ALLISON

SHORT FORM CATALOG #863

ALLISON LABS.

PRESENTS

INSTRUMENTS OF QUALITY

Continuously Variable Passive Filters

Spectrum Equalizers

Spectrum Analyzers

Modular Amplifiers

Random Noise Sources

Automatic Inspection Units

Multiple Oscillators

Instrumentation Modules

Custom Instrumentation

Model 201 series 2

VARIABLE FILTERS

wide dynamic range
no internal noise
flat pass bands
steep continuous attenuation
negligible ringing effect

SERIES 2

The Model 2 Series are variable passive network filters with independent high cutoff and low cutoff sections. Each section has a range switch that changes the cutoff in octave steps with a vernier dial that tunes over a range of one octave. The attenuation rate is 30 db per octave and they may be cascaded for increased attenuation. Two filters give 60–70 db per octave. The smooth pass band is flat ±1 db over 80% of the pass band. It may be tuned to a bandwidth as narrow as 1/3 octave. The maximum input voltage is 2 volts. The input and output impedance is 600 ohms.

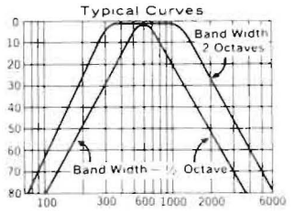
Size: 7-¼" high, 7-½" deep, 17-½" wide.

Rack model is mounted on a 7" panel with 6-½" behind panel.

MODEL	RANGE	SH.WGT.	PRICE
2A	15–10,000 cps	24#	$495
2AB	15–20,000 cps	24#	$525
2B	60–20,000 cps	20#	$365
2C	9– 672kcps	18#	$365
2D	250 cps–80kcps	19#	$395

Rack mount is the same price and shipping weight for all models.

Add 15% of the standard unit price for hermetically sealed capacitors.



MODEL 201

The new Model 201 extends into the sub-audio range while retaining all of the desirable characteristics of the 2 series, such as excellent transient handling capability, ability to handle small signal parameters and no active elements. The low noise, low distortion and good transient handling capacities of this filter make it excellent for studies of low level transient phenomena, such as encountered in heart studies, geophysical work, themocouples and low frequency vibrations. With high cutoff only, the filter will pass DC to the cutoff frequency.

A chart is provided on the panel for reading the multiplier dial directly into cps.

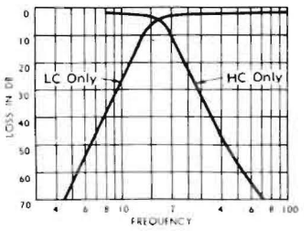
Low cutoff section . . . . . 1 to 128 cps
High cutoff section. . . . . 2 to 256 cps

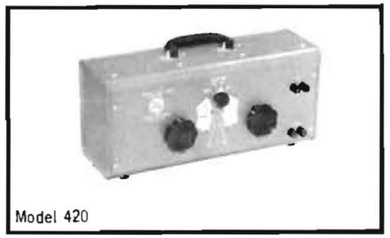
Size: 7-¼" high, 17-½" wide, 7-½" deep.
Rackmount: 7" high, 19" wide, 6-½" deep.

201	Sh. Wgt. 35#	$695
201 R Rack Mount	Sh. Wgt. 35#	$695

Hermetic Capacitors Not Available

TYPICAL CURVES





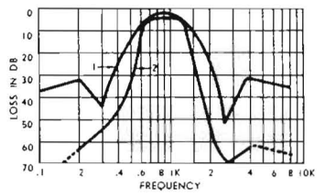
Model 420

Designed as an inexpensive general purpose filter for laboratory and production use, the 420 is very simple to operate and is direct reading with a single knob control for each section covering a range from 20 to 20,000 cps. A selector is provided for switching the filter out, low cutoff only, high cutoff only, or band pass mode of operation. There is 20 db or more attenuation per octave for the first octave, with attenuation outside the pass band exceeding 25 db at all frequencies beyond an octave away from cutoff frequency. Minimum bandwidth – approximately ½ octave. Maximum input–2 volts. Impedance–600 ohms.

Portable – excluding knobs and handle: (Shown) 17" long, 5-¾" deep, 8" high.

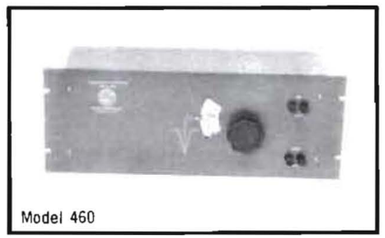
Available also in rack mount case with 7" x 19" panel and 5-¾" behind the panel.

