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1260 VXI
SWITCHING CARD

1260-60
18GHz MICROWAVE
SWITCH MODULE

PUBLICATION NO. 980673-011

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FOR YOUR SAFETY

Before undertaking any troubleshooting, maintenance or exploratory procedure, read carefully the **WARNINGS** and **CAUTION** notices.

This equipment contains voltage hazardous to human life and safety, and is capable of inflicting personal injury.

If this instrument is to be powered from the AC line (mains) through an autotransformer, ensure the common connector is connected to the neutral (earth pole) of the power supply.

Before operating the unit, ensure the conductor (green wire) is connected to the ground (earth) conductor of the power outlet. Do not use a two-conductor extension cord or a three-prong/two-prong adapter. This will defeat the protective feature of the third conductor in the power cord.

Maintenance and calibration procedures sometimes call for operation of the unit with power applied and protective covers removed. Read the procedures and heed warnings to avoid “live” circuit points.

Before operating this instrument:

1. Ensure the instrument is configured to operate on the voltage at the power source. See Installation Section.

2. Ensure the proper fuse is in place for the power source to operate.

3. Ensure all other devices connected to or in proximity to this instrument are properly grounded or connected to the protective third-wire earth ground.

If the instrument:

- fails to operate satisfactorily
- shows visible damage
- has been stored under unfavorable conditions
- has sustained stress

Do not operate until performance is checked by qualified personnel.

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NOTE FOR SYSTEMS WITH 1260-OPT 01T

The “Module-Specific Syntax” section of this manual shows the command syntax for the 1260-01S Smart Card. If you are using the newer 1260-01T Smart Card, the commands will NOT work as shown.

Consult the 1260-01T Manual for a description of the commands which may be used with the 1260-01T Smart Card.

The channel numbers described in this manual are valid for the 1260-01T. The channel numbers continue to be used for the 1260-01T.

The syntax of the commands which use channel numbers has changed for those cards controlled by the 1260-01T.

The new syntax used to close a channel is:

CLOSE (@ <module address> (<channel>))

For example, with for a relay module whose <module address> is set to 7, closing <channel> 0 is performed with the command:

CLOSE (@ 7 (0))

Using the older 1260-01S, the command would be (as shown in this manual):

CLOSE 7.0

Many other command syntax differences exist. Please consult chapter 2 of the 1260-01T manual for a description of the commands which are available for the 1260-01T.

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Control Information for the 1260-60

The following information describes the control-register-to-relay-channel mapping for a 1260-60 Relay Module. This information may be used to control a 1260-60 when using a 1260-01T in the register-based mode of operation.

There are two types of relays which populate the 1260-60 module. The standard relays (channels 0 through 111), are each controlled by a single bit within an 8-bit Control Register. Each of these relays is controlled by setting or clearing a single bit within a Control Register. Control Registers on the module operate 8 channels simultaneously. There are eight control bits per Control Register. Setting the bit to a 1 closes the relay; setting the bit to a 0 opens the relay.

The RF relays (channels 200, 201, and 202) are each controlled by 2 bits. Each of these relays is a latching relay. One bit is pulsed to set the relay to the OPEN state, in which the COM output is connected to the normally closed input. A different bit is pulsed to set the relay to the CLOSED state, where the COM output is connected to the normally open input. **An OPEN or CLOSE control bit must be set high for a minimum of 15 milliseconds before it is deasserted to ensure that the latching relay is actuated.**

The table below shows the mapping from logical channels to control bits. The logical channels are used when operating the relay module in message-based mode. The control bits within the Control Registers are used to operate the module in register-based mode.

Each Control Register is located 2 addresses from the previous Control Register. That is, each Control Register is located at an odd address. This is shown in Table 2-2 of the 1260-01T manual. Control Register 0 is located at the “Base A24 Address” for the module. Consult the “Register-Based Operation” Section of Chapter 2 of the 1260-01T manual for a description of calculating control register addresses.

Channel	Control Register	Control Bit
0	0	3
1	0	7
2	1	3
3	1	7
4	2	3
5	2	7
6	3	3
7	3	7
8	0	2
9	0	6
10	1	2
11	1	6
100	0	1
101	0	5
102	1	1
103	1	5
104	2	1
105	2	5
106	3	1
107	3	5
108	0	0
109	0	4
110	1	0
111	1	4
200	4	0 (CLOSE) 1 (OPEN)
201	4	2 (CLOSE) 3 (OPEN)
202	4	4 (CLOSE) 5 (OPEN)

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Chapter 1
INTRODUCTION

1260-60A/B Module Specification

The 1260-60A,B consists of three 1P2T, 18GHz switches and two 1X12 switches. The 1x12 switches are used to drive external relays, although other applications are possible.

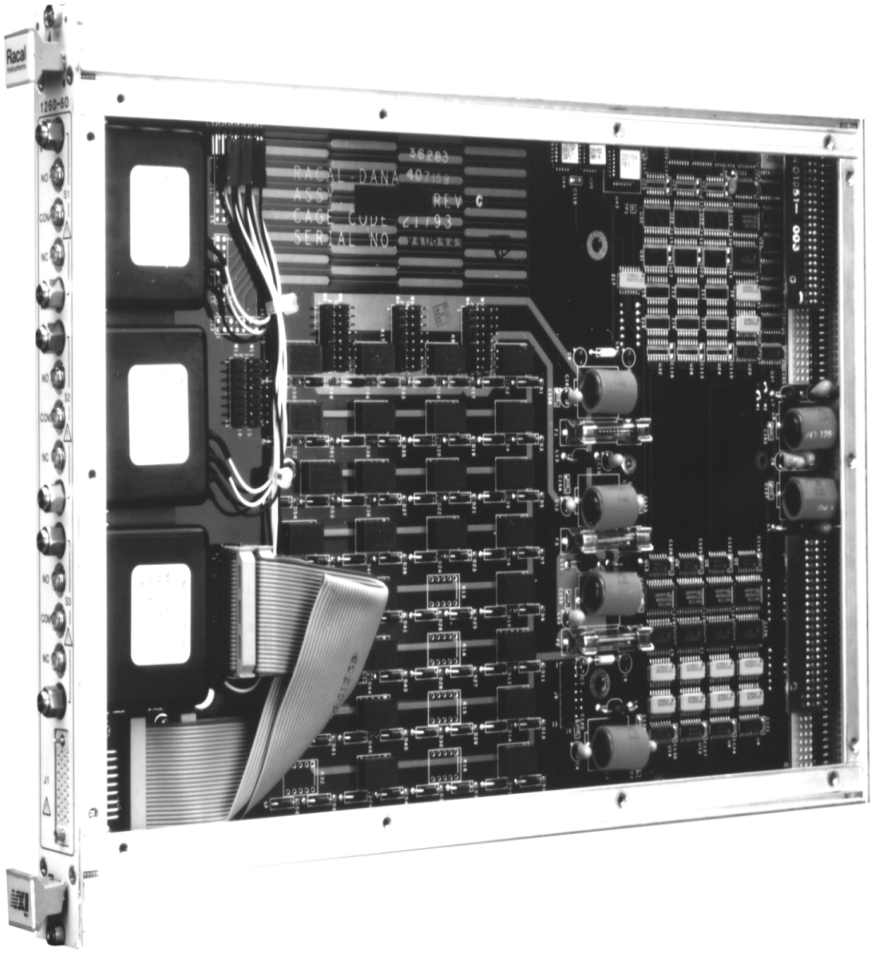


Figure 1-1, 1260-60

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Specifications

Frequency Range	DC to 180Hz
Maximum Continuous Wave Power per Channel (Cold Switching)	100MHz 400W 10Hz 150W 100Hz 50W 180Hz 40W
User Connectors on Module	**SMA - Caution**: Mating connector engagement should not exceed 9in. lbs. torque maximum. Recommended Torque Wrench: Wiltron Model 01-201, 8in. lbs.
RF Impedance	50Ω, nominal
Termination	50Ω, nominal (1260-60B only)
Insertion Loss, dB Max	0.2 DC-4GHz 0.3 40Hz- 80Hz 0.4 80Hz- 12GHz 0.5 120Hz- 180Hz
Isolation, dB Mm	80 DC-4Ghz 70 4GHz-8Ghz 60 8 0Hz - 18GHz
VSWR, Max	1.2:1 DC-4GHz 1.3:1 4GHz-8Ghz 1.4:1 8GHz-12Ghz 1.5:1 12GHz-18GHz
Minimum Option 01 Hardware Revision	401901-005 Rev. B
Minimum Option 01 Firmware Revision	231417-001, Rev. D 231417-002, Rev. D

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1X12 Switch Arrays Specifications

User Connector	34-Pin Connector. Body Part #601855-034, Solder Type Pins #601857
Number of Banks	2
Number of Switches per Bank	12, 1-wire
Relay Driver Configurations (User Configurable)	Source Driver, External Supply Source Driver, VXI +5V Supply Source Driver, VXI +12V Supply Source Driver, VXI +24V Supply Sink Driver, External Supply Sink Driver, VXI +5V Supply Sink Driver, VXI +12V Supply Sink Driver, VXI +24V Supply

(External flyback-suppression diodes are required when switching inductive loads.)

Maximum Total VXI Current Available to Drive External Loads	
+24V	.75A (May be further limited by mainframe capability)
+12V	1A (May be further limited by mainframe capability)
+5V	2A (May be further limited by mainframe capability)
Maximum Current per Bank	2A (Internal or External Supply)
Maximum Current per Switch	.5A
Maximum Switchable Voltage	30V, DC Only
Maximum Switchable Power	30W
Path Resistance	
Worst Case	<1.8Ω
End of Life	<2.7Ω

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General

Power Requirements (I_{pm})		
	+5V	0.4A (2.8 A with Option 01 installed) plus current drawn by external loads on 1x12 relay banks
	+12V	60mA per energized microwave relay (-60A) 130mA per energized microwave relay (-60B)
	+24V	10mA per relay (energized) plus current drawn by external loads on 1x12 relay banks
Cooling Requirements		
	Airflow	4.0 L/S at 0.5rnm of H_2O
Weight		3.7 lbs (1.67 Kg) 4.0 lbs (1.81 Kg) Option 01 installed

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Chapter 2

INSTALLATION INSTRUCTION

Unpacking and Inspection

1. Before unpacking the switching module, check the exterior of the shipping carton for any signs of damage. All irregularities should be noted on the shipping bill.
2. Remove the instrument from its carton, preserving the factory packaging as much as possible.
3. Inspect the switching module for any defect or damage. Notify the carrier immediately if any damage is apparent.
4. Have a qualified person check the instrument for safety before use.

Reshipment Instructions

1. Use the original packing if it is necessary to return the switching module to Racal Instruments for calibration or servicing. The original shipping carton and the instrument's plastic foam will provide the necessary support for safe reshipment.
2. If the original packing is unavailable, wrap the switching module in plastic sheeting and use plastic spray foam to surround and protect the instrument.
3. Reship in either the original or a new, sturdy shipping carton.

Option 01 Installation

Installation of the Option 01 into the 1260-60A,B is described in the Installation section of the 1260-Series VXI Switching Cards Manual.

Module Installation

Installation of the 1260-60A,B Switching Module into a VXI mainframe, including the setting of DIP switches, is described in the Installation section of the 1260 Series VXI Switching Cards Manual. The ID byte DIP switches should be set as follows:

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1260-60 (A or B)	5=ON	6=ON

Note that incorrect setting of the ID byte DIP switches will cause an incorrect module ID to be reported to the user in response to a PDATAOUT command. All other module functionality is unaffected by the setting of the ID byte switches.

Relay Bank Configuration

If two banks of DC relays are to be used, various internal jumpers must be installed. Examples of four possible configurations are shown in Figures 4-3 through 4-6. The card is shipped from the factory without any jumpers installed.

To access the jumpers, remove the right side cover from the module. The jumpers are located on the large PCB Assembly. There are two banks of relays. Each bank is configured independently, and the two configurations do not have to match. The banks are designated Bank A and Bank B.

Sink/Source Configuration

A sink driver connects its output to ground to energize a load; a source connects its output to B+ to energize a load. Eight push-on jumpers are to be installed as shown below:

Bank A Source Driver: W5
Bank A Sink Driver: W6
Bank B Source Driver: W11
Bank B Sink Driver: W12

Power - Bank A

If an external supply is to be used, the jumpers at locations W3 and W4 are to be removed. If the VXI +5 V supply is to be used, eight jumpers are to be installed at location W3 (1-2, 3-4, 5-6, etc.). If the VXI +12 V supply is to be used, three jumpers are to be installed at location W4 (1-2, 3-4, and 5-6). If the VXI +24 V supply is to be used, the three jumpers are to be installed at location W4 (11-12, 13-14, 15-16).

Power - Bank B

If an external supply is to be used, the jumpers at locations W8 and W9 are to be removed. If the VXI +5 V supply is to be used, eight jumpers are to be installed at location W8 (1-2, 3-4, 5-6, etc.). If the VXI +12 V supply is to be used, three jumpers are to be installed at location W9 (1-2, 3-4, and 5-6). If the VXI +24 V supply is to be used, three jumpers are to be installed at location W9 (11-12, 13-14, 15-16).

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The right cover can now be reinstalled on the module.

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Chapter 3

MODULE SPECIFIC SYNTAX

1260-60A/B Syntax

The Module Specific Syntax for the 1260-6A,B module is as follows:

<mod addr>.<bank no><relay no>

where <mod addr> is the address of the 1260-60A,B.

NOTE

The <mod addr> used here is NOT the VXIbus defined logical address of the 1260 Series Master. It is peculiar to the 1260 Series and describes the switching module in relation to the 1260 Master. This address corresponds to the binary value of the switch setting of SW1 on the switching module PCB.

<bank no> is a reference to the bank of the relay to be switched. It is a single digit number.

The <bank no> refers to the following relay banks:

0	1x12BankA
1	1x12BankB
2	1x2 Relays S1, S2, S3

<relay no> refers to the relay to be operated. This is a two-digit number. For Bank A and Bank B, this value must be between 00 and 11. For relay S1 it is 00, for S2-01, and for S3-02. Note the leading 0 for relays 00 through 09 is required.

Refer to Figures 4-1, 4-2, and Table 4-1 for banks, relay numbers, and connector pins for the 1260-60A,B module.

If more than one connection is to be made or broken on the 1260-60A,B with contiguous relays, the following format is supported:

<mod addr>.<bank no><relay no>-<bank no><relay no>

Multiple groups of relays can be specified on a single command

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line by separating the path designators by commas. Command lines terminate at the end of the line.

Commands

The Module Specific Syntax for the 1260-60A,B is required for use in the OPEN and CLOSE commands. It will also appear in data output by the 1260 Series Master in response to the PDATAOUT command.

OPEN

For OPEN, the syntax is:

OPEN <mod addr>.<bank no><relay no>-<bank no><relay no>

Example:

OPEN 3.000,004-011,100-111,201,203

CLOSE

For CLOSE, the syntax is:

CLOSE <mod addr>.<bank no><relay no>-<bank no><relay no>

CLOSE 3.000,004-011,100-111,201,203

PDATAOUT

The PDATAOUT command causes the specified module to transmit the CLOSED state of the relays in the 1260-60A,B module. The syntax used is:

PDATAOUT <mod addr>[;<mod addr>][;<mod addr>]....

The response to the PDATAOUT command for the 1260-60A,B is as follows:

<header>

<mod addr>. <bank no><group no>[,...] <bank no><group no>[,...] <mod addr>.END

where <header> is as follows:

1260-60A,B: <mod addr>. 1260-60A,B Triple SPDT MICROWAVE SWITCHING MODULE

Note the actual <header> sent is determined by the setting of the ID Byte DIP switches on the module.

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PSETUP

The PSETUP command causes the specified module to transmit its sequence mode. The supported sequence modes are IMM (Immediate), BBM (Break-Before-Make), and MBB (Make-Before-Break). The syntax used is:

PSETUP <mod addr>[;<mod addr>][;<mod addr>]....

The response to the PSETUP command for the 1260-60A,B is as follows:

<header>

<mod addr>.<seq mode> <mod addr>.END

where <seq mode> is IMM, BBM, or MBB, and

where <header> is as follows:

1260-60A,B: <mod addr>. 1260-60A,B Triple SPDT MICROWAVE SWITCHING MODULE

Note the actual <header> sent is determined by the setting of the ID Byte DIP switches on the module.

SETUP

The SETUP command affects only the DC relays in Banks A and B. These relays may be programmed as Break-Before-Make, Make-Before-Break, or Immediate. The microwave relays (S 1 through S3) are always implemented as Break-Before-Make (BBM).

Standard Features

The 1260-60A,B supports most standard 1260 features. These include Confidence Mode, Equate/Exclude/Scan Lists commands, and the STORE/RECALL commands.

