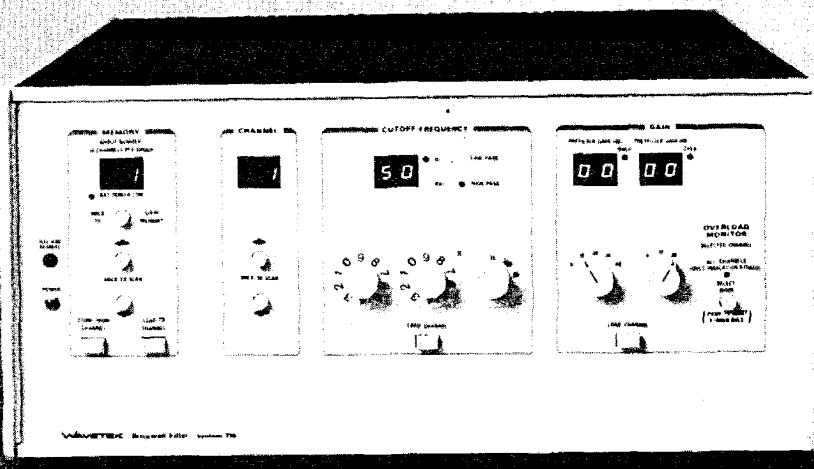




**SIGNAL PROCESSING
 FILTERS
 MODEL 716**



Multi-Channel Brickwall® Filter

- 1 Hz to 100 kHz Frequency Range
- 115 dB/Octave Rolloff
- Pre- and Post-Filter Gain

System 716, a multichannel programmable filter system, provides near-ideal passband and stopband characteristics in both high pass and low pass filter configurations.

Control is local or remote via GPIB, which provides control of all functions. Leading features include: self-diagnostics, storage of up to 16 groups of complete system setups and overload detection.

System 716 consists of mainframe and up to 16 independent-channel filter cards.

FILTER CARD OPTIONS 001 AND 002

Functions: Low pass (001) or high pass (002); rolloffs of 115 dB/octave.

Cutoff Frequency

Local Control Range: 1 Hz to 99 kHz.
Remote Control Range: 1 Hz to 100 kHz.

Programming and Resolution:

Multiplier	Frequency	Resolution
×1	1 to 99 Hz	1 Hz
×10	100 to 990 Hz	10 Hz
×100	1k to 9.9 kHz	100 Hz
×1k	10k to 99 kHz	1 kHz

Accuracy

High Pass: +0%, -3.5% max.
Low Pass: -0%, +3.5% max.

Stability: ±200 ppm/°C.
Gain

Pre-Filter Gain: 0, +10, +20, +30, +40 dB (±0.25 dB). One 5-position switch.
Post-Filter Gain: 0, +10, +20 dB (±0.25 dB). One 3-position switch.

Input Characteristics

Impedance: 1 MΩ, 50 pF, nominal.
Full-Scale Signal: 10V at 0 dB gain; divide by gain for other than 0 dB gain settings.
Absolute Maximum Input: 100V.
Equivalent Input Noise (at max pre-gain): -150 dBv/√Hz above 50 Hz.

Filter Characteristics

Passband Ripple: 0.8 dB, p-p max (low pass and high pass), 1.4 dB, p-p max for high pass with $f_c > 40$ kHz.
Stopband Attenuation: 80 dB min for $f > 2f_c$ (low pass), $f < 0.5f_c$ (high pass).
 f/f_c Ratio: 1.7 low pass; 0.6 high pass.
Amplifier Rolloff: -3 dB at approx. 400 kHz.

Output Characteristics

Impedance: 50Ω, nominal.
Full-Scale Signal: ±10V into 5 kΩ.
Harmonic Components (1 kHz Input Frequency): 80 dB below full-scale.
Intermodulation Products (Input fre-

quencies of 70 kHz and 90 kHz): >70 dB below full-scale.

DC Offset: Adjustable to 0V ± 50 mV.

Drift (at 0 dB gain): 50 mV, 15° to 40°C.

Crosstalk Between Channels (Input Source 50Ω or less):

Ref to Output: 85 dB below full scale.

Ref to Input: 110 dB below full scale.

Line Related or Spurious Components (Input Source 50Ω or less):

80 dB below full-scale.

Phase Match Between Channels

Low Pass: ±3° max DC to 0.8 f_c , ±4° max 0.8 f_c to f_c .

High Pass: ±3° max 1.3 f_c to 130 kHz, ±4° max f_c to 1.3 f_c .

Amplitude Match Between Channels

Low Pass: ±0.3 dB max DC to 0.8 f_c , ±0.5 dB max 0.8 f_c to f_c .

High Pass: ±0.3 dB max 1.3 f_c to 130 kHz, ±0.5 dB max f_c to 1.3 f_c .

MODEL 716-11 MAINFRAME

Memory: 16 selectable groups; each group has storage for 16 channel settings.

Battery Back-Up For Memory: Trickle charged, when unit is powered; 1000 hours nominal back-up and an LED low battery indicator.

Display: 7-segment displays for:

Group Number, Channel Number, Pre-Filter Gain, Post-Filter Gain, Cutoff Frequency

Channel Characteristic: LED for high pass or low pass.

Overload Indicators: Two LED's, one for filter input and one for filter output. Two overload modes can be selected: one mode monitors input and output of selected channels; the other mode monitors all channels and indicates which one is overloading.

Remote Programming/Sensing: IEEE 488-1978 (GPIB) digital interface meets the following standards: SH1, AH1, T6, TE0, L3, LE0, SR1, AL2, PPI, DC0, DT0, CO, E1.

Self-Test Diagnostics: Check at power-up; failure mode indicated on 7-segment displays.

Input/Output Connectors: Rear BNC's.

GENERAL

Environment: 0°C to 40°C operation, -20°C to +50°C storage.

Dimensions

43.2 cm (17 in.) wide; 22.2 cm (8¾ in.) high; 53.4 cm (21 in.) deep.

Weight

Mainframe: 15.4 kg (34 lb) net; 26.8 kg (59 lb) shipping.

Filter Card: 0.5 kg (1.2 lb) net; 1 kg (2.2 lb) shipping.

Power

115/230V ±10%, 48 to 400 Hz, 150 watts (less than 7 watts/channel).

FACTORY/FOB

San Diego, CA

PRICE

Model 716-11	\$4,895
Option 001	\$1,595
Option 002	\$1,595