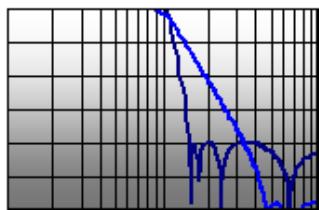


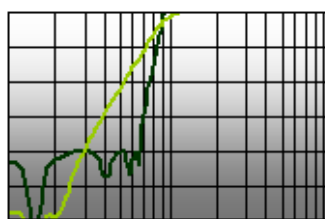
- Very versatile, easy to use
- 1 – 16 Channels per rack
- 1 Hz – 255 kHz filter range
- +60dB gain
- IEPE transducer source
- Differential Input
- BNC connectors
- 5 filter responses, 135 dB/Octave
- Series / Parallel connection
- Signal level indication
- Built in Ethernet type interface



Lowpass (x2)



Highpass (x2)



Bandpass



The VBF40 is a top of the range filter system, with 5 built-in filter responses, 2 low pass, 2 highpass, and one bandpass, housed in a 3U high 19" benchtop or rack mounted instrument case.

Control is via an easy to use 'menu' style control with LCD display, and 4 control buttons. 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.

To provide maximum sensor integration the VBF40 also features IEPE transducer signal conditioning.

The VBF 40 has a wide range of gain control, x100 (+40 dB) in 7 steps is available before the filter and after the filter there is an additional x 10 (+20dB) in 4 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. There is a 4-level signal level indicator.

The VBF 40 has 4 frequency ranges, each with 255 steps. Covering a range from 1 Hz to 255 kHz. Pairs of channels can be combined in series or parallel to give a wide range of filter combinations, bandpass, bandstop, and notch, each channel is independently controlled. The Ethernet interface can address up to 64 channels, channels may share an address to make group setting easy.

The combinations of filter response, gain, and channel coupling make the VBF 40 a highly versatile filter amplifier unit.

## VBF40 Performance Specification

Electronic: (Typical specifications after 30 minutes warm up at 20°C ambient temperature)

Channels	2-16 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	100k $\Omega$ , 150pF
Input gain	x1, x2, x5, x10, x20, x50, x100(+40dB)
Input voltage, linear	+/- 10 V
Input voltage maximum	+/- 30 V
Input modes	DC, AC, Differential
Input AC coupling	-3 dB @ 1.6 Hz
Input connectors	BNC
Transducer Source	IEPE Sensor Conditioning (24VDC 4mA)
Output type	Single ended
Output gain	x1, x2, x5, x10 (+20dB)
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
Offset voltage	<2.5 mV (RTI)
Offset drift	200 $\mu\text{V}/^\circ\text{C}$
Crosstalk	> -70dB
Interface	Text over Ethernet (TCIP) hardware, FICLII control commands
Amplitude matching	+/- 0.1 dB to 0.8 of $F_c$ (< 100 kHz, lowpass)
Phase matching	+/- 1° to 0.8 of $F_c$ (< 100 kHz, lowpass) The VBF 40 is a complex filter, typical matching values given. For more detailed response and matching data contact Kemo.
Power	105-125, 210-250 Vac 50/60 Hz 80 VA
Connector	IEC 6 Amp

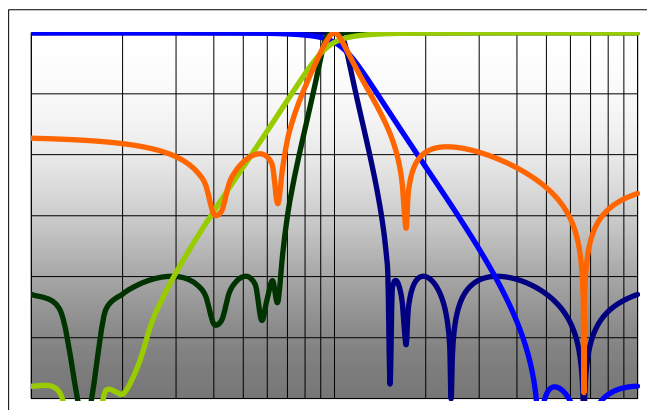
### Mechanical

Size	450 x 430 x 135 mm,                      17.6" x 17" x 5.2" 3U 19" rack mounting, 450 mm (18") 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 Limited reserve the right to change specification without notice.

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