WARNING

The state of the RF relays should NOT be changed when a signal is present. The relays should be "cold-switched" only. The recommended procedure for ensuring that an OPEN or CLOSE command has been completed is as follows:

1. Enable the confidence mode for the relays. This is done by

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sending the command:

CNF ON

2. Each time a relay is opened or closed, ensure the operation is complete using the following procedure:

   a. Send the OPEN or CLOSE command, e.g.:

      OPEN 3.200

   b. Send the YERR command to read back the error

      YERR

   c. Read the error result. The error result should be:

      error 000.00

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Chapter 4
CONNECTOR PIN CONFIGURATION

RF Relays

Figure 4-1 shows the location of the three RE switches on the front panel of the 1260-60A,B module.

Relay Banks

Figure 4-2 shows the pin locations for the 34-pin Relay Bank connector, 31. Table 4-1 lists the 31 pin signals. Connector 31 is Racal Instruments Part Number 601856- 034. The mating connectors are Racal Instruments Part Number 601855-034 for the connector body, and 601857 for the pins.

Each of the two relay banks can be independently configured as a sink or a source driver. Either the VXI mainframe or an external supply can be selected.

WARNING

The user must use caution when wiring to the module to prevent damage to the relay banks.

The 1260-60A,B contains some internal protection circuitry. The internal current sourcing and handling capabilities of the module and the mainframe must not be exceeded. Properly interface external loads, especially if they are inductive. If an external supply is used, the external B+ and B- lines MUST be connected to the External B+ and the External Ground pins on 31. flyback-clamping suppression diodes MUST be connected across any inductive loads. Figures 4-3 through 4-6 show correct methods interfacing to the 1260-60A,B relay banks.

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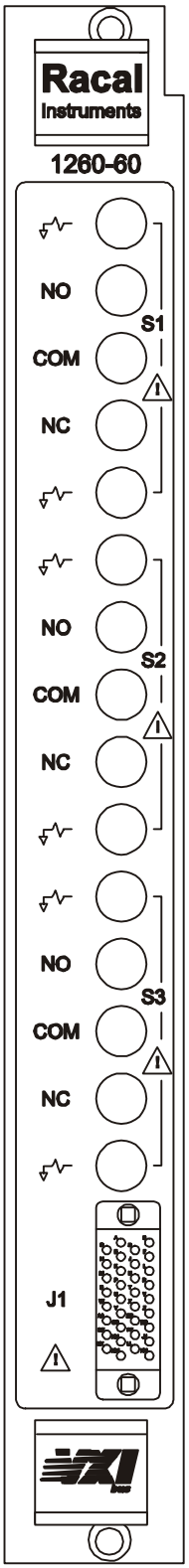


Figure 4-1, 1260-60A/B Front Panel

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Table 4-1, 1260-60A,B Pin Assignments

Bank A		Bank B	
Pin	Function	Pin	Function
A,C	External B+	B,D	External B+
HH,JJ,KK	External Ground	HH,JJ,KK	External Ground
LL,MM,NN	External Ground	LL,MM,NN	External Ground
W	Contact 0	BB	Contact 0
F	Contact 1	P	Contact 1
V	Contact 2	N	Contact 2
M	Contact 3	H	Contact 3
U	Contact 4	R	Contact 4
z	Contact S	x	Contact 5
DD	Contact 6	CC	Contact 6
FF	Contact 7	AA	Contact 7
Y	Contact 8	EE	Contact 8
L	Contact 9	T	Contact 9
S	Contact 10	J	Contact 10
K	Contact 11	E	Contact 11

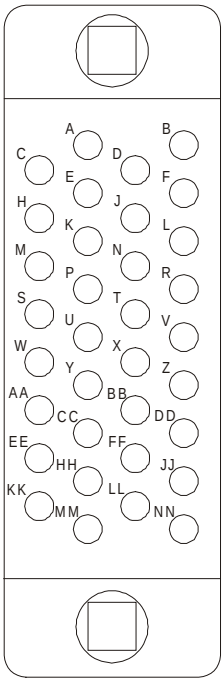


Figure 4-2, Relay Bank Pin Configuration

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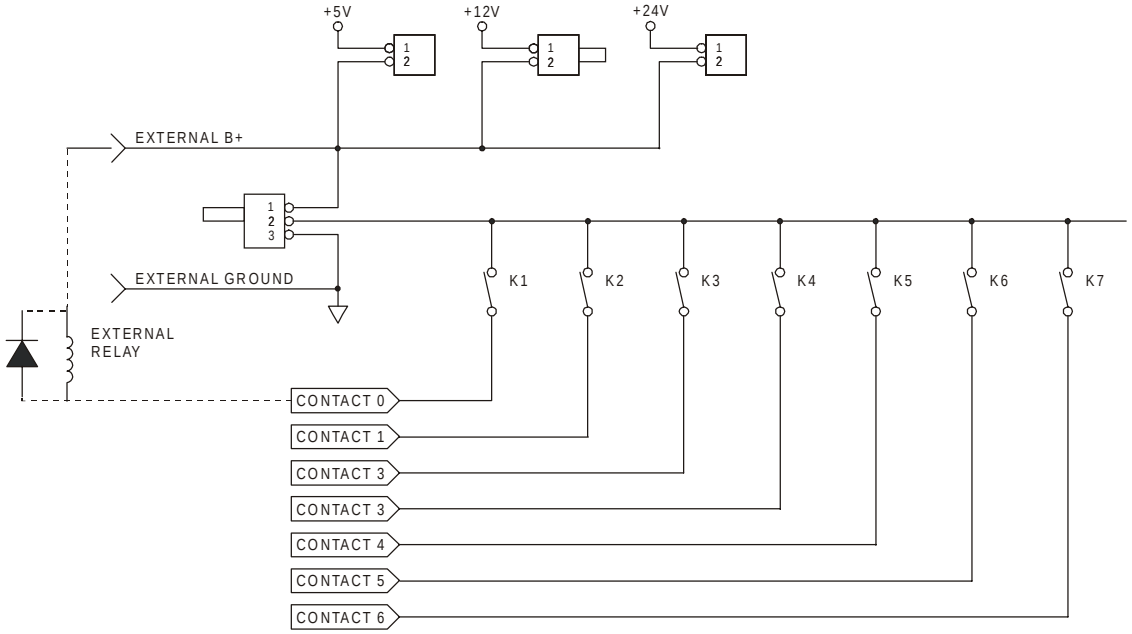


Figure 4-3, Internal Supply Sink Driver Example

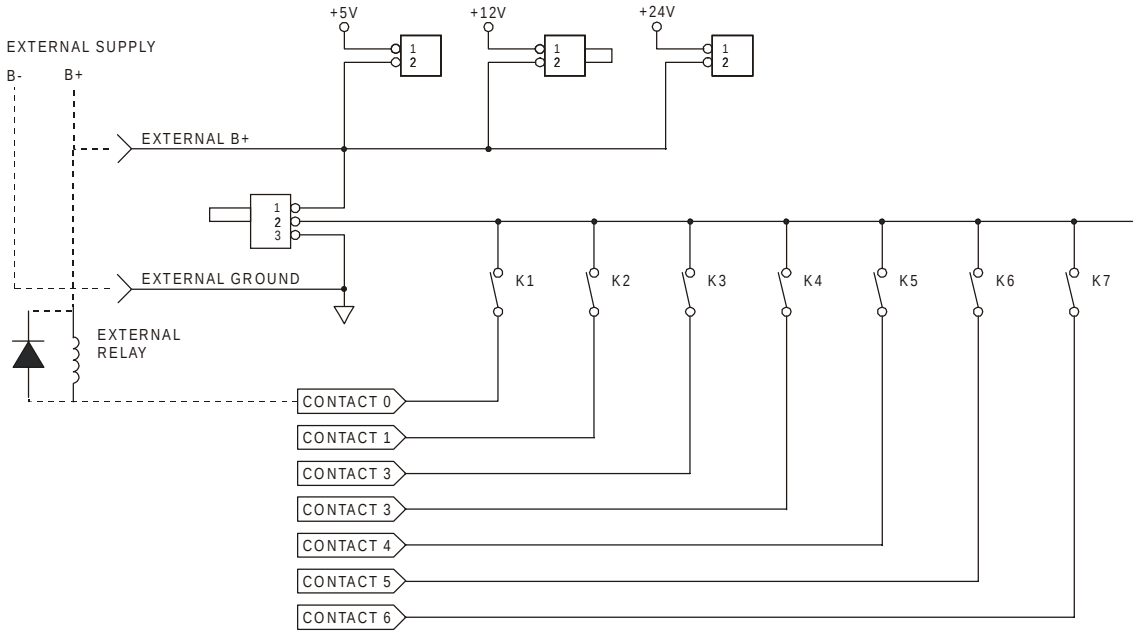


Figure 4-3, External Supply Sink Driver Example

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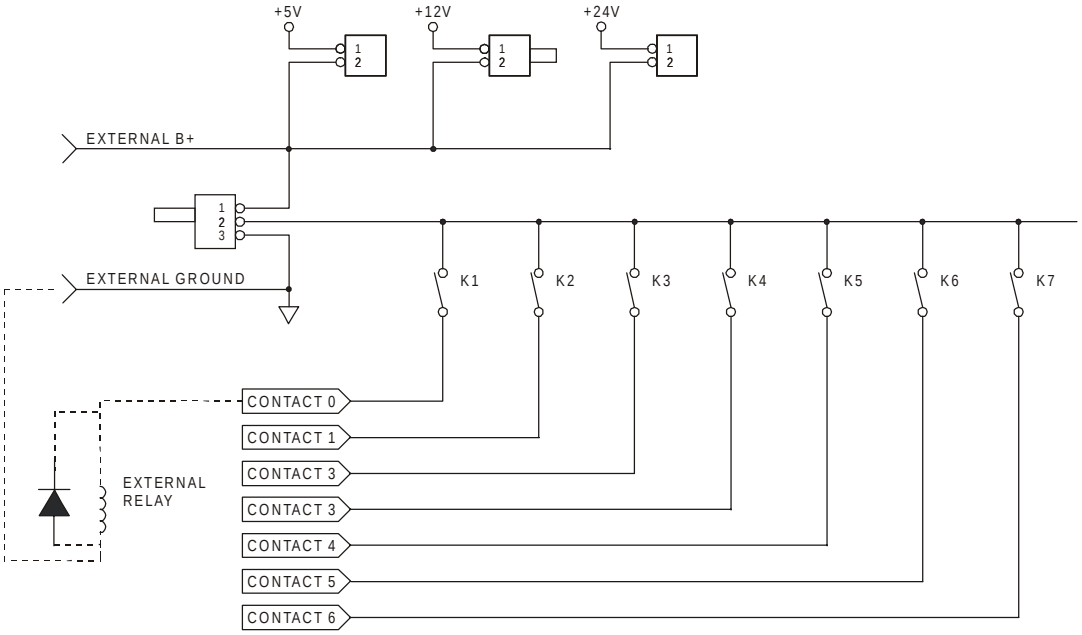


Figure 4-3, Internal Supply Source Driver Example

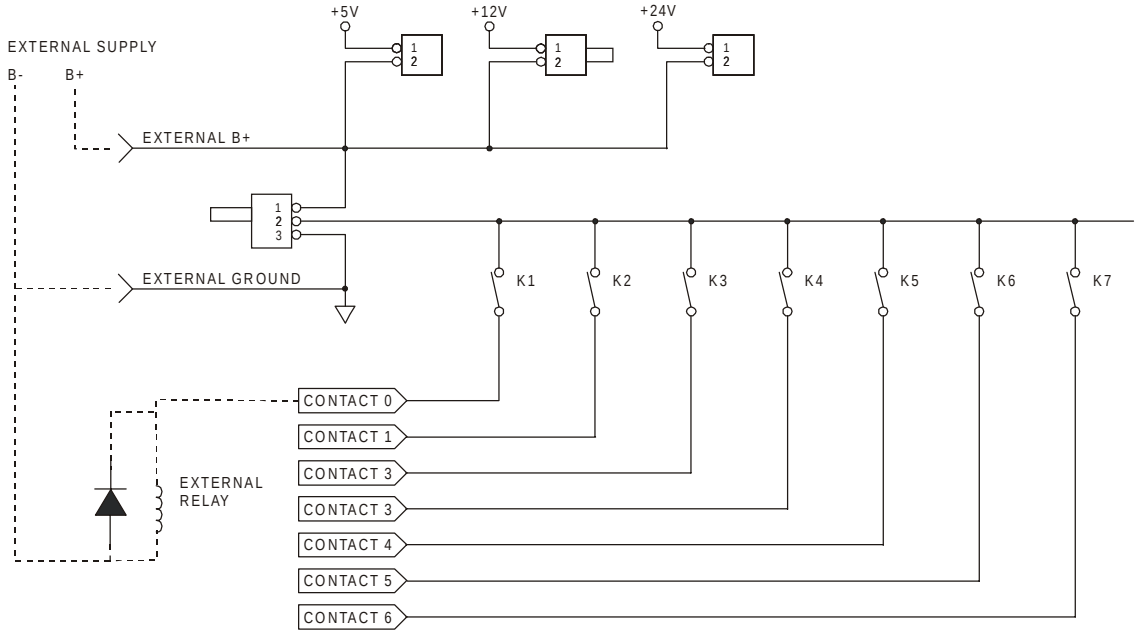


Figure 4-3, External Supply Source Driver Example

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Chapter 5
THEORY OF OPERATION

PCB Assemblies

The 1260-60A,B consists of two PCB assemblies. The small one is used only to mount connector 31 to the front panel.

The main logic PCB assembly contains DC relay banks, 1260 Local Bus interface circuitry, and drivers for both the relay bank and the RF relays. The VXI interface is described in the Theory of Operation section of the 1260 Series VXI Switching Cards Manual. The relay driver circuitry is contained in monolithic IC driver chips. The relay banks are shown in Figures 4-3 through 4-6. Not shown in these figures are internal clamp diodes. These diodes will clamp minor inductance effects, such as those caused by wiring; but they are not intended to replace suppression diodes across the solenoid coils of external relays, or other inductive loads. Referring to the schematic diagram, the diodes between the contact lines and ground clamp switch-to--open transients when the bank is used as a source driver. The diodes between the contact lines and the External A+, B+ clamp switch-to-open transients when the bank is used as a sink driver.

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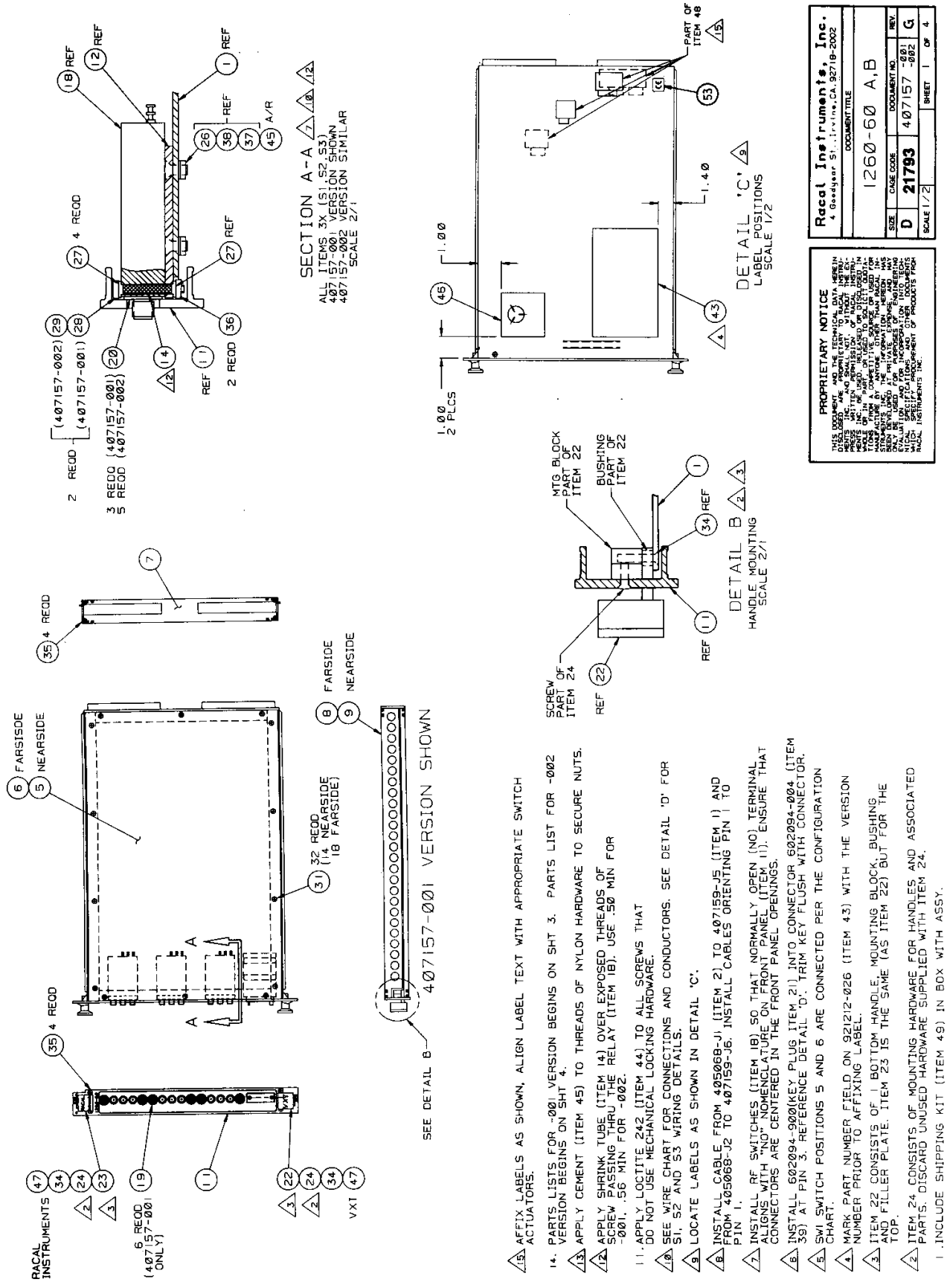
Chapter 6
DRAWINGS

407157-001, -002, Final Assembly, 1260-60A,B 6-3
405068, PCB Assembly, Connector Interface 6-5
435068, Schematic, Connector Interface 6-6
407159, PCB Assembly, 1260-60A,B 6-7
435056, Schematic, 1260-64/60/15 6-8

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/15 AFFIX LABELS AS SHOWN, ALIGN LABEL TEXT WITH APPROPRIATE SWITCH ACTUATORS.

