

### Amplitude Response

Kemo Filter Response 21 is modified 6 pole Elliptic type filter, it has characteristics similar to a classic 8 pole Butterworth filter.

This response is also available in high pass (21 HP)

Response 21 Data			
Equivalent Slope		51.1 dB / Octave	
Stopband (theoretical)		> -100 dB	
Overshoot (theoretical)		14.9 % at 1.125 / Fc	
Risettime to 0.996		0.9/Fc	
Mean phase line (theoretical)		-239.9 f/Fc	
Attenuation / dB	Normalised Frequency / Fc		Attenuation / dB
0.10	0.755	1.00	3.0
0.25	0.806	1.10	6.4
0.50	0.850	1.25	12.7
1.00	0.900	1.50	22.7
3.00	1.000	1.75	31.6
6.00	1.089	2	39.6
12.00	1.235	3	67.0
24.00	1.538	4	104.1
36.00	1.884	5	-
48.00	2.289	8	-
60.00	2.733	10	-
80.00	3.470	-	-

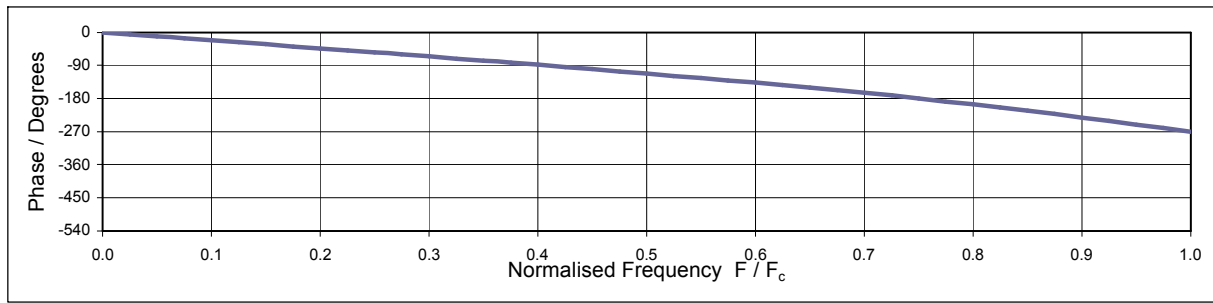
### ● Kemo Limited

Unit 1, Dene Yard  
 Green Street Green Road  
 Dartford Kent DA2 8DH  
 www.kemo.com  
 Tel + 44 (0)1474 705168  
 Fax + 44 (0)1474 705366

### ● Kemo Inc.

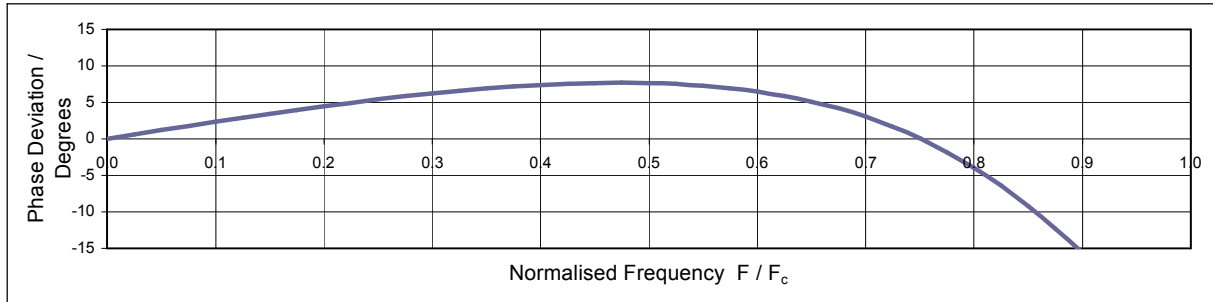
14 Rainstone Drive  
 Greenville  
 SC 29615

Tel (864) 297 2522



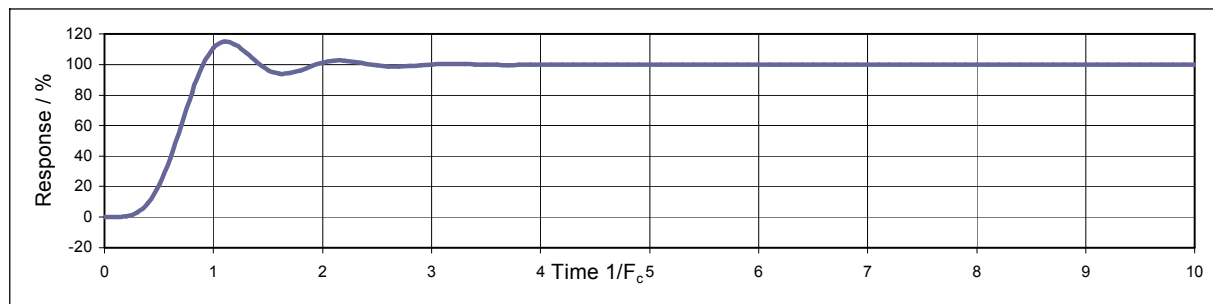
### Passband Phase Response

The Curve above shows the passband phase response of the Kemo response 21 filter.



### Passband phase deviation

The above curve shows the passband phase variation for the Kemo response 21 filter, this is the difference between the mean phase line and the passband phase response of the filter.



### Time Response to Step Input

The curve above shows the time response to a step input to the response 21 filter.

### Other Filter Responses

Anti-Aliasing (01) – a filter optimised for anti-aliasing protection before sampling and D-A conversion, where analysis is in the frequency domain.

Butterworth (03) (05) – traditional Butterworth filters, often used to match existing systems, type 01 is superior for alias protection, and type 41 is a better general purpose filter.

General Purpose (41) – a filter optimised for low signal distortion. Flat passband and linear phase characteristics, with moderate settling time.

Bessel (07) (09) – traditional Bessel filters, linear phase, and small time delay with no overshoot, but significant roll off in the passband.

### General Notes about Filter Responses

Selecting a filter is a compromise. We have been manufacturing filters since 1965, and this sheet shows our selection of standard responses built up over a number of years to meet most applications. One of the most important aspects of filter selection is to allow for the total effect on the signal, passband amplitude, phase variation, and step response.

**Note –  $F_c$  is cut-off frequency**

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

### ● Kemo Limited

Unit 1, Dene Yard  
Green Street Green Road  
Dartford Kent DA2 8DH  
www.kemo.com  
Tel + 44 (0)1474 705168  
Fax + 44 (0)1474 705366

### ● Kemo Inc.

14 Rainstone Drive  
Greenville  
SC 29615

Tel (864) 297 2522