

Description

Introduction

The AC Voltage transducer (PAV) is a compact instrument that accepts an ac voltage input and provides a proportional dc current output. This transducer responds to the average value of the input signal. The unit is calibrated to indicate the RMS value of a sinusoidal waveform.

The PAV is available in a single or triple configuration. The triple unit has three totally independent transducers sharing a single housing.

Installation

Mechanical Installation

The PAV is enclosed in an extruded aluminum housing. The mounting plate features keyhole cutouts so that the entire housing can be removed by just loosening the screws. See the Surface Mount (SM) housing sheet for a physical outline and mechanical installation requirements.

Electrical Installation

All electrical connections are made to the terminal block on the front of the unit. See figure 1.

External Power. If the unit is powered externally, connect 120Vac to the terminals marked EXT PWR. Internally powered units have the electronics power supply fed from the potential transformer connections at terminals 3 and 4.

Voltage (potential). All voltage connections are to high impedance terminations, which are balanced and isolated from each other.

Provided that the proper voltages are present, either side of any voltage input may be commoned and/or connected to ground.

Output

Constant current outputs do not react to resistance changes in the wire, within the very wide ranges specified, so that no calibration is required to compensate for lead length. If a voltage input is required by the measuring or telemetry equipment a precision resistor can be placed at the measuring end to create a voltage from the constant current. The low impedance constant current loops are not as susceptible to noise and transients as are voltage outputs, but should be protected by using shielded wire if the cable runs exceed 65 feet. Outputs from several transducers can be run in one common shield. The shield should be firmly grounded at one end only.

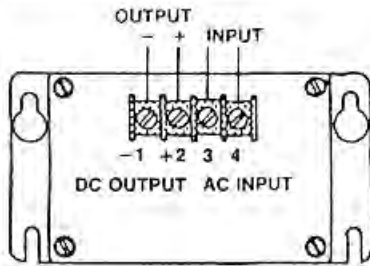
Calibration

Introduction

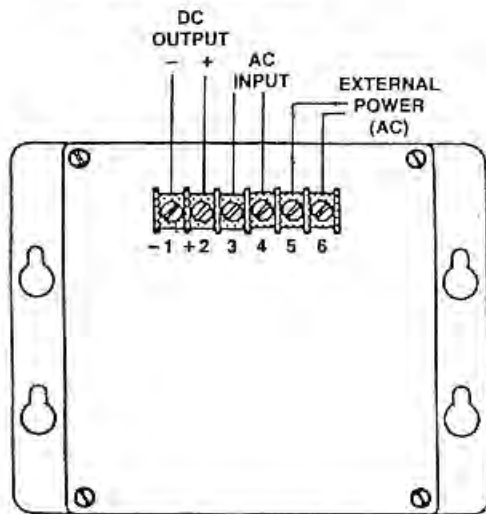
This section provides information necessary for unit calibration. Each unit is calibrated and checked for proper performance at the factory before shipping.

Equipment Required

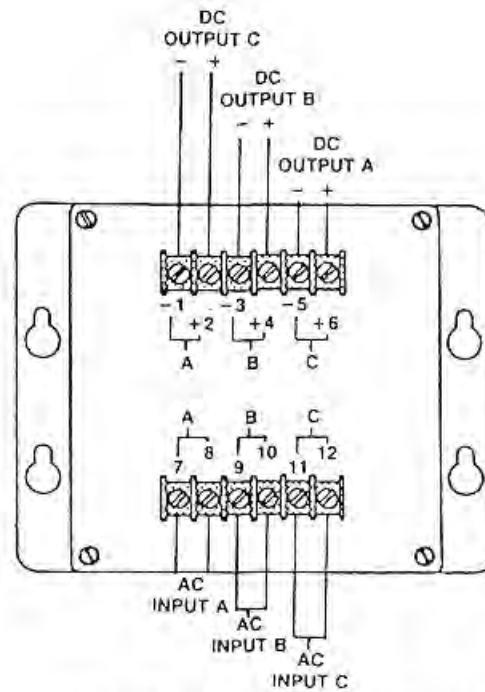
- Voltage or current source: Rotex Model 811A or equivalent.
- Wire-wound precision resistor, 1K ohm for 0-1mA output, and voltmeter. Both with 0.05% accuracy or better. Milliammeter with 0.05% accuracy can be used instead of the voltmeter and precision resistor.



