

Here it is!

The Sensational, New, AMECO

CONELRAD MONITOR



NOT JUST A KIT, BUT WIRED
AND TESTED, COMPLETE, READY
FOR OPERATION. PRICED AT A LOW

\$ **14**.95

MODEL CD-1

Completely enclosed in an attractive black case and brushed copper panel with black lettering, the AMECO Conelrad Monitor converts any receiver, having AVC, into an effective conelrad alarm system. When the broadcast station goes off the air, a loud clear tone is immediately sounded in the receiver. A twin triode (12AU7) and two transformers are used in the AMECO unit. The AMECO Monitor is a complete electronic audio alarm. There are no buzzers or relays, or extras to buy.

OTHER FEATURES INCLUDE:

- Easily installed. No leads in radio to cut.
- Connectors provided so that monitor can be plugged in or out of receiver.
- Monitor switch allows receiver to function normally or turns on Conelrad Alarm System.
- Excellent as Code Practice Oscillator.
- Receiver completely silent during the monitoring. No transformer chatter.
- Easily modified for mobile use.
- No potentiometers to vary. No relays to adjust.

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AMERICAN ELECTRONICS CO. N.Y. 59, N.Y.



**AIR ALERT
II
CONELRAD RECEIVER**

**\$46⁵⁰
COMPLETE**

**No additional
equipment
needed**

**Loud self
contained
alarm signal**



CONELRAD monitoring is an FCC requirement.

ALL CAN BE ALERTED

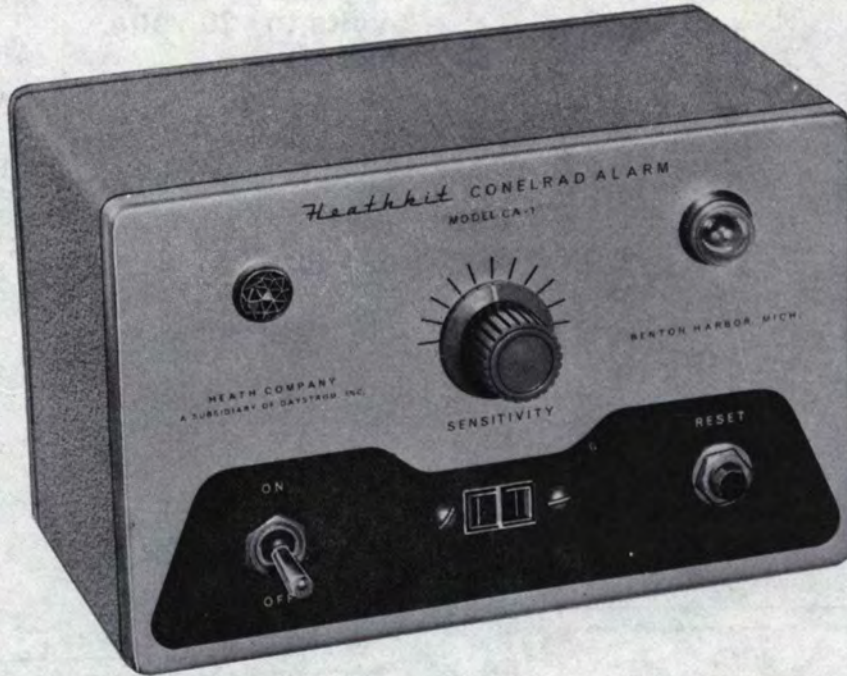
Public Safety Services, Land Transportation, Radio Stations, Fire, Police, Industries, Schools, Hospitals, Civil Defense Directors and Staff, News Services, Amateurs.

1. Meets FCC requirements.
2. Silent and audible monitoring.
3. Self contained alarm.
4. Built-in antenna.
5. Standard radio receiver, with special alarm circuit. Tunable over entire broadcast band.
6. Requires no installation.
7. Designed for continuous operation.
8. Power-on indicator lamp.



