



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

The 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

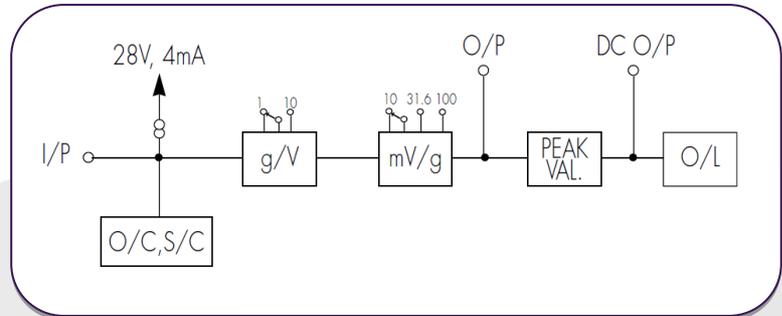
Input is assumed to be a two wire active device (QVC) with the signal offset by a DC bias which is the de facto QVC operating voltage V_b . V_b is temperature dependent. Signal excursion should not be constrained by virtue of power supply (voltage, current drive capability) limitations.

DC O/P

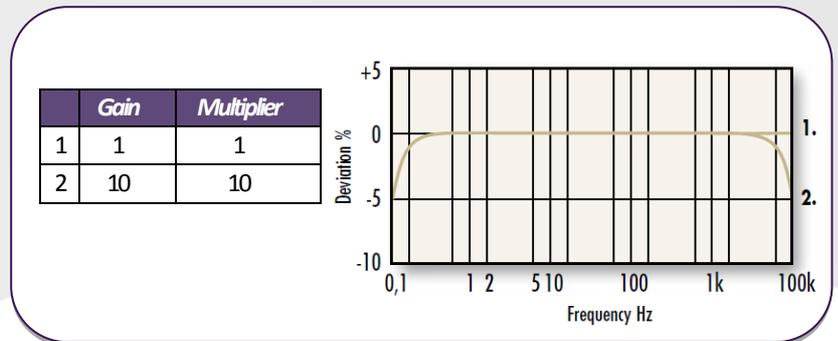
The O/P overload detector comprises a linear absolute value peak detector, comparator and LED. The peak detector provides the ancillary DC O/P. Note that the peak detector's 5sec. time constant is conditional upon minimal loading, a 10M Ω load will halve the t/c.

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



Frequency Response



Type	V4/04
Input	Single ended
Max. input voltage pk.	10V
QVC Supply	28V, 4mA, 500K Ω source resistance
Noise level r.t.i @ 10mV/g & 1g/V	<4mg
Outputs	Single ended
Output Impedance	10 Ω +47 μ F
Max O/P Volts pk. mA pk. $V_s = \pm 15V$	12.8
DC O/P	1V DC = $\pm 1V$ pk.
Warning Indicators	LED
O/P Overload	>5V
QVC O/C	$V_b > 15V$
Supply Voltage V_s , V	± 15
Supply Current, mA	+55, -20