

Film-Tech

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PG-2120
AUTOMATION



Strong International, Inc.
4350 McKinley Street • Omaha, Nebraska 68112
Telephone: **402-453-4444** • FAX: **402-453-7238**

SECTION 1 - PREFACE

1.1 SCOPE

This manual provides installation and operating instructions for the Strong International **PG-2100 Series Automation**. This system is designed to be installed in any Strong Xenon Projection Console as an integrated package. It may also be mounted into a user-supplied 19 inch rack, or it may be supplied in a wall-mount cabinet.

1.2 GENERAL DESCRIPTION

The Strong PG-2100 Series automation offers comprehensive and cost-effective technology for controlling all booth and auditorium functions. Designed with an EPROM, this solid-state automation provides standard programmable sequences, eight manual switches, prominently illuminated START and STOP buttons, and four sound format selections.

When requesting information or technical support for this unit, please furnish *model number* and *serial number*.

SECTION 2 - INSTALLATION

2.1 RECEIVING & HANDLING

Remove all packing material and carefully inspect for possible shipping damage. claims for loss or damage that may have occurred in transit must be filed by the buyer with the carrier. Copy of the bill of lading and freight bill will be furnished on request. When requesting information, be sure to furnish serial and model numbers.

2.2 MECHANICAL INSTALLATION-RACK MOUNT AUTOMATION

Mount automation to 19" rack using four appropriate size screws. Install terminal panel securely in back of rack.

2.2.1 MECHANICAL INSTALLATION - WALL MOUNT AUTOMATION

!!!WARNING!!!

IF ANY DRILLING OR METAL WORK IS TO TAKE PLACE NEAR THE AUTOMATION. COVER AUTOMATION TO PREVENT ANY METAL CHIPS FROM ENTERING.

Mount the enclosure on a solid wall, close to the normal operating position with three 1/4" mounting bolts.

2.2 ELECTRICAL INSTALLATION

!!!-WARNING-!!!

EXCEPT FOR THE PROJECTOR MOTOR, SLIDE PROJECTOR, EXCITOR SUPPLY AND THE DOUSER. ALL OTHER CONTACTS ARE RATED FOR A MAXIMUM OF .5 AMP. AT 120VAC. IF A HIGHER CURRENT RATING IS NEEDED AN EXTERNAL RELAY IS REQUIRED.

All electrical connections are made at the terminal panel. In the ORC console, the terminal panel is located behind the non-operating side panel

2.3.1 DOUSER RATED 5 AMP AT 120VAC

INPUT POWER L1(HOT)	TB1-17
INPUT POWER L2(NEUTRAL)	TB1-18
DOUSER OPEN OUTPUT	TB1-1
DOUSER COMMON	TB1-2
DOUSER CLOSE OUTPUT	TB1-3

This circuit supplies 120VAC pulses for standard douser coils. If a maintained or cold type contacts are required, consult ORC.

2.3.2 AUXILIARY RATED .5 AMP AT 120VAC

NORMALLY OPEN OUTPUT	TB1-4
NORMALLY CLOSED OUTPUT	TB1-5
COMMON	TB1-6

This SPDT circuit can be programmed to customer specifications.

2.3.3 SLIDE PROJECTOR RATED 5 AMP AT 120VAC

L1(HOT) OUTPUT	TB1-4
L2(NEUTRAL) OUTPUT	TB1-5

This circuit supply 120VAC whenever the exciter supply is off. This can conflict with the curtains. If both curtains and slide projector are to be used, consult ORC.

2.3.4 EXCITER SUPPLY RATED 10 AMP AT 120VAC

EXCITER SUPPLY	TB1-9
EXCITER SUPPLY	TB1-10

This cold contact closure is used to switch the exciter supply.

2.3.5 PROJECTOR MOTOR RATED 10 AMP-1/4HP AT 120VAC

INPUT POWER L1(HOT)	TB1-15
INPUT POWER L2(NEUTRAL)	TB1-16
PROJECTOR MOTOR OUTPUT L1	TB1-13
PROJECTOR MOTOR OUTPUT L2	TB1-14

This circuit supplies 120VAC single phase output whenever the projector is on. If three phase control is needed, a external relay will be required.

2.3.6 HOUSE LIGHTS RATED .5 AMP AT 120VAC

HOUSE LIGHTS COMMON	TB2-1
HOUSE LIGHTS UP	TB2-2
HOUSE LIGHTS 1/2	TB2-3
HOUSE LIGHTS DOWN	TB2-4

This circuit supplies a pulsed cold contact closure between common and the appropriate output.

2.3.7 STAGES LIGHTS RATED .5 AMP AT 120VAC

STAGE LIGHTS COMMON	TB2-5
STAGE LIGHTS UP	TB2-6
STAGE LIGHTS DOWN	TB2-7

This circuit supplies a pulsed cold contact closure between common and the appropriate output. The same relay controls both the stage lights and the curtains. Both must switch at the same time when operated by the PLC.

2.3.8 CURTAINS RATED .5 AMP AT 120VAC

CURTAINS COMMON	TB2-8
CURTAINS CLOSE	TB2-9
CURTAINS OPEN	TB2-10

This circuit supplies a pulsed cold contact closure between common and the appropriate output. The same relay controls both the stage lights and the curtains. Both must switch at the same time when operated by the PLC.

2.3.9 MASKING RATED .5 AMP AT 120VAC

MASKING COMMON	TB2-11
MASKING FLAT	TB2-12
MASKING SCOPE	TB2-13

This circuit supplies a pulsed cold contact closure between common and the appropriate output. The same relay controls both the turret and the masking. Both must switch at the same time when operated by the PLC.

2.3.10 TURRET RATED .5 AMP AT 120VAC

TURRET COMMON	TB2-14
TURRET FLAT	TB2-15
TURRET SCOPE	TB2-16

This circuit supplies a pulsed cold contact closure between common and the appropriate output. The same relay controls both the turret and the masking. Both must switch at the same time when operated by the PLC.

2.3.11 REMOTE INPUT

REMOTE COMMON	TB2-17
REMOTE START	TB2-18
REMOTE STOP	TB2-19

When a contact closure is made between common and the start or stop input the results are the same as pushing the start or stop button.

2.3.12 LAMP MONITOR ENABLE

LAMP MONITOR ENABLE	TB2-20
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For use with the ORC lamp monitor. See drawing in back of this manual for wiring.

2.3.13 INTERLOCK CONNECTIONS

TB3-1 AUTOMATION #1 TO TB3-1 AUTOMATION #2
TB3-2 AUTOMATION #1 TO TB3-2 AUTOMATION #2
TB3-3 AUTOMATION #1 TO TB3-3 AUTOMATION #2
TB3-4 AUTOMATION #1 TO TB3-5 AUTOMATION #2
TB3-5 AUTOMATION #1 TO TB3-4 AUTOMATION #2
TB3-6 AUTOMATION #1 TO TB3-6 AUTOMATION #2

For a two automation interlock, wire as above, noting that wires are reversed between the automations on TB3-4 and TB3-5. If more than two automations are to be interlocked, then an ORC interlock box is required-see drawing in back of this manual for wiring.

2.3.14 STATUS BOX

ALARM COMMON	TB3-7
ALARM HOT	TB3-8

Signals are provided for the ORC two wire status box-see drawing in back of this manual for wiring.