1080 DIONNE STREET • SAINT PAUL, MINN.

HEATHKIT CONELRAD ALARM MODEL CA-1

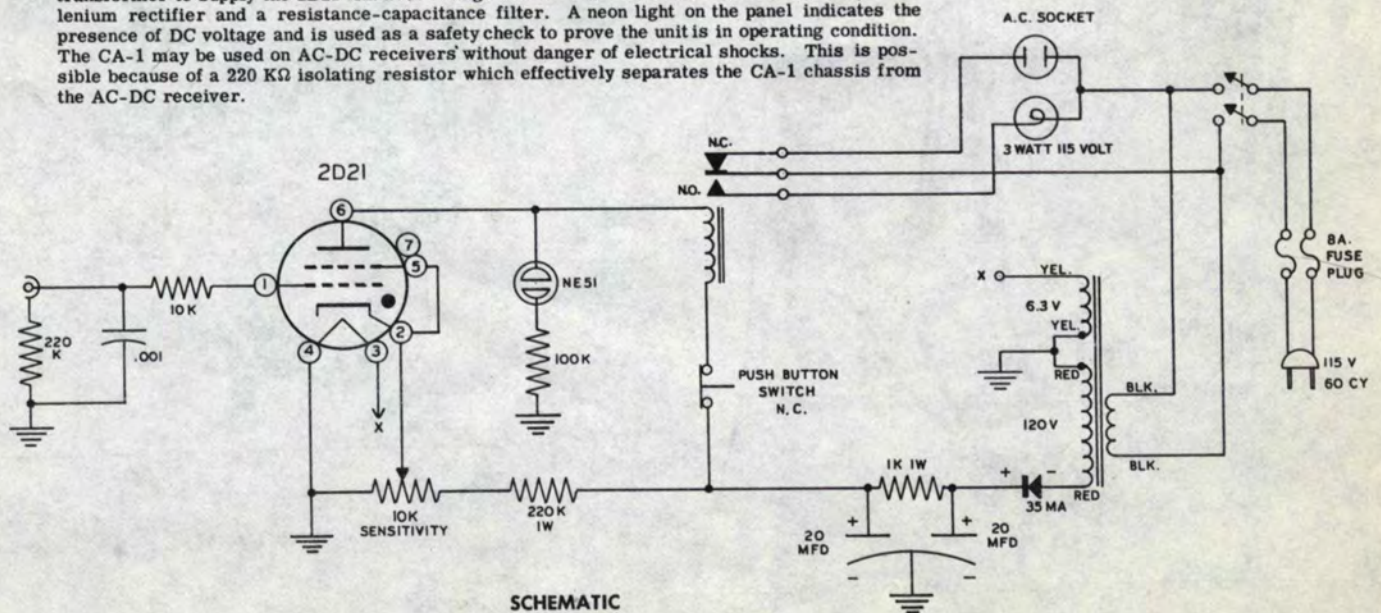


\$13⁹⁵

CIRCUIT DESCRIPTION

The CA-1 uses a 2D21 thyratron as a control tube. This is a gas filled tetrode type tube in which the grid normally exercises control as in ordinary vacuum tubes. However, once the grid loses control it cannot regain this function until the plate voltage drops below the firing point of the gas. In this application the tube acts as a switch which is tripped electrically and must be reset manually. The grid is controlled by a negative AVC (automatic volume control) bias from a broadcast receiver. This keeps the tube cut off until the broadcast carrier wave is interrupted. When the carrier wave is interrupted by a Conelrad alert the tube fires and stays in this state. A relay in the plate circuit is actuated by the current through the tube and removes the AC power from the transmitter. At the same time another contact on the relay lights a red warning light. At the end of an alert when the broadcast station returns to the air, the CA-1 may be reset by depressing the push button on the panel. This removes the plate voltage momentarily and allows the grid to regain control.

A sensitivity control on the panel permits the CA-1 to be adjusted for different AVC levels, which might be encountered in various receivers. The unit is self powered from the AC line and in turn supplies AC power to the transmitter. It has its own power supply consisting of a transformer to supply the 2D21 filament voltage and to obtain isolation from the AC line, a selenium rectifier and a resistance-capacitance filter. A neon light on the panel indicates the presence of DC voltage and is used as a safety check to prove the unit is in operating condition. The CA-1 may be used on AC-DC receivers without danger of electrical shocks. This is possible because of a 220 K Ω isolating resistor which effectively separates the CA-1 chassis from the AC-DC receiver.