14. PARTS LISTS FOR -001 VERSION BEGINS ON SHT 3. PARTS LIST FOR -002 VERSION BEGINS ON SHT 4.

/13 APPLY CEMENT (ITEM 45) TO THREADS OF NYLON HARDWARE TO SECURE NUTS.

/12 APPLY SHRINK TUBE (ITEM 14) OVER EXPOSED THREADS OF SCREW PASSING THRU THE RELAY (ITEM 18). USE .50 MIN FOR -001, .56 MIN FOR -002.

11. APPLY LOCTITE 242 (ITEM 44) TO ALL SCREWS THAT DO NOT USE MECHANICAL LOCKING HARDWARE.

/10 SEE WIRE CHART FOR CONNECTIONS AND CONDUCTORS. SEE DETAIL 'D' FOR S1, S2 AND S3 WIRING DETAILS.

/9 LOCATE LABELS AS SHOWN IN DETAIL 'C'.

/8 INSTALL CABLE FROM 405068-J1 (ITEM 2) TO 407159-J5 (ITEM 1) AND FROM 405068-J2 TO 407159-J6. INSTALL CABLES ORIENTING PIN 1 TO PIN 1.

/7 INSTALL RF SWITCHES (ITEM 18) SO THAT NORMALLY OPEN (NO) TERMINAL ALIGNS WITH "NO" NOMENCLATURE ON FRONT PANEL (ITEM 11). ENSURE THAT CONNECTORS ARE CENTERED IN THE FRONT PANEL OPENINGS.

/6 INSTALL 602094-900(KEY PLUG ITEM 21) INTO CONNECTOR 602094-004 (ITEM 39) AT PIN 3. REFERENCE DETAIL 'D'. TRIM KEY FLUSH WITH CONNECTOR.

/5 SW1 SWITCH POSITIONS 5 AND 6 ARE CONNECTED PER THE CONFIGURATION CHART.

/4 MARK PART NUMBER FIELD ON 921212-026 (ITEM 43) WITH THE VERSION NUMBER PRIOR TO AFFIXING LABEL.

/3 ITEM 22 CONSISTS OF 1 BOTTOM HANDLE, MOUNTING BLOCK, BUSHING AND FILLER PLATE. ITEM 23 IS THE SAME (AS ITEM 22) BUT FOR THE TOP.

/2 ITEM 24 CONSISTS OF MOUNTING HARDWARE FOR HANDLES AND ASSOCIATED PARTS. DISCARD UNUSED HARDWARE SUPPLIED WITH ITEM 24.

1. INCLUDE SHIPPING KIT (ITEM 49) IN BOX WITH ASSY.

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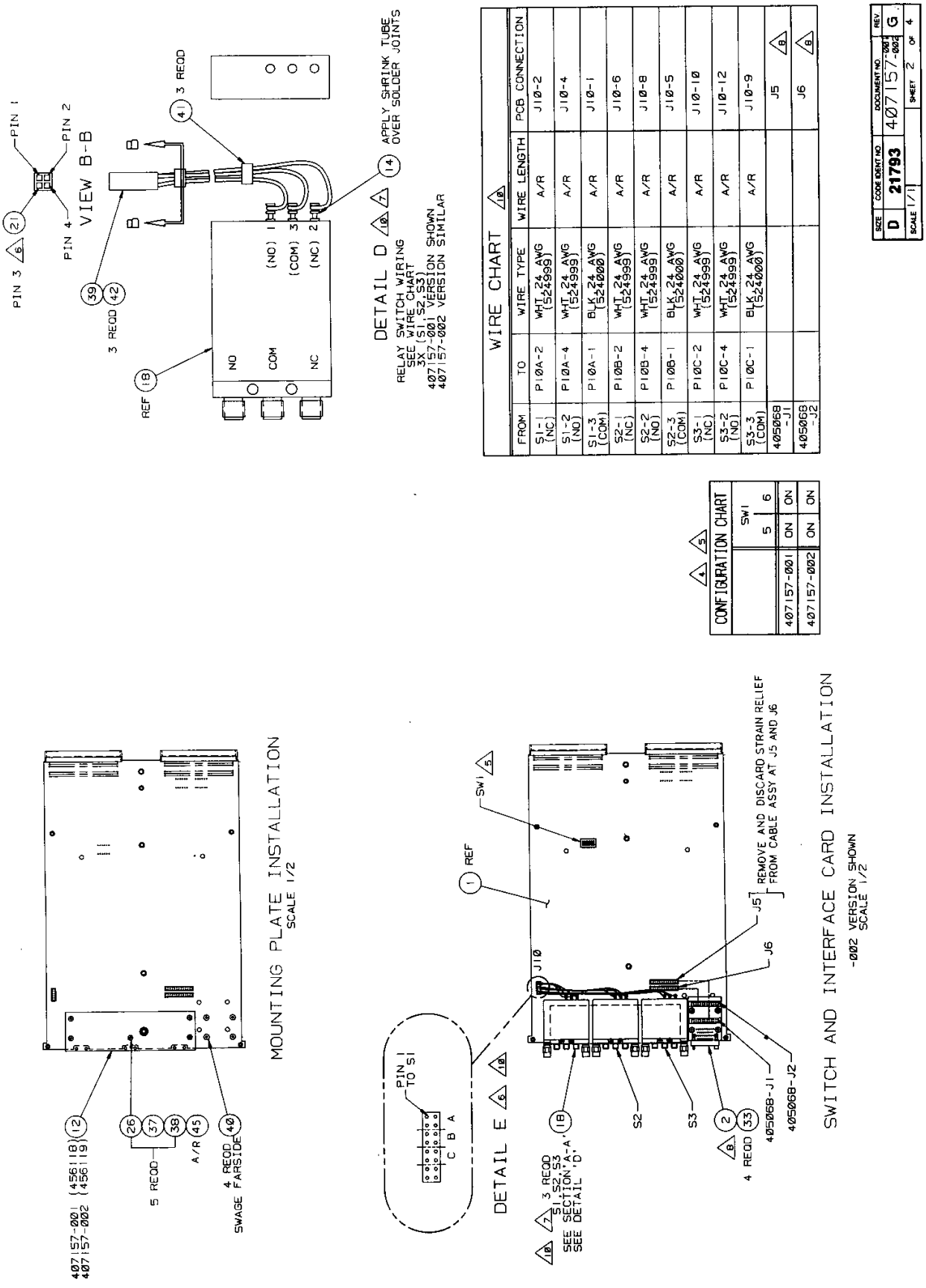
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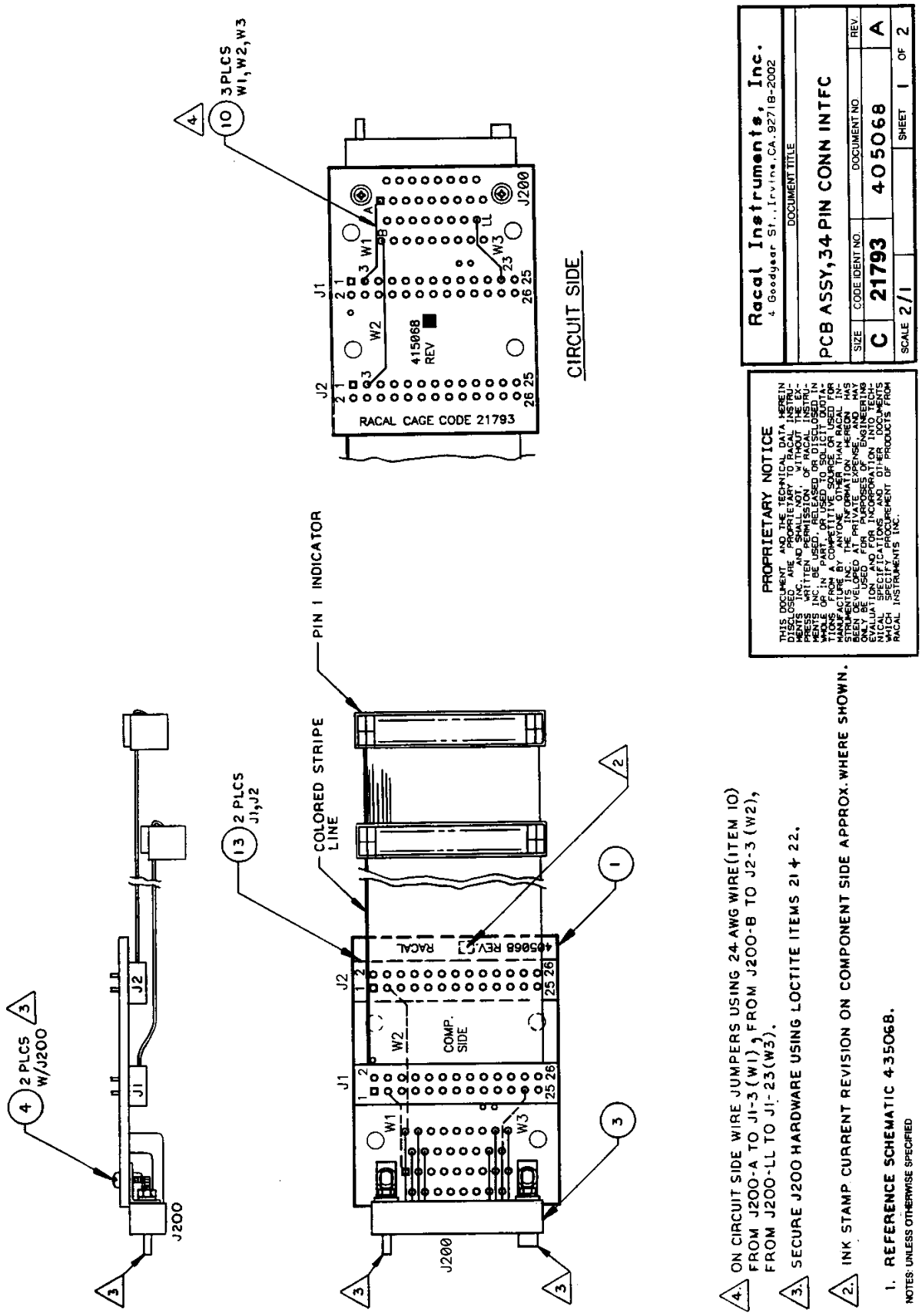
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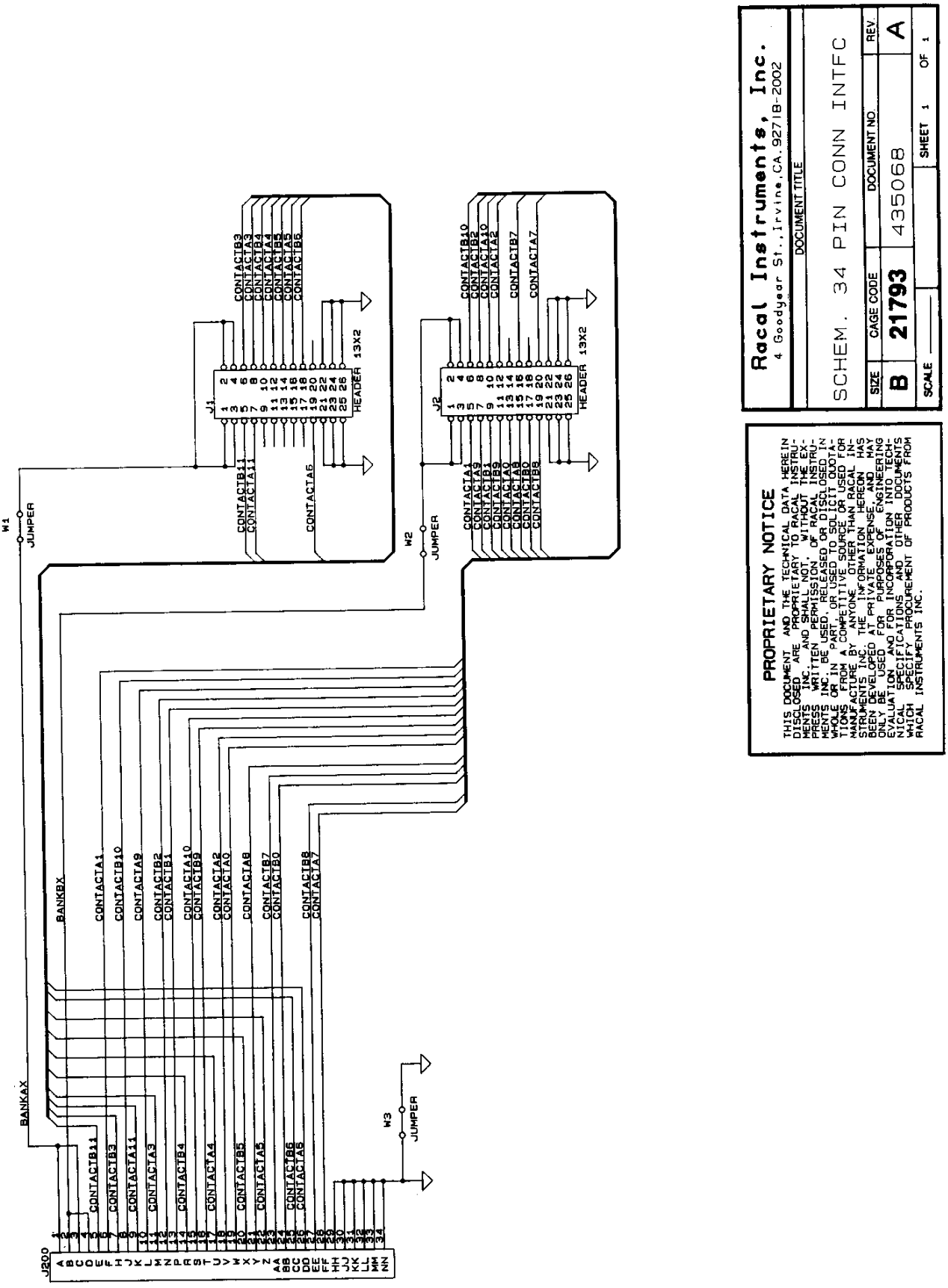
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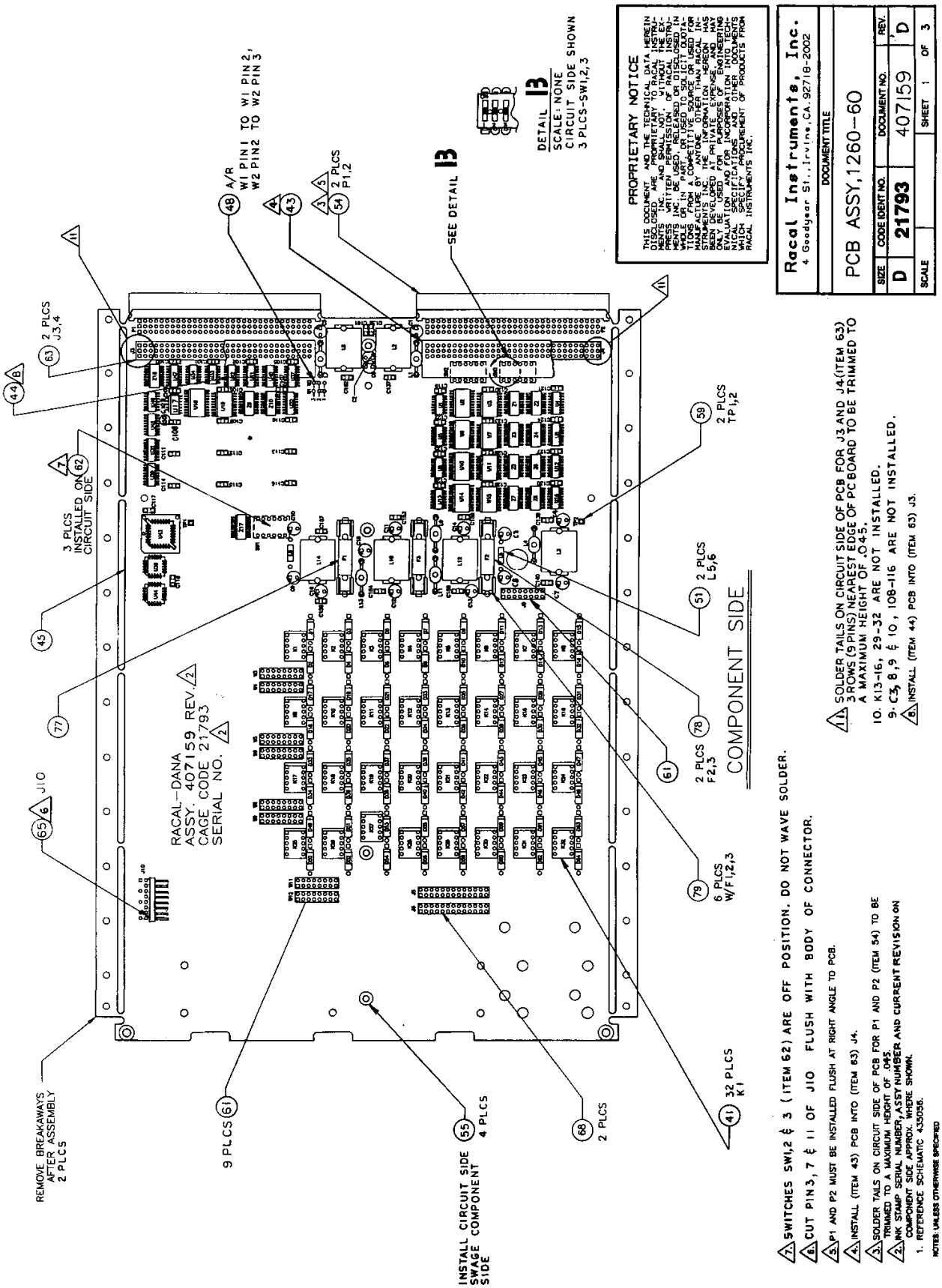
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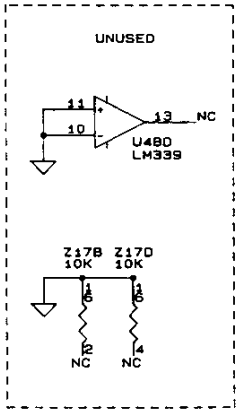
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REF. DES.	IC TYPE	+5V PIN NO.	GND PIN NO.
IC POWER AND GROUND CONNECTIONS			
U43	231154 (22V10H)	28	14
U42	26LS31	16	8
U40, 41	26LS32	16	8
U37, 39	74HCT253	16	8
U36	231152-001 (16L8Q)	20	10
U48	LM339	3	12
U47	74HCT85	16	8
U45	74LS138	16	8
U44	231153 (16R4)	20	10
U4, 8, 12, 16, 20, 24, 28 U32, 35	74HCT166	16	8
U3, 7, 11, 15, 19, 23, U27, 31	2803	NC	9
U2, 6, 10, 14, 18, 22, U26, 30	74HCT273	20	10
U1, 5, 9, 13, 17, 21, 25, 29 U33, 34	74HCT164	14	7

