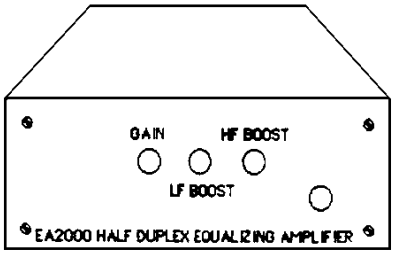

EA2000

Half-Duplex Equalizing Amplifier

Installation/Operation Manual

C632M (2/88)

Pelco • 300 W. Pontiac Way, Clovis, CA 93612-5699 • USA • (800) 289-9100 or (1-209) 292-1981
FAX (800) 289-9150 or (1-209) 292-3827 • DataFAX (800) 289-9108 or (1-209) 292-0435
International customers call (1-209) 292-1981 or FAX (1-209) 348-1120

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INSTALLATION/OPERATION MANUAL
MODEL EA2000
HALF-DUPLEX EQUALIZING AMPLIFIER

1.0 WARNINGS

Prior to installation and use of this product, the following WARNINGS should be observed.

1. Installation and servicing should only be done by Qualified Service Personnel and conform to all Local codes.

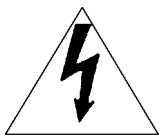
2. Unless the unit is specifically marked as a NEMA Type 3, 3R, 35, 4, 4X, 6 or 6P enclosure, it is designed for Indoor use only and it must not be installed where exposed to rain and moisture.

3. The product may bear the following marks:

4. Only use replacement parts recommended by Pelco.

5. After replacement/repair of this unit's electrical components, conduct a resistance measurement between line and exposed parts to verify the exposed parts have not been connected to line circuitry.

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.



SA 1965

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

SA 1966

CAUTION:
TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION:
RISK OF ELECTRIC SHOCK.
DO NOT OPEN.

Please thoroughly familiarize yourself with the information in this manual prior to installation and operation.

2.0 SCOPE

The information contained within this manual covers the installation and operation of the EA2000 Half-duplex Equalizing Amplifier.

3.0 DESCRIPTION

The EA2000 is a prioritized, half-duplex equalizing amplifier intended for, but not restricted to, use with Pelco's Coaxitron® System 2000 control.

In the absence of a Coaxitron control signal, the amplifier functions identically to an ordinary unidirectional equalizer, providing up tp 8 dB of flat gain and high frequency boost of up to 18 dB at 12 MHz.

In the presence of a control signal, the "forward" equalizing function is temporarily suspended while the control signal is regenerated, pre-equalized and transmitted in the "reverse" direction.

Note that the control direction has priority over the video direction, but that this "interruption" occupies less than one TV line period (excluding sync pulses) and that precautions are taken to insure that the synthetically generated video signal during this interruption does not contain deleterious anomolies.

The EA2000 provides a low cost, highly effective means of maintaining CCTV picture quality in runs of up to 3,000 feet (914 m) of RG59 cable.

Through panel controls provide for adjustable amplifier flat gain of 1-8 dB plus adjustable high frequency boost of from 0 to greater than 18 dB at 12 MHz.

Applications of the EA2000 should be for post-equalization only (located near the Coaxitron transmitter); use as a pre-equalizer is not allowed.

This desk top unit can be rack mounted using the R300 Rack Mount Kit.

3.1 OPTIONS

R300	Rack mount kit (up to 3 units can be racked horizontally)

4.0 INSTALLATION

The EA2000 is designed to be used for post equalization only (located near the Coaxitron transmitter); use as a pre-equalizer is not allowed.

Figure 1 illustrates a typical system installation.

For installation, perform the following steps:

1. Connect the video cable from the Coaxitron receiver to the connector marked "INPUT" on the rear panel.

2. Connect a video cable from the connector marked "OUTPUT" to the Coaxitron transmitter (see Figure 2).

The EA2000 is supplied with a U.L. listed wall transformer which plugs into a 120 VAC outlet and supplies the 12 VAC to operate the unit.

5.0 OPERATION

Optimum performance is achieved if an oscilloscope and a standard EIA resolution chart are used in making gain and boost adjustments. The GAIN control should be adjusted for an output level to 1 volt p-p and the L.F. BOOST control should be adjusted for minimum tilt during sync pulses. The H.F. BOOST control is then adjusted for optimum resolution wedge reproduction.