PAV Small Case Connections



PAV Large Case Connections, Single Configuration



PAV Large Case Connections, Triple Configuration

Figure 1. Electrical Connections

WARNING

USE EXTREME CARE WHEN CALIBRATING UNIT. HIGH VOLTAGES ARE PRESENT. VOLTAGES PRESENT CAN BE LETHAL.

Procedure

PAV Single (standard), Zero-based Outputs, Self-powered (0-1mA output)

Connect the equipment listed above as shown in figure 2. Measure the 0-1mA output as 0-1 volts across a 1K ohm wire-wound precision resistor or current meter. Apply

Specifications subject to change

100% input. Adjust the CAL potentiometer for 100% output. Apply 10% input. Read 10% $\pm 0.1\%$. Apply 50% input. Read 50% $\pm 0.1\%$.

PAV Single, 4-20mA/1-5V Outputs with External Power

Connect the equipment as shown in figure 2. Measure the 4-20mA output as 1-5 volts across a 250 ohm wire-wound precision resistor or current meter. Apply 0% input. Adjust the ZERO potentiometer for 0% output. Apply 100% input. Adjust the SPAN potentiometer for 100%. Apply 50% input. Read 50% $\pm 0.1\%$. Apply 10% input. Read 10% $\pm 0.1\%$.

$\pm 0.1\%$. Apply 10% input. Read 10%
 $\pm 0.1\%$.

PAV Triple Configurations

For triple configurations repeat the above steps three times.

PAV Expanded Scale

Follow the procedures for the unit with the proper output (0-1mA or 4-20mA).

