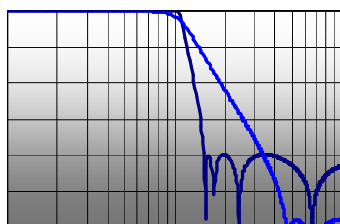
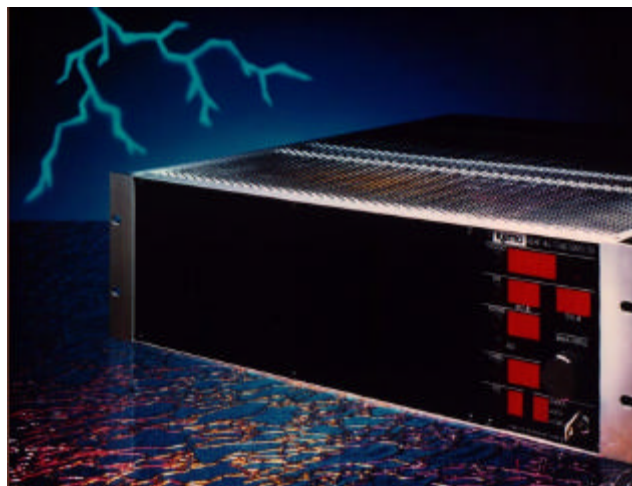
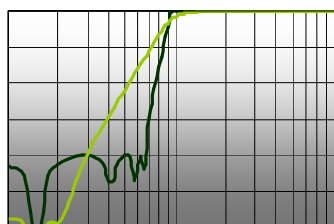


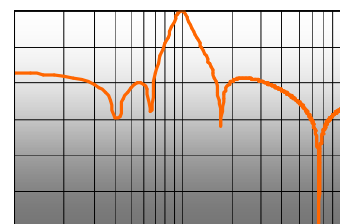
- Very versatile, easy to use
- 1 – 64 Channels from one system
- 1 – 16 Channels per rack
- 1 Hz – 255 kHz filter range
- +70dB gain
- Differential Input
- 5 filter responses, 135 dB/Octave
- Non-volatile memory
- BNC and 'D Type' connectors
- Signal level indication
- Built in RS 232, or GPIB interface
- Lowpass (x2)



Highpass (x2)



Bandpass



The Kemo VBF 40 is a top of the range filter system, with 5 built-in filter responses, 2 low pass, 2 highpass, and one bandpass. The VBF40 is a 3U high 19" benchtop or rack mounted instrument. Control is an easy to use 'menu' style control with LED panel, selection buttons and index wheel. The simple panel interface has a number of features to make control and programming of each channel easy. These include full manual control of frequency range and cut-off frequencies if required. The VBF 40 can store up to 3 sets of filter settings. External control is available via the optional RS232 or GPIB interface.

The VBF 40 has a wide range of gain control. +40 dB (x 100) is available before the filter, in 20 dB (x10) steps. There is also a 10 dB (x 0.31) input attenuator. After the filter there is – 10 dB to + 30 dB of gain in 2 dB steps. This combination allows optimisation of signal levels both before and after the filter, as well as optimising output signal levels for signal analysis systems.

Filter cut-off frequencies and gains are set using the easy to use LED panel and push button controls. The VBF 40 has 4 frequency ranges, each with 255 steps. Covering a range from 1 Hz to 255 kHz.

The combination of frequency range, pre and post-filter gain, and 5 filter responses make the VBF 40 a very versatile, flexible, top of the range filter amplifier.

