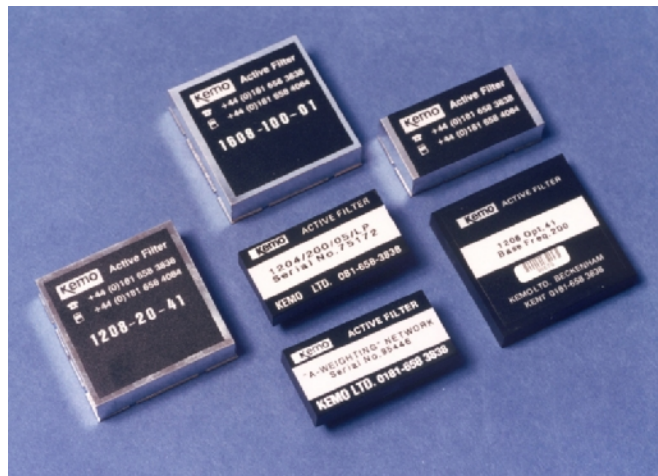


- Lowpass, Highpass, Bandpass, Bandstop
- High performance ready to use
- Low distortion
- Stable DC characteristics
- High Dynamic Range
- 0.01 Hz to > 500 kHz
- Range of stock filter responses
- Compact 25 x 50 x 15 mm 4 pole  
50 x 50 x 15 mm 8 pole
- Metal Case
- Programmable 255 linear steps
- '1600 W' Version 1792:1 frequency range



#### Applications

- Anti-aliasing filtering
- Sound and Vibration testing
- Noise elimination
- Band limiting
- Medical research and electronics
- Data acquisition systems
- Signal reconstruction
- Aerospace and Communication systems

#### 1200 Series Resistor Set

Add your own resistors to set the filter cutoff ( $f_c$ ) frequency within a 1000:1 range, or fit to any of the Kemo filter module carrier cards. A range of stock 4 and 8 pole filter responses including Bessel, Butterworth, low distortion linear phase, and responses optimised for anti-aliasing.

#### 1600 Series Programmable

Programmable by TTL 8 bit word, to give 255 linear filter cutoff steps. A 20 Hz 1600 Series gives 255 cutoff steps from 20 Hz to 5 100 Hz. Available with the same filter responses as the 1200 Series. Kemo have a range of programmable cards and systems for the 1600 series modules.

#### 1600 W

Programmable, 100 pseudo-logarithmic steps over a 1792:1 range. Ideal for applications where close filter cutoff steps are required at low frequency, while maintaining a wide frequency range. A 20 Hz '1600 W' gives 20 Hz steps at low frequency with a highest cutoff at 35 840 Hz.

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

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## Mechanical Specification ( typical values )

|                            |   |                                 |
|----------------------------|---|---------------------------------|
| 1200/1600/1600W            | 4 pole  | 8 pole                          |
| Dimensions ( case )        | 25 x 50 x 15 mm<br>1 x 2 x 0.6 "                                  | 50 x 50 x 15 mm<br>2 x 2 x 0.6" |
| Weight 1200                | 20 gms 0.7 oz   | 35 gms 1.3 oz                   |
| 1600/1600W                 | 25 gms 0.9 oz   | 45 gms 1.6 oz                   |
| Pin size 1600/1600W Series | 0.6 mm square 2.5 mm long on 0.1" grid<br>.025 " square 0.1" long |                                 |
| Sockets 1200 Series        | Sockets suitable for 0.6 mm pins as above                         |                                 |
| Temperature                | 0 – 45 °C, non condensing   |                                 |

## Electrical Specification ( typical values <sup>1</sup> )

|                            |  |
|----------------------------|--|
| Input Impedance            | 1 M $\Omega$   |
| Output Impedance           | 47 $\Omega$  |
| Output current             | 8 mA ( max )   |
| Supply Voltage             | +/- 7 Volt to +/- 16 Volt DC                                 |
| Supply current             | 4 pole 25 mA                      8 pole 50 mA               |
| Gain                       | -1 dB ( pin to trim increased gain )                         |
| DC Offset                  | < +/- 60 mV ( trim pin on modules )                          |
| DC offset drift            | 100 $\mu$ V/ °C at 25 °C                                     |
| Signal level ( sine wave ) | within 2.5 Volts of supply Voltage, for < 10 K $\Omega$ load |
| Phase matching             | +/- 2° ( closer matching on request )                        |
| Noise and THD              | < 0.003% typical ( dependant on frequency and amplitude )    |

### Notes

- 1 Filter performance is dependant on many variables during use, including input levels and frequencies, and quality of voltage supply. Here representative typical values are given.

## Filter Responses

Standard responses are held in stock, these are:-

4 and 8 Pole Butterworth

4 and 8 Pole Bessel

Linear phase, low distortion, Response 41, ideal for general purpose filtering,

flat response to  $f_c$ , -80dB at 3  $f_c$ .

Sharp cut off, Response 01, ideal for anti aliasing

flat response to  $f_c$ , -80 dB at 1.5  $f_c$ .

For the 1200 Resistor set series our stock covers 0.1 to 250 kHz

For the 1600 Programmable series base frequencies are available in 1,2,5,10,20,50,100,200 Hz,  
with 0.1 and 500 Hz available for some responses.

With over 30 years of building active filters Kemo have over 90 filter responses on our files. Please contact us for any special requirements you have.

## Carrier Cards

Kemo have a range of carrier cards for filter modules, standalone units, to fit PC's and VME racks, and our own 1 and 18 slot 3U rack systems. Most carrier cards are user configurable with, input gain to +60dB, icp transducer supply, AC/DC coupling, single ended/differential input, and output attenuation. CardMaster 21.2 also allow for 3 cutoff frequencies with 1200 series modules,  $f_a$ ,  $f_b$ , and  $f_{a+b}$ , and 255 cutoffs with 1600 series modules. All settings are manually user configurable on the cards.

|                 | Channels | Modules    | Mounting   | Size          | Power  | Comments                          |
|-----------------|----------|------------|------------|---------------|--------|-----------------------------------|
| CardMaster 1    | 1        | 1200/1600  | Standalone | 100 x 60 x 20 | 9-30 V | Compact simple filter card        |
| CardMaster 21.2 | 2        | 1200/1600  | Kemo rack  |               | Rack   | Fits to Kemo series 21 Racks      |
| CardMaster 255G | 8        | 1600       | Kemo rack  |               | Rack   | Fits to Kemo series 21 Racks      |
| 6UG/1600        | 8        | 1600/1600W | VME Rack   | VME           | 5 V    | RS 232 control versions with gain |

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