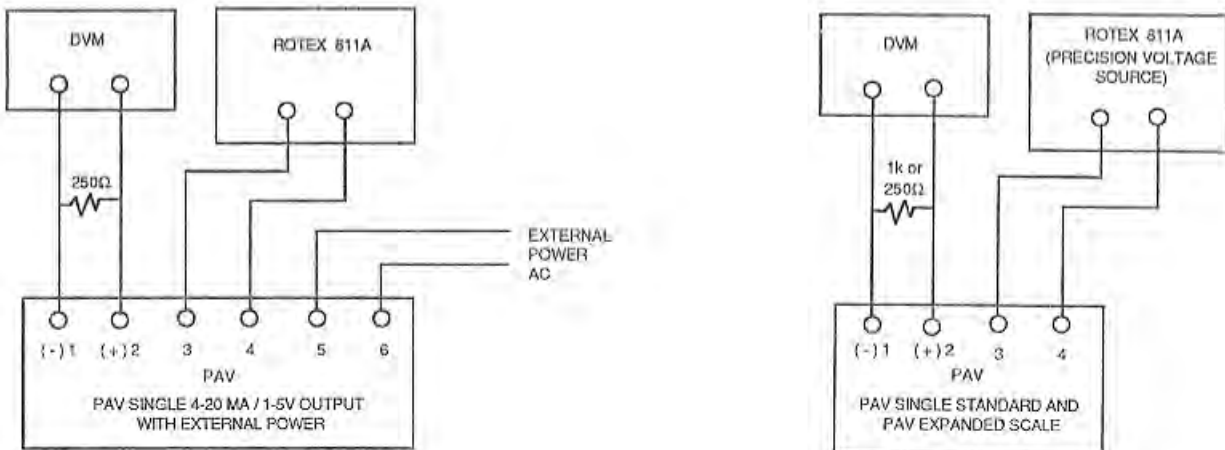


Figure 2. Calibration Procedures



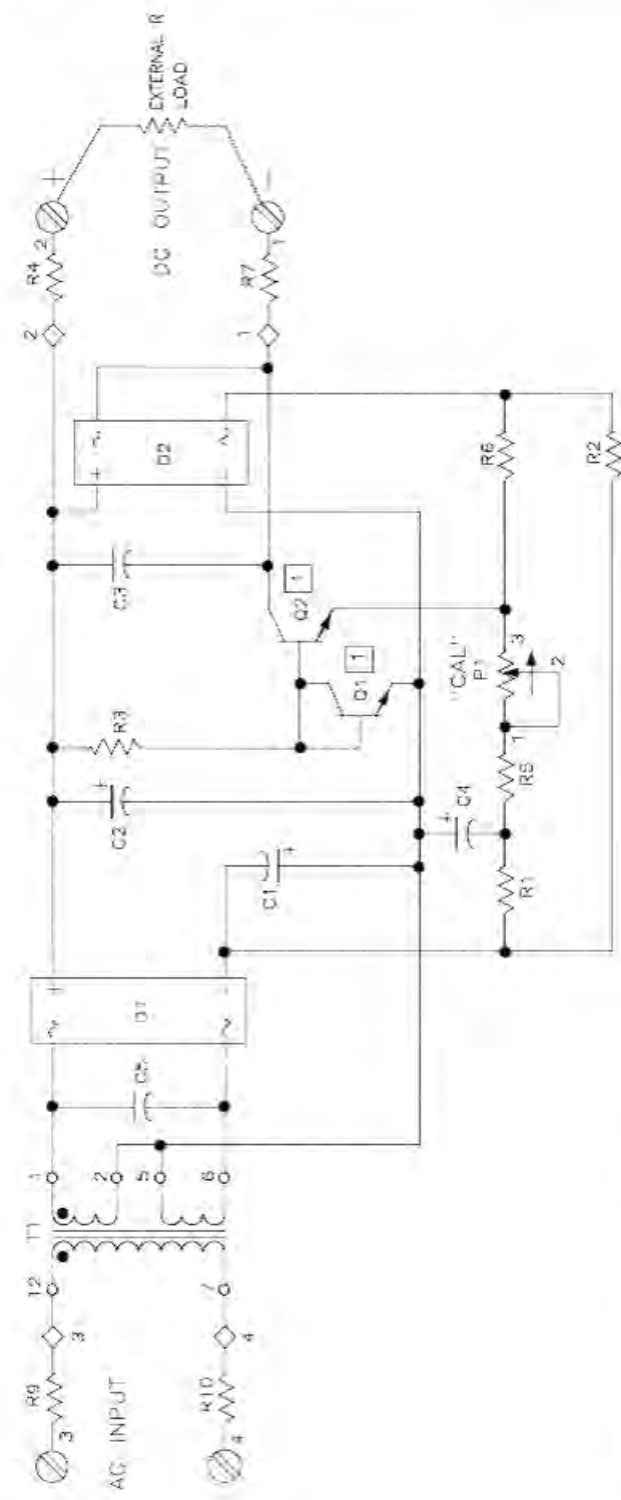
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OVERSIZES IN INCHES	

SCHEMATIC	
PAV	
SINGLE STANDARD	
(0-BASED OUTPUTS)	

FORMAL NUMBER		REVISION	
324-401-00		A	
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- 4. CONNECTION ON TERMINAL BLOCK.
- 3. INDICATES WIRING PAD ON P. C. BOARD.
- 2. REF.: INPUTS AND OUTPUTS MUST BE ZERO BASED (EG. 0-150VAC AND 0-1MA).
- 1. Q1 AND Q2 ARE THERMALLY CONTACTED.

