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# VBF 40

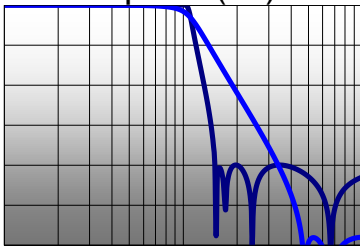
## Versatile Filter / Amplifier 5 Filter Responses, 135 dB/Octave

WORLD LEADER IN RANGE OF PRODUCTS AND QUALITY PRESENTS THE MOST VERSATILE BENCHTOP OR RACK MOUNTED 16 CHANNEL UNIT. COMPUTER CONTROL 64 ADDRESSES.

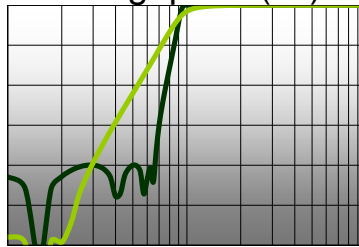
- +60dB total gain
- Differential Input
- Signal level indication
- IEPE transducer source
- Very versatile, easy to use
- 2 – 16 Channels per rack
- 1 Hz – 255 kHz filter range
- Built in Ethernet type interface
- 5 filter responses, 135 dB/Octave
- Series / Parallel connection between channels



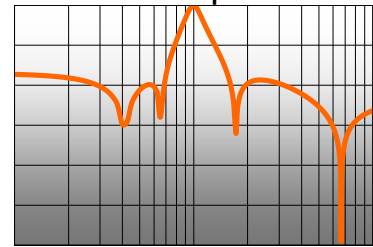
Lowpass (x2)



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. Configurable input stage, IEPE transducer source, gain 5 filter responses, and series/parallel connection between channels. Control is an easy to use 'menu' style control with LCD display, and 4 control buttons. The simple panel interface has features to make control and programming of each channel easy.

The VBF 40 has a wide range of gain control. x 100 (+40 dB) in 7 steps is available before the filter, after the filter there is 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 very versatile filter amplifier unit. There is nothing else like it available to signal conditioning user.

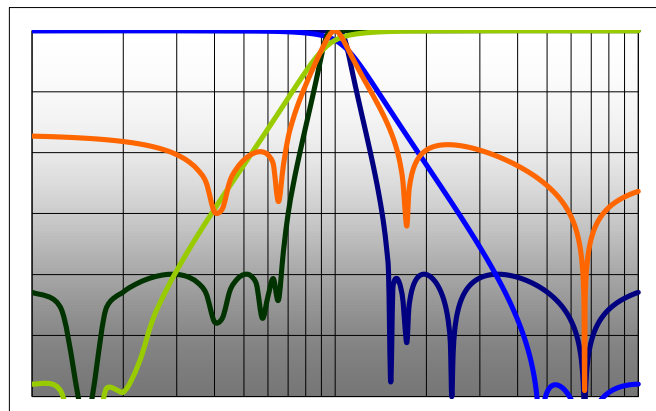
# VBF40 Performance Specification

<b>Electronic</b>	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 24V 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 $^\circ$ 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	
<b>Mechanical</b>		
Size	450 x 410 x 135 mm,	17.6" x 16" x 5.2"
	3U 19" rack mounting, 410 mm (16") 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. Made by Kemo Limited, UK.