM 502 Differential Amplifier offers unique capabilities for solving electrical measurement and analysis problems. Compact portability and plug-in flexibility allow complete lab instrumentation set-ups, within stringent space and budget limitations.

This versatile signal alteration device is applicable to a broad range of measurement needs, including: amplification of low level signals, addition or removal of dc offset, or amplification (to 10 V peak-to-peak).

The versatile AM 502 Differential Amplifier lets you control gain, dc offset, low-frequency and high-frequency response for maximum rejection of unwanted signals. Adjustable dc offset allows high amplification even when low-level signals have a dc component of up to 1 V. High performance features of the AM 502 are a dc to 1 MHz bandwidth and 100 dB common mode rejection ratio.



AM 502

- 1 to 100,000 Gain
- 100 dB CMRR
- Selectable Upper and Lower — 3 dB Points
- Dc to 1 MHz Maximum Bandwidth
- Adjustable Dc Offset

The AM 502 Differential Amplifier features wide bandwidth, high CMRR, and selectable calibrated gain and filtering. Well-suited for general purpose or laboratory work, it can drive oscilloscopes, monitors, chart recorders, displays, or processing devices. In the unity gain mode, it can be used as a signal conditioner. Input dc offset to ± 1 V is provided.

Characteristics

Amplifier

Gain — 100 to 100,000; 1-2-5 sequence; accurate within 2%. 1X gain obtained by 100X attenuation.

HF -3 dB POINT— Selectable in 9 steps (1-3 sequence) from 100 Hz to 1 MHz. Upper -3 dB point reduces to 500 kHz at 50 k gain; 250 kHz at 100 k gain.

LF -3 dB POINT— Selectable in 6 steps from 0.1 Hz to 10 kHz; ac coupling limits -3 dB point to 2 Hz or less.

Variable DC Offset — At least ± 1 V.

Normal-Mode CMRR — At least 100 dB, dc to 50 kHz, ± 5 V.

÷ 100 Mode CMRR — At least 50 dB, dc to 50 kHz, ± 50 V.

Maximum Input Voltage — Normal mode dc coupled: 15 V (dc + peak ac) $\div 100$
Mode dc coupled: 350 V (dc + peak ac).
Ac coupled: 350 V (dc + peak ac) with coupling capacitor precharged.

Input R and C — 1 M Ω paralleled by ≈ 47 pF. Input impedance can be increased to an FET input via a simple internal jumper change.

Maximum Voltage Drift — 100 μ V/ $^{\circ}$ C referred to input Norm mode.

Input Gate Current — ± 100 pA for $T \leq 30^{\circ}$ C.

Maximum Noise — ≤ 25 μ V or less (tangentially measured) referred to input NORM mode.

Output

Maximum Output — ± 5 V, ± 20 mA, output resistance is 5 Ω or less.

Minimum Load Impedance — 250 Ω .

Over Range — Front-panel lamp indicates most over-range conditions.

Ordering Information

AM 502 Differential Amplifier
Includes: Instruction Manual
(070-1582-01)

TM 502A	2 Wide Power Module Mainframe
TM 502A/TB	TM 502A w/Tool Box Plug-In
TM 503B	3 Wide Power Module Mainframe
TM 503B/RI	TM 503B w/Rear Interface
TM 503B/TB	TM 503B w/Tool Box Plug-In

Mainframe Power Plug Options

Standard	120V North American
UE220	220V Universal Euro & Switzerland
UK240	240V United Kingdom
A240	240V Australian
NA240	240V North American
S220	220V Switzerland

Warranty

One year on materials and workmanship.

Calibration Documentation

Contact TEGAM for OPTION Z540 NIST Traceable Compliance Certificate and Test Data.

Calibration & Technical Services

For warranty and remedial repair, calibration services and spare parts, or for additional information on TEGAM sales and service offices around the world, contact us at 440-466-6100 (ph) or 440-466-6110 (fx).



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