Film-Tech

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D C POWER SUPPLY

1FXM1600-02S

INSTRUCTIONS

D-C POWER SUPPLY

TYPE "FXM" 3-PHASE

FOR XENON COMPACT ARC LAMPS

CHRISTIE ELECTRIC CORP.
20665 MANHATTAN PLACE
TORRANCE, CALIFORNIA 90501
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TWX: 910-349-6260

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GENERAL DESCRIPTION

The Christie "FXM" power supply employs static components for the conversion of a-c power to d-c for lamp operation.

A transformer with special volt-ampere characteristics provides high impedance. This assures stable lamp operation and, at the same time, maintains high power supply efficiency.

Rectification is provided by silicon diodes which are non-aging and also provide high efficiency. Transient suppressors protect the unit from spurious igniter or other high voltages.

The power supply is designed such that the current ripple obtained during lamp operation is within lamp manufacturer's recommendations.

The Christie design eliminates high inrush current during lamp ignition, which would stress the lamp and would be detrimental to its life. This design also prevents resonance effects which can cause both instability and reduced lamp life.

UNPACKING:

A. If any damage has occurred during shipping, call the transportation company at once and file a claim.

B. Remove shipping bolts.

CONNECTIONS:

A. BEFORE CONNECTION, PULL THE A-C DISCONNECT SWITCH IN THE A-C SUPPLY LINE, or make sure the A-C plug is not connected to the line.

B. Remove the upper rear panel.

C. Check the a-c voltage shown on the nameplate, then check the a-c supply voltage with voltmeter to see that it does not differ by more than 10% from rated nominal value of the unit. Connect the a-c supply wires to the a-c terminals, and the grounding wire to the grounding lug. GROUNDING THE CABINET IS AN IMPORTANT SAFETY MEASURE.

D. Connect the d-c cables to the power supply d-c terminals (marked "+" pos. and "-" neg.) The d-c cables are then attached to the lamphouse. Be sure to observe proper polarity.

   If the igniter is not part of the lamphouse, connect lamphouse and power supply to igniter (Christie IGA or equivalent) using the same size d-c cables throughout. If not in the lamphouse, the igniter should normally be installed near the lamp. It must keep high voltage from appearing across the power supply d-c output, and must be properly grounded. The high voltage leads must be short, adequately insulated and clear of the lamphousing. It is preferable to locate the power supply at least 6 feet from the igniter.

E. Close all panels and connect to the a-c line.

OPERATION:

Note the rating on the lamp to be used.
Operate only with lamps of current, voltage and wattage ratings within the output rating of the power supply.

Before operating make sure all panels are closed. Cooling will be impaired if the unit is operated with a panel open.

A. The output is adjustable in steps by the tap switch knob on the front panel. If the tap switch is changed while the lamp is operating, the lamp will extinguish. If the supply is being used for the first time, set the knob to position 4.

B. Turn the unit on by moving the toggle switch from "OFF" to "ON". Observe that the pilot lamp lights.

C. Wait at least 2 seconds before starting the lamp. Proper starting will help to extend lamp life. Start the lamp by energizing the igniter. If the lamp fails to ignite, increase the output current setting. If, after a 5-10 minute warm-up period, the correct current cannot be obtained with the current adjustment knob, turn the unit off and change "HI" - "LO" links as necessary. Never exceed the maximum current or wattage ratings of the lamp.

If desired, the power supply may be started and left in the "no-load" mode for prolonged periods without damage.

D. To turn lamp off, move the power supply switch to its "OFF" position.

Caution: Do not service the power supply until at least 2 minutes after it has been turned off, to allow capacitors to discharge.

REMOTE ON-OFF (Except on FXM900-2):

A. Remove jumper from TB1-10 and 11.

B. Connect remote ON-OFF toggle switch to terminals TB1-10 and 11. (Typical remote wiring for use with Christie XENOLITE lamphouse shown on schematic).

C. Once the correct operating position of the tap switch and HI-LO links have been established, they are left in their operating positions and the ON-OFF is performed at the lamphouse, or remote station.

D. If you wish to turn the power supply on using the (ON-OFF Switch on the Power Supply), the remote switch must be closed.

OPEN CIRCUIT VOLTAGE:

Open circuit voltage should be between 110 and 150 volts d-c, for proper lamp starting characteristic. If open circuit voltage is too low, (less than 110 volts DC), remove wire No. 78 from TB1-78, and wire No. 84 from TB1-81. Connect wire No. 87, (taped back behind TB1) to TB1-81 and wire No. 81 to TB1-78. Insulate the lugs on wire No's. 78 and 84. If the open circuit voltage is over 150 volts, remove wire Nos. 81 and 87 and reconnect wires 78 and 84.