2.3.15 FAILSAFE/CUE DETECTOR

OUTBOARD CUE	TB3-9
INBOARD CUE	TB3-10
FAILSAFE COMMON POWER SUPPLY-	TB3-11
FAILSAFE BREAK	TB3-12
POWER SUPPLY +24VDC 300mA MAX	TB3-13

The failsafe common is used as the common for switch type failsafe/cue detectors. If proximity detector or other powered cue detector is used, +24VDC at 300 mA max is available on TB3-14. Note that the automation requires low going(grounding) inputs.

2.3.16 SOUND SYSTEM

SOUND COMMON	TB3-15
SOUND NON-SYNC	TB3-16
SOUND FORMAT #1	TB3-17
SOUND FORMAT #2	TB3-18
SOUND FORMAT #3	TB3-19
SOUND FORMAT #4	TB3-20

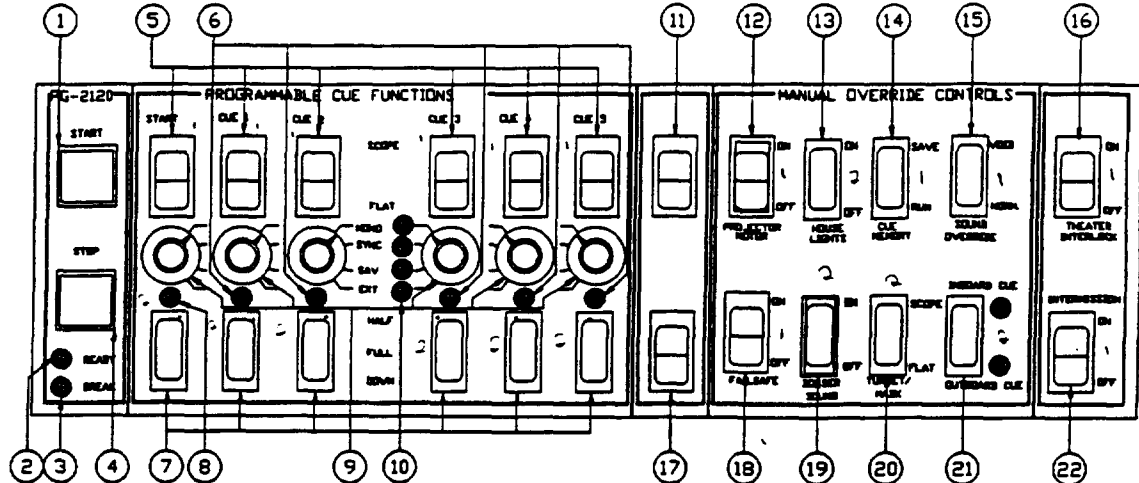
This circuit supplies a pulsed cold contact closure between common and the appropriate output.

SECTION 3 - OPERATION

3.1 GENERAL

Before applying power, make sure that the equipment has been properly installed and the proper connections made in order to prevent possible damage.

3.2 FRONT PANEL OPERATION



1. "START" push button - when depressed, will initiate show start.
2. "READY" light -
GREEN = READY FOR SHOW START, FAILSAFE ARMS UP.
ORANGE = AUTOMATION READY, FAILSAFE ARMS DOWN.
RED = FAILSAFE OR LAMP MONITOR HAS SHUT DOWN SHOW.
3. "BREAK" light - lights whenever failsafe arms are down.
4. "STOP" push button - when depressed, will stop projector, close douser, bring up house lights, etc. Also will cancel film break alarm.
5. "LENS" switches - determines the position of the lens turret and masking, at show start, and first through fifth inboard cues.
6. "CUE 1-5" LEDs - indicates the automation has received the indicated inboard cue and has responded to it's program switches.
7. "HOUSE LTS" switch - determines the house light levels, at show start, and first through fifth inboard cues.

8. "START" LED - indicates the automation responded to the "START" program switches last.
9. "SOUND FORMAT" switches - determines the sound format for show start, first and second inboard cues.
10. "SOUND FORMAT" LEDs - Will light momentarily as the sound pulse is sent out.
11. NOT USED AT THIS TIME.
12. "MANUAL PROJECTOR MOTOR" switch - allows the projector motor to be manually turned on. Operates with or without automation power on.
13. "MANUAL HOUSE LIGHTS" switch - provides manual switching for house lighting. Operates with or without automation power on.
14. "CUE MEMORY" switch

SWITCH IN THE RUN POSITION.- Cues can be placed on the film or input manually from the front panel. The automation responds to the cues as they are received. The cue timing is recorded each time the show is run. The timing from the previous show is erased and recorded over in the process.

SWITCH IN THE SAVE POSITION.- The automation will respond only to the cues recorded in its memory. It will ignore any cue on the film or manually input.

NOTE!!! THE MAXIMUM TIME FOR CUE MEMORY 165 MINUTES IF THE TOTAL RUN TIME, INCLUDING TRAILERS IS OVER 165 MINUTES. DO NOT USE CUE MEMORY!.

15. "SOUND OVERRIDE"
16. "INTERLOCK" switch - is used to run a single print on two or more projectors. If the interlock switches on both automations are on the switches will light up.
17. NOT USED AT THIS TIME
18. "FAILSAFE" switch -Allows the failsafe to be deactivated.
19. "MANUAL DOUSER" switch - operates the douser and the exciter supply. Will not operate with automation power on. Note that the exciter supply is on, any time the automation power is off.
20. "TURRET/MASK" switch - provides manual switching for lens turret and masking. Operates only with automation power on.

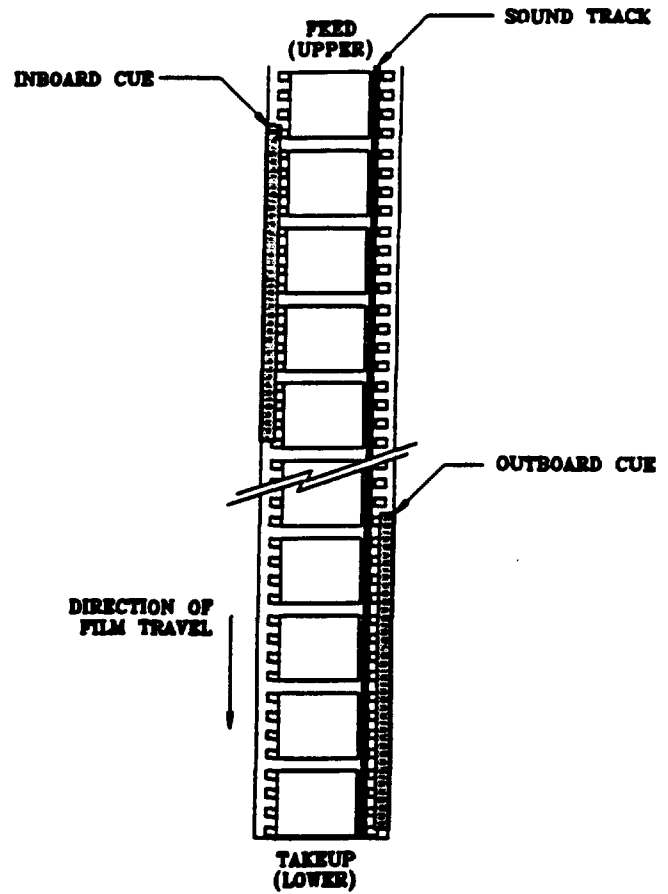
21. "MANUAL CUES" switch - allows inboard and outboard cues to be input manually. CUE LEDs - will light whenever a cue is received from the cue sensor or is input manually. Cues stored in cue memory will not light the LEDs.
22. "INTERMISSION" switch - if the intermission switch is on, when the douser closes at the end of show the projector will shut off. In the off position the projector will run till the failsafe drops.

