FREQUENCY DEVICES™, INC.

D86 Series

Differential Input Buffer Amplifier

-12 dB to +60 dB

Description:

The D86 Series are differential input, single-ended output buffer amplifiers for conditioning DC-coupled wide-band signals (AC coupled-optional). Components are selected and configured to provide full signal bandwidth to 100 kHz in all models.

These amplifiers are particularly useful to scale sensor outputs to signal levels that optimize signal-to-noise ratios prior to their input to FDI active filter modules. Available in 13 fixed gain models from -12 dB to +60 dB with options that include AC coupled input and/or differential output.

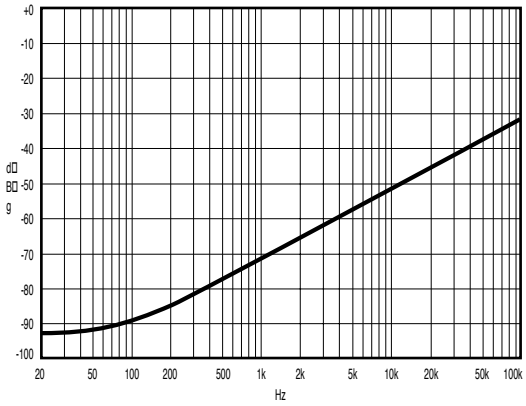
Features/Benefits:

- Full power bandwidth to 100 kHz for wide dynamic range applications
- Compact 1.8” x 0.8” x 0.3” (32 pin DIP) size minimizes board space requirements
- Plug-in ready-to-use, reducing engineering design and manufacturing time.

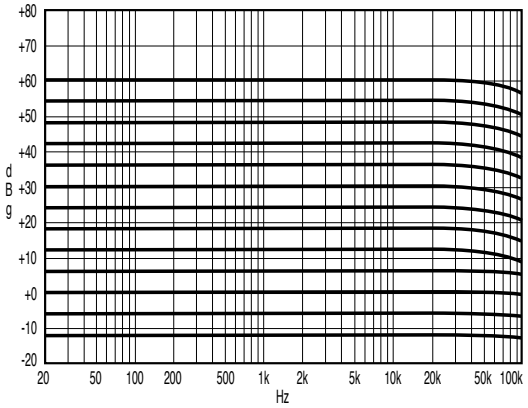
Applications

- Data acquisition
- Test equipment
- Remote instrumentation systems
- Ground loop elimination in remote measurements
- Improvements in system dynamic range and resolution
- Telemetry
- Process control
- Medical, Scientific & engineering research

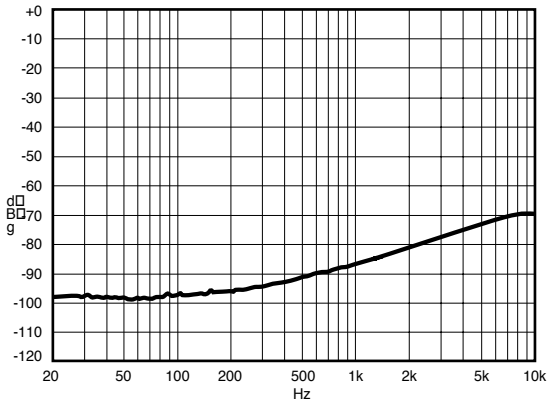
Common Mode Rejection Ratio



Frequency Response



Total Harmonic Distortion + Noise



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D86 Series

Specifications
(@25°C and Vs ± 15Vdc)

Analog Input Characteristics

Configuration	DC coupled, differential Input
AC Coupled (Optional)	Fixed @ 10 Hz
Impedance	1 MΩ ‖ 22pF
Bias Current	20 pA max.
Offset Current	10 pA max.
Voltage Range	±10 Vpeak
Max. Safe Voltage	±Vs
Common Mode Rejection Ratio	Typ. 80 dB @ 1 kHz
	Min. 60 dB @ 1 kHz
Noise Voltage Density, RTI	20 nV/$\sqrt{Hz}$ @ 1 kHz, G=1,024

Analog Output Characteristics

Configuration	Single ended, DC coupled
Differential Output	(Optional)
Impedance	<1 Ω typ., 10 Ω max.
Current (linear operation)	±5 mA max.
Offset Voltage	2 mV RTI, NTE 40mV max.
Offset Temp. Coeff.	±(5 + 100/G) μV/°C

General Analog Characteristics

Gain (selectable)	0.25X to 1,024X in factors of 2
Gain Tolerance	±0.10 dB
Distortion (0 dB gain @ 3.5 Vrms)	-86 dB @ 1 kHz typ.
Full Power Bandwidth (0 dB gain)	100 kHz

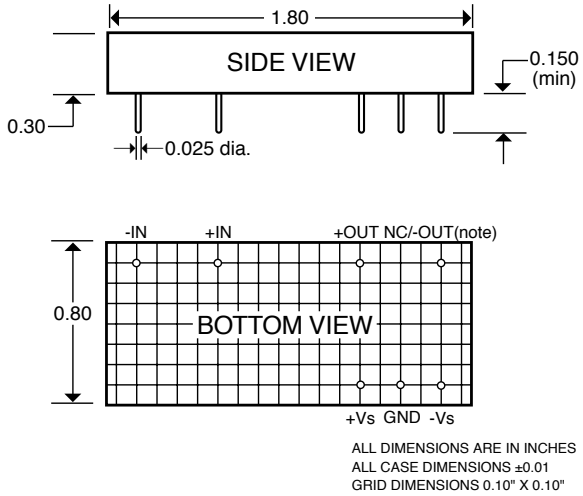
Power Supplies ($\pm V_S$)

Rated Voltage	±15 Vdc
Operating Range	±5 to ±18 Vdc
Maximum Safe Voltage	±18 Vdc
Quiescent Current, ±15V	±12mA

Temperature

Operating	0 to +70°C
Storage	-25 to +85°C

Pin-Out and Package Data
Ordering Information



ALL DIMENSIONS ARE IN INCHES
ALL CASE DIMENSIONS ±0.01
GRID DIMENSIONS 0.10" X 0.10"

Note: NC pin is used as "-OUT" for differential output option

Ordering Information

Options
A - AC Coupled Input
D - Differential Output

D86-60-D

Gain
-12, -6, 0, 6, 12, 18, 24
30, 36, 42, 48, 54, 60

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