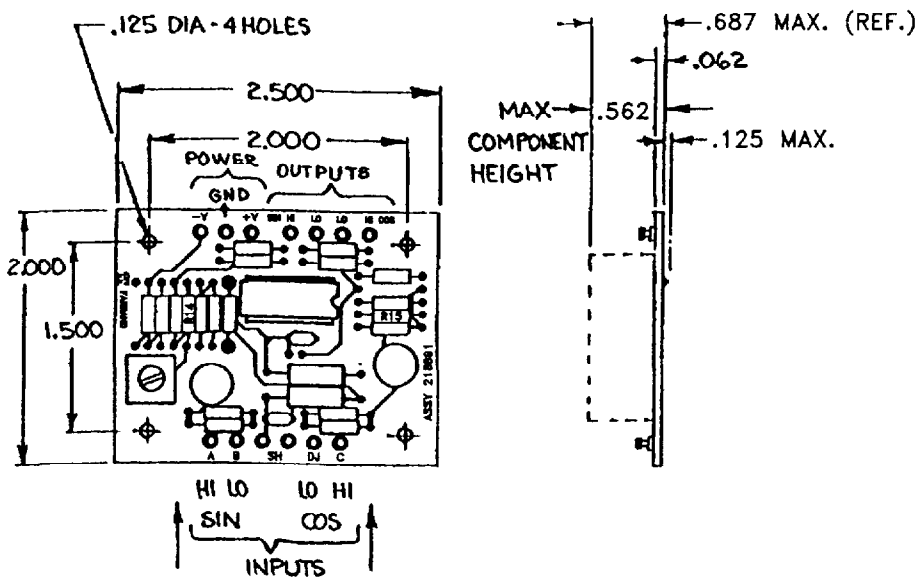


218891-I  
G

NOTES:  
1. R14 & R15 ARE GAIN  
RESISTORS.



DASH NO.	GAIN ±10%	POWER
-1 & -11	5600	+V, -V
-2 & -12	3000	
-3 & -13	1250	
-4 & -14	520	+V, GND
-5 & -15	286	
-6 & -16	136	+V, -V
-7 & -17	520	
-8 & -18	286	
-9 & -19	136	

NOT FOR CVU  
CONVERTER

USE WITH CVU  
CONVERTER

NOT FOR CVU  
CONVERTER

OUTPUT  
SIGNAL - 2.5 VOLTS RMS MAX  
D.C. COMPONENT - LESS THAN 50 mV

GAIN  
SIN, ADJUSTABLE ± 5% OF COS,  
COS, SEE TABLE

INPUT IMPEDANCE  
GREATER THAN 18 OHMS

POWER SUPPLY, +V & -V  
+V II TO 16V DC 25 mA  
-V -II TO -16V DC 25 mA  
MAGNITUDE +V AND -V MUST NOT DIFFER  
BY MORE THAN 1 VOLT.