3.5 CUE FOIL PLACEMENT

Cue tape foil should be approximately 4 frames long. Foil should be wrapped around the edge of the film, from the outside of the sprocket holes on one side to the outside edge of the holes on the other side.

If cue memory is not used, the foil tape should be replaced when signs of wear start to show.

See operational sequence for cue functions.



3.6

CUE MEMORY - MAXIMUM SHOW TIME IS 165 MINUTES.

Each time a show is run while the cue memory switch is in the run position, all cues are responded to and the timing recorded into the automation's memory. This memory is retained even when automation power is off.

After one complete show has been played with all required cues on the film or input manually, the cue memory switch can be placed in the save position. When in the save position, the automation will respond to the cues recorded in it's memory. It will NOT respond to any cues on the film or input manually.

The automation memory can record cues for up to 165 minutes. It will not record any cues after this time. If the presentation, including trailers is over 165 minutes do NOT use cue memory.

Cue memory only times cues while the film is running. If a film break or manual stop shuts down the show. It can be restarted without the automation losing track of the cue position.

If a power failure shuts down a show, and the show needs to be restarted. Cue memory should be switched back to the run position and one complete show run through before switching back to save.

Cue memory and the internal cue counters can be reset to the start position, by holding down the stop button for two seconds or shutting down the power.

If a feature or trailers are changed or moved, cue memory should be switched back to the run position and one complete show run through before switching back to save.

TIMER ADJUSTMENT

CURTAIN CLOSE TIMING - When the end of show cue (outboard cue) is received, the curtains will begin to close. The remaining functions can be programmed to coincide with the curtains fully closing.

TO ADJUST:

- 1) Time the curtain close time with a stop watch.
- 2) With the automation stopped (can NOT be programmed while the automation is running) momentarily depress the stop button and the manual douser off switch, at the same time.
- 3) Depress the manual douser off switch to reset the timer to zero seconds.
- 4) Depress the manual douser on switch once for each second it takes for the curtains to close.

DOUSER OPEN TIMING - The time from when the start button is depressed to when the douser opens, sound changes etc, can be adjusted as follows.

TO ADJUST:

- 1) With the automation stopped (can NOT be programmed while the automation is running) momentarily depress the stop button and the manual douser on switch, at the same time.
- 3) Depress the manual douser off switch to reset the timer to zero seconds.
- 4) Depress the manual douser on switch once for each second you would like the douser delayed.

POWER ON

PULSE NON SYNC SOUND.
PULSE HOUSE LIGHTS UP.
PULSE DOUSER CLOSE.
READY LIGHT GREEN/STATUS BOX CUE LIGHT ON.

START

PROJECTOR MOTOR ON/XENON LAMP ON.
PULSE HOUSE LIGHTS TO PROGRAMMED
"START" LEVEL.
PULSE LENS TO PROGRAMMED "START" SETTING.
READY LIGHT/STATUS BOX CUE LIGHT OFF.

START +7 SECONDS

PULSE SOUND TO PROGRAMMED "START" FORMAT.
EXCITER SUPPLY ON.
PULSE DOUSER OPEN.

FIRST INBOARD CUE

PULSE HOUSE LIGHTS TO PROGRAMMED
"CUE 1" LEVEL.
PULSE SOUND TO PROGRAMMED "CUE 1" FORMAT.
PULSE LENS TO PROGRAMMED "CUE 1" SETTING.
IF LENS CHANGES-CLOSE DOUSER AND REOPEN
AFTER 3 SECONDS.

SECOND THROUGH FIFTH INBOARD CUES

SAME AS FIRST INBOARD CUE.

OUTBOARD CUE

PULSE HOUSE LIGHTS UP.
READY LIGHT GREEN/STATUS BOX CUE LIGHT ON.

OUT BOARD CUE +11 SECONDS (ADJUSTABLE 1-30 SEC)

PULSE DOUSER CLOSE.
PULSE NON-SYNC SOUND.
EXCITER SUPPLY OFF.

FAILSAFE DROP AFTER OUTBOARD CUE

PROJECTOR MOTOR OFF/XENON LAMP OFF.
READY LIGHT ORANGE/STATUS BOX BREAK LIGHT ON.

FAILSAFE DROP-NO OUTBOARD CUE

PROJECTOR MOTOR/XENON LAMP OFF.
PULSE DOUSER CLOSE.
PULSE HOUSE LIGHTS .UP
EXCITER SUPPLY OFF.
PULSE NON-SYNC SOUND.
READY LIGHT RED/STATUS BOX BREAK
LIGHT ON-ALARM SOUNDS.

STOP

PROJECTOR MOTOR/ XENON LAMP OFF.
PULSE DOUSER CLOSE.
PULSE HOUSE LIGHTS UP.
EXCITER SUPPLY OFF.
PULSE NON-SYNC SOUND.

START AFTER FAILSAFE DROP OR STOP

PROJECTOR MOTOR/ XENON LAMP ON.
PULSE HOUSE LIGHTS TO PRESTOPPED LEVEL.

RESTART +7 SECONDS

PULSE SOUND TO PRESTOP FORMAT.
EXCITER SUPPLY ON.
PULSE DOUSER OPEN.

SECTION 4 - MAINTENANCE

4.1 CUE DETECTOR/FAILSAFE

See manufacture's instructions

NOTE: MOST CUE DETECTORS HAVE BEARINGS WITH CONDUCTIVE GREASE. DO NOT ALLOW CLEANERS TO PENETRATE BEARINGS.

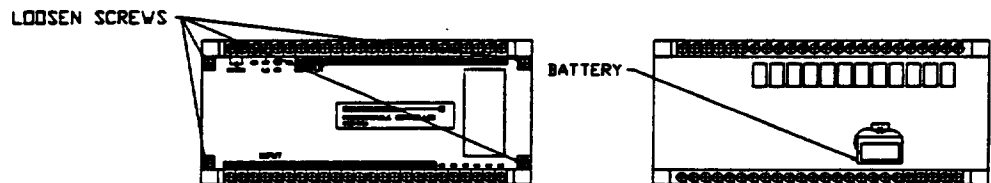
4.2 PLC BATTERY REPLACEMENT

TYPE 3GZA9-BAT08

Battery life is approximately five years. When the battery has been fully discharged, the error (alarm) indicator on the PLC will blink. If this happens, replace the battery within one week. It is recommended that the battery be replaced every four years, to avoid an interruption of service.

TO REPLACE

- 1) Turn off power to the automation. If power is already off, turn it on and wait at least 10 seconds. Then turn off.
- 2) Using a phillips screwdriver, loosen the four screws and remove the cover from the PLC, lifting it from the left.
- 3) Pull the battery from the holder and install the new one within five minutes to avoid losing the contents of the RAM memory.
- 4) Replace the cover, positioning it over the unit. Snapping it into place by applying pressure to the area marked ORC.

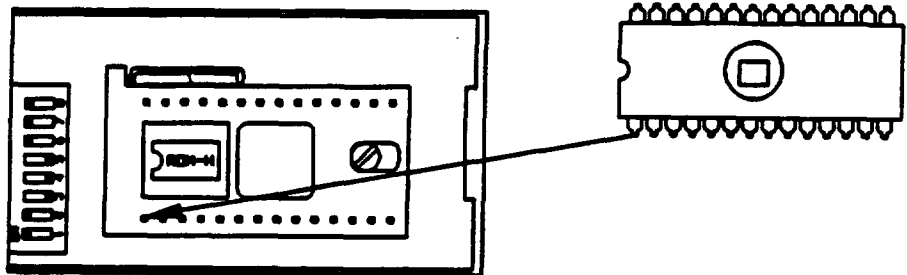


4.3

EPROM MEMORY CHIP REPLACEMENT

If a program change is required. The EPROM chip can be changed as follows.