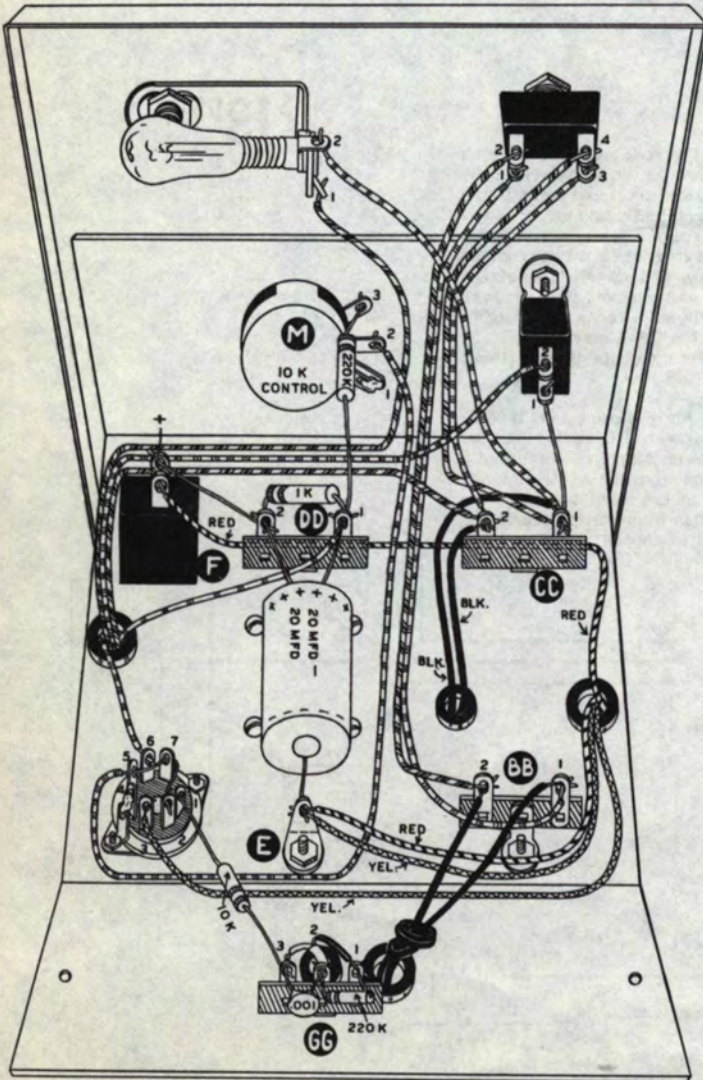


**SCHEMATIC
HEATHKIT CONELRAD ALARM
MODEL CA-1**

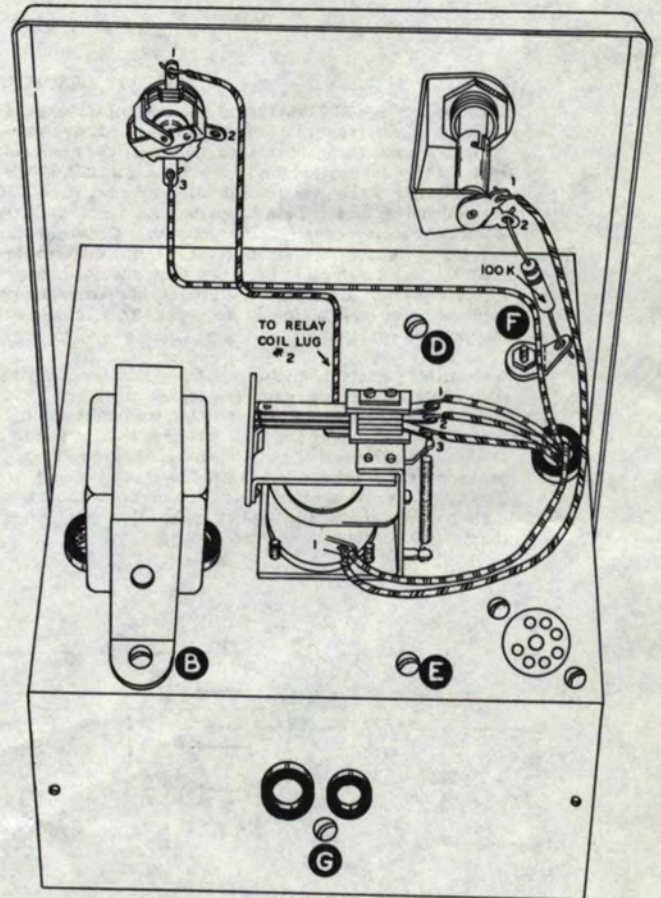
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SPECIFICATIONS

- Tube Complement:**.....2D21 thyatron.
AVC Sensitivity:.....-2 volts to -20 volts.
Operating Power:.....115 volts AC, 60 cycles 7 watts.
Power Capability:.....115 volts AC, 60 cycles 700 watts.
Cabinet Size:.....7 3/8" wide x 4 11/16" high x 4 1/8" deep.
Net Weight:.....3 lbs.
Shipping Weight:.....4 lbs.