TROUBLESHOOTING:

If the Power Supply Will Not Start:

A. Try new fuses in the a-c line.

B. Check carefully with a voltmeter across all 3 phases of the a-c line to see that the phase-to-phase voltages are equal on all 3 phases within 5%. To locate trouble in the line, start this test at the power supply input terminals, and then proceed to both sides of the fuses in the line, then on to the disconnect switch.

C. Check the indicator light.

If the Lamp Will Not Ignite:

A. Check the voltage at the lamphouse and at the power supply terminals. The no-load voltage should be 110 volts minimum.

B. Check the capacitors in the d-c output circuit (see schematic).

If the Power Supply Will Not Deliver Its Full Output, or Output Is Not Steady:

A. Turn off power and make a complete inspection of all connections in the d-c and a-c lines. Connections found hot to the touch by hand after operation are indications of loose or dirty contacts.

B. If one phase of a 3-phase supply line is open, the power supply will deliver a reduced current of high ripple. In such case, check with a voltmeter or a test light across all three a-c terminals to see that the phase-to-phase voltages are equal on all 3 phases within 5% of rated voltage while the power supply is delivering load current.

C. Check for an "open" or "short" in one of the diodes. To do this, disconnect the flexible pigtail connection (or the lead to the diode) and measure the resistance of the diode from the pigtail to the base, using a standard ohmmeter. Reverse the meter leads and repeat the measurement. If both measurements are below 1 ohm, the diode is shorted. If both measurements are above 10,000 ohms, the diode is open. Replace open or shorted diodes.

CLEANING:

Accumulation of dust inside the enclosure should be avoided by opening the enclosure at periodic intervals (6 to 12 months) and cleaning with a soft brush or compressed air.

IN5404 = TCG5804

DIODES:
70H20A = TCG 6074 CATHODE CASE
70HR20A = TCG 6075 ANODE CASE
} PACKAGE DO-5

SHEET 1 OF 3 — CHRISTIE ELECTRIC CORP. BILL OF MATERIAL — ASSEMBLY # PL- U114145-1

REG.# | ASSEMBLY NAME: UNIT ASSEMBLY | MODEL # 1FXM1600-02S
W.O.# | QTY | DATE REQ'D

ITEM NO.	PART NO.	PART NAME	QTY PER ASS'Y	QTY REQ'D	QTY ISSUED	QTY SHT.	PER EACH PART NO. LABOR HRS.	LABOR $	MAT. $	PER ASS'Y TOTAL HRS.	TOTAL $
	530106-302	CAPACITOR - Electrolytic,6K uf.,160 v., C1	1								
	S114109-1	HEATSINK ASSEMBLY - (INCL. THE FOLLOWING:	1								
		541103-032, DIODE, SIL,200v,70a,70H20A CR1-3 541103-033, DIODE, SIL,200v,70a,70HR20A CR4-6									
	515380-003	TAPER PIN - 0 X 1-1/4"	1								
	515610-001	SPRING - Tap switch, front	1								
	520400-007	BRACKET - Capacitor clamp	1								
	571220-004	RELAY - Contactor RBM 75-903,230v., coil K1	1								
	W113915-1	TRANSFORMER - Main, T-3472-1, S-120 T1	1								
	S111972-2	TAP SWITCH ASSEMBLY S3	1								
	S114173-2	CONTROL ASSEMBLY(incl. the following:	1								
		530705-703, capacitor cer, .05 uf,500v, C3-8 540135-025, rect. stack, sel, CR7-9,CR12-CR13									
		541146-009, diode,sil,300 v.,3A., CR10-CR11 555023-601, res, fixed, 2K ohm.,12W.,5% R1									
		555250-903, res,fixed,25 ohm.,25w.,10% R2,4									
	578711-015	SWITCH - toggle spst 250 v.,10A S1	1								
	M107316-6	RESISTOR - #14 nichrome 19" R3	1								
	546700-018	LIGHT INDICATOR - Bayonet base w/clear lens DS1	1								

A REV	11/6/70 ECO	B REV	12/4/70 ECO	C REV	1/27/71 ECO	D REV	6/8/71 ECO	E REV	11/10/72 ECO	PREPARED By Date	POSTED By Date	MAT. ISSUED By Date	CORRECTED By Date

SHEET 2 OF 3 CHRISTIE ELECTRIC CORP. BILL OF MATERIAL ASSEMBLY # PL- U114145-1

REG.#	ASSEMBLY NAME	MODEL # 1FXM1600-02S
W.O.#	UNIT ASSEMBLY	QTY / DATE REQ'D

ITEM NO.	PART NO.	PART NAME	QTY PER ASS'Y	QTY REQ'D	QTY ISSUED	QTY SHT.	PER EACH PART NO. LABOR HRS.	LABOR $	MAT. $	PER ASS'Y TOTAL HRS.	TOTAL $
	546597-002	LAMP - 110V.,	1								
	583714-010	LUG 4-14	3								
	583706-020	LUG 1/4 Stud	2								
	515900-007	CHASE NIPPLE - 3/4"	1								
	515900-008	LOCKNUT - 3/4"	1								
	515900-023	CHASE NIPPLE - 1-1/2"	1								
	515900-020	LOCKNUT - 1-1/2"	1								
	515900-005	CHASE NIPPLE	1								
	515900-006	LOCKNUT	1								