- 1) Remove all power from automation.
- 2) Remove the EPROM cover on the left side of the PLC. Using a screwdriver.
- 3) Lift the lever on the top side of EPROM socket.
- 4) Lift Eprom out of socket.
- 5) Install new EPROM with the notch to the left.
- 6) Lower lever on socket and replace cover.



SECTION 5 - TROUBLESHOOTING

5.1

RELAY FUNCTIONS

Since many automation problems can be traced to faulty relay operation, an understanding of the function of each relay is essential when troubleshooting. The following table lists each of the relay functions of the PG-2100. The relay's name is printed on the mother board

PLC OUTPUT #	H.U.	H.L.D.	S.L.U.	S.L.D.	F.	I.S.	INTL.	INTL.	CL.	AL.	SP.	S.S.	S.I.	S.S.	EXR	MUX1	MUX2	AUX.	DO.	DC.	EX.	ML.
	000	100	204	304	400	510	600	700	800	900	000	100	200	300	400	507	605	700	800	900	000	100
DOUSER OPEN																						
DOUSER CLOSE																						
FLAT LED																						
SCOPE LED																						
SLIDE PROJECTOR																						
EXCITER SUPPLY																						
LAMP																						
PROJECTOR MOTOR																						
HOUSE LIGHTS UP																						
HOUSE LIGHTS 1/2	X	X																				
HOUSE LIGHTS DOWN		X																				
STAGE LIGHTS UP			X																			
STAGE LIGHTS DOWN				X																		
CURTAINS COLSE			X																			
CURTAINS OPEN				X																		
MASKING FLAT					X																	
MASKING SCOPE						X																
TURRET FLAT							X															
TURRET SCOPE								X														
INTERLOCK									X													
STATUS ALARM										X												
STATUS CUE											X											
SOUND NON-SYNC																						
SOUND START												X	X								X	X
SOUND FIRST CUE												X	X									

INPUTS

PLC IN #	FUNCTION	PLC IN #	FUNCTION
00	IN BOARD CUE	08	
01	OUT BOARD CUE	09	START INPUT
02	INTERMISSION	10	MANUAL WALL LIGHTS DOWN
03	FAILSAFE	11	STOP INPUT
04	CUE MEMORY	12	MANUAL DOUSER CLOSE
05	MANUAL WALL LIGHTS UP	13	MANUAL DOUSER OPEN
06	FEATURE LENS	14	SYNC STOP LINE
07		15	SYNC

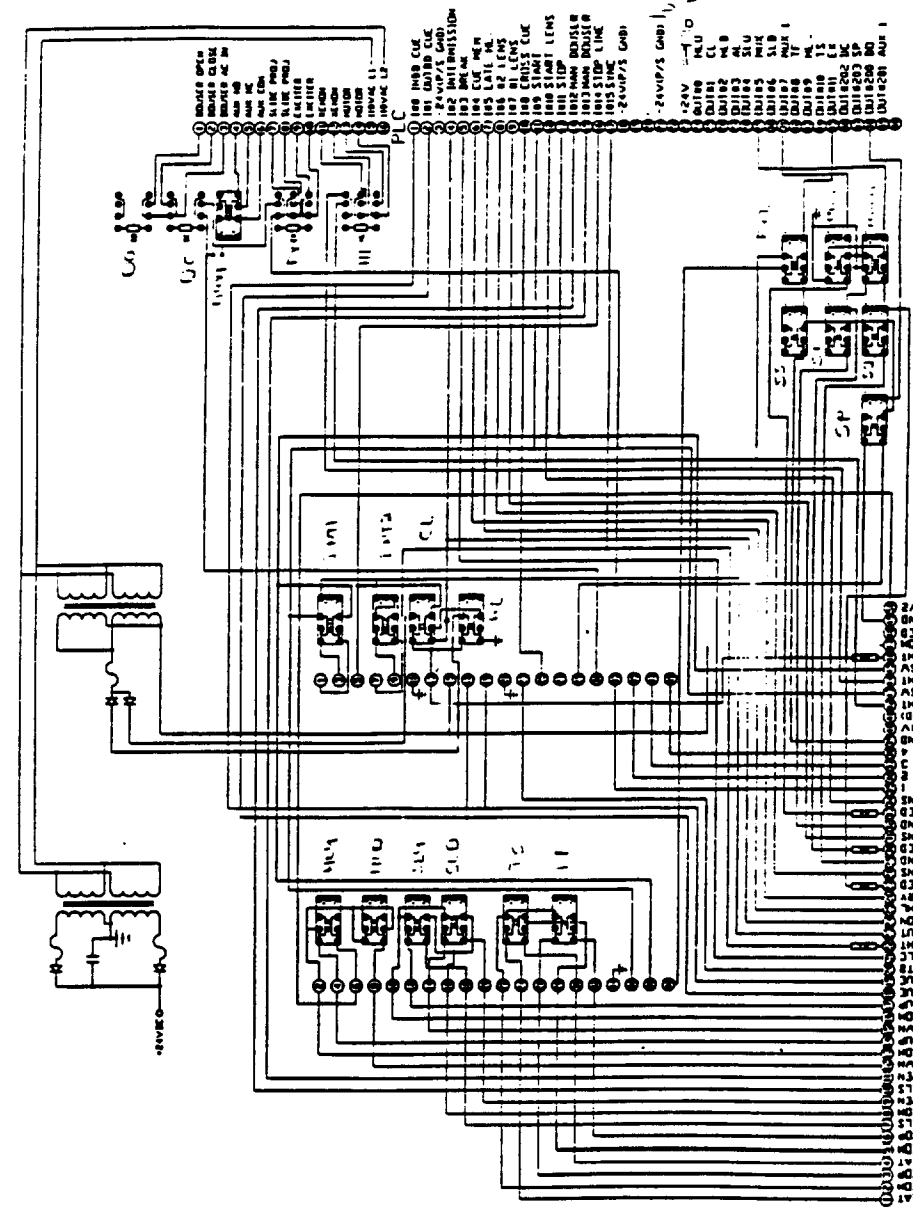
5.2

FUSE REPLACEMENT

Fuses are located next to the large transformer on the mother board. The fuses marked "1A for P/S" are used to power the automation and are rated 1 AMP at 250 V. The fuse marked "2A for STATUS" is used for the status boxes and interlock. It's rated 2 AMP at 250V. Fuses must be replaced with the same type and rating to prevent damage to the automation.