PICTORIAL 1



PICTORIAL 2



AIR ALERT I CONELRAD RECEIVER

**Manufactured by Miratel — Designed to control alarm circuits on Conelrad signal
from local or sky wave stations**



\$89⁵⁰

RACK MOUNTED

RECEIVER SPECIFICATIONS 110 VOLT AC

Frequency:—tuneable 550—1600 KC, 1240 and 640 KC indicated on dial.

TUBES: 6BA6 RF amplifier for minimum image problems when operated near local transmitter and maximum sensitivity for sky wave reception. 6BE6 mixer, 6AM8—IF amplifier, second det. and AVC, 1N34 alarm det., 12AT7 first audio and alarm amplifier, 6AQ5 audio output and relay control, 6X4 rectifier.

OUTPUT: Exceeds 3 watts, silent when in alarm position. Speaker operates on alarm.

RELAY CONTROL: Operates on carrier interrupt with 1.5 second delay to eliminate alarm on intermittent overloads of monitored station. Failure of any component or tube will operate alarm and will continue until reset. No adjustments on alarm circuit, operation and sensitivity are automatic. Relay circuit is voltage regulated. External bell circuit and antenna on back terminal board.

CABINET MODEL: \$99.50. Gray metallic hammered finish—
19³/₄"x7"x8¹/₂":



1080 DIONNE STREET • SAINT PAUL, MINN.

RCA * CONELRAD RECEIVER — DESK MOUNT

Type CR-17B • 550-1600 KC

For Reception of Conelrad Radio Alerts and Emergency Weather Warnings

catalog

C.4618



FEATURES

- Meets FCC Requirements
- Designed for Continuous Operation
- Two Tuning Sections—Tunable to Broadcast Band and Preset to Conelrad Frequency
- Silent or Audible Monitoring
- Automatic Visual Indication on Loss of Carrier or Presence of Conelrad Carrier—Provisions for External Alarm
- Automatic Switching Between Broadcast Station and Conelrad Channel
- Fail Safe Indication
- Built-in Ferrite Rod Antenna
- Provision for Connecting External Antenna and Ground in Weak Signal Areas
- Attractive UMBER GRAY Desk Cabinet with Brushed Aluminum Front Panel

APPLICATION

The Federal Communications Commission requires every station in the Amateur, Standard Broadcasting, Public Safety, Special Industrial, and Land Transportation Radio Services to observe all Conelrad radio alerts. Notification of a Conelrad radio alert may be assured by continuously monitoring a broadcast station which will proceed as follows in the event of an alert:

1. Cut the carrier for approximately 5 seconds.
2. Return carrier to the air for approximately 5 seconds.
3. Cut the carrier for approximately 5 seconds.
4. Return carrier to the air.
5. Broadcast approximately 1000 cycle tone for 15 seconds.
6. Make announcement of Conelrad radio alert.
7. Repeat announcement of alert.
8. Remove carrier from air.

Broadcasting of essential information and instructions during the alert will then be made on either 640 or 1240 kc depending upon the facilities available in your area. At the conclusion of the alert, normal operation will be resumed by the station to which the receiver was tuned before the alert.

For emergency weather and flood warnings, the broadcast station will proceed with steps 1 thru 5 and then transmit the emergency weather report.

* CONTROL of Electromagnetic RADiation.



RADIO CORPORATION OF AMERICA

Communications Equipment • Camden, N. J.

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DESCRIPTION

The RCA Conelrad Receiver is designed to provide continuous monitoring of a selected AM broadcast station for reception of Conelrad radio alerts or emergency weather warnings. A tuning knob is provided at the rear of the cabinet for presetting the receiver to Conelrad frequency 640 or 1240 kc, whichever is available in your area. A green pilot light indicates that the receiver is on, and that the carrier of the selected broadcast station is being received. A toggle switch provides either audible monitoring, or silent monitoring to eliminate nuisance noise in your radio room. Absence of a carrier or receiver failure is indicated by a red pilot light.

In the absence of a carrier, the RCA Conelrad Receiver automatically switches between the broadcast channel and the Conelrad channel until a carrier is received. During this process the red light (indicating the absence of a carrier) will remain on. When a signal is received, the receiver locks on that channel, the red light is extinguished, and an orange or green pilot light will indicate which carrier is being received (broadcast channel or Conelrad channel).