If the use of a resolution chart is precluded, the H.F. BOOST control should be adjusted for maximum sharpness of sync pulse edges — without overshoot.

In the absence of an oscilloscope, a less precise (but often equally satisfactory) adjustment can be made as follows:

1. Set the GAIN and BOOST controls approximately 1/3 turn from fully counterclockwise.

2. Adjust GAIN control for satisfactory overall picture contrast.

3. Adjust L.F. BOOST control for optimum detail. Too much boost (clockwise) can cause picture instability and/or smearing (trail).

4. Adjust the H.F. BOOST control to further optimize picture detail. Note that the effectiveness of this control is hardly perceptible unless very fine picture detail is present in the camera signal output. An excessive setting of this control (clockwise) can, however, increase picture noise.

6.0 MAINTENANCE

Under normal operating conditions and usage, maintenance of this equipment is not necessary. The EA2000 has no operator serviceable components and should be serviced by a trained technician or returned to the factory for repair.

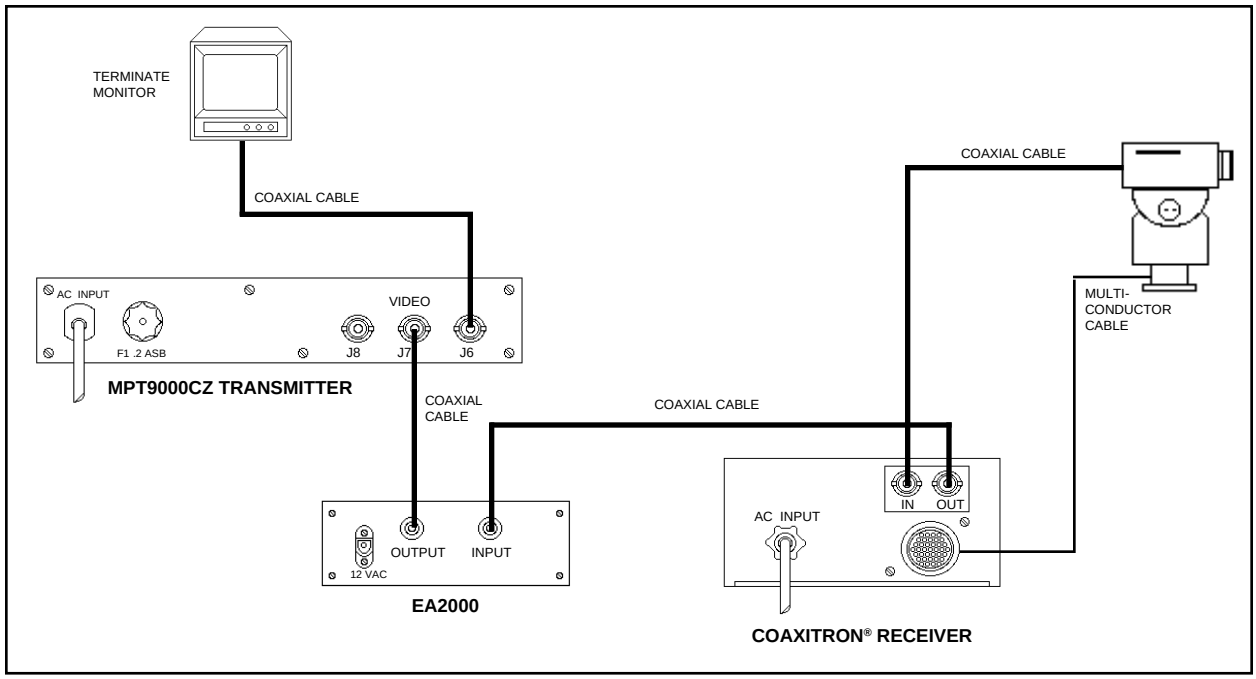


Figure 1. Typical Installation Configuration

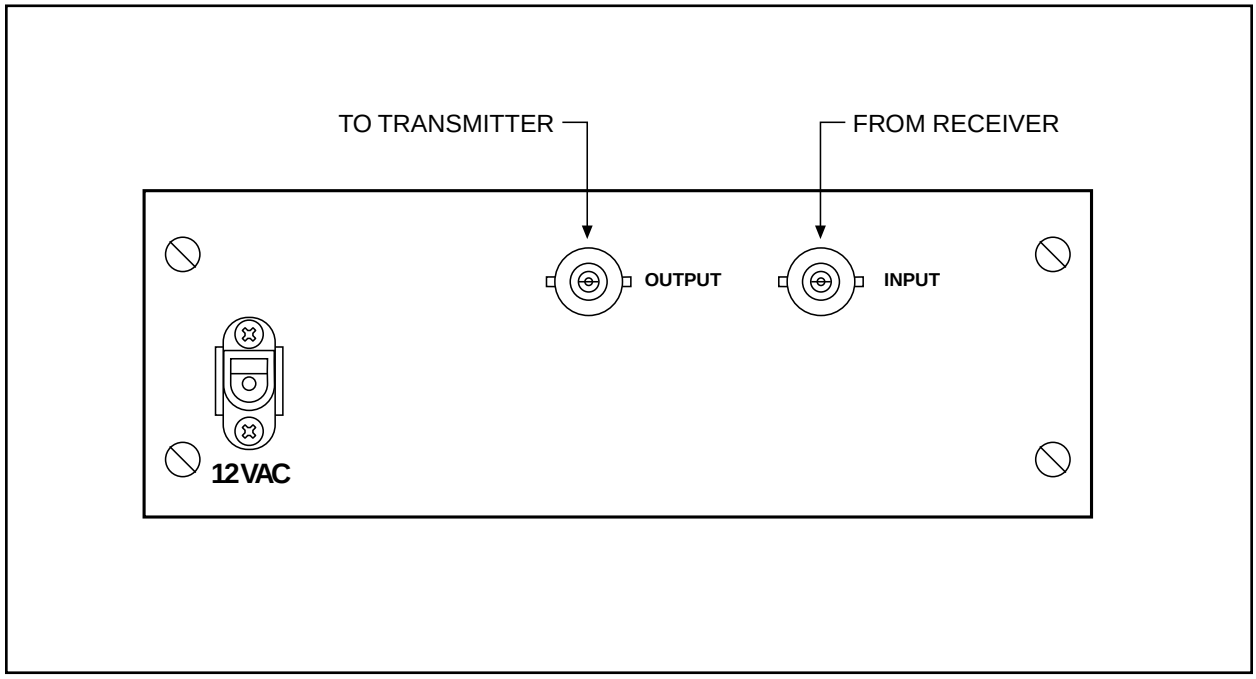


Figure 2. EA2000 Cable Connections

7.0 PARTS LIST

The following list corresponds to the exploded assembly diagram in Figure 3.

Item	Qty	Description	Part Number
1	1	Connector, DC power jack #16 PJ221	CON16PJ421
2	2	Connector MTA 2-position cable w/socket	CON640428-2
3	1	Connector MTA 3-position cable w/socket	CON640428-3
4	2	Connector, BNC CP1094ULNSD CAM00	CONUG1094/U
5	1	Chassis, univ M1CA	M1CA4001COMP
6	1	Chassis cover, univ M1CA	M1CA4001COMP
7	1	Panel front, EA2000	PANEA4004COMP
8	1	PCB assembly, half-duplex equalizer	PCB9000104ASSY
9	1	Panel, rear EA2000	RPEA4000COMP
10	4	Spacer, 1/4" hex x .375 4-40 tap	SPA8402
11		Not used	
12	1	Lug, BNC ground	ZH1497
13	2	Screw, 2-56 x 3/16" pan slot SS	ZH2-56X.187SPS
14	8	Screw, 4-40 x 1/4" pan Philips SS	ZH4-40X.250SPP15
15	8	Screw, 4-40 x 3/8" pan Philips Blk	ZH4-40X.375BPP
16	4	Screw, 4-40 x 3/8" pan Philips SS	ZH4-40X.375SPP
17	12	Washer, internal star #4 SS	ZH4LWSIS