HIGHEST REF. DES.
Z18
W12
U48
TP2
SW3
P2
L14
K32
J13
F3
D64
C162



4. C3, C8, C9, AND C10 ARE NOT INSTALLED

3. RELAYS K1 THRU K32 ARE RACAL P/N 310197. ALL RELAYS SHOWN IN DE-ENERGIZED POSITION.
2. RESISTOR NETWORKS ARE IN OHMS.
1. CAPACITOR VALUES ARE IN MICROFARADS, 50V, +/-20%

NOTES: UNLESS OTHERWISE SPECIFIED

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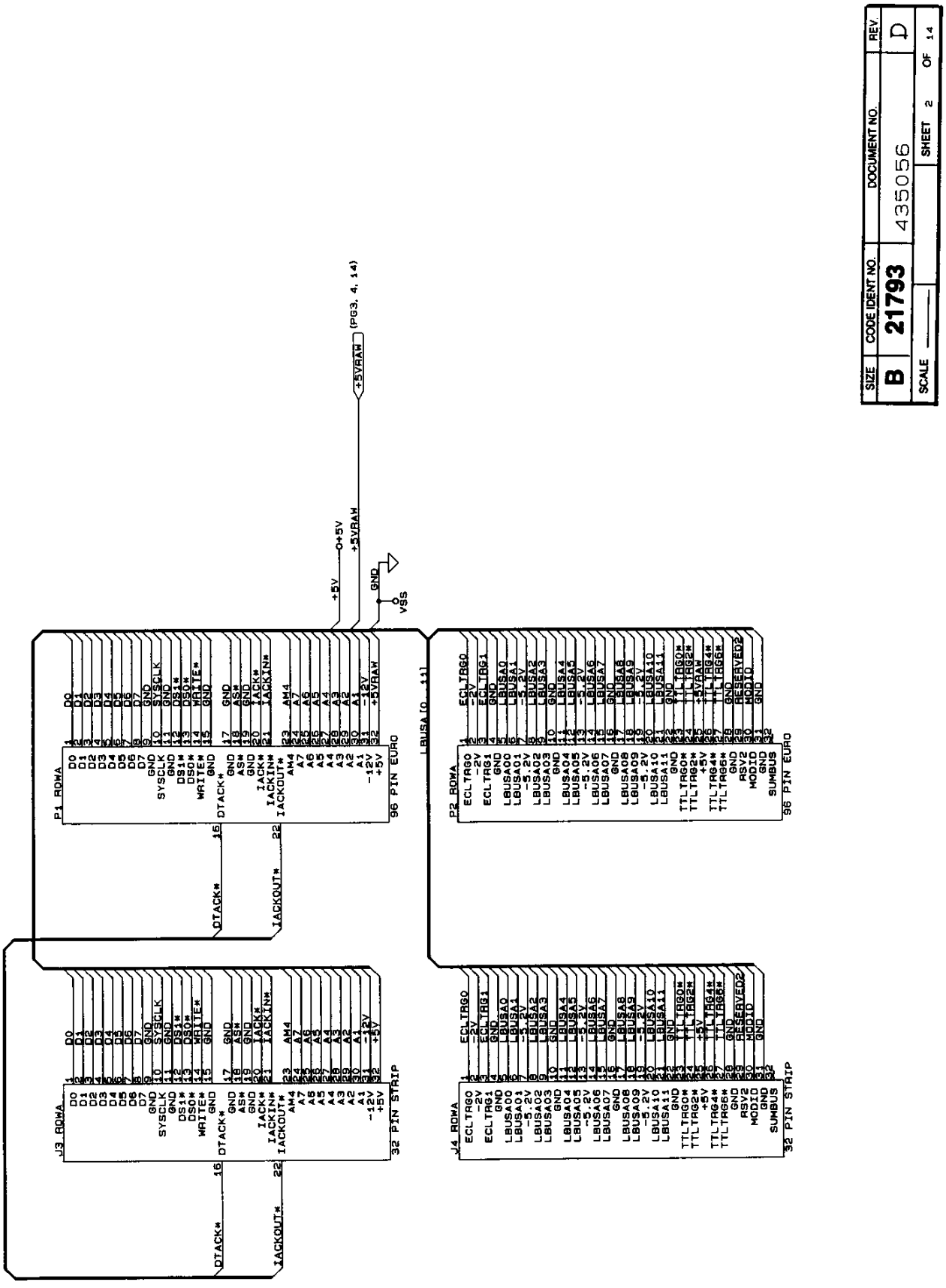
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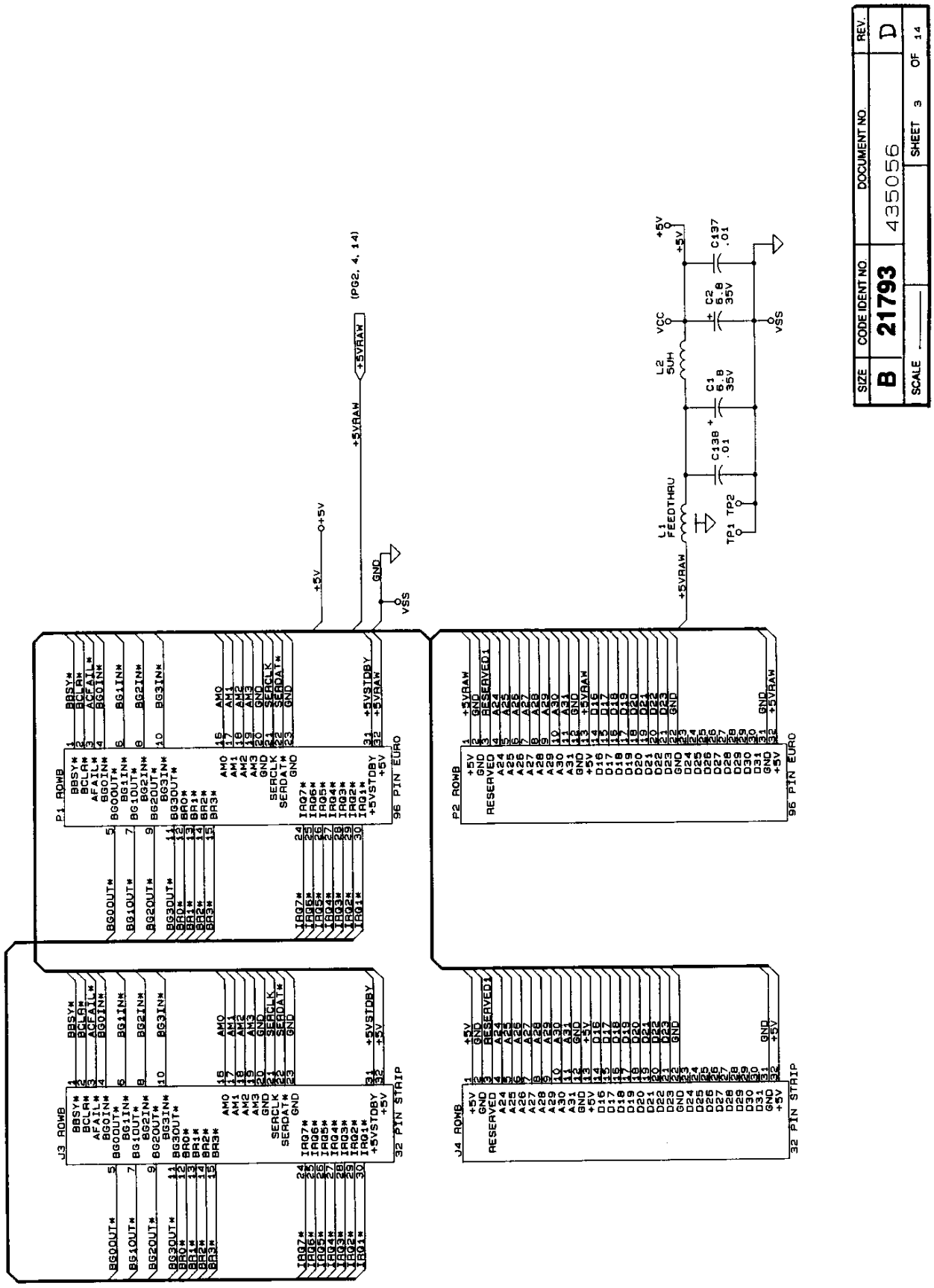
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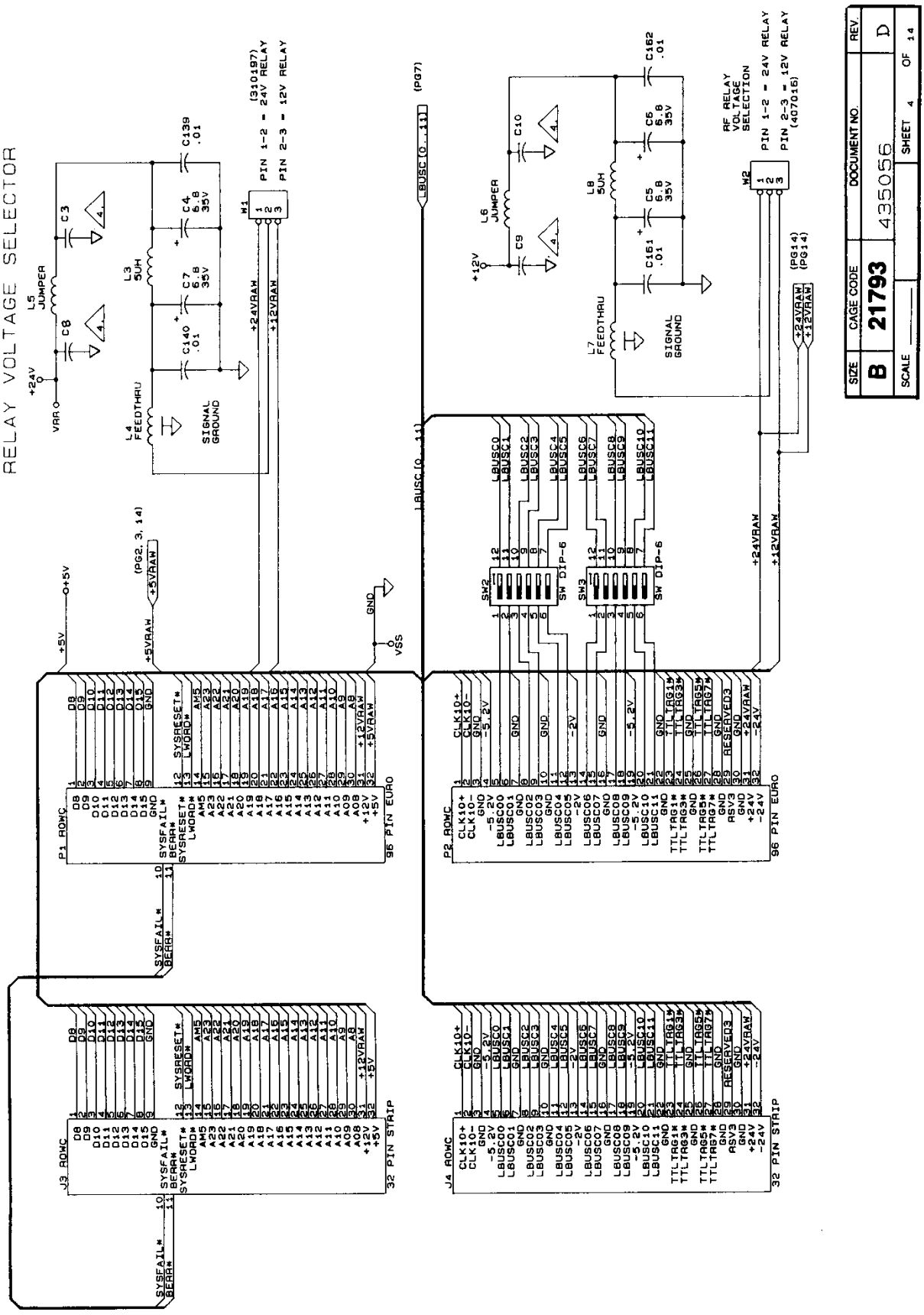
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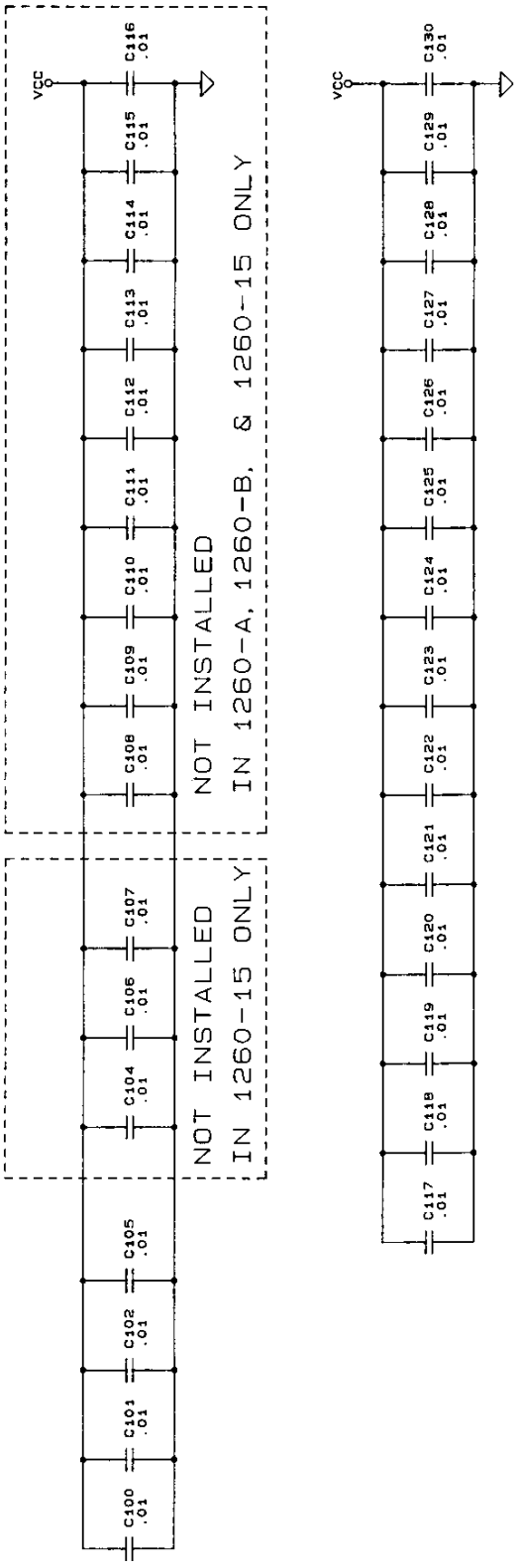
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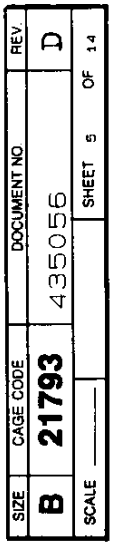


