

### Amplitude Response

Kemo Filter Response 09 is a classic 4 pole Bessel filter, 24 dB/Octave roll off, -3 dB at cut-off, low overshoot and linear phase. This response is also available in high pass (09 HP)

Response 09 Data			
Equivalent Slope		24 dB / Octave	
Stopband (theoretical)		> monotonic	
Overshoot (theoretical)		10.8 % at 0.90 /Fc	
Risetime to 0.996		0.7/Fc	
Mean phase line (theoretical)		-165.2 f/Fc	
Attenuation / dB	Normalised Frequency / Fc		Attenuation / dB
0.10	0.188	1.00	3.0
0.25	0.301	1.10	3.7
0.50	0.422	1.25	4.9
1.00	0.588	1.50	7.3
3.00	1.000	1.75	10.3
6.00	1.364	2	13.3
12.00	1.895	3	25.0
24.00	2.913	4	34.3
36.00	4.215	5	41.8
48.00	6.010	8	57.8
60.00	8.515	10	65.5
80.00	-	-	-

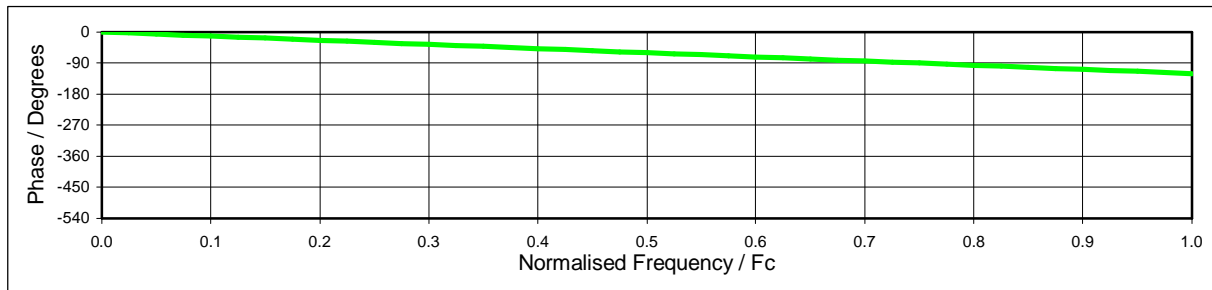
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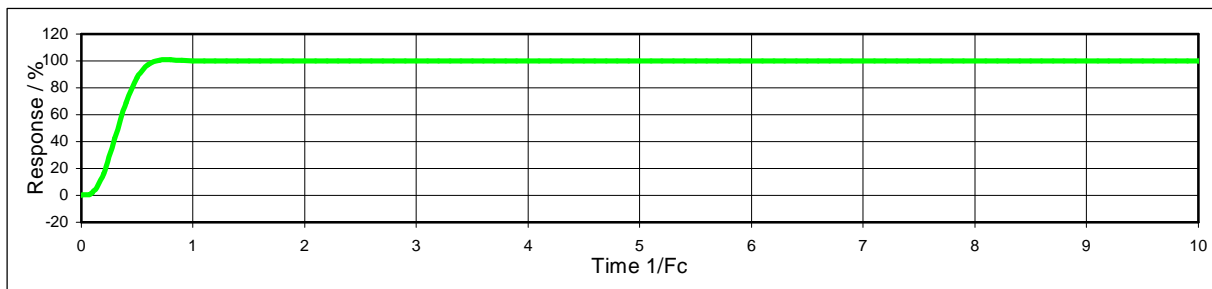
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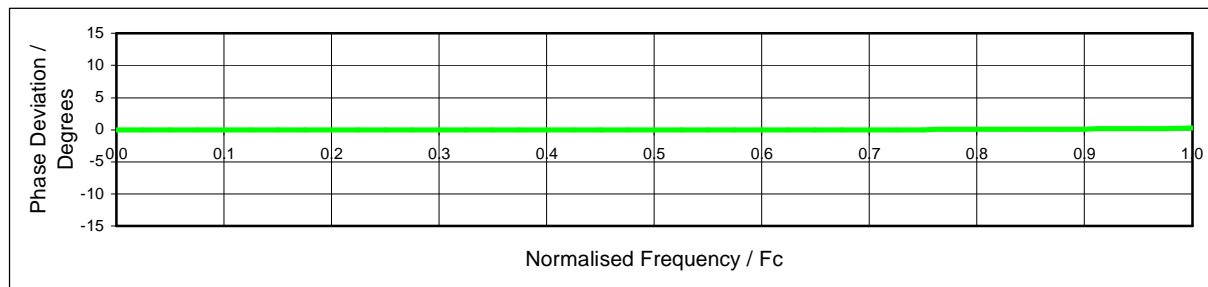
### Passband Phase Response

The Curve above shows the phase of response 09 filter in the passband.



### Time Response to Step Input

The curve above shows the time response to a step input to the response 09 filter.



### Passband phase deviation

The above curve shows the phase variation in the filter passband, this is the difference between the mean phase line and the actual variation of the 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)** **(09)** – 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.

### 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.

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

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