OUTPUT
18

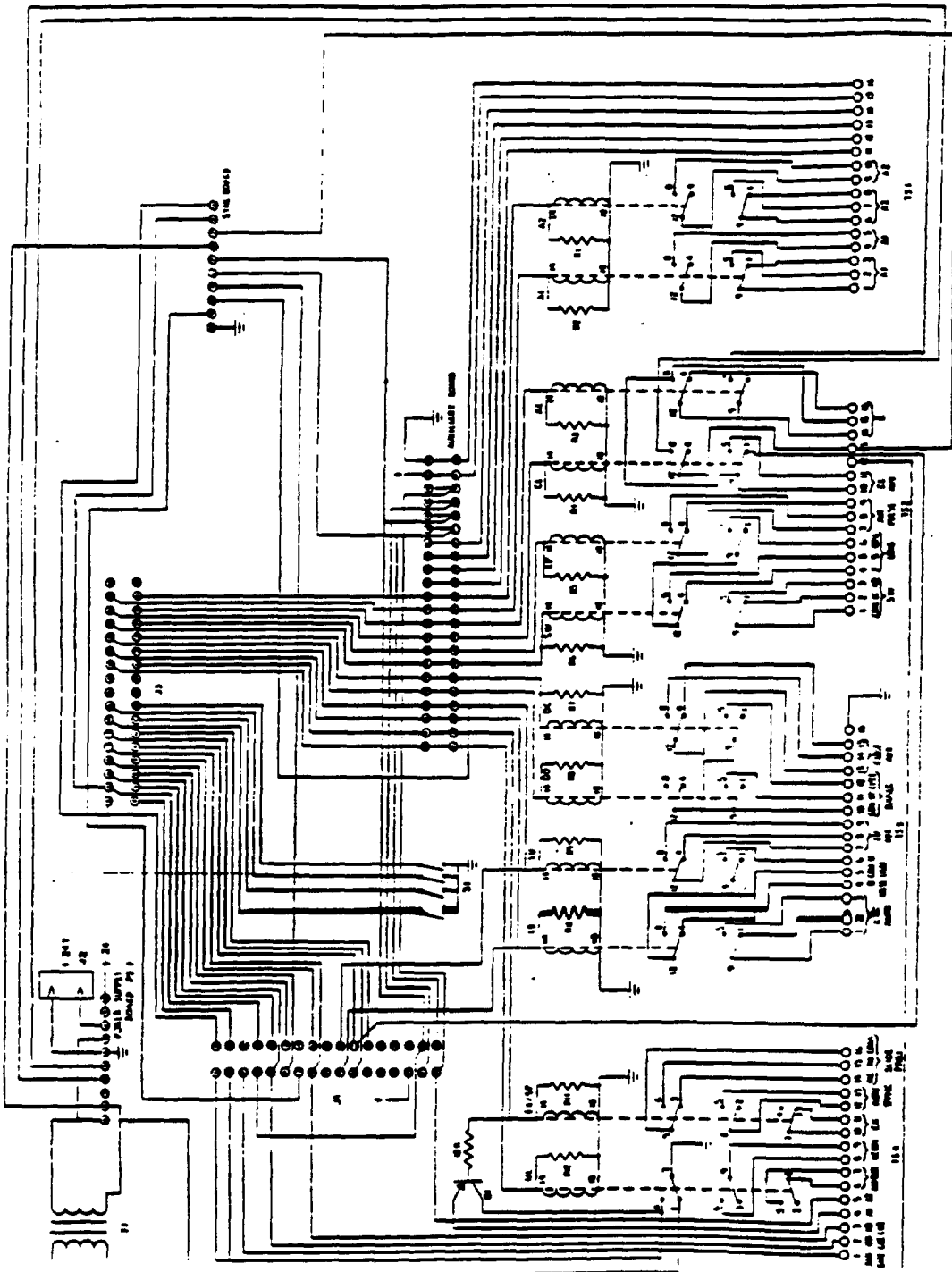
- INTERLOC 1
- PL CLM 2
- INTERLOC 2 3
- PL UP 4
- INTERLOC 3 5
- PL 6
- INTERLOC 4 9
- PL DOWN 8
- INTERLOC 5 9
- SL CLM 10
- INTERLOC 6 11
- SL UP 12
- AL ARM 10/13
- SL DOWN 14
- ALARM COM 15
- CURTAIN CLM 16
- ALARM COM 17
- CURTAIN CLS 18
- INHIB CLM 19
- CURTAIN UP/DN 20
- CLM CLM 21
- MASK CLM 22
- BREAK 23
- MASK FLAT 24
- CROSS CLM 25
- MASK SCRE 26
- TURRET CLM 27
- SLC CLM 28
- SLC CLM 29
- TURRET 1 CLM 30
- MEM SYNC 31
- TURRET 2 CLM 32
- REWIND 33
- REWIND CLM 34
- STOP 35
- REWIND 36
- REWIND CLM 37
- REWIND 38
- REWIND CLM 39
- LAMP 10/11 40



FRONT
PANEL

NO.	DESCRIPTION	DATE	BY
1	ASSEMBLED	10/17/50	...
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S-UNLESS OTHERWISE SPECIFIED



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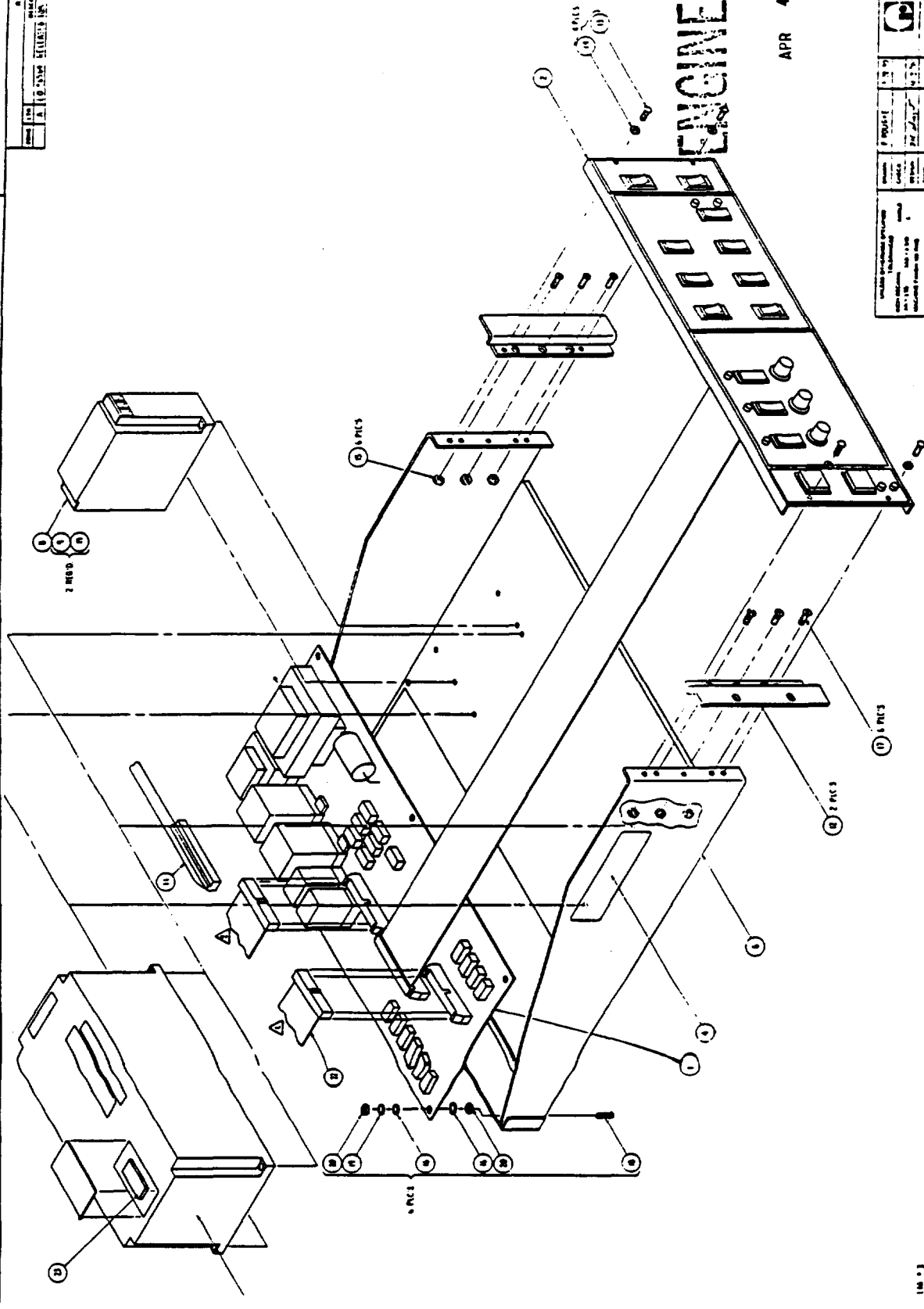
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ALL DIMENSIONS IN INCHES
 UNLESS OTHERWISE SPECIFIED