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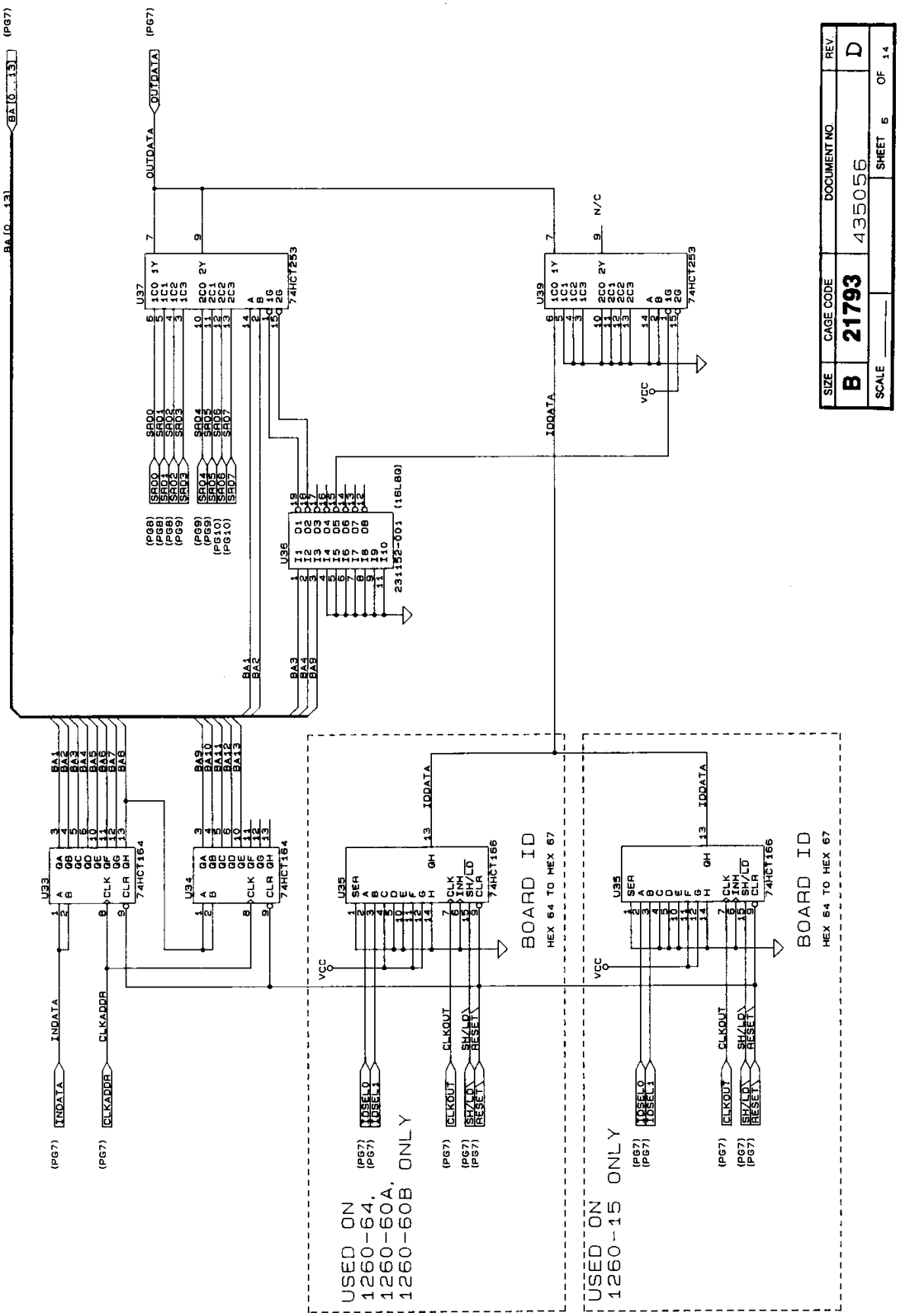


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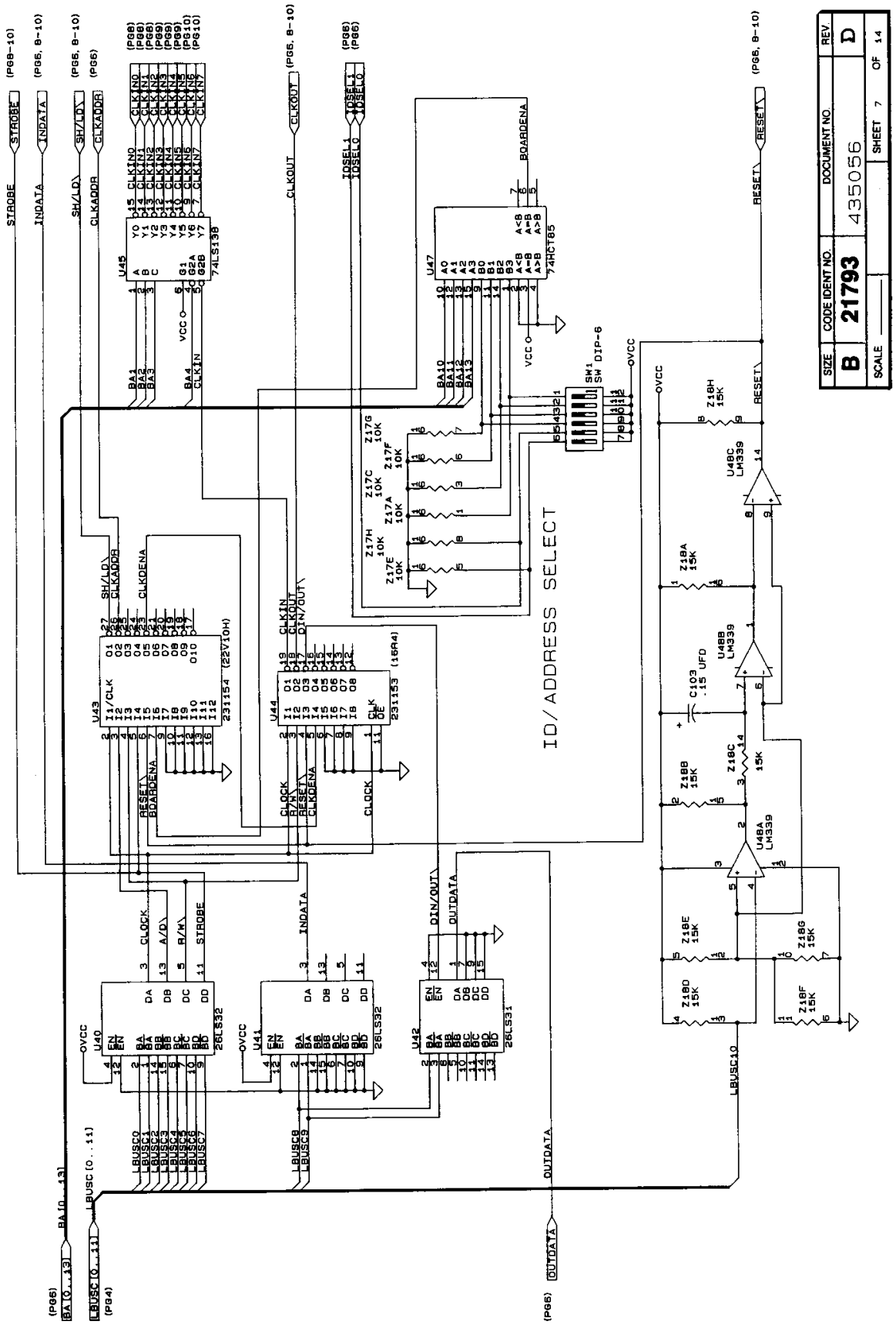