8.0 EXPLODED ASSEMBLY DIAGRAM

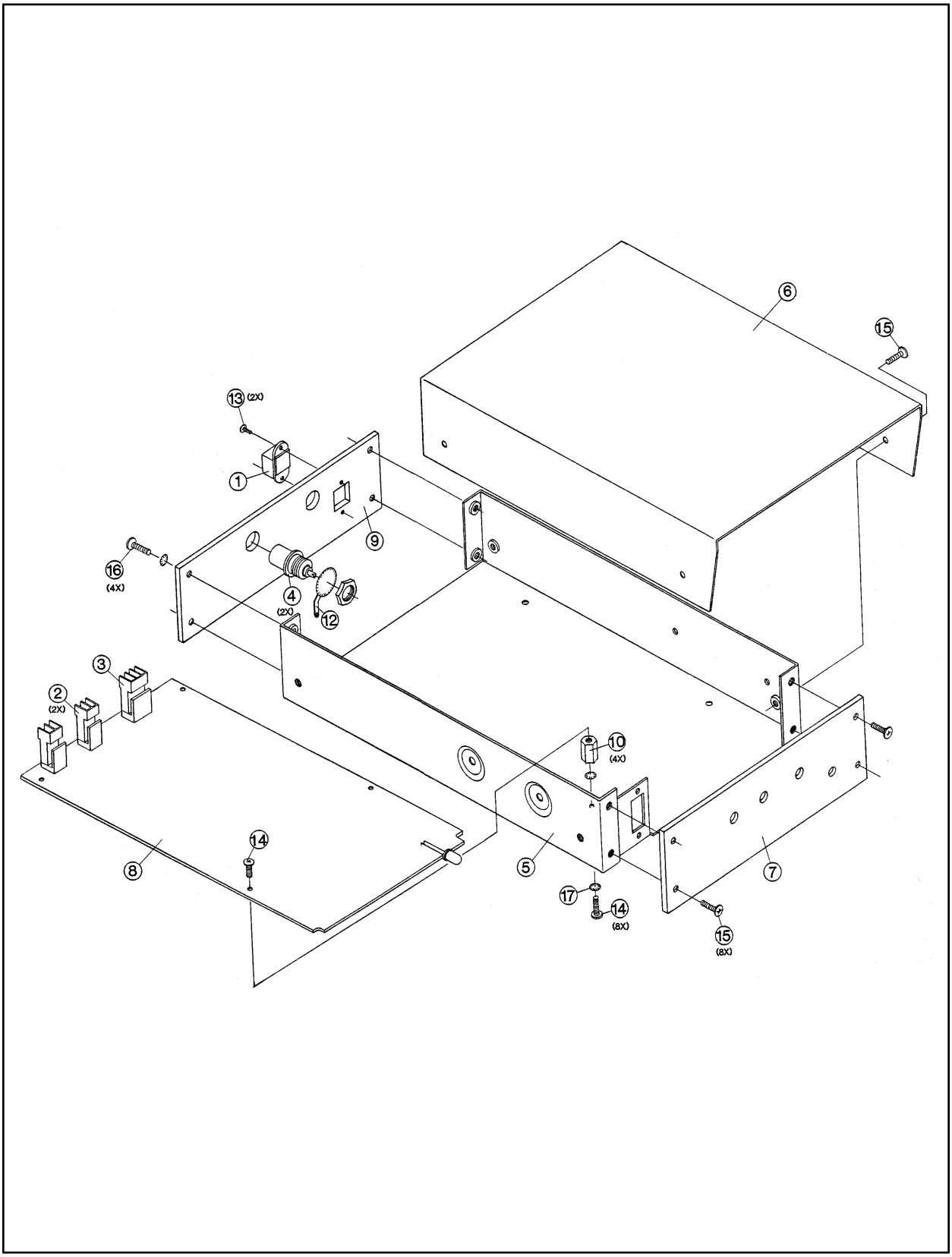


Figure 3. EA2000 Exploded Assembly Diagram

9.0 SCHEMATIC

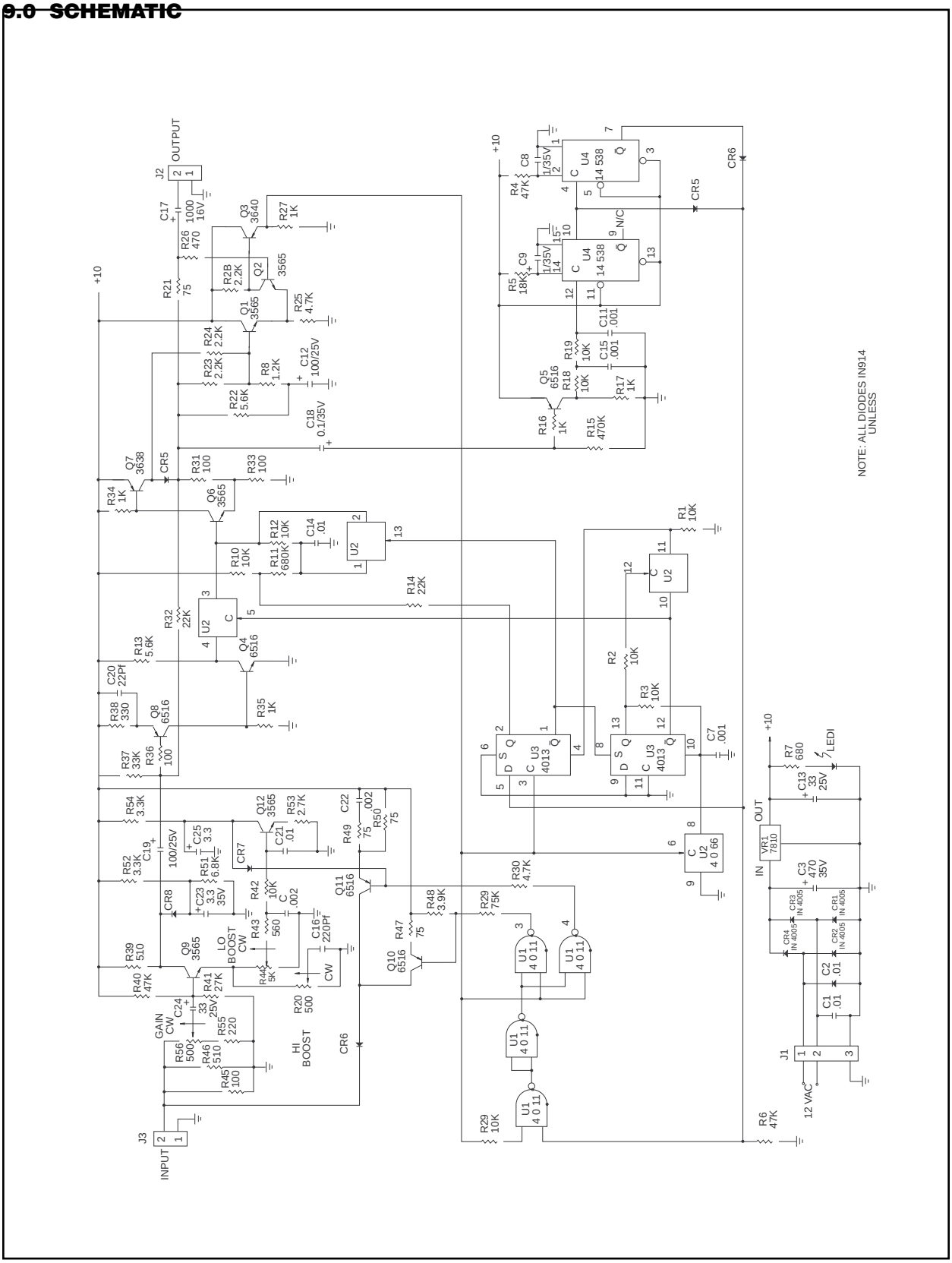


Figure 4. EA2000 Schematic (PCB9000104)

10.0 SPECIFICATIONS

MODEL

EA2000	Half-duplex Equalizing Video/Control Amplifier
EA2000/220	Same as EA2000 except 230 VAC operation

ELECTRICAL

Input:	Single (BNC) internally terminated in 75 ohms
Output:	Single (BNC) source terminated
Frequency Response:	Adjustable from flat (±1 dB) at 12 MHz to greater than 18 dB of boost at 12 MHz
Gain:	Adjustable from 1–8 dB
Output Dynamic Range:	Up to 2 volts p-p at 50% APL Up to 1.5 volts p-p at 90% APL
Tilt:	Less than 2%
Power Requirements for Transformer:	1.5 vA (.125 amp) at 12 ±15% volts RMS 50-60 Hz from a dedicated, isolated source

Cable Lengths:

Cable Type	Maximum Effective Distance
RG59	3,000 feet (914.4 m)
RG6	4,500 feet (1371.6 m)
RG11	6,000 feet (1828.8 m)
RG15	8,000 feet (2438.4 m)

GENERAL

Environment:	32° to 122°F (0 to 48.89°C) 0-90% relative humidity
Dimensions:	see Figure 5
Weight:	3 lbs (1.35 kg)
Shipping Weight:	4 lbs (1.81 kg)
Construction:	
Chassis	Steel, zinc plated
Cover	Aluminum, black polyester powder coat
Panel	Aluminum, black polyester powder coat with white silk screening