REV	DATE	BY	APP	DESCRIPTION
1	10-23-58	W. J.
2



ENGINEERING

APR 4 1990

PROJECT	1340335
DATE	APR 4 1990
DESIGNER	...
CHECKED	...
APPROVED	...

REV	DATE	BY	APP	DESCRIPTION
1	10-23-58	W. J.
2

14 13
10 ITEM 10

LESS OTHERWISE SPECIFIED:

1	2	3	4	5	6	7
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TITLE

Assembly, PG-2100 Automation Final

DWG. NO.

1340335-1

REV.

A

SH. NO.

2 of 3

PARTS LIST

PL	IDENTIFICATION NO.	DATE	COPY TO PUR. DATE	REL. FROM STOCK DATE	REMARKS	TAB	PRE BILL	PO REQ	UNIT QTY	QTY ISS'D	QTY B/O	UNIT COST	EXTENDEI COST	JOB NO.	JOB QTY.
X	1340244-1								1						
X	1340309-1								1						
X	1340313-1								1						
	1239043-23								1						
X	1239710-1								Ref.						
	1249667-1								1						
	2706-0037								1						
	6-32 x 5/8 Lg.								6						
X	1340311-1								1						
	1320312-1								1						
	1239347-3								2						
	8-32 x 3/8 Lg.								4						
	#8								4						
	8-32								6						
	6002-0140								12						
	8-32 x 3/8 Lg.								6						
	6-32 x 1/2 Lg.								6						
	#6								12						
	6-32								12						
X	1320331-1								1						
									1						

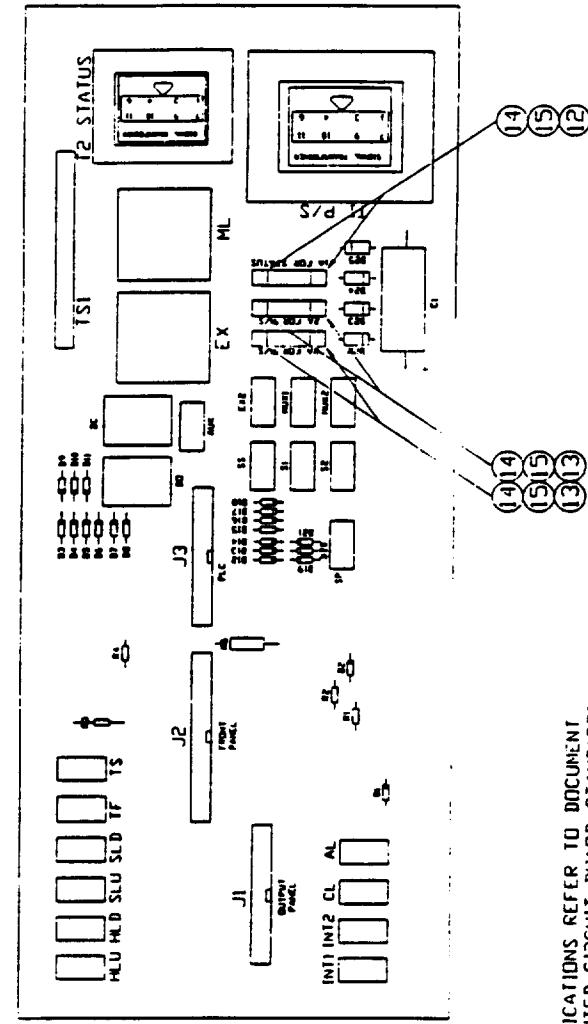
FORM NO. 5-219

TOTAL COST

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

REV	DATE	BY	CHK
1			
2			

Assembly
 F.r P62001
 1248939-1



ENGINEERING

APR 4 1990

ORK #1340241

1. FURTHER PCB SPECIFICATIONS REFER TO DOCUMENT #21 'COMMERCIAL PRINTED CIRCUIT BOARD STANDARD'

2. 1/8" TWIST OF FINISHED BOARD SHELL BE 0.005 PER INCH

3. CENTERS SHELL BE LOCATED WITHIN 0.005 OF PAD CENTERS

4. HOLE DIMENSIONS APPLY AFTER PLATING

UNLESS OTHERWISE SPECIFIED

Optical Radiation Corporation	
ASSY	AUTOMATIC RELAY 14
D 1340241	

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1



TITLE

ASSEMBLY, CONTROLLER AUTOMATION RELAY BOARD

DWG. NO.

1340244-1

REV.

A

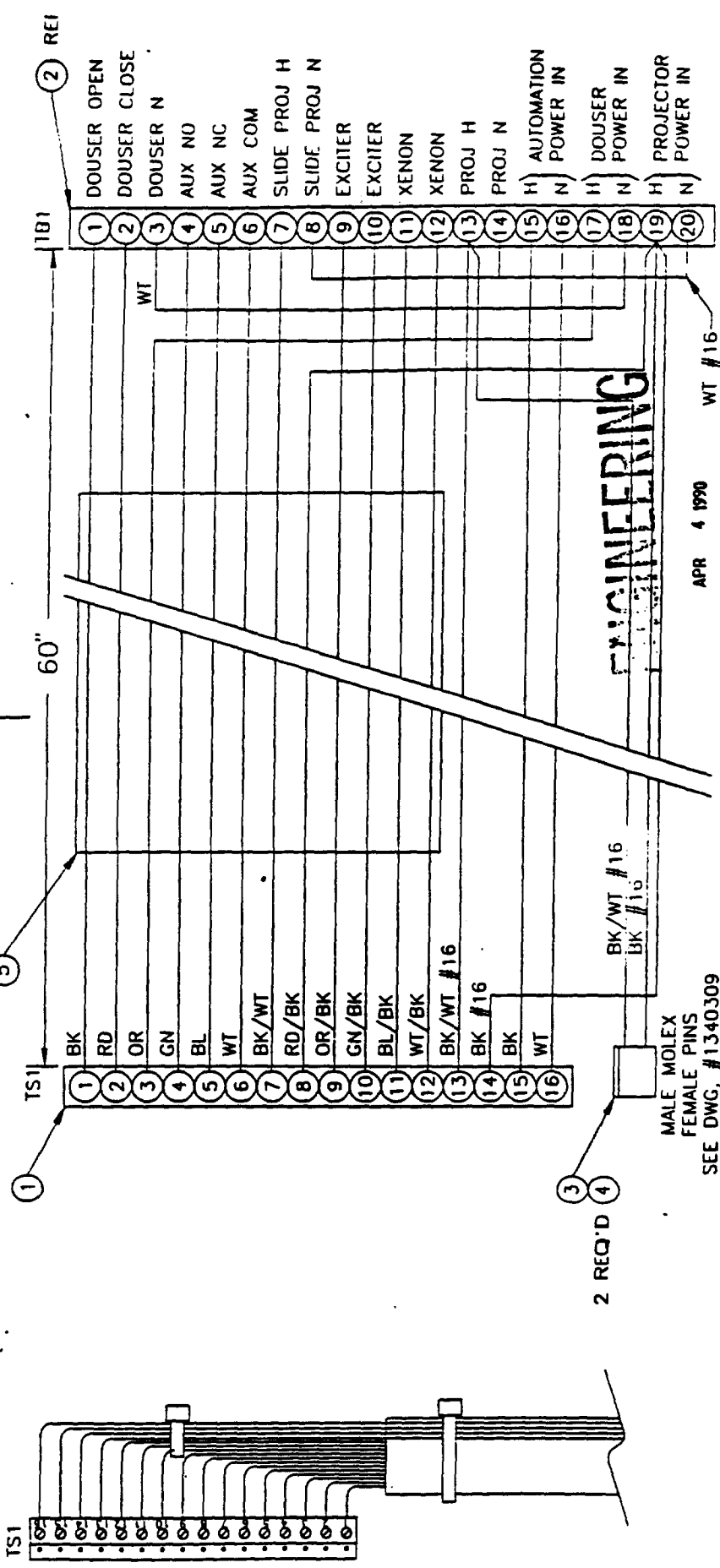
SH. NO.