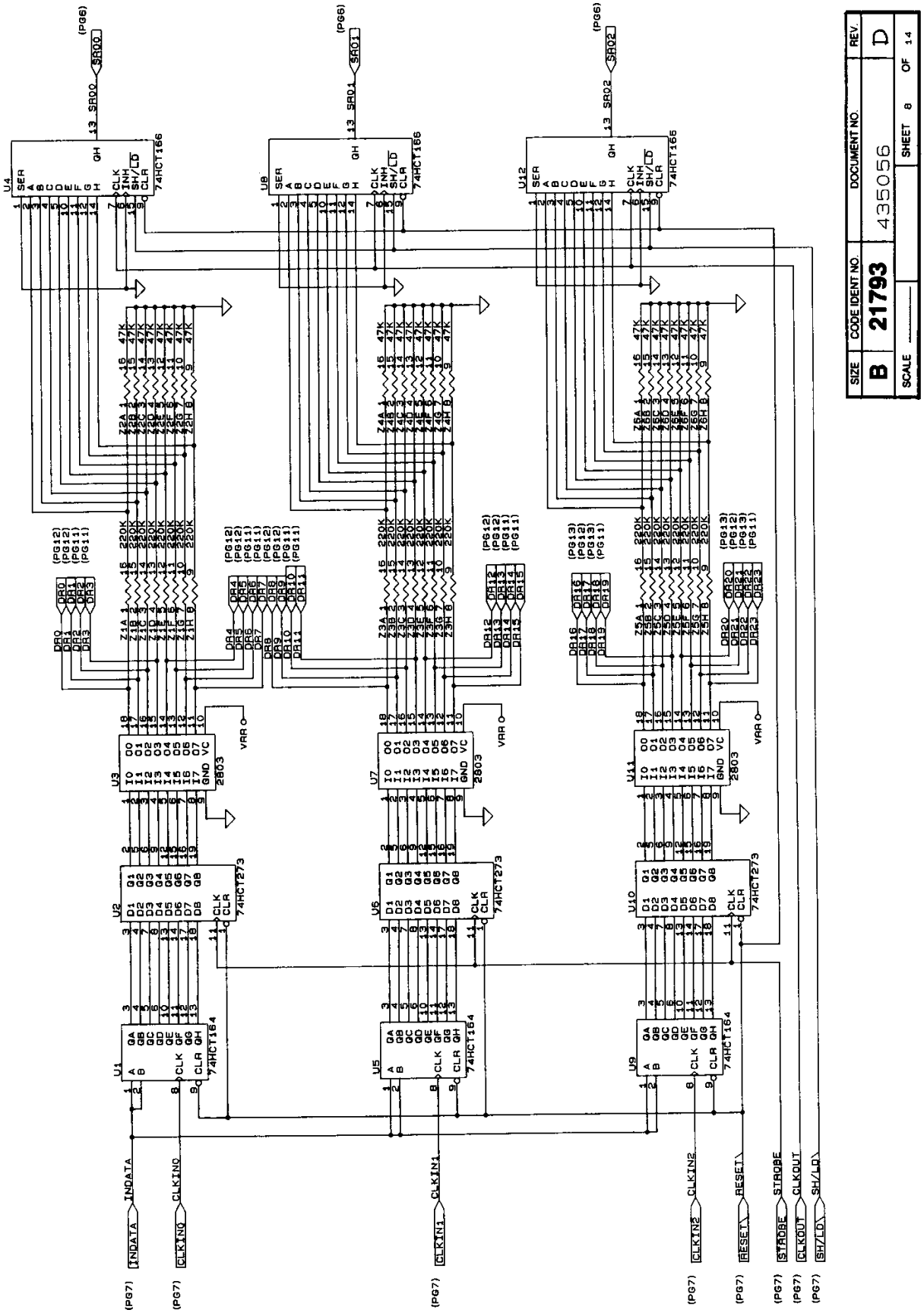
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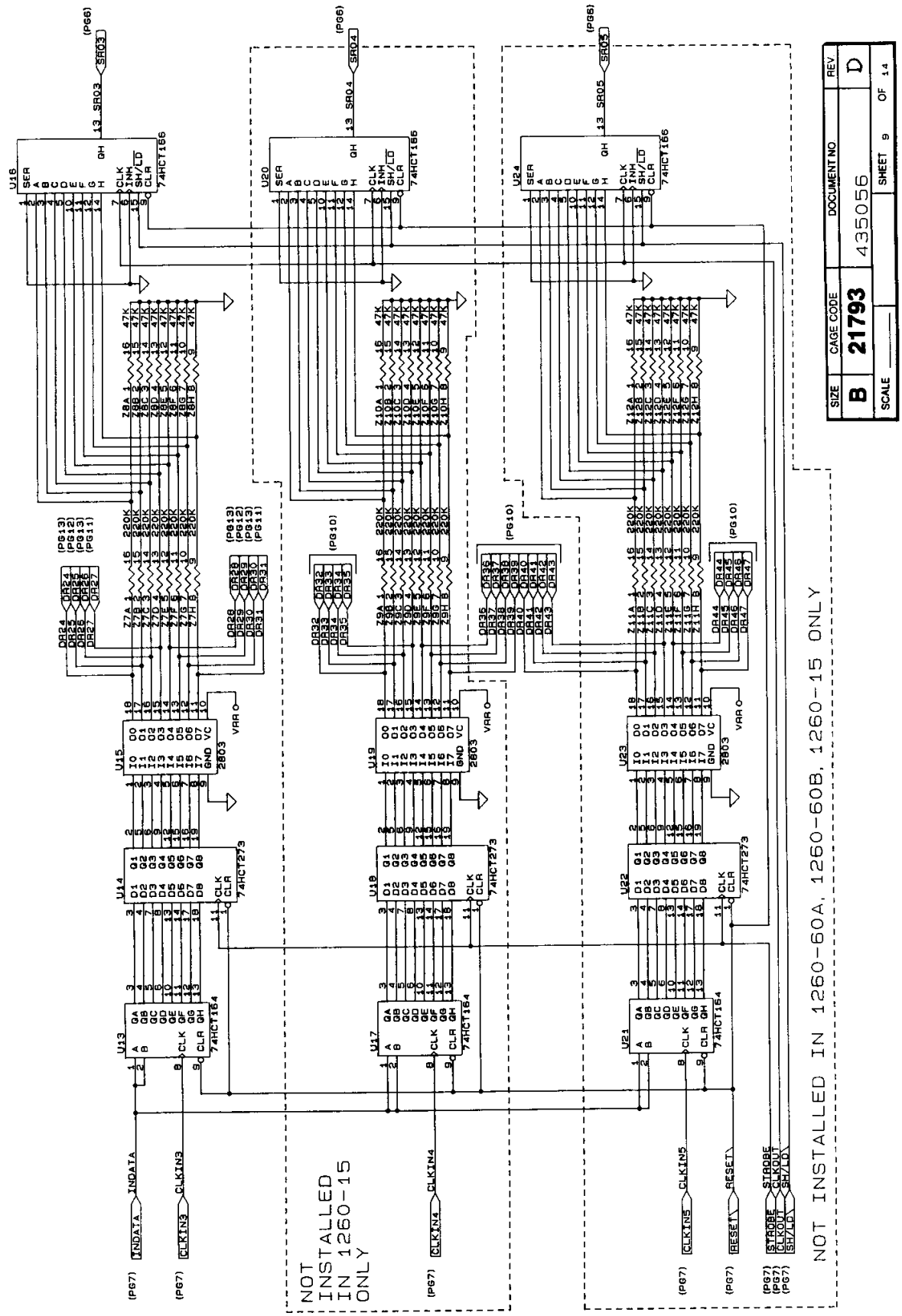
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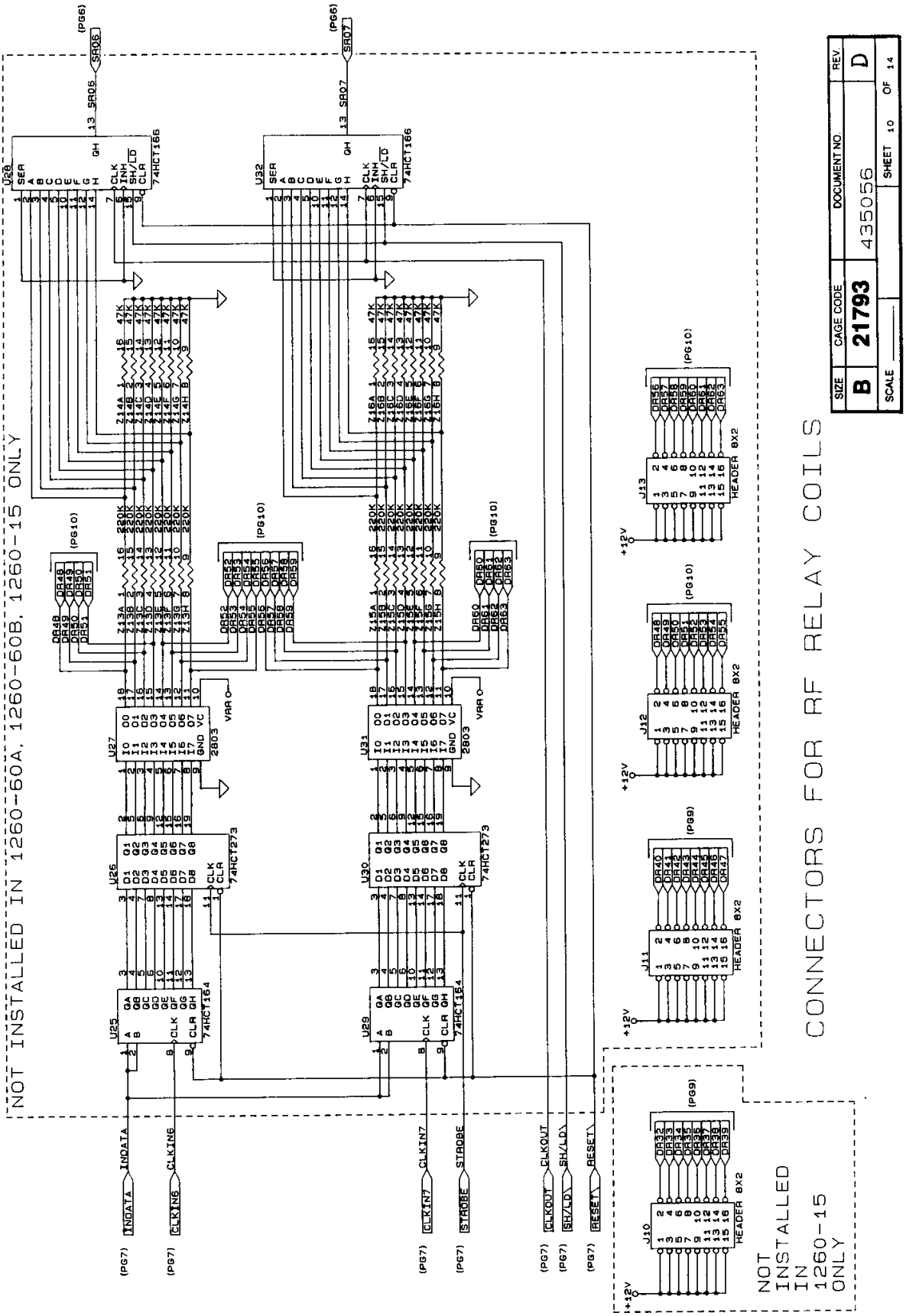
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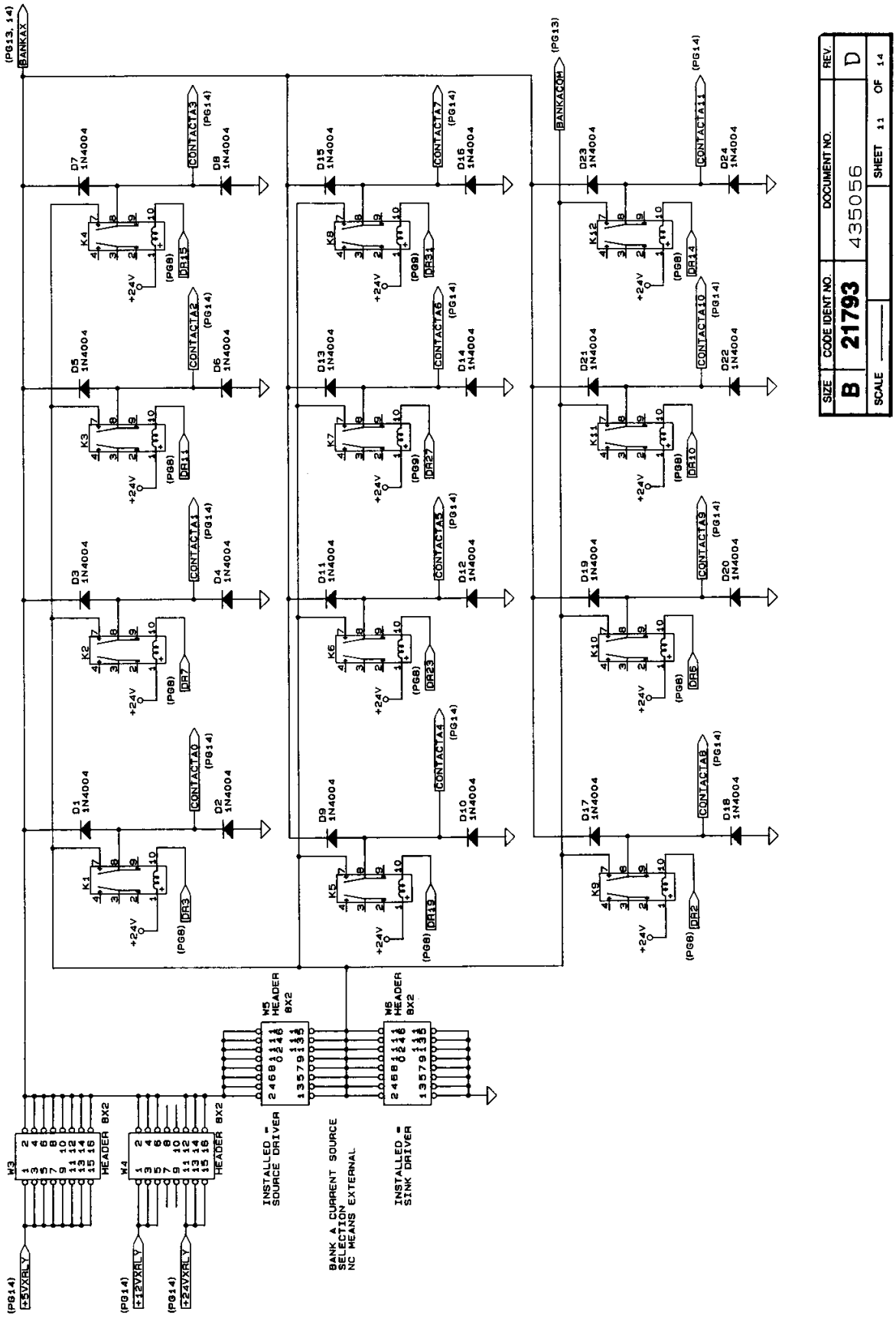
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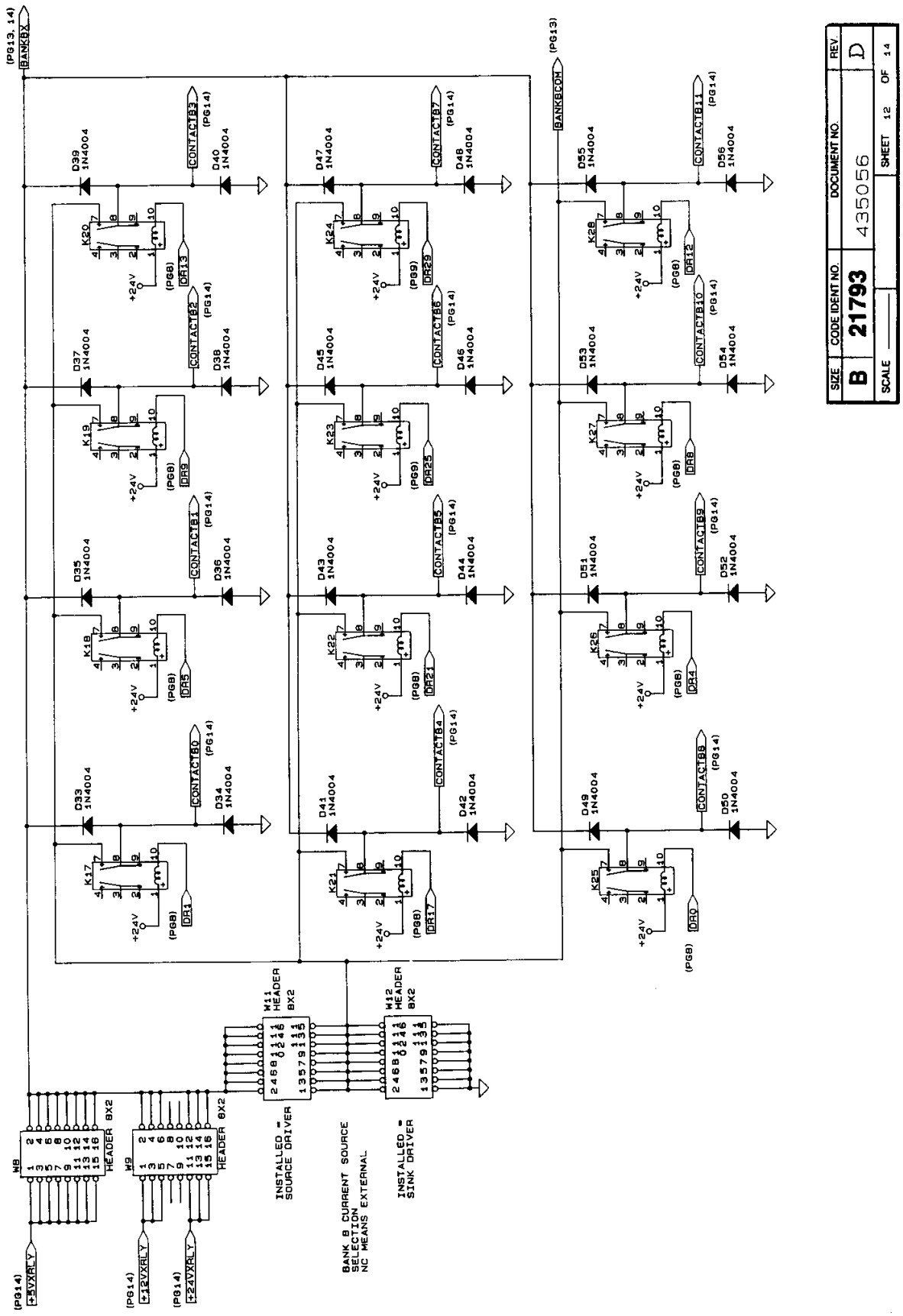
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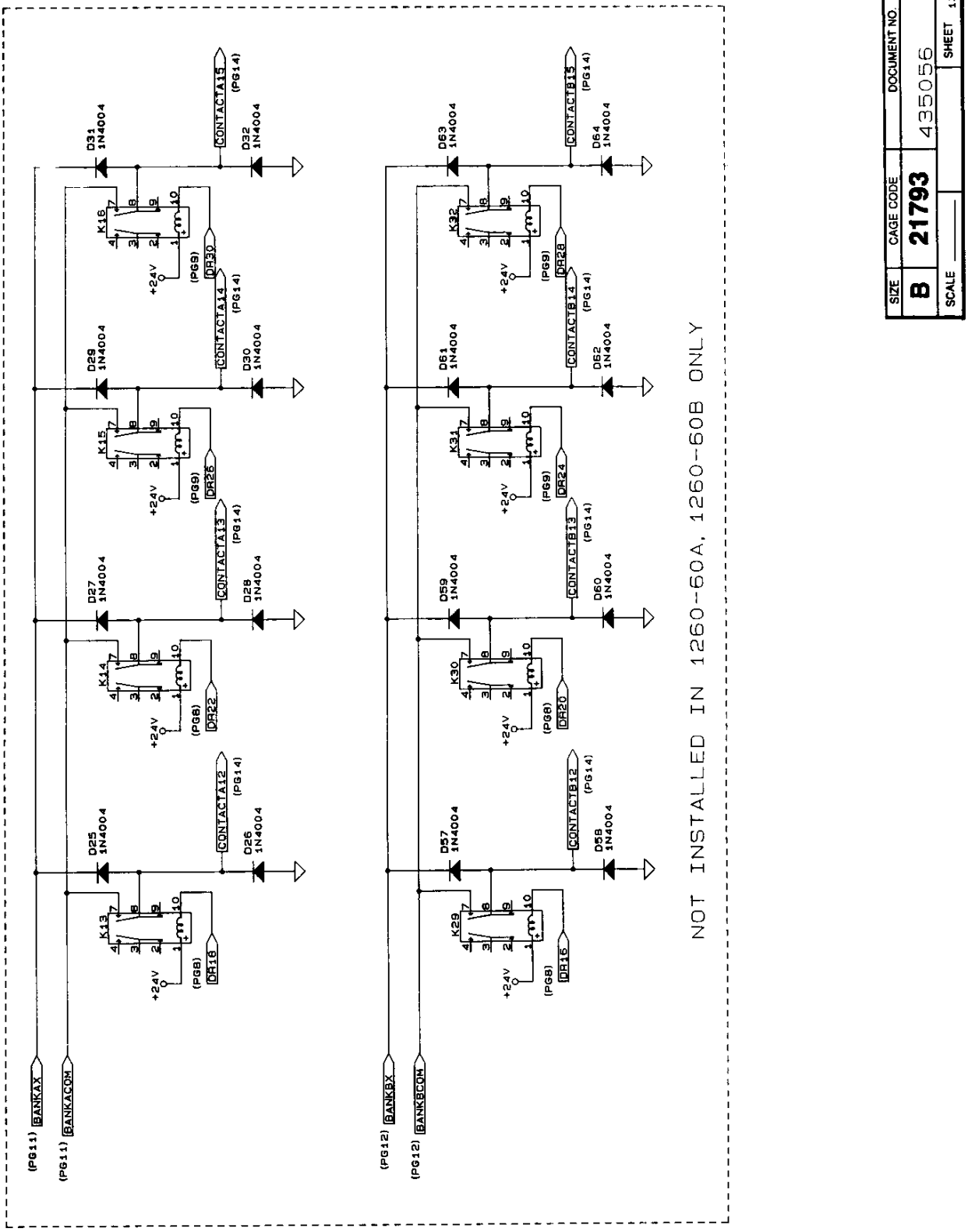
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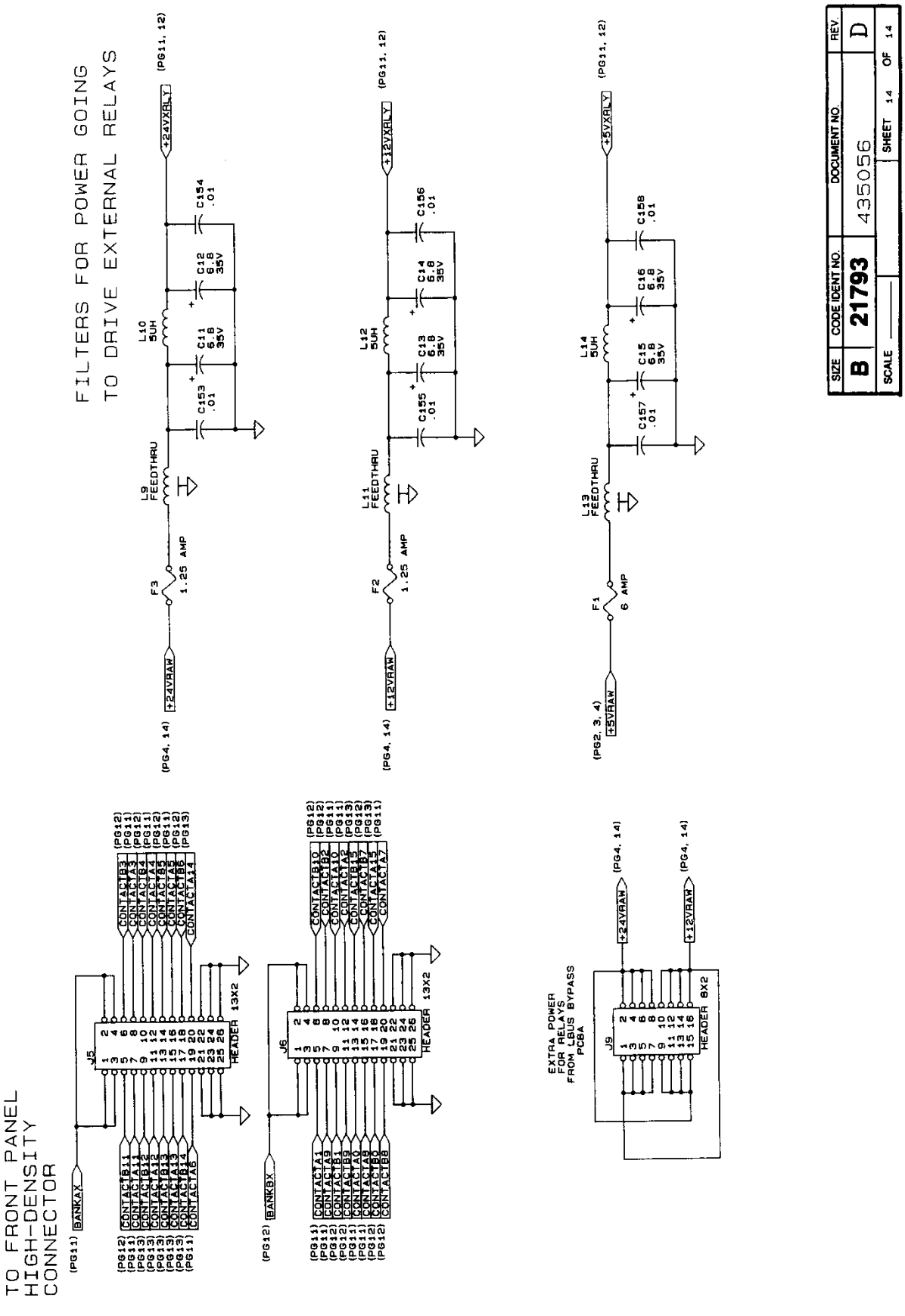
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Chapter 7
PARTS LIST