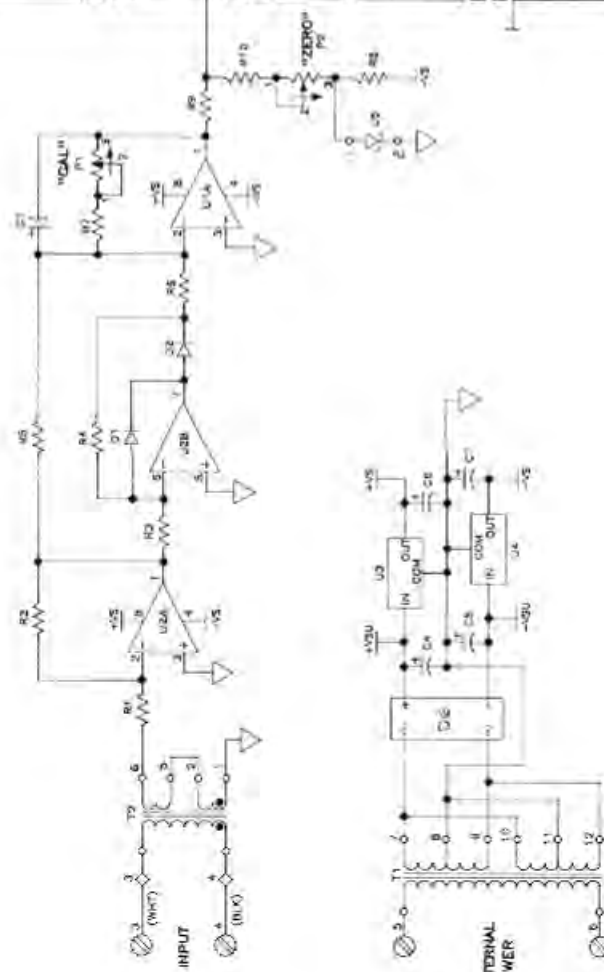
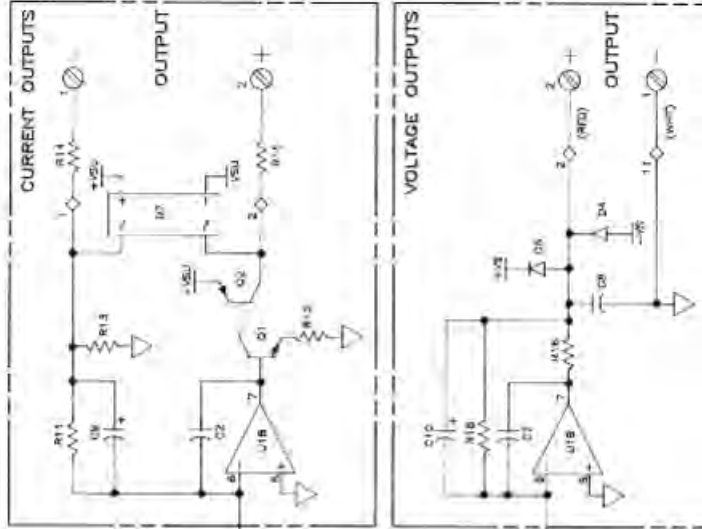
NOTES-



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2. CONNECTION ON TERMINAL BLOCK.
 1. ⊕ INDICATES WIRING PAID ON P. C. BOARD.
 NOTES:

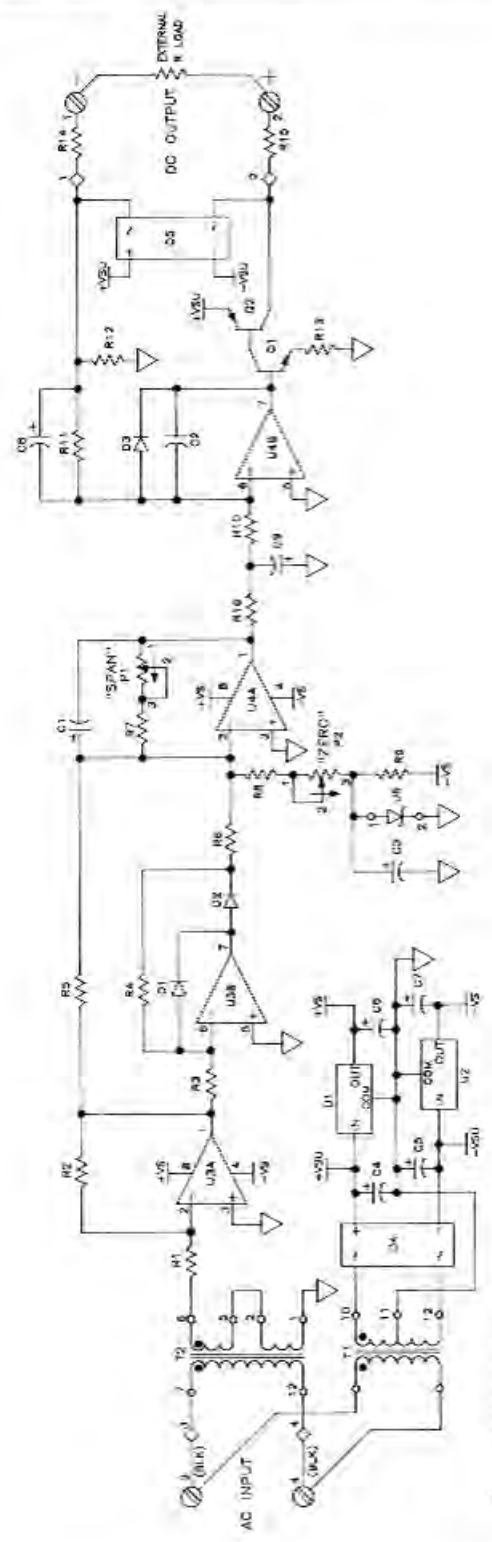
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SCHEMATIC
 PAV
 SINGLE
 EXPANDED SCALE

