Krohn-Hite Tunable Active Filters used in Sonar and other specialist applications

The KH Model 3380 Filter Series are one, two or four channel filters providing ease of operation and the reliability Krohn-Hite has been known for since 1949; along with a price that will fit any budget.

The 3380 Series provides a tunable frequency range from 0.1Hz to 200kHz, and with the 002 option, the range is extended to 0.005Hz. The frequency response characteristic is selectable to either maximally flat (Butterworth) for clean filtering in the frequency domain, or linear phase (Bessel) to provide superior pulse for complex filtering.

Each channel of the 3380 Series is a selectable low-pass or high-pass, 8-pole filter providing an input gain to 50dB, and an output gain to 20dB selectable in 0.1dB steps. The 3380 Series will accept input signals to ±10V peak at 0dB gain and has selectable ac or dc coupling. Memory is available for storing a set-up of the instrument which can be recalled with a simple command.

BAND-PASS/BAND-REJECT OPERATION

With the Model 3382 and 3384 models, the user can simply connect two channels in series to achieve band-pass operation or two summed in parallel for band-reject operation.

APPLICATIONS

Applications of the Model 3380 are anti-aliasing, ultra-sound measurements, random noise testing, sound recording, suppressing interference in audio communications and related fields of medical, geological, geophysical, oceanographic, military and many more.

FUNCTIONS

Low-pass filter, high-pass filter. 2 and 4 channel models provide one and two channel(s) respectively of band-pass or band-reject via external connections.

NUMBER OF CHANNELS

Model 3381 - 1 channel
Model 3382 - 2 channel
Model 3384 - 4 channel

FILTER CHARACTERISTICS

Type:	8-pole, Butterworth/Bessel.
Attenuation Slope:	48dB/octave.
Frequency Range fc:	0.1Hz to 200kHz; (option 002, 0.005Hz).
Frequency Resolution:	0.001Hz, 0.1Hz to 0.999Hz; 3 Digits, 1Hz to 200kHz, (option 002, 0.001Hz from 0.005Hz to 0.1Hz).
Cutoff Freq Accuracy:	±3%.
Relative Gain at fc:	–3dB, Butterworth; –12.6dB, Bessel.
High-Pass Bandwidth (0dB Gain):	>2MHz.
Stopband Attenuation:	>80dB.
Wideband Noise (2MHz bandwidth detector):	0dB gain, <300µVrms. Max. gain, <25µVrms RTI.
Harmonic Distortion (1V input, 0dB gain):	–60dB (0.1%) to 10kHz; –50dB (0.3%) to 100kHz.
DC Stability:	Typically ±1mV/°C.
Input:	Differential or single-ended.
Pre-Filter Gain:	0dB, 10dB, 20dB, 30dB, 40dB, 50dB, ±0.2dB.
Impedance:	1M ohm in parallel with 25pf.
Maximum Input:	±10V peak at 0dB gain, reduced in proportion to gain setting.
CMRR:	>60dB to 10kHz; >50dB to 100kHz.
Coupling:	ac (0.16Hz) or dc.
Sensitivity:	3mV peak with 70dB total gain for 10V peak output.
Maximum DC Component:	±100V in ac coupled mode.
Post-Filter Gain:	0dB to 20dB in 0.1dB steps, ±0.2dB.
Maximum Voltage (open circuit):	±10V peak.
Maximum Current:	±80mA peak.
Impedance:	50 ohms.
DC Offset:	Adjustable to zero volts.

GENERAL

Crosstalk Between Channels (input source £50 ohms):	–80dB for fsig £200kHz, –70dB for fsig >200kHz.
Memory:	9 stored set-ups.
Self-Test Diagnostics:	MPU checks unit upon power-up. Display indicates failure mode.
Displays:	7 segment, green, LED; 0.3" high.
Operating Temperature:	0°C to 50°C.
Isolation to Chassis:	±200Vdc.

Input/Output Connectors:	BNC.
Power Requirements:	90-132/180-264 volts ac, 50Hz-400Hz, 10 watts (3381), 15 watts (3382), 30 watts (3384).
Dimensions and Weights:	3.5“ (9cm) high, 14" (36cm) wide, 12.5” (32.13cm) deep; 12 lbs (5.4kg) net, 14 lbs (6.3kg) shipping.

OPTIONS

002:	Extends low end cutoff to 0.005Hz.
BK-330:	Line/battery operation, Model 3382 only.
Rack Mount Kit:	Part No. RK-314, permits installation of the Model 3380 Series into a standard 19" rack spacing.
Extended 1 Year Warranty:	Part No. EW3381, EW3382 or EW3384.

OPTIONAL ACCESSORIES

CAB-025:	Cable, BNC, 3ft, Low Noise

Above specifications apply at 25°C, ±5°C.