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407157-002, Final Assembly, 1260-60B 6-4
407158, Ship Kit, 1260-60A/B 6-5
405068, PCB Assembly, Connector Interface 6-5
407159, PCB Assembly, 1260-60A,B 6-6
List of Suppliers 6-8

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407157-001 - FINAL ASSY., 1260-60A

REF DESIG	RACAL INST P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
{1}1	407159	PCB ASSY., 1260-60	21793	407159
{2}1	405068	PCB ASSY., 34-PIN CONNECTOR INTERFACE	21793	405068
{5}1	455901	PANEL, RIGHT SIDE	21793	455901
{6}1	455779-003	PANEL, SIDE, LEFT	21793	455779-003
{7}1	455781	PANEL, REAR, SINGLE	21793	455781
{8}1	455784-001	PANEL, VXI TOP	21793	455784-001
{9}1	455784-002	PANEL, VXI BOTTOM	21793	455784-002
{11}1	456117	PANEL, FRONT, 1260-60	21793	456117
{12}1	456118	PLATE, MOUNTING, .09THK	21793	456118
{14}A/R	500009	TUBING, SHRINK,. 12 ID, BLK	29005	RNF-100-1-1/8
{15}A/R	524000	WIRE, TEFLON STRANDED, 24 GA, BLK	-	-
{16}A/R	524999	WIRE, TEFLON STRANDED, 24 GA, WHT	-	-
{18}3	310241	RELAY, ELEC-MECH, 1P2T, 12V	50667	D3-412C38
{19}6	610390	PLUG, HOLE	28520	P-375
{20}9	610728	WASHER, TEFLON, .263 ID,.433 OD,.031THK	86928	5612-39-031
{21}3	602094-900	POLARIZATION PLUG	22526	65307-001
{22}1	611264	HANDLE, EXTRACTOR, BOTTOM	62559	20817-327
{23}1	611265	HANDLE, EXTRACTOR, TOP	62559	20817-328
{24}.5	611266	MOUNTING HARDWARE, HANDLE	62559	21100-745
{26}5	611333	STANDOFF, PRESS, 6-32X.25L	46384	SOS-632-8
{27}12	611336	WASHER, SHOULDER, #2, .05THK	86928	5607-2
{28}6	615020	SCREW, MACHINE, PPH, 2-56X.750	-	-
{31}32	615539	SCREW, PFH, 4-40X. 125	-	-
{33}4	616251	SCREW, PPH, SEMS ASSY, 4-40X.250	78189	SEMS W/SQ CONE WA.
{34}2	616405	SCREW, PFH, M2.5-.45 X 12	-	-
{35}8	616480	SCREW, PFH, 4-40 X .375	-	-
{36}6	617002	NUT, HEX, 2-56	-	-
{37}5	617016	NUT, HEX, 4-40	-	-
{38}5	617127	WASHER, LOCK, #4, LIGHT SERIES	-	-
{39}3	602094-004	CONNECTOR HOUSING, 4 PIN	22526	65043-35
{40}4	610252	STANDOFF, SWAGE, 1/4D,4-40X.125	06540	9531B-B-0440-3A
{41}9	610777	CABLE TIE	16956	08-432
{42}9	611311	TERMINAL, CRIMP	22526	48251-000
{43}1	921212-026	LABEL, VXI, 1260-60	21793	921212-026
{44}A/R	920962	LOCTITE, 242, MED STR.	05972	272
{45}A/R	920008	LOCTITE	05972	495-50
{46}1	921059	LABEL, CAUTION, STATIC	21793	921059
{47}1	921148	LABEL SET, VXI-VME	21793	921148
{49}1	407158	SHIPPING KIT, 1260-60	21793	407158
{51}1	921309	LABEL, VXI SWITCH ID	21793	921309
{53}1	921423	LABEL, CE MARKING	21793	921423

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407157-002 - FINAL ASSY., 1260-60B

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{1}1	407159	PCB ASSY., 1260-60	21793	407159
{2}1	405068	PCB ASSY., 34-PIN CONNECTOR INTERFACE	21793	405068
{5}1	455901	PANEL, RIGHT SIDE	21793	455901
{6}1	455779-003	PANEL, SIDE, LEFT	21793	455779-003
{7}1	455781	PANEL, REAR, SINGLE	21793	455781
{8}1	455784-001	PANEL, VXI TOP	21793	455784-001
{9}1	455784-002	PANEL, VXI BOTTOM	21793	455784-002
{11}1	456117	PANEL, FRONT, 1260-60	21793	456117
{12}1	456119	PLATE, MOUNTING, .06THK	21793	456119
{14}A/R	500009	TUBING, SHRINK,. 12 ID, BLK	29005	RNF-100-1-1/8
{15}A/R	524000	WIRE, TEFLON STRANDED, 24 GA, BLK	-	-
{16}A/R	524999	WIRE, TEFLON STRANDED, 24 GA, WHT	-	-
{18}3	310240	RELAY, ELEC-MECH, 1P2T, 12V	50667	D3-412C38T
{20}15	610728	WASHER, TEFLON, .263 ID,.433 OD,.031THK	86928	5612-39-031
{21}3	602094-900	POLARIZATION PLUG	22526	65307-001
{22}1	611264	HANDLE, EXTRACTOR, BOTTOM	62559	20817-327
{23}1	611265	HANDLE, EXTRACTOR, TOP	62559	20817-328
{24}.5	611266	MOUNTING HARDWARE, HANDLE	62559	21100-745
{26}5	611333	STANDOFF, PRESS, 6-32X.25L	46384	SOS-632-8
{27}12	611336	WASHER, SHOULDER, #2, .05THK	86928	5607-2
{29}6	615020	SCREW, MACHINE, PPH, 2-56X.750	-	-
{31}32	615539	SCREW, PFH, 4-40X. 125	-	-
{33}4	616251	SCREW, PPH, SEMS ASSY, 4-40X.250	78189	SEMS W/SQ CONE WA.
{34}2	616405	SCREW, PFH, M2.5-.45 X 12	-	-
{35}8	616480	SCREW, PFH, 4-40 X .375	-	-
{36}6	617002	NUT, HEX, 2-56	-	-
{37}5	617016	NUT, HEX, 4-40	-	-
{38}5	617127	WASHER, LOCK, #4, LIGHT SERIES	-	-
{39}3	602094-004	CONNECTOR HOUSING, 4 PIN	22526	65043-35
{40}4	610252	STANDOFF, SWAGE, 1/4D,4-40X.125	06540	9531B-B-0440-3A
{41}9	610777	CABLE TIE	16956	08-432
{42}9	611311	TERMINAL, CRIMP	22526	48251-000
{43}1	921212-026	LABEL, VXI, 1260-60	21793	921212-026
{44}A/R	920962	LOCTITE, 242, MED STR.	05972	272
{45}A/R	920008	LOCTITE	05972	495-50
{46}1	921059	LABEL, CAUTION, STATIC	21793	921059
{47}1	921148	LABEL SET, VXI-VME	21793	921148
{49}1	407158	SHIPPING KIT, 1260-60	21793	407158
{51}1	921309	LABEL, VXI SWITCH ID	21793	921309
{53}1	921423	LABEL, CE MARKING	21793	921423

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407158 - SHIPPING KIT, 1260-60

REF DESIG	RACAL P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
{1}2	455541	KEY, LOCKOUT, TTL, A/C	21793	455541
{2}2	455542	KEY, LOCKOUT, TTL, A/C	21793	455542
{3}2	455540	KEY, LOCKOUT, TTL, A/C	21793	455540
{4}1	601855-034	CONNECTOR, SGMC CABLE PLUG	28198	SGMC34MOE100JO
{5}34	601857	CONTACT, SGMC. MALE	28198	M5422N
{7}4	615013	SCREW, PPF, 2-56 X .188	-	-
{9}64	601195	PLUG, JUMPER, 0.1 CTR, LOW PROFILE	00779	530153-2
{11}1	980673-011	MANUAL, 1260-60 MODULE	21793	980673-011

405068 - PCB ASSY., CONN. INTFC., 34-PIN

REF DESIG	RACAL P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
J1	602105	CABLE ASSY., PCB INTERFACE	21793	602105
J2	602105	CABLE ASSY., PCB INTERFACE	21793	602105
J200	601856-034	CONNECTOR, SMPL, PCB RCP	28198	SMPL34FOTOLB
{1}1	415068	PCB, 34-PIN CONNECTOR INTERFACE (UNLOADED)	21793	415068
{4}2	615013	SCREW, PPF, 2-56 X .188	-	-
{10}A/R	524555	WIRE, TEFLON STRANDED, 24 GA, GRN	-	-
{21}A/R	921279	LOCQUIC, PRIMER	05972	74756
{22}A/R	921280	LOCTITE, HIGH STRENGTH	05972	27121

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407159 - PCB ASSY., 1260-60

REF DESIG	RACAL INST P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
C1	110126	CAP, TANTA, 6.8UF, 35V, 20 PERCENT	05397	T355F685M035A5
C2	110126	CAP, TANTA, 6.8UF, 35V, 20 PERCENT	05397	T355F685M035A5
C4-C7	110126	CAP, TANTA, 6.8UF, 35V, 20 PERCENT	05397	T355F685M035A5
C11-C16	110126	CAP, TANTA, 6.8UF, 35V, 20 PERCENT	05397	T355F685M035A5
C100-C102	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C103	110165	CAP, TANTA, .15 MF, 35V, 10PCT	05397	T355A154K035AS
C104-C107	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C117-C130	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C137-C140	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C153-C158	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C161	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C162	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
D1-D64	210004	DIODE, SILICON	81349	1N4004
F1	920930	FUSE, NORMAL BLO, 6A, 250V	75915	312.006
F2	920776	FUSE, SLO BLO, 1.25A, 250V	71400	MDX1-1/4
F3	920776	FUSE, SLO BLO, 1.25A, 250V	71400	MDX1-1/4
J3	601925	CONNECTOR, PCB, RECEPT, 3 ROW, 96P	52072	618008
J4	601925	CONNECTOR, PCB, RECEPT, 3 ROW, 96P	52072	618008
J5	601583-026	CONNECTOR, PCB, PLUG, 26 PIN	55322	TSW-113-08-G-D
J6	601583-026	CONNECTOR, PCB, PLUG, 26 PIN	55322	TSW-113-08-G-D
J9	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
J10	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
K1-K12	310197	RELAY, 2 FORM C	61529	TQ2E-24V
K17-K28	310197	RELAY, 2 FORM C	61529	TQ2E-24V
L1	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L2	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
L3	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
L4	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L5	600245	JUMPER, INSULATED	52210	L-2007-1
L6	600245	JUMPER, INSULATED	52210	L-2007-1
L7	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L8	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
L9	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L10	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
L11	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L12	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
L13	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L14	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
P1	601675-001	CONNECTOR, EUROCARD, 96 PIN MOD.	21793	601675-001
P2	601675-001	CONNECTOR, EUROCARD, 96 PIN MOD.	21793	601675-001
SW1	601969	SWITCH, DIP 6 POS, LOW PROFILE	65832	K406S
SW2	601969	SWITCH, DIP 6 POS, LOW PROFILE	65832	K406S
SW3	601969	SWITCH, DIP 6 POS, LOW PROFILE	65832	K406S
TP1	601197	POST, TEST, .025 SQ	00779	6-87022-6
TP2	601197	POST, TEST, .025 SQ	00779	6-87022-6
U1	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U2	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273
U3	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW
U4	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U5	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U6	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273
U7	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW
U8	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U9	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U10	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273
U11	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW
U12	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U13	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U14	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273

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407159 - PCB ASSY., 1260-60

REF DESIG	RACAL INST P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
U15	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW
U16	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U17	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U18	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273
U19	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW
U20	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U33	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U34	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U35	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U36	231152-001	IC, DIGITAL 16L8, PAL	21793	231152-001
U37	231147	IC, MULTIPLEXER	04713	74HC253D
U39	231147	IC, MULTIPLEXER	04713	74HC253D
U40	231096	IC, QUAD DIFF RECEIVER	01295	AM26LS32ACD
U41	231096	IC, QUAD DIFF RECEIVER	01295	AM26LS32ACD
U42	231125	IC, DIGITAL, LINE DRIVER	27014	DS26LS31MN
U43	231154	IC, PROGRAMMED PLA	21793	231154
U44	231153	IC, PROGRAMMED PLA	21793	231153
U45	231094	IC, DEMUX DECODER	18324	N74LS138D
U47	231135	IC, DIGITAL, 4-BIT COMPARATOR	18324	PC74HCT85D
U48	231093	IC, QUAD COMPARATOR	04713	LM339D
W3-W6	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
W8	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
W9	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
W11	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
W12	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
Z1	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z2	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z3	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z4	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z5	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z6	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z7	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z8	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z9	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z10	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z17	080120	RES NETWORK, 10K	11236	767-161R10K
Z18	080114	RES NETWORK, 16P8R, 15K	73138	628-AL-153J
{43}1	401951	PCB ASSY., LBUS JUMPER	21793	401951
{44}1	401951-003	PCB ASSY., P3 JUMPER	21793	401951-003
{45}1	415056	PCB, 1260-64 (UNLOADED)	21793	415056
{48}A/R	500022	WIRE, BARE COPPER/TIN, 22 GA	21793	500022
{50}A/R	501376	TUBING, TEFLON, 20 GA, THIN WALL	29005	TW20GA
{55}4	611258-001	STANDOFF, SWAGE 4-40 X .170	06540	8091-11B-B-440-28
{79}6	920971	FUSE CLIP, PC MOUNT	75915	122088

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78189	ILLINOIS TOOL WORKS, INC. (SHAKEPROOF DIV.) ELGIN, IL
81349	MILITARY SPECIFICATION
86928	SEASTROM MFG. CO. GLENDALE, CA
91637	DALE ELECTRONICS, INC. COLUMBUS, NE
95275	VITRAMON, INC. BRIDGEPORT, CT

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Chapter 8
OPTIONAL HARNESS ASSEMBLIES

The following harness assembly is used to connect Racal Instruments Model 1260-60 to Freedom Series Test Receiver Interface.

