

- 9900 : 1 cutoff span
- AC / DC / IEPE(ICP®) inputs
- Easy to Use
- Switchable High / Low pass
- Switchable Gain
- Single ended / differential input
- BNC connectors
- Switchable 'pulse' response
- 2 Rugged racks, AC or DC power
- Range of filter responses



8 Channel BenchMaster 21M

The Kemo BenchMaster 21M, is an easy to use, versatile manual filter system. Available in 2 sizes, 1-2 channels (VBF2), and up to 9 channels BenchMaster 21M. Both racks are available in AC or DC versions. The simple easy to use front panel make this system ideal for general purpose filtering, and on site work.

The inputs are switched, single ended/differential, and differential with a 4mA, 20 Volt source for IEPE (ICP®) transducers. Switched high pass AC coupled, and low pass AC and DC coupled. Front panel connectors are BNC.

There are three operating modes, normal filter response, bypass, and a minimum overshoot mode for impulsive signals. Frequency is set by a two digit thumbwheel, and a 3 position decade switch. This provides 3 ranges of 99:1 filtering. Three frequency options are available. Gain can be set by front panel switches to x4 (+12dB), x1 (0 dB), and x0.25 (-12dB).



2 Channel BenchMaster 21M (VBF2)

The standard filter supplied, usually available from stock, is the Kemo response 37. This filter response is flat in the passband, to the filter cutoff point, and then drops to -82dB at 3 times the cutoff frequency. Phase linearity is good, and overshoot is reasonable. This is a good general purpose filter response.

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

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BenchMaster 21 Performance Specification

Electronic

Frequency ranges

Typical specifications after 30 minutes warm up at 20°C ambient temperature.

3 models, each with 3 frequency ranges

Low	0.1 – 9.9 Hz	1 – 99 Hz	10 – 990 Hz
Medium	1.0 – 99 Hz	10 – 990 Hz	100 – 9.9 kHz
High	10.0 – 990 Hz	100 – 9.9 kHz	1 kHz – 99 kHz

Filter cutoff resolution

99:1 in 3 decade ranges

Cutoff accuracy

< 0.8 % of F_c

Input impedance

1M Ω , 50pF

Input gain

+12 dB (x4), 0 dB, -12dB (x0.25) (+/- 0.2dB) switched on front panel
(Gain trim available on front panel)

Input voltage, linear

+/- 10 V

Input voltage maximum

+/- 40 V

Input AC coupling

-3 dB @ 0.17 Hz

Input modes

Single Ended, Differential, IEPE (ICP[®]) (4 mA, 20V)

CMRR

50 dB DC – 500 Hz

Output type

Single ended

Output impedance

50 Ω

Output voltage

+/- 10 V (load > 2k Ω)

Output noise

< 100 nV/ $\sqrt{\text{Hz}}$

Output linearity

<0.03%

Offset voltage

< 5 mV (Offset trim available on front panel)

Offset drift

200 $\mu\text{V}/^\circ\text{C}$

Cross talk

> -80dB

Amplitude matching

+/- 0.1 dB to 0.8 of F_c

Phase matching

+/- 1 $^\circ$ to 0.8 of F_c

Mechanical

Number of channels

1 or 2 plus optional interface in 21.5 rack
1 to 9 or 8 plus optional interface in 21.18 rack

Power 21.5 AC

105-125, 210-250 Vac 50/60 Hz 50 VA

21.18 AC

105-125, 210-250 Vac 50/60 Hz 100 VA

Connector AC

IEC 6 Amp

21.5 DC

9 – 36 V DC 40 VA

21.18 DC

9 – 36 V DC 80 VA

Connector DC

XLR 3 pin

Size

21.5

153 x 155 x 350 mm,

6" x 6.1" x 13.8" (excluding handles)

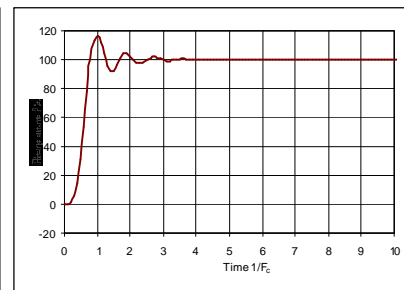
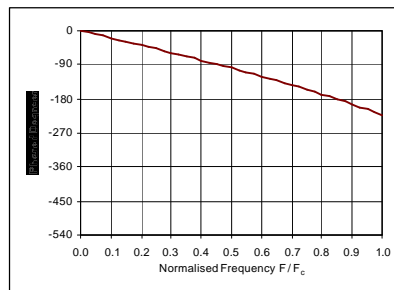
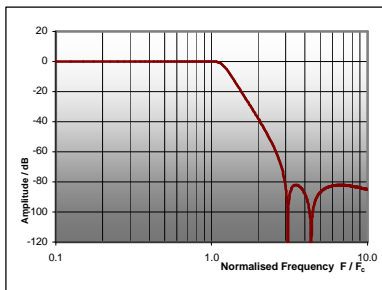
21.18 (19 ")

420 x 155 x 350 mm,

16.6" x 6.1" X 13.8" (excluding handles)

Filter Responses for BenchMaster 21M

The standard, stock, response for BenchMaster 21M is a good general purpose filter, response 37. This filter has, a flat passband , falls to -82 dB at 3 times cutoff, with good phase linearity and low overshoot. Other responses (21, similar to 48 dB/Octave Butterworth, 05, 24 dB/Octave Butterworth, and 79 linear phase 45 dB/Octave) are available to special order, contact Kemo or your local representative for details, and filter response data sheets.



Filter response 37 characteristics

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