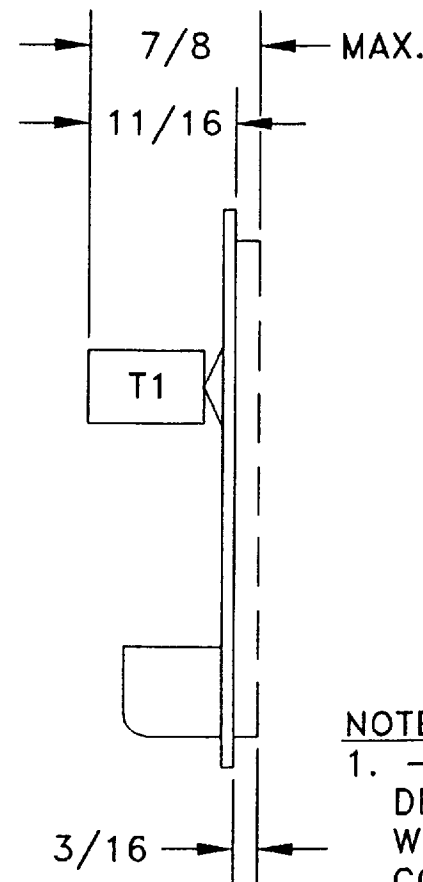
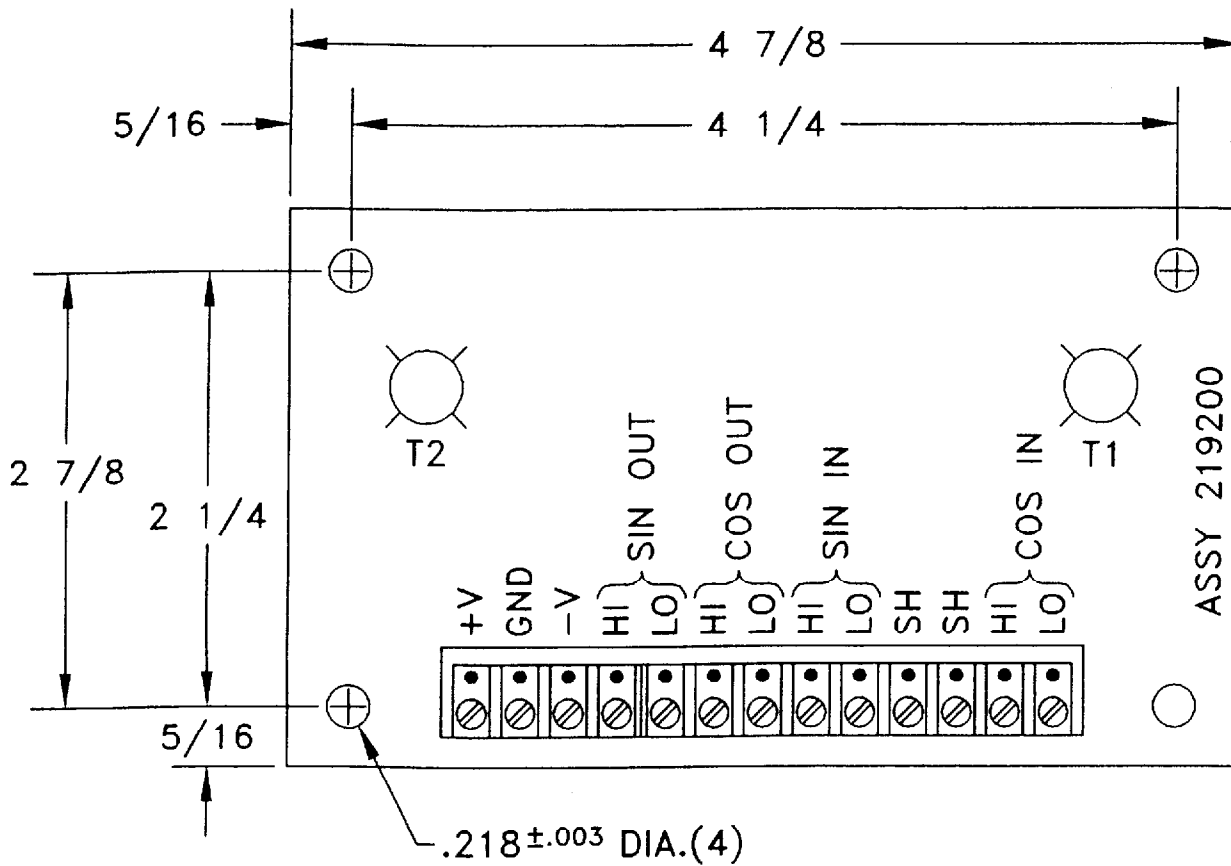
POWER SUPPLY, +V, GND  
11 TO 16 Vdc 25mA

TEMPERATURE RANGE  
0° TO 70° C -1 TO -9  
-55° C TO 125° C -11 TO -19

REFERENCE:  
HOOK-UP DWG. 218918 & SCHEMATIC 218929

MATERIAL					
FINISH					
DRAWN	RSG	3/30/93	APPROVED	JTB	10-31-96
CHECKED			RELEASED	PAV	4/25/93
PROJ. ENG.			APPROX. SCALE		NEXT ASSEMBLY
UNLESS OTHERWISE SPECIFIED FOLLOWING TOLERANCES APPLY					
FRACTIONS	DECIMALS	ANGLES	FARRAND CONTROLS DIVISION OF RUMBLE COMPANIES, INC. 99 WALL STREET VALHALLA, N.Y., U.S.A.		
INFO DWG TWO CHANNEL PRE- AMP BOARD ASSY 218891			DWG. SIZE	B	218891-I

G	REVISED & REDRAWN	H-19-96	NC
LET. NO.	CHANGES	DATE	CHK'D



DASH NO.	GAIN ±10%
-1	5600
-2	3000
-3	1250
-4	520
-5	286
-6	136
-7	UNITY
-8	286
-9	136
-10	520

NOTES:  
 1. -4, -5 & -6 ARE DESIGNED FOR USE WITH MODEL CVU CONVERTER

GAIN SINE CHANNEL-ADJUSTABLE ±5% OF COSINE, COSINE CHANNEL-SEE TABLE.

OUTPUT SIGNAL-2.5V RMS MAX.

DC COMPONENT-LESS THAN 50mV.

POWER +11 TO +16V 25 mA AND -11 TO -16V 25mA  
 MAGNITUDE OF PLUS AND MINUS VOLTAGES NOT TO DIFFER BY MORE THAN 1 VOLT. EXCEPT -4, -5 & -6 +11 TO +16V 25mA & GND.