CONELRAD RADIO ALERT

In the event of an alert, the receiver automatically (1) lights red indicator on front panel, (2) turns on

the speaker to receive the Conelrad alert message, and (3) switches automatically to the pre-set conelrad frequency and lights orange indicator. A three-position switch on the front panel permits the pre-setting of an external alarm circuit (to which a buzzer, bell, light or other means of indication may be connected) so that (1) the absence of a carrier will actuate the alarm, or (2) the presence of the pre-set Conelrad Cluster Carrier of 640 or 1240 kc will actuate the alarm, or (3) the alarm will remain off. At the conclusion of the alert, the receiver automatically returns to the regular broadcast station to which the receiver was tuned before the alert.

EMERGENCY WEATHER WARNING

In the event of a weather warning, the receiver automatically turns on the speaker to receive the emergency weather report. A switch on the front panel permits the pre-setting of an external alarm circuit (to which buzzer, bell, light or other means of indication may be connected) so that the absence of a carrier or the alerting procedure followed by the broadcast station prior to the transmission of the emergency weather warning will actuate the alarm. At the conclusion of the weather report, the broadcast station will return to its normal programming and the receiver may be re-set for silent monitoring.

SPECIFICATIONS

Frequency Range.....	550-1600 kc
Supply Voltage.....	115 volts, 50/60 cycles
Power Consumption.....	35 watts
Temperature Rating.....	-22° to +122° F. (-30° to +50° C.)
Dimensions.....	Height 9½", Width 13½", Depth 6"
Weight:	
Net	15 lbs.
Shipping	24 lbs.
Finish.....	Umber gray Hammeroid enamel over zinc chromate primer with brushed aluminum front panel
Type of Circuit.....	Superheterodyne
Sensitivity.....	25 microvolts at 640 kc 15 microvolts at 1240 kc
Selectivity.....	40 db down at ±16 kc

Spurious Response.....	Image more than -44 db at 1600 kc
Audio Output.....	1.0 watt
Duty Cycle	Continuous
Tube Complement:	
	(1) 12BE6, (1) 12BA6, (1) 12AV6, (1) 35C5, (1) 12AT7, (1) 35W4

ORDERING INFORMATION

Equipment includes receiver, a-c power supply, loudspeaker, built-in ferrite rod antenna, and one set of tubes housed in an attractive desk cabinet containing a control panel and 6-foot a-c cord with plug. Receiver shipped complete and ready for operation. Simply plug into any 115 volt, 50/60 cycle power outlet.

Specify RCA Conelrad Receiver.....Type CR-17B



CONALERT II

Civil Defense...

Emergency Weather Warning...



The Kaar Conalert II has been selected by the FCC for exhibition in Washington D.C. as a weatherman's "Sentry" to warn of impending emergency weather conditions.

Under the auspices of the FCC, Conelrad Systems may now be used for emergency weather warning in addition to Civilian Defense functions. Local U.S. Weather Bureaus will inform local commercial broadcast stations of impending storms. The stations then send out signals to Conelrad sets that simultaneously switch on their speakers and cause an alarm to be issued, via lights or audibly. This calls the listener

to attention to hear the storm warning which is then broadcast. Though these bulletins are issued over normal broadcast frequencies, the Conalert monitor frees the listener from constantly staying tuned to his radio to get bulletins.

First Warning for impending enemy air attack or disaster is broadcast through the Conelrad Radio Alert. Only by continuously monitoring key radio stations can you be sure of receiving the warning. The KAAR CONALERT II has been designed to do this job for you, silently or audibly — 24 hours a day.

FEATURES:

- Five preset standard broadcast channels including 640 Kc and 1240 Kc.
- Silent or audible monitoring.
- Automatic visual and audible alarm.
- Designed for round-the-clock duty.
- Fail-safe external alarm actuated in case of power or component failure.
- Excellent audio quality — equal to the finest home radio.
- Same low price for either rack or cabinet models.