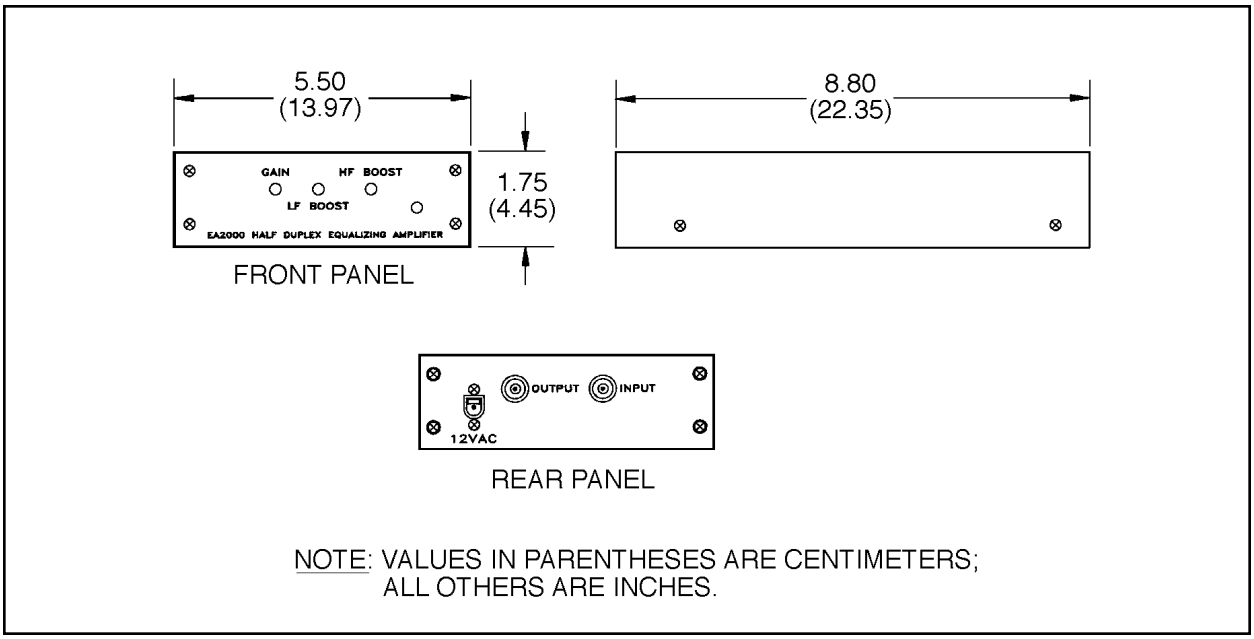


Figure 5. EA2000 Dimension Drawing

11.0 WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship for a period of one (1) year after the date of shipment. Exceptions to this warranty are as noted below:

- Two (2) years on all standard motorized and fixed focal length lenses.
- Two (2) years on Legacy®, Intercept®, CM8500/CM9500/CM9750 Matrix and DF8 Fixed Dome products.
- Two (2) years on WW5700 series window wiper (excluding wiper blades).
- Two (2) years on cameras.
- Six (6) months on all pan and tilts, scanners or preset lenses used in continuous motion applications (e.g., preset scan, tour and auto scan modes).

Pelco will warranty all replacement parts and repairs for 90 days from the date of shipment. All goods for warranty work shall be sent freight prepaid to our Clovis, California facility. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty. Pelco is not liable for any incidental or consequential expenses or liability incurred by the customer as a result of field repair, installation, or any other reason.

The above warranty is in lieu of any other expressed or implied warranty, condition, or guarantee by Pelco of the equipment listed herein. Pelco makes no warranties except for intended use and will not be liable for any loss, damage, or costs arising, whether consequential or incidental, from the use of said merchandise.

This warranty gives you specific legal rights. You may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, contact Pelco at **(800) 289-9100** or **(209) 292-1981** for a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Ship freight prepaid to: Pelco
300 West Pontiac Way
Clovis, CA 93612-5699

Method of return shipment shall be the same as method by which the repair item is received by Pelco.

RETURNS

In order to expedite parts returned to the factory for repair or credit, please call the factory at **(800) 289-9100** or **(209) 292-1981** to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair). Goods returned for repair or credit should be clearly identified with the assigned CA/RA number and freight should be prepaid. All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Ship freight prepaid to: Pelco
300 West Pontiac Way
Clovis, CA 93612-5699