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- 3. WIND PAD ON P. C. BOARD.
 - 2. CONNECTION ON TERMINAL BLOCK.
 - 1. INPUTS ARE EXPANDED SCALE (E.G. 80-150VAC).
- NOTES-



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DIAMETRIC		
SCALE		

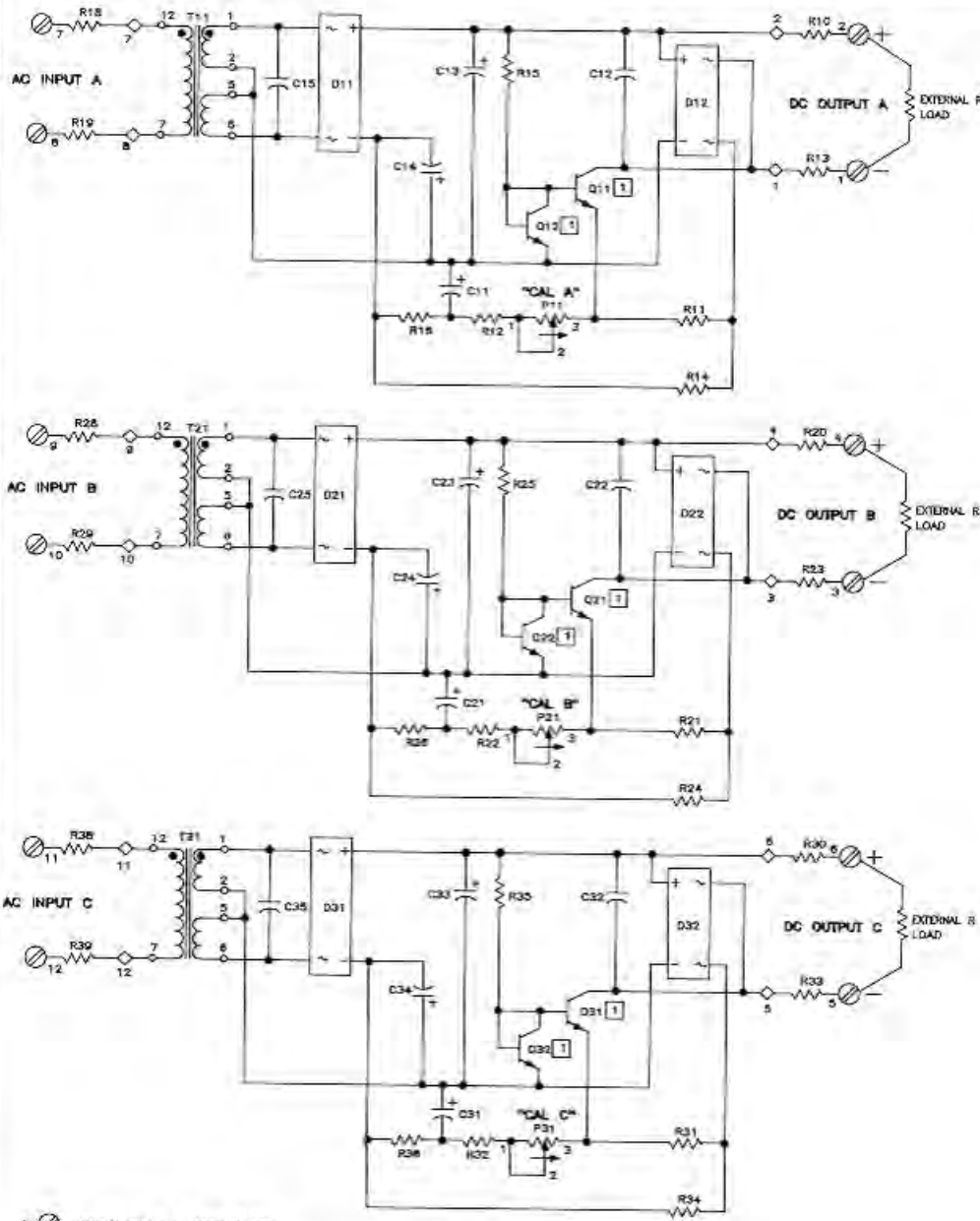
SCHEMATIC
PAV
TRIPLE
CONFIGURATION

324-404-00

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AC 324-404-00 PAV TRIPLE CONFIGURATION. This drawing and the information contained herein are the proprietary property of Moore Industrial Information, Inc. (MII) and should not be used, copied or disclosed to any third party without the written consent of an authorized officer of MII.