APPLICATIONS:

- Schools
- Hospitals
- Office Buildings
- Institutions
- Airlines
- Police
- Local and State Government
- Farms and Ranches
- Ports and Harbors

COMPLETE

\$140⁰⁰

F. O. B. PALO ALTO

SPECIFICATIONS

CONALERT II

Model Designations:	117R905 — Standard Cabinet Model 117R906 — Relay Rack Model																
Monitor Channels:	Three fixed, tuned monitoring channels on a selector switch. Two channels adjustable from 550 Kc to 1600 Kc, and the third channel adjustable from 800 Kc to 1600 Kc. (Can be padded lower if needed.) Each channel has provision for separate sensitivity adjustment.																
Conelrad Channels:	Two channels provided, 640 Kc and 1240 Kc.																
Selectivity:	Less than 6 db down at plus or minus 3 Kc. More than 40 db down at plus or minus 14 Kc.																
Alarm Sensitivity:	With RF gain adjustment set to maximum, the relay will pull in and hold with 5 μ v or more; set to minimum, the relay will not pull in with less than 500 μ v.																
Antenna Input:	Separate inputs for high or low impedance antennas.																
Audio Output:	Two watts with less than 10% total harmonic distortion.																
Alarm Indication:	Loss of carrier input activates the following: (1) Red indicator lamp on front panel. (2) Energizes 6.3 VAC external alarm circuit. (3) Closes switch contacts for external alarm circuit. (4) Speaker automatically switched in for monitoring Conelrad messages which follow carrier break. Lock-in circuit keeps alarm activated until manually reset by operator.																
False Alarm:	Momentary carrier breaks and power failures of less than 2 1/2 seconds duration will not cause alarm to operate.																
Fail-Safe Alarm:	Failure of any major tube or component will activate the alarm for immediate attention.																
Monitor Switch:	The monitor switch may be set to monitor either aurally or silently.																
Speaker:	Built-in 5" PM speaker. Provisions to connect external speakers for continuous audible monitoring or simultaneous switching with the internal speaker.																
External Alarm Switch:	An external alarm switch is provided on the front panel which allows the operator to turn off the external alarm circuits.																
Alarm Reset:	May be reset from front panel or from remote location.																
Tube Lineup:	<table><tr><td>6BA6</td><td>RF Amplifier</td><td>6AU6</td><td>Alarm Amplifier</td></tr><tr><td>6BE6</td><td>Oscillator and Mixer</td><td>6AU6</td><td>Relay Control Tube</td></tr><tr><td>6BA6</td><td>IF Amplifier</td><td>6AQ5</td><td>Audio Output Tube</td></tr><tr><td>6T8</td><td>DET, AVC, and 1st Audio</td><td>6AX5GT</td><td>Rectifier</td></tr></table>	6BA6	RF Amplifier	6AU6	Alarm Amplifier	6BE6	Oscillator and Mixer	6AU6	Relay Control Tube	6BA6	IF Amplifier	6AQ5	Audio Output Tube	6T8	DET, AVC, and 1st Audio	6AX5GT	Rectifier
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6BA6	IF Amplifier	6AQ5	Audio Output Tube														
6T8	DET, AVC, and 1st Audio	6AX5GT	Rectifier														
Size:	15" wide x 9" high x 10 1/2" deep. (Cabinet) 19" wide x 8 3/4" high x 9 3/4" deep. (Rack)																
Weight:	21 pounds.																
Shipping Weight:	27 pounds.																
Power Source:	117 volts, 50-60 cycles AC.																



KAAR ENGINEERING CORP.

Canadian Office: 801 Dominion Bldg., Vancouver, B. C.

2995 MIDDLEFIELD ROAD
PALO ALTO, CALIFORNIA

(For other Kaar radio equipment, specification sheets are available upon request)

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THE FCC REQUIRES THAT EVERY
2-WAY RADIO LICENSEE MUST OB-
SERVE CONELRAD RADIO ALERTS.
HERE'S THE SURE WAY TO DO IT.

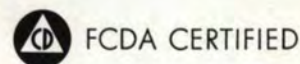
POSITIVE ALERTING*

with **MOTOROLA**
Conelrad Monitor

* *Tone-activated for protection
from false alarms*



CONELRAD MONITOR



ONLY MOTOROLA'S CONELRAD MONITOR HAS THE THREE MOST WANTED FEATURES

POSITIVE ALARM SECURITY—Motorola's Conelrad Monitor is the *only receiver that depends upon both segments of the Conelrad sequence for operation . . . the carrier break and the 1000 cycle tone.* Carrier breaks caused by a normal shutdown of a broadcast station, for example, won't cause a false indication.

FAILURE INDICATION—An *extra and separate* alarm system within the monitor warns you of non-standard operation. The "failure" light gives you 3-way protection, alerting you to (1) abnormally weak received signal, (2) complete absence of carrier, or (3) signal failure in RF, IF or Audio-detector circuits.

CRYSTAL-CONTROLLED CHANNELS—Up to 5 crystal-controlled channels, including the two Conelrad frequencies, give you positive assurance that your monitor will always be on frequency. No need to worry about excessive heat or aging components detuning your receiver. An additional channel is tuneable over the broadcast range.