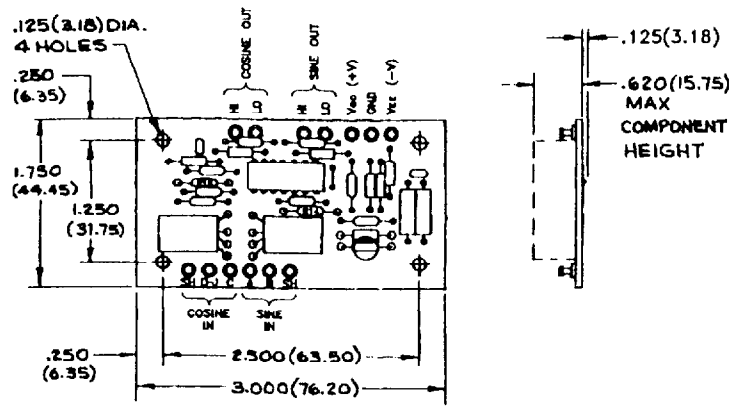
TEMPERATURE RANGE 0° TO 70° C.

REFERENCE: HOOK-UP DWG. 219159, SCHEM. 219201

MATERIAL				
FINISH				
DRAWN	RSG	4/7/95	APPROVED	JHB 11/20/96
CHECKED			RELEASED	PAV 4/7/95
PROJ. ENG.			APPROX. SCALE	1/1
UNLESS OTHERWISE SPECIFIED FOLLOWING TOLERANCES APPLY			FARRAND CONTROLS	
FRACTIONS	DECIMALS	ANGLES	DIVISION OF RUHLE COMPANIES, INC.	
			99 WALL STREET	
			VALHALLA, N.Y., U.S.A.	
INFORMATION DRAWING			DWG. SIZE	A
DUAL CHANNEL PREAMP			219200-I	

E	REVISED POWER INFORMATION	11/21/96	NC	4/96	JTB
LET.	NO.	DATE	CHANGES	DATE	CHK'D

NOTES:  
 1. R14 & R15 ARE GAIN RESISTORS.  
 2. -31 THRU -39 ARE FOR SYSTEMS WHERE THE BALANCE ADJUSTMENT IS PROVIDED ON A REMOTE BUFFER AMPLIFIER.



**OUTPUT**  
 SIGNAL-2.5 VOLTS RMS MAX.  
 D.C. COMPONENT-LESS THAN 50 mV

**GAIN, ADJUSTABLE BALANCE**  
 SIN, ADJUSTABLE  $\pm 5\%$  OF COS,  
 COS, SEE TABLE

**GAIN, FIXED BALANCE**  
 SIN & COS-SEE TABLE

**INPUT IMPEDANCE**  
 GREATER THAN 18 OHMS AT 10 KHZ

**TEMPERATURE RANGE**  
 -55° TO +125° C

- POWER SUPPLY, +V, -V VERSION**  
 +V 11 TO 16 VDC 25 mA  
 -V -11 TO -16 VDC 25 mA  
 MAGNITUDE +V AND -V MUST NOT DIFFER BY MORE THAN 1 VOLT.
- SINGLE SUPPLY (CVU) VERSION**  
 +V 11 TO 16 VDC 25 mA  
 -V NOT CONNECTED

CHANNEL BALANCE METHOD	DASH NUMBER			GAIN $\pm 10\%$	POWER	
	POTENTIOMETER	PRECISION FACTORY SELECTED RESISTORS	FIXED RESISTORS NOT TRIMMED FOR PRECISION BALANCE			
-1	-11	-31	5600	+V, -V	}	NOT FOR CVU CONVERTER
-2	-12	-32	3000			
-3	-13	-33	1250			
-1C	-11C	-31C	5600	+V, GND	}	USE WITH CVU CONVERTER
-2C	-12C	-32C	3000			
-3C	-13C	-33C	1250			
-4	-14	-34	520			
-5	-15	-35	286	+V, -V	}	NOT FOR CVU CONVERTER
-6	-16	-36	136			
-7	-17	-37	520			
-8	-18	-38	286			
-9	-19	-39	136			

219594-I  
 D

REFERENCE:  
 HOOK-UP DWG. 218918 & SCHEMATICS  
 219596 & 219596-3X

MATERIAL				
FMSH				
DRAWN	RSG	5/30/63	RELEASED	JTB
				10/31/64
MECH. ENG.				
ELECT. ENG.			APPROX. SCALE	NEXT ASSEMBLY
FARRAND CONTROLS DIVISION OF BURLER COMPANIES, INC. 98 WALL STREET VALHALLA, N.Y., U.S.A.				
INFO DWG TWO CHANNEL		DWG. SIZE		
PREAMP BOARD ASSY		C		219594-I

D	CHANGED DASH NO. CHART & POWER SUPPLY INFORMATION & TEMP. RANGE		
C	REVISED & REDRAWN	11/18/64	
REV	CHANGES	DATE CHECKED	DATE RELEASED