1. CONNECTION ON TERMINAL BLOCK.
 2. INDICATES WIRING PAD ON P. C. BOARD
 3. REF.1 INPUTS AND OUTPUTS MUST BE ZERO BASED (EG. 0-150VAC AND 0-1MA).
 4. THE FOLLOWING TRANSISTORS ARE THERMALLY CONTACTED:
Q11 TO D12, Q21 TO D22 AND Q31 TO D32.
- NOTES-



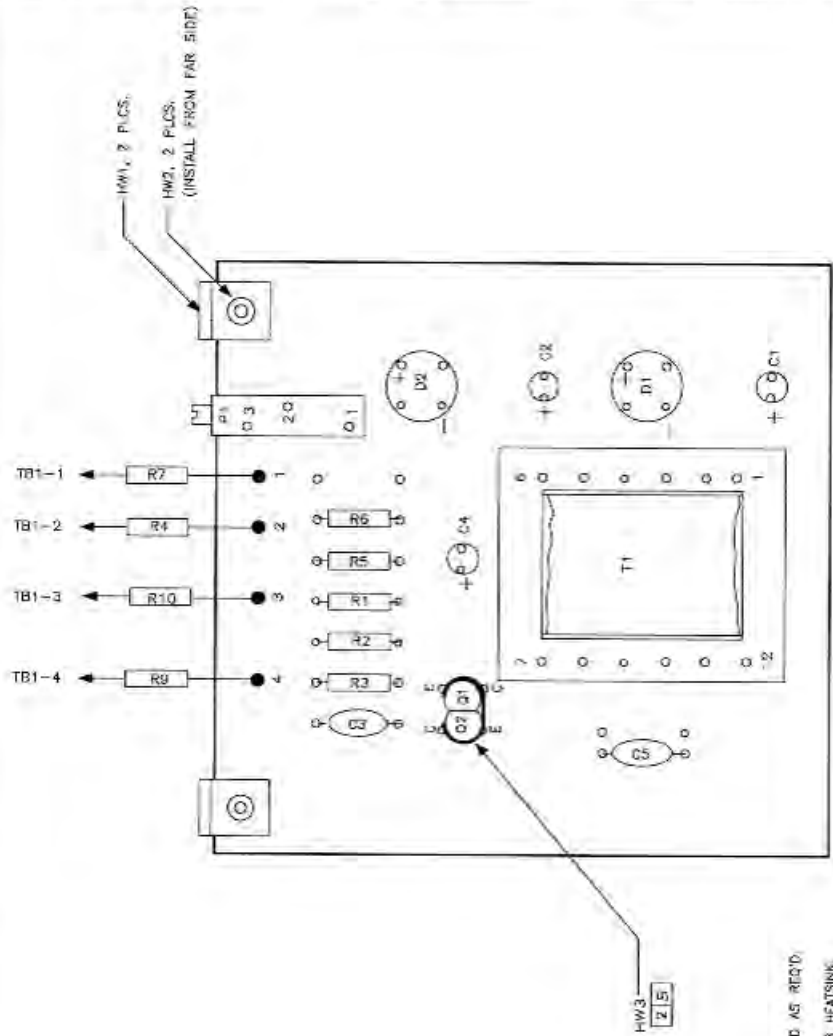
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FEEL .0005	DATE
ANGLES 1:20	SCALE NONE
NOTES PER SAE STANDARD	

CATEGORY	P. C. ASSEMBLY
TITLE	PAV SINGLE STANDARD (G-BASED OUTPUTS)

DRAWING NUMBER	324-501-00	REVISION	B
DESIGNED BY	EGD 6550	DATE	7/87
		APPROVAL	[Signature]

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1. RESISTORS R4, R7, R9 & R10 INSTALL FROM NEAR SIDE AND RUN DIRECTLY TO TERMINAL BLOCK. SEE WIRING LIST.
2. COAT D1 AND D2 WITH HW4 THERMAL COMPOUND & INSTALL HW3 HEATSINK.
3. WHEN SHOWN, ALL JUMPERS ARE 22 AWG BUSS; FIBLON SLEEVED AS REQ'D.
4. ALL LEADS MUST BE SOLDERED TO PADS.
5. D1 AND D2 SHOULD BE MOUNTED .257 ABOVE PC BOARD.