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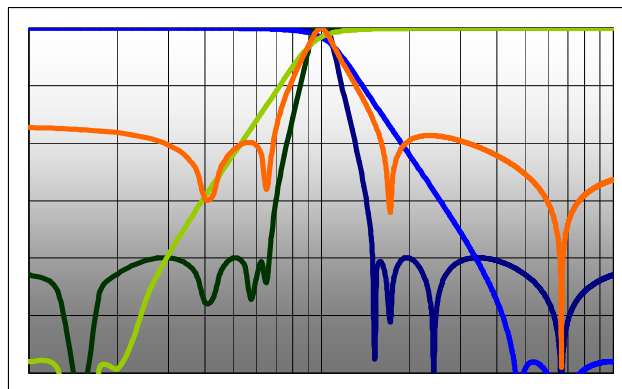
# VBF40 Performance Specification

|                           |  |                    |
|---------------------------|--|--------------------|
| <b>Electronic</b>         | Typical specifications after 30 minutes warm up at 20°C ambient temperature.   |                    |
| Channels                  | 1-16 per rack  |                    |
| Filter modes              | Lowpass 1, Lowpass 2, Bandpass, Highpass 1, Highpass 2.  |                    |
| Frequency range           | 1 Hz – 255 kHz   |                    |
| Filter cut-off resolution | 255:1 in 4 decade ranges   |                    |
|                           | 1 Hz – 255 Hz  | 10 Hz – 2 550 Hz   |
|                           | 100 Hz – 25 500 Hz   | 1 kHz – 255 kHz    |
| Cut-off accuracy          | 2 % of $F_c$   |                    |
| Bandwidth                 | > 1 MHz, 1 volt signal, 0dB gain, filter highpass and bypass modes   |                    |
| Input impedance           | 1M $\Omega$ , 150pF  |                    |
| Input gain                | 0 dB to +40 dB (x100) in 20 dB steps, switchable – 10dB input attenuator   |                    |
| Input voltage, linear     | +/- 10 V   |                    |
| Input voltage maximum     | +/- 40 V   |                    |
| Input modes               | DC, AC, Differential   |                    |
| Input AC coupling         | -3 dB @ 1.6 Hz   |                    |
| Input connectors          | BNC and 37 way 'D' type  |                    |
| Output type               | Single ended   |                    |
| Output gain               | -10 dB to + 30 dB in 2 dB steps  |                    |
| Output impedance          | 50 $\Omega$  |                    |
| Output voltage            | +/- 10 V (load > 2k $\Omega$ )   |                    |
| Output noise              | < 100 nV/ $\sqrt{\text{Hz}}$ (lowpass)   |                    |
| Output linearity          | <0.03%   |                    |
| Output connectors         | BNC and 37 way 'D' type  |                    |
| Offset voltage            | <2.5 mV (RTI)  |                    |
| Offset drift              | 200 $\mu\text{V}/^\circ\text{C}$   |                    |
| Crosstalk                 | > -70dB  |                    |
| Amplitude matching        | +/- 0.1 dB to 0.8 of $F_c$ (< 100 kHz, lowpass)  |                    |
| Phase matching            | +/- 1 $^\circ$ to 0.8 of $F_c$ (< 100 kHz, lowpass)  |                    |
|                           | The VBF 40 is a complex filter, typical matching values given.<br>For more detailed response and matching data contact Kemo. |                    |
| Power                     | 105-125, 210-250 Vac 50/60 Hz 80 VA  |                    |
| Connector                 | IEC 6 Amp  |                    |
| <b>Mechanical</b>         |  |                    |
| Size                      | 447 x 430 x 135 mm,  | 17.6" x 17" x 5.2" |
|                           | 3U 19" rack mounting, 430 mm (17") deep  |                    |
| Weight                    | 16 Kg (35 lb) (16 channel system)  |                    |

## Filter Responses (theoretical values)

- Lowpass L1** Flat to  $F_c$  -80 dB at 1.5  $F_c$   
Stopband -80 dB
- Lowpass L2** Flat to 0.6  $F_c$  -96 dB at 4  $F_c$   
Stopband -96 dB
- Highpass H1** Inverse of L1
- Highpass H2** Inverse of L2
- Bandpass B1** 0 dB at  $F_c$  -35 dB at 0.67 $F_c$  and 1.5 $F_c$   
Stopbands -35 dB

The combination of flexible control, range of 5 filter responses, gain, make the VBF 40 an excellent, versatile top quality filter/amplifier unit.



Due to continued product development Kemo reserve the right to change specification without notice.

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