ADDITIONAL FEATURES


Silent or Audible Monitoring—No need to monitor audible radio programs which distract your personnel. A simple flick of the switch cuts out the speaker, without disabling the alarm. Reception of the carrier break and the 1000 cycle tone automatically turns the speaker on.

Provisions for External Alarms—Contacts for operation of an external alerting device make it easy to operate an alarm system designed for your particular requirements.

Positive Alarm Reception—To assure that it has been heard, the alarm continues until manually reset. If alert is sounded while dispatcher is away from his desk, alarm will remain on, and alerts him when he returns.

High Sensitivity—Only 5 microvolts input signal provides 4:1 signal-to-noise ratio. Reliable alarm operation with received carrier levels as low as 8 microvolts.

Weak Signal Protection—Unique alarm circuitry makes a drop to subnormal received signal level equivalent to a carrier break, assuring alarm operation over wide range of signal levels.



MOTOROLA

Conelrad Monitor

Simple operation... just set it and forget it!

All you need do is turn on the power and select the channel. Then forget it! The dispatcher needn't turn it off every time he goes off duty, because the alarm *can't* be set off on a Motorola Conelrad Monitor by a routine station break.

When both the carrier break *and* the 1000 cycle tone have been received, the indicator lamp will light and the speaker turn on. Dispatcher then switches channel selector to either of the two crystal-controlled Conelrad channels.



(ALERT LIGHT)
Alert lamp lights when bona-fide alert is received.

(FAILURE INDICATOR)
Lamp warns of non-standard operation.



(CHANNEL SELECTOR)
6 channels—2 for Conelrad frequencies, 4 for monitoring

(POWER ON SWITCH)
On-off switch for power

(LIGHT)
Lamp indicates when set is on

(FUSE)
Conveniently located for easy replacement

(OPERATIONS SELECTOR)
Alert... for silent monitoring
Reset... to switch alarm off
Listen... for audible monitoring

(VOLUME)
Full range volume control

GUARANTEED PERFORMANCE SPECIFICATIONS

Frequency Range: 540 to 1600 kc

Selectivity: Less than 6 db down at ± 3 kc; more than 40 db down at ± 15 kc.

Audio Output: 1.5 watts at less than 10% distortion

Temperature Range and Frequency Stability: Stability of crystal-controlled channels is maintained to within $\pm .05\%$ of center frequency from -20° C to $+60^\circ$ C ambient (25° C reference)

Power Input: 117 volts, 60 cycles; 52 watts on standby, 58 watts during alert

Dimensions: Approximately $20\frac{1}{2}$ " wide, $8\frac{5}{8}$ " high, and 12" deep

Weight: 29 pounds (approx.) **Shipping Weight:** 32 pounds (approx.)

Specifications are subject to change without notice

ORDERING INFORMATION

The Motorola Conelrad Monitor is available in two models, one housed in an all-steel cabinet for desktop mounting, and one for mounting on a standard 19" relay rack. Both models have crystal-controlled channels for the Conelrad frequencies of 640 and 1240 kc. and one tuneable channel. Crystals for additional broadcast stations you wish to monitor can be ordered as optional equipment.

For Desktop Model, order DS 9661—B

For Rack-Mounted Model, order DS 9660—B

For Additional Crystals, specify station frequencies desired and order one DS 9662 crystal for each.

Send order to your nearest area headquarters of Motorola Communications & Electronics, Inc.

Western area: 1616 Rollins Road, Burlingame, California

Eastern area: 540 Bergen Blvd., Ridgefield, New Jersey

Central area: 1400 North Cicero, Chicago, Illinois

Southern area: 171 Parkhouse Street, Dallas 7, Texas

CERTIFIED AS COMPLYING WITH FCDA SPECIFICATIONS I-100



MOTOROLA

MOTOROLA COMMUNICATIONS & ELECTRONICS, INC. A Subsidiary of Motorola, Inc. 4501 Augusta Boulevard, Chicago 51, Illinois

Conelrad Monitor

MOTOROLA

The Research Line

FM
2-WAY
RADIO



DESKTOP MODEL DS9661-B




RACK MOUNT MODEL DS9660-B

CONELRAD RADIO ALERT TRANSMISSION

5 seconds carrier off
5 seconds carrier on
5 seconds carrier off
15 seconds 1000 cps tone
Alert message, repeated

CONELRAD MONITOR AM RECEIVER

 FCDA Certified

540-1600 kc.
117 volt 60 cycle operation

POSITIVE ALARM SECURITY—the only receiver for the land mobile services which requires *both* carrier break and 1000 cps tone for alarm operation at normal signal levels—will not falsely respond to carrier loss alone.