NOTES:

RETURN PROCEDURES

To return equipment to Moore Industries for repair, follow these four steps:

1. Call Moore Industries and request a Returned Material Authorization (RMA) number.

Warranty Repair –

If you are unsure if your unit is still under warranty, we can use the unit's serial number to verify the warranty status for you over the phone. Be sure to include the RMA number on all documentation.

Non-Warranty Repair –

If your unit is out of warranty, be prepared to give us a Purchase Order number when you call. In most cases, we will be able to quote you the repair costs at that time. The repair price you are quoted will be a "Not To Exceed" price, which means that the actual repair costs may be less than the quote. Be sure to include the RMA number on all documentation.

2. Provide us with the following documentation:
 - a) A note listing the symptoms that indicate the unit needs repair
 - b) Complete shipping information for return of the equipment after repair
 - c) The name and phone number of the person to contact if questions arise at the factory
3. Use sufficient packing material and carefully pack the equipment in a sturdy shipping container.
4. Ship the equipment to the Moore Industries location nearest you.

The returned equipment will be inspected and tested at the factory. A Moore Industries representative will contact the person designated on your documentation if more information is needed. The repaired equipment, or its replacement, will be returned to you in accordance with the shipping instructions furnished in your documentation.

WARRANTY DISCLAIMER

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ANY BUYER OF GOODS OR SERVICES FROM THE COMPANY AGREES WITH THE COMPANY THAT THE SOLE AND EXCLUSIVE REMEDIES FOR BREACH OF ANY WARRANTY CONCERNING THE GOODS OR SERVICES SHALL BE FOR THE COMPANY, AT ITS OPTION, TO REPAIR OR REPLACE THE GOODS OR SERVICES OR REFUND THE PURCHASE PRICE. THE COMPANY SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES EVEN IF THE COMPANY FAILS IN ANY ATTEMPT TO REMEDY DEFECTS IN THE GOODS OR SERVICES. BUT IN SUCH CASE THE BUYER SHALL BE ENTITLED TO NO MORE THAN A REFUND OF ALL MONIES PAID TO THE COMPANY BY THE BUYER FOR PURCHASE OF THE GOODS OR SERVICES.

ANY CAUSE OF ACTION FOR BREACH OF ANY WARRANTY BY THE COMPANY SHALL BE BARRED UNLESS THE COMPANY RECEIVES FROM THE BUYER A WRITTEN NOTICE OF THE ALLEGED DEFECT OR BREACH WITHIN TEN DAYS FROM THE EARLIEST DATE ON WHICH THE BUYER COULD REASONABLY HAVE DISCOVERED THE ALLEGED DEFECT OR BREACH, AND NO ACTION FOR THE BREACH OF ANY WARRANTY SHALL BE COMMENCED BY THE BUYER ANY LATER THAN TWELVE MONTHS FROM THE EARLIEST DATE ON WHICH THE BUYER COULD REASONABLY HAVE DISCOVERED THE ALLEGED DEFECT OR BREACH.

RETURN POLICY

For a period of thirty-six (36) months from the date of shipment, and under normal conditions of use and service, Moore Industries ("The Company") will at its option replace, repair or refund the purchase price for any of its manufactured products found, upon return to the Company (transportation charges prepaid and otherwise in accordance with the return procedures established by The Company), to be defective in material or workmanship. This policy extends to the original Buyer only and not to Buyer's customers or the users of Buyer's products, unless Buyer is an engineering contractor in which case the policy shall extend to Buyer's immediate customer only. This policy shall not apply if the product has been subject to alteration, misuse, accident, neglect or improper application, installation, or operation. THE COMPANY SHALL IN NO EVENT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.



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