2 of 4

PARTS LIST

PL	IDENTIFICATION NO.	DATE	COPY TO PUR. DATE	REL. FROM STOCK DATE	JOB QTY.			JOB NO.					
					TAB	REMARKS	PRE BILL	PO REQ	UNIT QTY	QTY ISS'D	QTY B/O	UNIT COST	EXTENDED COST
	1340242-1		P.C.B., Automation Relay						1				
	2501-5140		Relay, 3PDT, 24VDC, 10A		EX, ML				2				
	2501-3141		Relay, DPDT, 24VDC, 5A		DC, DO				2				
	2506-0024		Relay, DPDT, 24VDC, .5A		HLU, HLD, SLU,				18				
					SLD, TF, TS,								
					INTL, INT2								
					CL, AL, SP, SS,								
					S1, S2, EX2,								
					MUX1, MUX2,								
					AUX								
	3146-0016		Transformer, 36VCT, 56VA		T1				1				
	3146-0015		Transformer, 12.6VCT, 20VA		T2				1				
	2286-0188		Header, 40 Pin Connector		J1, J3				2				
	2286-0189		Header, 50 Pin Connector		J2				1				
	2231-1640		Header, 16 Pin Connector		TS1				1				
	2777-2011		Diodes		D1-D21				21				
	2777-1030		Diodes, Rectifier, 3A, 100V		D22-D25				4				
	2353-0100		Fuse, 1 Amp						1				
	2353-0200		Fuse, 2 Amp						2				
	2375-0030		Clip, Fuse Holder						6				
	1/8" Dia.		Rivets, Pop						6				
	2082-2055		Capacitor, 2200 UFD, 50VDC		C1				1				
	2524-2215		Resistor, 2.2K, 1/4W		R1-R4				4				
	2553-2215		Resistor, 220 OHMS, 2 W		R5				1				

8	7	6	5	4	3	2	1
				REVISIONS			
ZONE LTR				DISCUSSION			
A				E.O. 1564, RELEASED FOR PRODUCTION			
				DATE		APPR	
				4-3-90		PRC/77	



ENGINEERING

APR 4 1990

SEE DWG. #1340309

UNLESS OTHERWISE SPECIFIED	DATE	M. SKRZAT	4-3-90
SEE DESIGN	4-3-90	M. SKRZAT	4-3-90
REFERENCES	4-3-90	DATE	4-3-90
DO NOT SCALE DRAWING		CONTRACT NO	0165

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1. TB1 IS NOT TO BE WIRED UNTIL IT'S MOUNTED TO PANEL. SEE DWG #1340311

S-UNLESS OTHERWISE SPECIFIED

Optical Radiation Corporation
WIRE HARNESS,
AUTOMATION BACK PAN

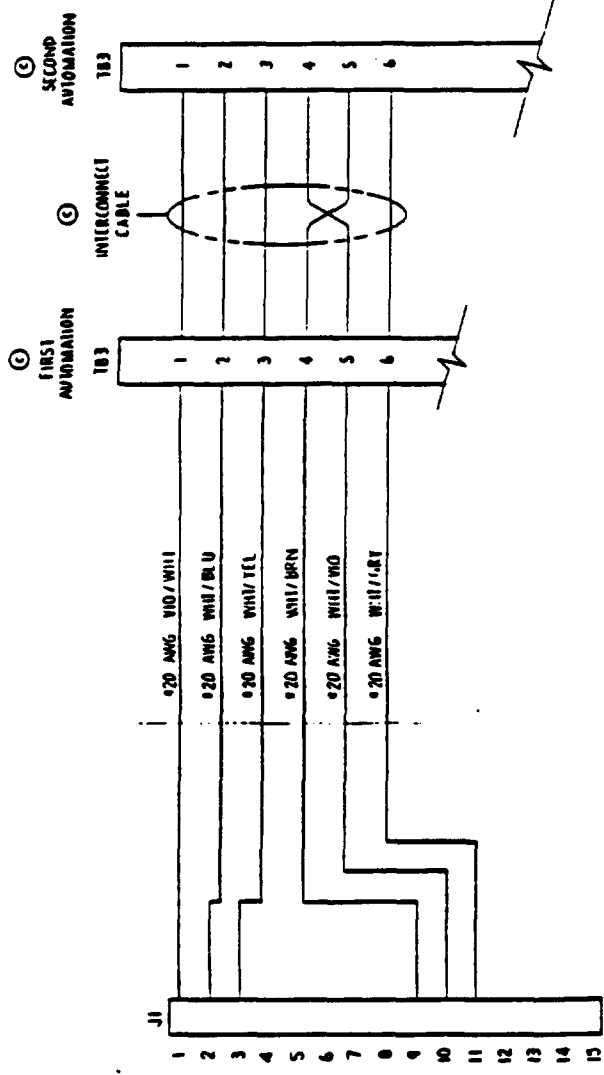
B 1320312

SCALE NONE

8 7 6 5 4 3 2 1

REVISIONS

ZONE	LT#	DESCRIPTION	DATE	APPROVED
A		EO 5181, RELEASID FOR PRODUCTION	7 11 80	PA 206
B		ADDRESS VALUED - 3 - 5 - 9 - 11 VERSIONS ADDED - 13 VERSION, ITEM #1 WAS TABULATED IS 8711, ITEM #3 WAS TAB. IS 8716. JTA 5 12 9482-1 PANEL ADDED. PG 6 17 DELETED	2 13 81	CAF
C		EO 5181, THIS WAS WIRE HARNESS, SYNC BOARD/ MULTIPLIER BOARD, ADDED WIRE TERMINATION AND	8 30 81	PA 206



-1 VERSION

REV	DATE	DESCRIPTION	BY	CHKD
1	13	124922-2	PG 25/30	
2	7	124922-3	PG 25/30	
3	1	124952-1	PG 7/1000	

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UNLESS OTHERWISE SPECIFIED
TOLERANCES ARE:
FRACTIONS AS SHOWN
DECIMALS .010
ANGLES .5
DIMENSIONS TO CENTER UNLESS OTHERWISE SPECIFIED
DIMENSIONS TO SURFACE UNLESS OTHERWISE SPECIFIED

DESIGN: P. MOYNE
CHECK: J. J.
DRAWN: J. J.
APPV: J. J.
APPV: J. J.
CONTRACT NO. 0118

DATE: 6 17 81

Optical Radiation Corporation
WIRE HARNESS, SYNC BOARD

THE LENGTH APPROXIMATELY 8 FEET.