CRYSTAL CONTROLLED—to assure optimum reliability—up to five preset crystal controlled channels including 640 kc. and 1240 kc. CONELRAD channels. Additional sixth channel tuneable to any fixed frequency from 540 to 1600 kc.

MULTIPLE ALARMS—reception of full CONELRAD alert signal activates front panel speaker, front panel ALERT indicator light, and dry contacts for operation of an external alarm device.

FAILURE INDICATION—failure indicator light on front panel is illuminated when (1) received carrier is abnormally weak, or (2) received carrier entirely absent or (3) signal failure occurs in RF, IF or audio detector circuits. Abnormal conditions are indicated separately from CONELRAD alarm.

SILENT OR AUDIBLE MONITORING—front panel switch disables speaker for silent monitoring until alert is received.

MANUAL ALARM RESET—when activated, CONELRAD alarm remains "on" until manually reset, assuring cognizance that CONELRAD alert signal has been received.

HIGH SENSITIVITY—4:1 signal-to-noise ratio with only 5 microvolts signal strength—reliable alarm circuit operation on received carrier levels as low as 8 microvolts where received signals are barely audible above background noise.

WEAK SIGNAL RELIABILITY—unique alarm circuitry makes a drop to sub-normal received signal level equivalent to a carrier break, assuring alarm operation over a wide range of signal levels.



MOTOROLA COMMUNICATIONS & ELECTRONICS, INC.

A SUBSIDIARY OF MOTOROLA, INC.

4501 W. AUGUSTA BLVD., CHICAGO 51, ILL., SPAULDING 2-6500

Technical Information Center



MOTOROLA

Guaranteed PERFORMANCE SPECIFICATIONS

MODELS	DS9660-B Rack Mount, DS9661-B Desktop Cabinet.
FREQUENCY RANGE	540-1600 kc.
PRESET CHANNELS	6: 5 crystal-controlled including 640 kc. and 1240 kc. CONELRAD frequencies 1 tuneable (screwdriver adjustment) from 540 kc. to 1600 kc.
INPUT IMPEDANCE	75 Ohms nominal
SENSITIVITY	RECEIVER: 5 microvolts at 30% modulation provides 4:1 signal-to-noise ratio ALARM CIRCUIT: 8 microvolts at 30% modulation
SELECTIVITY	less than 6 db. down at ± 3 kc., more than 40 db. down at ± 15 kc.
TUBE COMPLEMENT AND FUNCTION	6X8 — osc. & mix. 2D21 — carrier break detector 6BJ6 — IF amp. 6AN8 — squelch & 1000 cps. amp. 6BJ6 — IF amp. 6BJ8 — 1000 cps. det. & relay amp. 6AV6 — det. & 1st audio 6BW4 — rect. 6AQ5 — audio output
AUDIO OUTPUT	1.5 watts at less than 10% distortion.
TEMPERATURE RANGE AND FREQUENCY STABILITY	stability of crystal controlled channels is maintained to within $\pm .05\%$ of center frequency from -20° C. to $+60^{\circ}$ C. ambient (25° C. reference)
CONELRAD ALARM	Alarm actuated only when (1) received signal is absent or abnormally weak and (2) 1000 cps. modulated carrier is received. Alarm activates the following: front panel speaker, front panel alarm indicator light, and a pair of dry contacts rated at 5 amps at 117 VAC for an external alarm circuit.
FAILURE INDICATION	an additional front panel light connected to a separate sensing circuit indicates (1) loss of received carrier or (2) abnormally low received carrier level or (3) signal failure in RF, IF or audio detector circuits.
SPEAKER	built-in speaker—back panel jack for external speaker.
POWER INPUT	117 volts 60 cycles: 52 watts on standby, 58 watts during alert.
DIMENSIONS	approximately $20\frac{1}{2}$ " wide x $8\frac{5}{8}$ " high x 12" deep.
WEIGHT	approximately 29 lbs.
SHIPPING WEIGHT	approximately 32 lbs.

Specifications Subject to Change Without Notice

Certified as complying with FCDA Specifications I-100, Item R-21, approvable for purchase under the FCDA Federal Contributions Program.

E-165A
Supersedes E-165 10/56



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