Each harness documentation consists of an assembly drawing, parts list, and wire list.

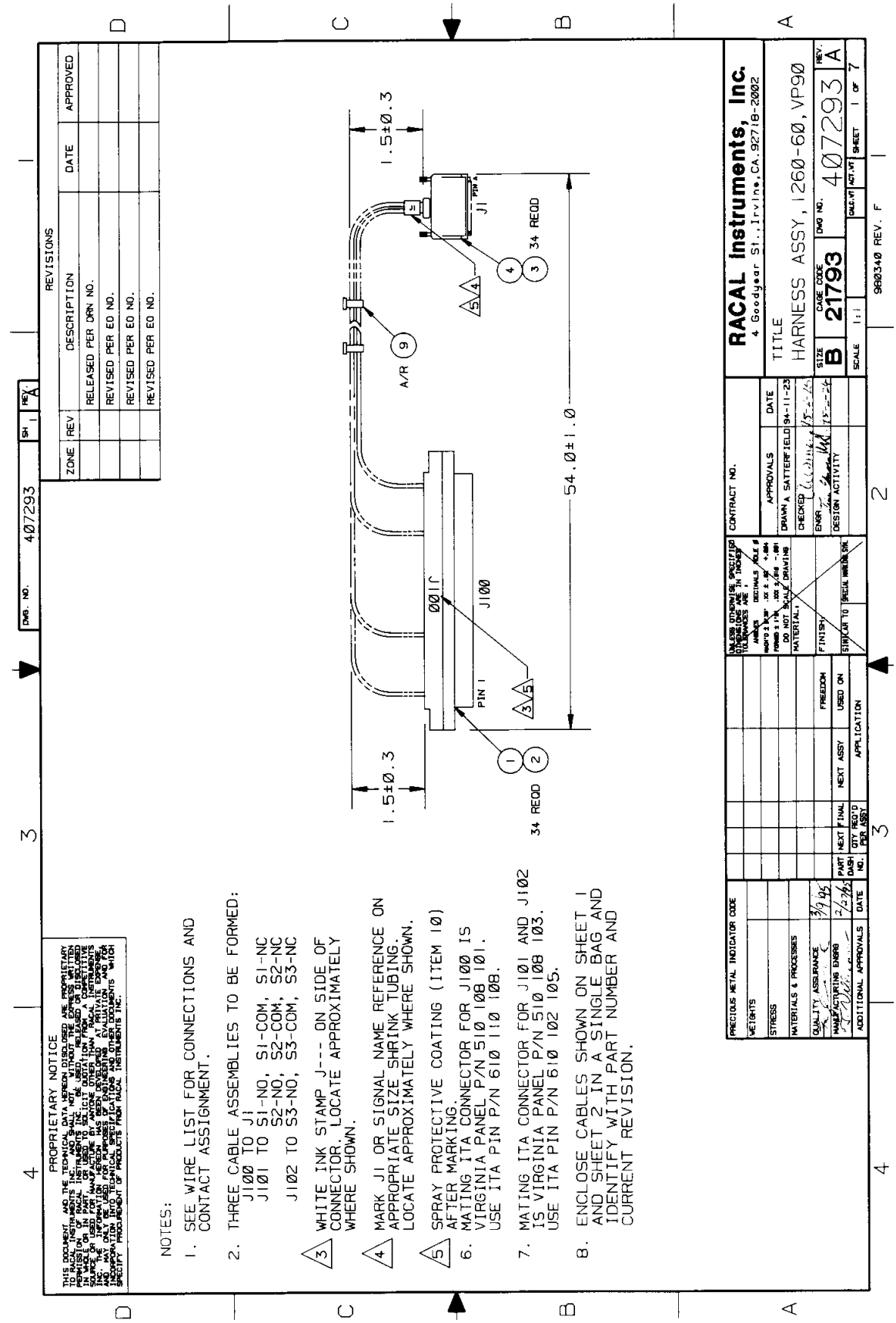
407293, Virginia Panel, Inc. Series VP90 Interface Harness 8-3

For more information on Racal Instruments complete line of Test Receiver Interface Solutions, contact your Sales Representative.

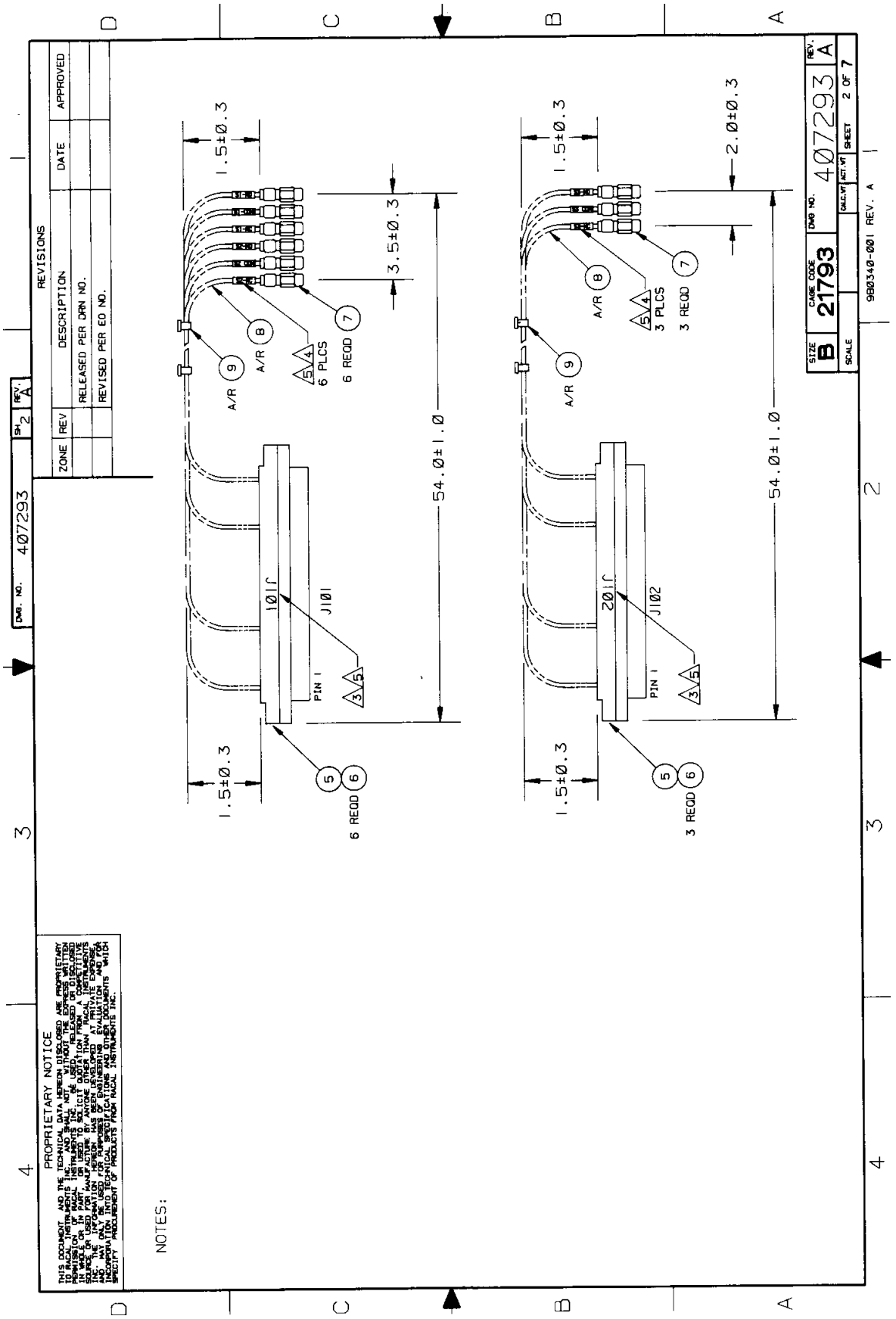
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ENGINEERING PARTS LIST

ITEM	BIN	PART NO.	DESCRIPTION	QTY	REFERENCE
1		602201-001	CON-RCV-PLG064C.---D-VP90	1	J100
2		602201-806	PATCHCORD,SIGNAL,24AWG,60"	34	W/J100
3		602092-001	CONT,SGMC MALE,CRIMP	34	W/J1
4		601855-034	CON-CAB-PLG34CP.	1	J1
5		602201-007	CON-RCV-PLG008C.	2	J101-J102
6		602230	CONTACT, COAXIAL,18GHZ,SF142	9	W/J101-102
7		602231	CON-CXL-PLG001C.	9	S1-S3
8		500317	CACX-SHD-01C28G-1STR	A/R	
9		610777	TIE-CA-LKG-.064-.075	A/R	
10		910541	POLYURETHANE CONF. COAT	A/R	

DOC. NO. 407293

RACAL Instruments, Inc., 4 Goodyear St., Irvine, CA 92718

DOCUMENT TITLE	SIZE	CODE NO.	DOCUMENT NO.	REV
HARNESS ASSEMBLY, 1260-60, VP90	A	21793	407293	A
	DRN		SHEET 3 of 7	

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ENGINEERING WIRE LIST

WIRE	FROM	TO	TYPE	PART #	WIRE LEN	REFERENCE
	BLK AA (J100)	Uxx-SLOT yy (J1)	CABLE	407293		SYSTEM WIRE LIST
	BLK AA (J101)	Uxx-SLOT yy (S1,S2)	CABLE	407293		
	BLK AA (J102)	Uxx-SLOT yy (S3)	CABLE	407293		

This system wirelist serves as a template for incorporating this harness assembly into the overall system wirelist. It does not in any way affect the fabrication of this harness assembly.

DOC. NO. 407293

RACAL Instruments, Inc., 4 Goodyear St., Irvine, CA 92718				
DOCUMENT TITLE	SIZE	CODE NO.	DOCUMENT NO.	REV
HARNESS ASSEMBLY, 1260-60, VP90	A	21793	407293	A
	DRN		SHEET 4 of 7	

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ENGINEERING WIRE LIST

WIRE	FROM	TO	TYPE	PART #	WIRE LEN	REFERENCE
1	J101-1 602230	S1-NO (602231)	COAX	500317	54"	S1 NO
2	J101-2 602230	S1-COM (602231)	COAX	500317	54"	S1 COM
3	J101-3 602230	S1-NC (602231)	COAX	500317	54"	S1 NC
4	J101-4 602230	S2-NO (602231)	COAX	500317	54"	S2 NO
5	J101-5 602230	S2-COM (602231)	COAX	500317	54"	S2 COM
6	J101-6 602230	S2-NC (602231)	COAX	500317	54"	S2 NC
7	J101-7	NO CONNECT				
8	J101-8	NO CONNECT				
9	J102-1 602230	S3-NO (602231)	COAX	500317	54"	S3 NO
10	J102-2 602230	S3-COM (602231)	COAX	500317	54"	S3 COM
11	J102-3 602230	S3-NC (602231)	COAX	500317	54"	S3 NC
12	J102-4	NO CONNECT				
13	J102-5	NO CONNECT				
14	J102-6	NO CONNECT				
15	J102-7	NO CONNECT				
16	J102-8	NO CONNECT				
17	J100-1 (602201-001)	J1-A 602092-001	24 AWG WHT	602201-806	54"	BANK A, EXTERNAL B+
18	J100-33 (602201-001)	J1-C 602092-001	24 AWG WHT	602201-806	54"	BANK A, EXTERNAL B+
19	J100-2 (602201-001)	J1-W 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 0
20	J100-34 (602201-001)	J1-F 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 1
21	J100-3 (602201-001)	J1-V 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 2
22	J100-35 (602201-001)	J1-M 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 3
23	J100-4 (602201-001)	J1-U 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 4
24	J100-36 (602201-001)	J1-Z 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 5
25	J100-5 (602201-001)	J1-DD 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 6

DOC. NO. 407293

RACAL Instruments, Inc., 4 Goodyear St., Irvine, CA 92718

DOCUMENT TITLE	SIZE	CODE NO.	DOCUMENT NO.	REV
HARNESS ASSEMBLY, 1260-60, VP90	A	21793	407293	A
	DRN			SHEET 5 of 7

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ENGINEERING WIRE LIST

WIRE	FROM	TO	TYPE	PART #	WIRE LEN	REFERENCE
26	J100-37 (602201-001)	J1-FF 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 7
27	J100-6 (602201-001)	J1-Y 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 8
28	J100-38 (602201-001)	J1-L 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 9
29	J100-7 (602201-001)	J1-S 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 10
30	J100-39 (602201-001)	J1-K 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 11
31	J100-8 (602201-001)	J1-B 602092-001	24 AWG WHT	602201-806	54"	BANK B, EXTERNAL B+
32	J100-40 (602201-001)	J1-D 602092-001	24 AWG WHT	602201-806	54"	BANK B, EXTERNAL B+
33	J100-9 (602201-001)	J1-BB 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 0
34	J100-41 (602201-001)	J1-P 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 1
35	J100-10 (602201-001)	J1-N 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 2
36	J100-42 (602201-001)	J1-H 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 3
37	J100-11 (602201-001)	J1-R 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 4
38	J100-43 (602201-001)	J1-X 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 5
39	J100-12 (602201-001)	J1-CC 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 6
40	J100-44 (602201-001)	J1-AA 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 7
41	J100-13 (602201-001)	J1-EE 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 8
42	J100-45 (602201-001)	J1-T 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 9
43	J100-14 (602201-001)	J1-J 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 10
44	J100-46 (602201-001)	J1-E 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 11
45	J100-15 (602201-001)	J1-HH 602092-001	24 AWG WHT	602201-806	54"	EXTERNAL GND
46	J100-47 (602201-001)	J1-JJ 602092-001	24 AWG WHT	602201-806	54"	EXTERNAL GND
47	J100-16 (602201-001)	J1-KK 602092-001	24 AWG WHT	602201-806	54"	EXTERNAL GND
48	J100-48 (602201-001)	J1-LL 602092-001	24 AWG WHT	602201-806	54"	EXTERNAL GND

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DOCUMENT TITLE	SIZE	CODE NO.	DOCUMENT NO.	REV
HARNESS ASSEMBLY, 1260-60, VP90	A	21793	407293	A
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ENGINEERING WIRE LIST

WIRE	FROM	TO	TYPE	PART #	WIRE LEN	REFERENCE
49	J100-17 (602201-001)	J1-MM 602092-001	24 AWG WHT	602201-806	54"	EXTERNAL GND
50	J100-49 (602201-001)	J1-NN 602092-001	24 AWG WHT	602201-806	54"	EXTERNAL GND
51	J100-18	NO CONNECT				
52	J100-50	NO CONNECT				
53	J100-19	NO CONNECT				
54	J100-51	NO CONNECT				
55	J100-20	NO CONNECT				
56	J100-52	NO CONNECT				
57	J100-21	NO CONNECT				
58	J100-53	NO CONNECT				
59	J100-22	NO CONNECT				
60	J100-54	NO CONNECT				
61	J100-23	NO CONNECT				
62	J100-55	NO CONNECT				
63	J100-24	NO CONNECT				
64	J100-56	NO CONNECT				
65	J100-25	NO CONNECT				
66	J100-57	NO CONNECT				
67	J100-26	NO CONNECT				
68	J100-58	NO CONNECT				
69	J100-27	NO CONNECT				
70	J100-59	NO CONNECT				
71	J100-28	NO CONNECT				
72	J100-60	NO CONNECT				
73	J100-29	NO CONNECT				
74	J100-61	NO CONNECT				
75	J100-30	NO CONNECT				
76	J100-62	NO CONNECT				
77	J100-31	NO CONNECT				
78	J100-63	NO CONNECT				
79	J100-32	NO CONNECT				
80	J100-64	NO CONNECT				

DOC. NO. 407293

RACAL Instruments, Inc., 4 Goodyear St., Irvine, CA 92718

DOCUMENT TITLE	SIZE	CODE NO.	DOCUMENT NO.	REV
HARNESS ASSEMBLY, 1260-60, VP90	A	21793	407293	A
	DRN			SHEET 7 of 7

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Chapter 9
PRODUCT SUPPORT

Product Support

Racal Instruments has a complete Service and Parts Department. If you need technical assistance or should it be necessary to return your product for repair or calibration, call 1-800-722-3262. If parts are required to repair the product at your facility, call 1-949-859-8999 and ask for the Parts Department.

When sending your instrument in for repair, complete the form in the back of this manual.

For worldwide support and the office closes to your facility, refer to the Support Offices section on the following page.

Reshipment Instructions

Use the original packing material when returning the 1260-60A or 1260-60B to Racal Instruments for calibration or servicing. The original shipping crate and associated packaging material will provide the necessary protection for safe reshipment.

If the original packing material is unavailable, contact Racal Instruments Customer Service for information.

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Support Offices

Racal Instruments, Inc.
4 Goodyear St., Irvine, CA 92618-2002
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