CODE SHEET NO. C 33030 12 18

ZONE	LTR	DESCRIPTION	DATE	APPROVED
B		E.O. 14176, RELEASED TO PRODUCTION	8-27-81	P.R. 7048

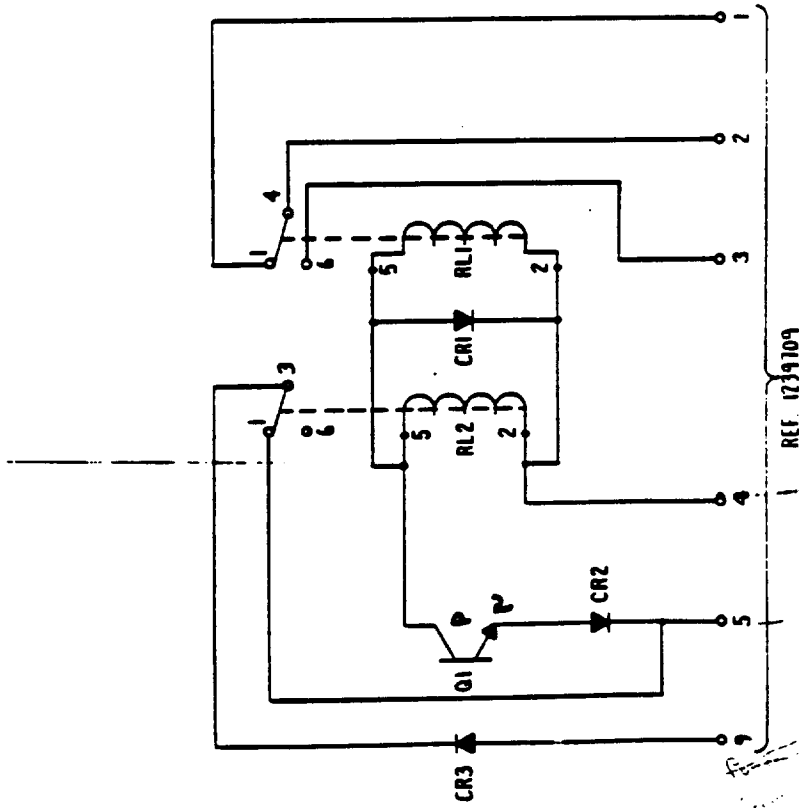
5

4

3

2

1



		Optical Radiation Corporation	
SCHMATIC, LAMP MONITOR		CODE IDENT NO B 33030	1229398
QUANTITY CHECKED DELIVERED APPROVED APPROVED	P. ROURNE 1-5-81	CONTRACT NO 0118	SHEET 1 OF 1

UNLESS OTHERWISE SPECIFIED
 TOLERANCES
 FRACTIONS .100 .050 .020
 DECIMALS .0005 .001 .002 .005 .010 .020 .050 .100
 ANGLES .0005 .001 .002 .005 .010 .020 .050 .100
 DO NOT SCALE DRAWING

REFERENCE DRAWINGS • 1239397, 1239709
 ES — UNLESS OTHERWISE SPECIFIED:

5

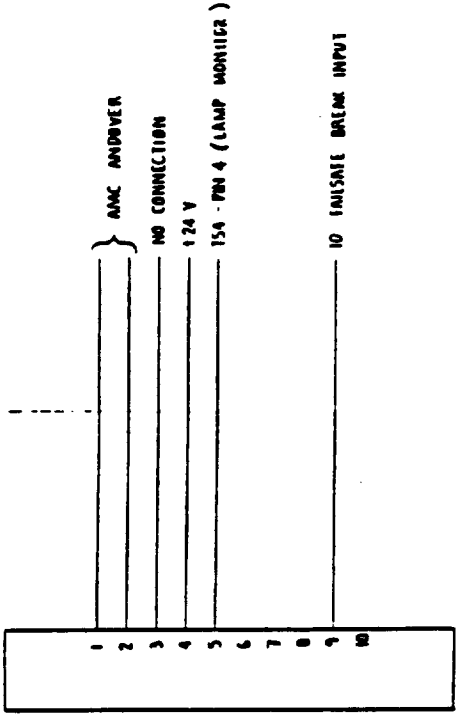
4


3

2

1

REVISIONS		
ZONE	LINE	DESCRIPTION
A	1	0.0455. REVISED FOR PRODUCTION
		DATE APPROVED
		9 21 88
		P.E. [Signature]



 Optical Radiation Corporation		HARNES. LAMP MONITOR	
UNLESS OTHERWISE SPECIFIED TOLERANCES ANGLES UNLESS OTHERWISE SPECIFIED DO NOT SCALE DRAWING	DRAWN: P BOURNE CHECK: [Blank] DESIGN: [Blank] ENG: [Blank] APPR: [Blank]	1-3-89 277 2171 CONTRACT NO 0118	CODE QUANT NO C 33030 1 099 A

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FORM	110	REV. 10/68	APPROVED
DATE			
DESCRIPTION	REVISIONS		
18069 11116.70			

SR-2016 16 PLEX STATUS BOX 1241351

SR-2002 12 PLEX STATUS BOX 1241350

SR-2000 8 PLEX STATUS BOX 1241347

BOARD 4

BOARD 3

BOARD 2

PM 1	PM 1	PM 1	PM 1
PM 2 TO (LD1.LD5) THEATER 1	PM 2 TO (LD1.LD5) THEATER 5	PM 2 TO (LD1.LD5) THEATER 9	PM 2 TO (LD1.LD5) THEATER 13
PM 3 TO COMMON	PM 3 TO COMMON	PM 3 TO COMMON	PM 3 TO COMMON
PM 4 TO (LD3.LD7) THEATER 3	PM 4 TO (LD3.LD7) THEATER 7	PM 4 TO (LD3.LD7) THEATER 11	PM 4 TO (LD3.LD7) THEATER 15
PM 5 TO (LD4.LD8) THEATER 4	PM 5 TO (LD4.LD8) THEATER 8	PM 5 TO (LD4.LD8) THEATER 12	PM 5 TO (LD4.LD8) THEATER 16
PM 6 TO (LD2.LD6) THEATER 2	PM 6 TO (LD2.LD6) THEATER 6	PM 6 TO (LD2.LD6) THEATER 10	PM 6 TO (LD2.LD6) THEATER 14

		Optical Radiation Corporation DIAGRAM STATUS BOX CONNECTOR CIRCUITRY TERMINATION
UNLESS OTHERWISE SPECIFIED EACH BOARD IS TO BE ASSEMBLED IN A CABINET TO THE SPECIFICATIONS INDICATED HEREIN. SEE THE SPECIFICATIONS FOR THE BOARD AND THE BOARD CONNECTIONS.	P. NUMBER 1-27-81	CHECKED DATE APPROVED CONTRACT NO. 0110
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UNLESS OTHERWISE SPECIFIED: