DJB Instruments
SENSING ENGINEERING INNOVATION

V4/04 Four Channel Voltage Source Amplifier

Gain Factor x 1, 3.16, 10, 31.6 and 100
Transducer O/C & S/C Fault detection O/L indicator, DC O/P

Thee V4/04 is a four channel QVC interface amplifier, providing a low cost, space efficient solution to multi channel piezotronic transducer interfacing at the expense of somewhat reduced flexibility. Each channel provides switched normalised outputs of 1 or 10g/V for transducer sensitivities of 10, 31.6, or 100mV/g. Gain is thus adjustable over the range x1 to x100 in 10dB increments.
This is a much reduced dynamic range compared to that of the VV/04, but suffices for a very broad range of applications, particularly where close tolerance transducers equating to the three normalising options are used.

Each V4/04 amplifier channel includes an integral 28V 4mA transducer power source, transducer O/C and S/C fault detection LEDs, an output overload indicator LED, and AC/DC peak converter output.

TRANSDUCER POWER SUPPLY

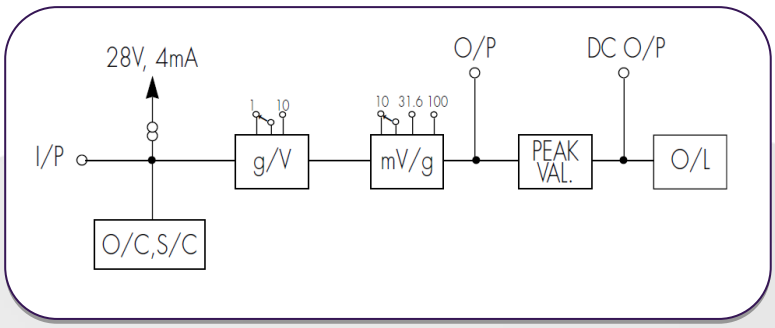
Input is assumed to be a two wire active device (QVC) with the signal offset by a DC bias which is the de facto QVC operating voltage Vb. Vb is temperature dependent. Signal excursion should not be constrained by virtue of power supply (voltage, current drive capability) limitations.

DC O/P

The O/P overload detector comprises a linear absolute value peak detector, comparator and LED. The peak detector provides the ancillary DC O/P. Note that the peak detector's 5sec. time constant is conditional upon minimal loading, a 10MΩ load will halve the t/c.

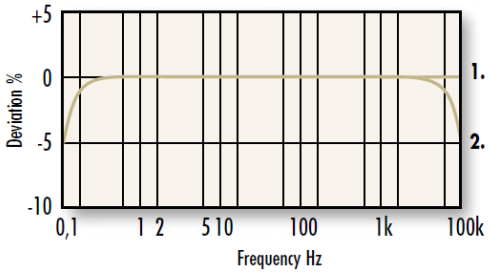
The V4/04 allows 24 channels of QVC interface to be packed into a single housing. Benefits are a reduction of up to 65% in capital cost and 50% space saving.

Module Schematic



Typical Frequency Response

	Gain	Multiplier
1	1	1
2	10	10



	V4/04
Input	Single ended
Max. input voltage pk.	10V
QVC Supply	28V, 4mA, 500KΩ source resistance
Noise level r.t.i @ 10mV/g & 1g/V	<4mg
Outputs	Single ended
Output Impedance	10Ω +47µF
Max O/P Volts pk. V_s = +/- 15V	12
DC O/P	1V DC = +/- 1V pk.
Warning Indicators	LED
O/P Overload	>5V
QVC O/C	V_b >15V
Supply Voltage Vs, V	+/- 15
Supply Current, mA	+55, -20

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A UK company with UK-based manufacturing, assembly and calibration in-house.

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