TYPICAL CURVES



Curve #1 – 1 Model 420
Curve #2 – 2 Model 420 Filters in Series.

420	Sh. Wgt. 24#	$345
420R Rack Mount	Sh. Wgt. 30#	$345



Model 460

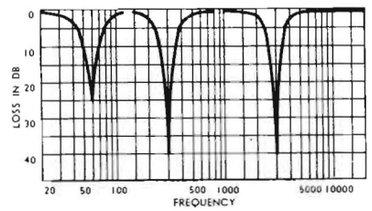
This filter also features the single knob tuning. The rejection band may be moved continuously over the range of 20 to 20,000 cps. The reject band is slightly less than 1 octave wide at the -3 db points. Attenuation at the bottom of the reject band varies as shown in the curves below. It can be used to eliminate single components as, interfering hum, the resonant peak of an accelerometer, a fundamental or constant tone to facilitate analyses of the remaining frequency spectrum. 460 Filters used in series eliminate additional frequencies.

Impedance .... 600 ohms.
Reject band ... Less than 1 octave wide.
Maximum input . . 2 volts.

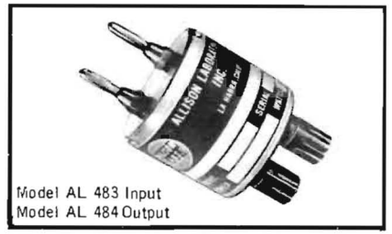
Portable: 17" long, 5-¾" deep, 8" high.

Available also in rack mount.
(Shown with 7" x 19" x 5-¾".)

TYPICAL CURVES



460	Sh. Wgt. 24#	$385
460R Rack Mount	Sh. Wgt. 30#	$385



Model AL 483 Input
Model AL 484 Output

IMPEDANCE MATCHING TRANSFORMERS

These units are used for applications where it is inconvenient to match impedances of 600 ohms. The AL–483 Input Transformer is an autotransformer designed to work from approximately 10,000 ohms to the 600 ohm circuit of the filter. The AL–484 Output Transformer is designed to match the 600 ohms impedance of the filter into the grid of a vacuum tube or a VTVM. The output transformer has an impedance ratio of 600 to 45,000 ohms. A terminating resistor is built into the transformer to properly terminate the filter.

Each transformer is encased in a mu-metal case and a grounded steel case.

In the event that high impedance inputs are required in frequencies above or below the above limits, refer to the Model 659 amplifier. These units have input impedance of 40,000 ohms and match the filter using a 600 ohm series resistor. The frequency coverage can be extended in this manner from 10 cps to 500 kcps.

AL–483 Input Autotrans. 10,000/600 ohms	$30
AL–484 Output Trans. 600 ohms/Grid	$30

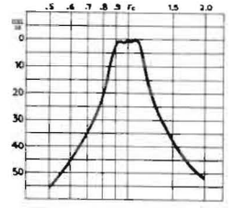
Typical Filter

FIXED 1/3 OCTAVE FILTERS

Fixed 1/3 octave filters having excellent and uniform response. Each model consists of 1 decade of 10 filters, case complete with power supply. These are passive networks using solid state isolation and amplification.

Standard filters are on ASA preferred center frequencies. Special filters may be ordered to other frequencies and down to 5% bandwidth. Individual filters are also available cased or uncased as desired.

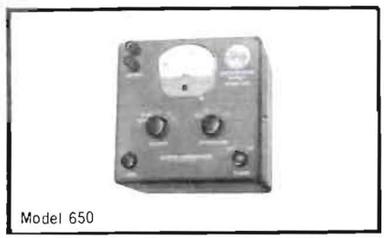
TYPICAL CURVE ALL FILTERS



MODEL	FREQUENCY	PRICE
240	2.5 – 20	$1425
241	25 – 200	1100
242	250 – 2000	900
243	2500 – 20000	850
244	25000 – 200000	850

Individual filters by quotation

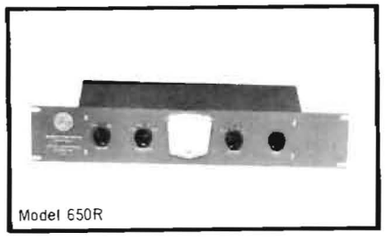
See also 1/3 octave analyzer, page 8



Model 650

RANDOM NOISE SOURCES MODEL 650

A superior random noise source for general use. Using the Model 655 Module as a source it provides references and controls. Filters are also provided for equal energy per octave (Pink) noise, 12 db/ octave roll off above 1000 cps and a 100 to 300 cps narrow band. The unit is non microphonic and has a maximum output of 1.5 vrms in the equal energy per cycle setting. This is widely used as a signal source for shake tables, acoustic testing, etc. Available also in rack-mount case on a 3-½" x 19" panel x 6-½" deep as shown below. Standard models have a bandwidth from 5 cps to 30 kcps. Lower and higher limits available on special order.



Model 650R

PRICES

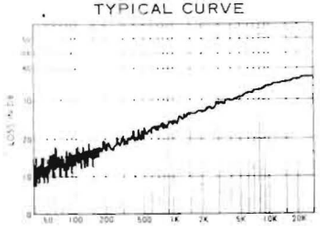
Portable	Battery	$265
Portable	AC	275
Rack Mount	Battery	280
Rack Mount	AC	290

Model 655

MODEL 655

An extremely useful noise module for many applications. Commonly internally mounted for test and calibration signals in various instruments. Requires only 22.5 VDC to produce approximately .3 volts of random noise having good Gaussian distribution of amplitudes and uniform spectral density. Simple mounting using 3 6–32 screws into molded inserts. Standard units have frequency response from 5 cps to 30 kcps. Lower and higher limits available .1 cps to 1 mcps on special order.

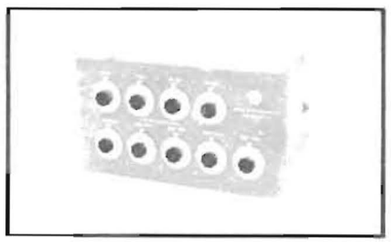
TYPICAL CURVE



PRICES

1 – 4		$60.00 each
6 – 9		55.00 each
10 – 24		50.00 each
25 – 49		45.00 each
50 – 99		38.00 each
100 and up		36.00 each

See Pages 10 & 11 for other instrumentation Modules.

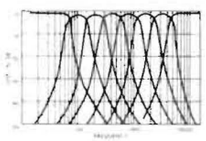


MULTIPLE BAND EQUALIZER

SERIES 300

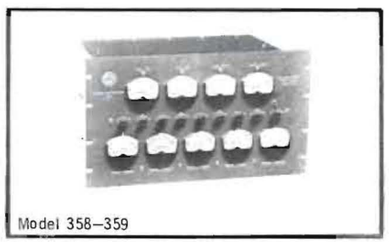
The 300's are a series of octave band filter sets with either 8 or 9 bands. The octaves start at 37 cps (20 on special order) and extend to either 9.6 kcps or 19.2 kcps. All filter inputs are in parallel and each filter is provided with an attenuator to adjust the level in the band. This method is used to produce shaped spectrums for various tests.

The Models 348A and 349A have a random noise source (Model 655) complete with flat or pink noise plus filter driver amplifier and output amplifiers. Outputs can be either individual or grouped. Filters have 40 db/octave attenuation.



PRICES

Model	Description	Price
318 A	8 Band Filter	$1200
319 A	9 Band Filter	1400
348 A	8 Bands w/ noise generator	1525
349 A	9 Bands w/ noise generator	1725

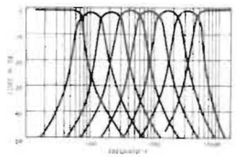


Model 358–359

MODELS 358–359

The Models 358 and 359 provide a simultaneous readout of 8 or 9 octave bands. The filters are fed in parallel and each output is amplified, rectified and displayed on an rms meter. The individual channels are also available individually at the rear of the case for recording, etc. The unit is used with microphone pickup or accelerometer.

TYPICAL CURVES



Size: 19" wide, 10½" high, 15" deep.

PRICES

Model 358R	$2635
Model 359R	2990

NOTES

1/3 octave equalizers are available in these same configurations on special order. Write your requirement for quotes on frequency ranges between 2.5 cps and 200 kcps.

See pages 2–4 for filter data.

Model 532

OCTAVE BAND ANALYZER MODEL 532

The Allison 532 Octave Band Analyzer is a small lightweight spectrum analyzer that is exceedingly easy to operate. The instrument consists of a complete analyzing circuit including attenuator and meter. Used with a sound level meter it will measure signal components in octave bands 56 db below the overall signal level. Used with the Model 533 shown at the right, it will measure and analyze sound from 65 to 130 db sound pressure level. The 532 is also suitable for use with tape recorders and microphone preamplifiers and similar equipment. It is useful for the octave band analysis of environmental noises, complex audio signals, production line testing, noise level acceptance and speech interference levels.

SPECIFICATIONS

SIZE:	6-3/4" × 6-3/4" × 5".
WEIGHT:	7#
PRICE:	$425.00

Model 533

MICROPHONE ACCESSORY MODEL 533

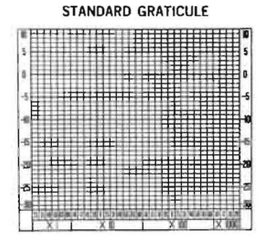
The Model 533 Accessory Kit consists of a very stable and reliable dynamic microphone, tripod, cable and input transformer. This arrangement permits the Model 532 to be used as a sound level meter for sound pressure levels above 65 db. The kit has a 25 foot cable furnished and a 100 foot extension is available. The combination 532 and 533 will make industrial sound survey and analysis simple and accurate.

WEIGHT:	4#
PRICE:	$135.00
100' EXTENSION CABLE	18.75

DEVELOPMENT NOTE

Allison has under development a new solid state sound level meter with an exciting new feature. Watch for it!

1/3 OCTAVE SPECTRUM ANALYZER



Model 540

MODEL 540

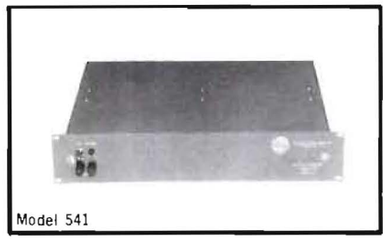
The Allison Model 540 is a new and exciting instrument for 1/3 octave spectrum analysis with many applications. The extreme flexibility of of filter selection over a range of 2.5 cps to 200 kcps makes it suitable for standard or special purpose tests. A repetitive .1 second display of the spectrum allows high speed testing of product or immediate evaluation of design changes and adjustments.

The input signal is fed to a bank of 1/3 octave passive network bandpass filters. The individual filter output is rectified and stored in a capacitor. Each capacitor is sampled consecutively 10 times per second by a motor driven commutator switch. The switch output is amplified logarithmically and the signal is displayed on the calibrated oscilloscope screen shown above. Simultaneously calibration signals are displayed to show instrument accuracy during the test. The filters are continuously open and all signals are received, integrated and stored for display.

The standard Model 540 shown above covers the range of 25 cps to 20,000 cps. Filters are Allison standard Models 241, 242 and 243 (Page 4).

The newness of this instrument prevents a previous background of applications; however, the basic versatility of the unit shows that uses are limited mainly by the frequency range, voltage range and the imagination of the user. It will display the analysis of any repetitive simple or complex waveform or pulses within the above limitations. Many accessories to the standard device can adapt it to various test situations such as a microphone for acoustic input, an accelerometer for vibration pickup, etc. Revisions to the standard model can be made to adapt it to a variety of situations such as narrow band filters or a combination of standard 1/3 and 1/6 octave filters to increase resolution of certain areas, linear rectification only for expanded scale close tolerance measurements, multiple speed scanning motors for recording requirements, special outputs per channel to operate go – no go apparatus. Calibration references permit readout in voltage, decibels re 1 millivolt or sound pressure level.

SIZE:	22" wide × 30" high × 18" deep.
WEIGHT:	300#
PRICE:	$7250.00



Model 541

MULTIPLE FREQUENCY OSCILLATOR MODEL 541

The Model 541 provides a long felt need for a simultaneous multiple frequency test signal. Variations of packaging can provide from 2 to 50 frequencies in in the range from 2.5 cps to 200 kcps. Individual amplitude controls allows shaping of the spectrum as desired. Switches and meters may be added to give the individual or overall reference level.

Primarily designed as a known, controllable test signal for the Model 540 it is adaptable by changing frequencies or number of oscillators. Other uses include shaker table drive signal, programable oscillator, etc. The 541 features all solid state circuitry and self contained power supply. Output is .15 Vrms per freguency and approximately .8 Vrms for 30 oscillators.

WEIGHT:	20#
SIZE:	3–½" × 19" × 14" deep
PRICE: (30 Oscillators)	$950.00

Model 601A

AUTOMATIC INSPECTION UNIT MODEL 601A

The 601A is an improved solid state instrument for rapid automatic inspection of sound or vibration in any product. It consists of an optional transducer, amplifiers, variable filter, attenuator, meter and relay circuits to signal acceptance or rejection of the product under test. The high cutoff, low cutoff or band pass filters cover the range of 60 cps to 20 kcps. When set to pass objectional frequencies it will measure level and operate go – no go indicators or separating devices. This unit is used extensively on gears, bearings and similar products. The instruments may be made with 2 channels of filter and indicating circuits.

SIZE:	10–½" × 22" × 6–¾"
WEIGHT: (Single channel)	33#
PRICE: (Single channel)	$900.00

Model 660

INSTRUMENTATION MODULES MODEL 660

Welded and encapsulated modules are easily adapted to your circuitry whether breadboard or production. The Model 660 is a very low noise flexible preamplifier having adjustable gain and bandwidth. Using only 1 MA of 13.5 to 22.5 VDC it saves space and power. The feedback loop is brought out to pins on the top of the module. This allows customer selection of feedback value for gain and resulting bandwidth. Turned circuits may also be inserted for selective amplification. Molded in 6–32 inserts simplify mounting. Transistors are readily serviced since sockets are also molded in.

GAIN AT 1 KCPS	20 to 40 db.
GAIN STABILITY	±.5 db 0°c to 50°c.
INPUT IMPEDANCE	40,000 ohms.
AVERAGE CURRENT	1 MA.
SIGNAL TO NOISE RATIO	85 db.
FREQUENCY RESPONSE	20db 10 cps to 1 mcs. 40db 10 cps to 50 kc.
PRICE 1–4:	$31.50

See pages 12 & 13 for more new modules to extend power and signal conditioning capabilities of these handy building blocks.

Model 659

MODEL 659

Another welded and encapsulated module designed to be used in filter driver applications. An output of 6 volts into 600 ohms with an input impedance of 40,000 ohms makes it suitable for many other circuits. Again, as in the Model 660, it has an open feedback loop for variation of gain and bandwidth. Used in conjunction with the Model 660 and 671 meter system it forms a transistorized voltmeter with sensitivity to .001 volts rms.

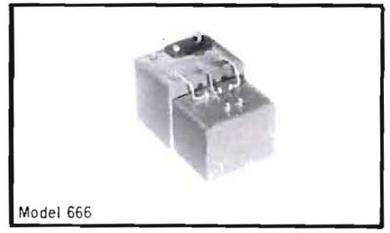
GAIN AT 1 KCPS	30 to 40 db.
GAIN STABILITY	.5 db 0° to 50°c.
INPUT IMPEDANCE	40,000 ohms.
AVERAGE CURRENT	2 to 17 MA.
FREQUENCY RESPONSE	30db 10 cps to 400 kcps 40db 10 cps to 100 kcps
PRICE 1–4:	$37.50

For multiple channel use from common power source use Model 658. Same performance on constant 12 MA current (Class A).

VARIABLE GAIN KIT MODEL 661

Provides self mounted variable control as well as shielding when used in multiples for high gain applications.

PRICE:	$8.00



Model 666

POWER SUPPLY MODEL 666

The Allison Model 666 regulated power supply is a solid state dual module device. Designed primarily for the operation of various Allison modules, it may be used for many other instrumentation applications.

The two unit design offers a variation of mounting arrangements for minimum space and convenience. It also allows variation on the transformer when somewhat larger or smaller power requirements occur.

The 666 will produce 100 millivolts of well regulated 25 volts for operation of as many as 6 Model 659, 8 Model 658, 10 Model 660 or combinations of these.

SPECIFICATIONS

INPUT POWER:	110–130 50–60 cps 5 V.A.	
OUTPUT VOLTAGE:	25 VDC ±1 V	
CURRENT OUTPUT:	100 Milliamps DC Max.	
OUTPUT RIPPLE:	3 Millivolts.	
SIZE:	Trans.	Rect. – Reg.
	1-13/16 x 1-1/2 x 2-1/2	1 x 2-1/8 x 2-1/8
WEIGHT:	8 oz.	
PRICE:	$50.00	

Model 671

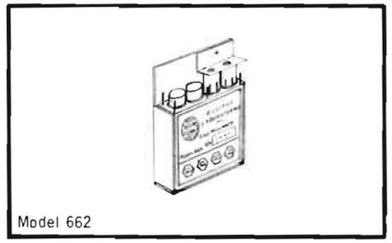
METER SYSTEM MODEL 671

This model offers an extremely simple method of monitoring AC voltages or decibels in systems or instrumentation. The full wave bridge rectifier is welded and encapsulated for easy mounting either adjacent or remotely from the meter. Used with the Models 660 and 658, it forms a transistorized voltmeter with .001 volts sensitivity and frequency response from 10 cps to 50 kcps. Meters are available with either or both AC volts and decibels. The meter used is a 2-½" standard 3 screw mounting type. Indication is quasi rms. An extra terminal is provided for either slow or fast meter damping for measurement of constant or fluctuating voltages.

SPECIFICATIONS

SENSITIVITY:	"0" db = .66 volts
	+10 db = 2.1 volts
FREQUENCY RESPONSE:	-5 db at 20 cps & 600 kcps
INPUT IMPEDANCE:	19 k ohms
PRICE:	$35.00 (Standard scale)

PRELIMINARY ANNOUNCEMENT OF NEW PRODUCTS



Model 662

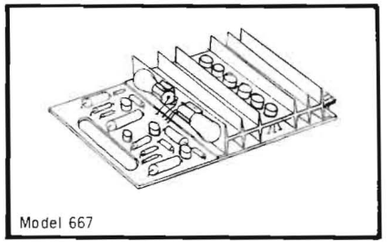
600 MILLIWATT AMPLIFIER MODEL 662

Following the successful pattern of welded and encapsulated modules, we are adding to the line. This module will make the next step in power decades from 60 MW to 600 Milliwatts. Revision of circuitry and addition of heat sinks make this increase in power practical in almost the same size as the 659.

Expected specifications are as follows:

INPUT IMPEDANCE:	40 k.
VOLTAGE GAIN:	Variable–30 to 40 db.
AVERAGE CURRENT:	3 MA No Sig. 20 MA Max. Sig.
SIGNAL TO NOISE RATIO:	85 to 90 db.
HARMONIC DISTORTION:	.3%.
EQUIVALENT INPUT NOISE:	20.
OUTPUT VOLTAGE:	Approximately 6 to 9 volts.
EDC:	30 volts.

We expect the price to be $43.00 or less.



Model 667

6 WATT AMPLIFIER MODEL 667

A third step in the power amplifier decade series will be the Model 667 6 watts of clean sine wave or complex wave with a 30 db of gain. We are shooting for frequency response of 10 cps to 50 kcps, low noise, low distortion and those most desirable features as high input and low output impedance. The package shown is a preliminary version and the package may change to a more compact design. To aid us further in this final development we would appreciate your comments on such features as size, power, voltage gain, frequency response, etc. that are important to your applications. Write to R.E. Allison at P.O. Box 515, La Habra, California.

We expect to price this model at $65.00 or less.

Model 677

LINEAR RECTIFIER MODEL 677

A solid state rectifier having a 40 db linear range. This unit produces a linear analog of AC voltage presented to it over the range of .05 to 5 volts. Complex voltages are converted on a quasi rms basis. Input frequency range is 20 cps to 20 kcps ±.5 db. Input impedance is approximately 600 ohms and is designed to work from a low impedance output such as the Model 659. Output DC voltage is approximately twice the AC input and the output impedance is 10,000 ohms and designed to work into a load of 100,000 ohms or more.

SIZE: 1-½" × 1" × 1-¼"

WEIGHT: 3 oz.

PRICE

We expect the price to be $35.00

THIS SPACE

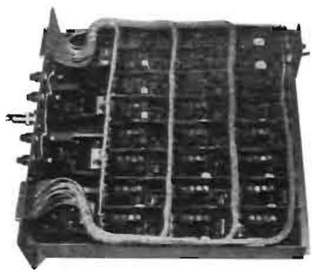
RESERVED FOR ANOTHER

NEW ITEM COMING

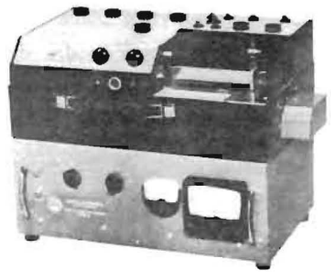
SOON.

(High temperature noise sources and preamplifiers)

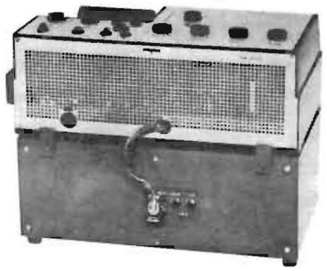
Model 607



48 Channel Linear Rectifier



Model 570



2 Channel Noise & Transmission Recorder

SPECIAL INSTRUMENTS CONSTRUCTED WITH ALLISON MODULES

Above are two examples of special instruments designed and produced by Allison Labs. The complete familiarity with our building blocks and their application makes it possible for us to save you many engineering and test hours. Send your problems in the area of filtering, amplification, rectification, analysis, etc.

We cover the full frequency range between a fraction of 1 cps to 1 megacycle in control, amplification, rectification. Filters range from 1 cps to 600 kcps. The use of welded solid state circuitry prevents microphonics and provides minimum maintenance with maximum reliability.

If you haven't seen just what you need -- write giving your specifications. We may be able to adapt a standard unit to your application or have what you want in development.

IN DEVELOPMENT

Allison Labs is constantly searching for new instruments and instrumentation components to broaden our coverage of the sub audio, audio and low RF range. We are particularly working on filtering, signal conditioning and analysis equipment. In addition to increasing the number and variety of off-the-shelf equipment available to you, we welcome your special applications which may require new methods and techniques or special adaptations of our standard equipment. Many special filters have been made by combining or dividing our stock type instruments.

Items now in development which may solve some of your problems are:

1. New low frequency amplifiers to be welded and encapsulated will join the module family. Response to .05 cps and out to 600 kcps in one unit. Probable 2 models differentiated by input and output impedance requirements.

2. Two more additions to the Random Noise Source similar to the Model 655. One low frequency which will use the above amplifier and produce a good random signal down to .05 cps. The second to extend the range to at least 1 megacycle on the upper end.

3. A new meter system to provide wide range measurements (100 – 1) of either AC voltage or db for sinusoidal or complex wave forms. The meter will be calibrated in linear DB (40) or logarithmic volts RMS. With expanded range much decade range switching will be avoided.

4. Higher power modular amplifiers with bandwidths from 5 cps to 500 kcps and power to 30 watts which will be combinable to produce 60 watts. Small package and good thermal stability will be additional features.

5. New applications for the excellent 1/3 octave filters in equalizer-analyzer applications. Spectrum shapers with ranges from 2.5 cps to 200 kcps. Featuring slide attenuators for ease of setting and reading.

6. A new package for our long proved variable inductor. Just the inductor but with range of as much as 10,000 to 1 variation in 1 package. (1 millihenry to 10 henrys). A very handy tool in the laboratory.

7. Additional modular power supplies similar to the model 666 which will supply power to our new power amplifiers.

Again if you haven't seen what you need in this, please write – it may be possible in our bag of tricks.

NOTES

FOR TECHNICAL DATA SHEETS AND INFORMATION

WRITE CALL WIRE

ALLISON LABORATORIES, INC.

P. O. BOX 515 • LA HABRA, CALIFORNIA

AREA CODE 213 – OWEN 1-0115

OR

REPRESENTATIVES LISTED

UNITED STATES

If you are in an area without present reps, please contact the factory in writing or call collect to 213–691–0115 or 697–7698. We will provide instruments for trial in these areas just as our reps do in their territories.

Alaska:
Arva, Inc.
P.O. Box 171
Anchorage, Alaska
BRoadway 2–6731

Arizona, Clark County, Nevada:
Williams - Associates
1608 E. Earll
Phoenix, Arizona
277-7858

California (northern):
Dynamic Associates
1011 D Industrial Way
Burlingame, California
344–2521

Colorado, Nebraska, Wyoming and Eastern Montana:
Williams - Associates
4971 Jackson Street
Denver 16, Colorado
388-4391

Hawaii:
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949 McCully Street
Honolulu, Hawaii
993 – 149

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7 Wellington Street
Waltham 54, Massachusetts
TWinbrook 4–1955

Michigan:
The Tiby Company
8701 Fenkell Avenue
Detroit 38, Michigan
TExas 4–9211

Minnesota, North & South Dakota and western Wisconsin:
Pat Lind Electronics Company
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Circle Pines, Minnesota
781–6568

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FA 5–2557

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OLiver 4–6400

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199 Rideau Street
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P. O. Box 487
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