A	11/ 6/70	B	12/4/70	C	1/27/71	D	6/8/71	E	8/18/72	PREPARED	POSTED	MAT. ISSUED	CORRECTED
REV	ECO	REV	ECO	REV	ECO	REV	ECO	REV	ECO	BY	BY	BY	BY
F	11/10/72									DATE	DATE	DATE	DATE

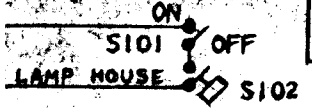
SHEET 3 OF 3 — CHRISTIE ELECTRIC CORP. BILL OF MATERIAL — ASSEMBLY # U114145-1

DATE ISSUED:	CONTR.#	REG.#	W.O.#	QTY.	MODEL # IFXM1600-02S
DATE COMPL.:	DEPT.	ASS'Y NAME UNIT ASSEMBLY			DATE REQ'D:

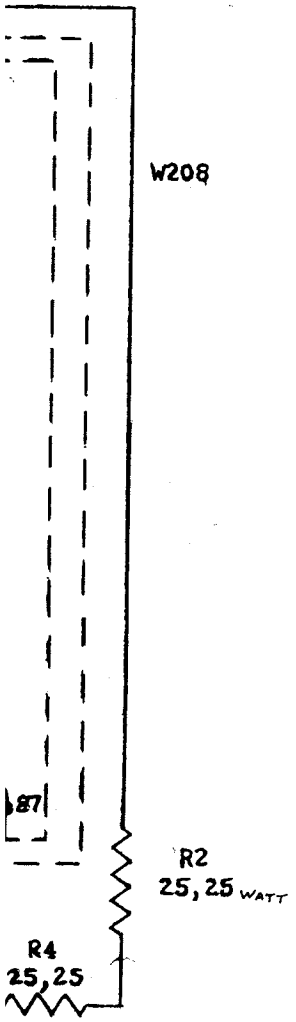
PART NO.	PART NAME	QTY. RUN	QTY. PER ASSY	QTY. REQD.	QTY. ISSUED	QTY. SHORT	PER EACH PART NO. LABOR HRS.	LABOR $	MAT. $	PER ASS'Y TOTAL HRS.	$
C314145-1	CABINET PARTS LIST		1	X							
M314145-1	MISCELLANEOUS PARTS LIST		1	X							
B314145-1	BUS BAR AND SHUNT LIST		1	X							
H314145-1	HARNESS LIST (INCL.)		1	X							
N314145-1	NAMEPLATE AND STICKER LIST		1	X							
	FASTENINGS AND HARDWARE LIST			X							
	PAINT (ESTIMATED)			X							
	SHIPPING CRATE AND BRACKETS (SEE REGISTER)			X							
501911	SCHEMATIC WIRING DIAGRAM		1	X							
	INSTRUCTION MANUAL			X							
	FREIGHT			X							

REV	ECO	REV	ECO	REV	ECO	REV	ECO	REV	ECO	PREPARED	POSTED	MAT. ISSUED	CORRECTED
A	11-6-70	B	12-4-70	C	1-27-71	D	6-8-71	E	11/10/72	BY	BY	BY	BY

	REV.	SYM	REVISION	DATE	DR.	APP.
501911	A					



AIR FLOW SWITCH
ON LAMP HOUSE



NOTES:

3. FOR REMOTE START-STOP OPERATION REMOVE JUMPER WIRE BETWEEN TERMINALS 10 & 11 ON TB1.
4. FOR 230V INPUT, LEADS A,B,C, CONNECT TO TERMINALS 4,5,6, OF TB1.
5. FOR 208V INPUT, LEADS A,B,C, CONNECT TO TERMINALS 7,8,9, OF TB1.

WARNING: USE 208V CONNECTION ONLY ON 208V SYSTEMS.

6. FOR AUTOMATIC STARTING CONNECT LEADS 81 & 87 TO HI-LO TERMINALS 78 & 84. SEE INSTRUCTION MANUAL.
7. FOR MANUAL STARTING CONNECT LEADS 78 & 84 TO HI-LO TERMINALS 78 & 84. SEE INSTRUCTION MANUAL.

NOTE: UNLESS OTHERWISE NOTED--
1.) ALL RESISTORS ½W. 10%.
2.) ALL CAPACITORS UF AND WVDC.

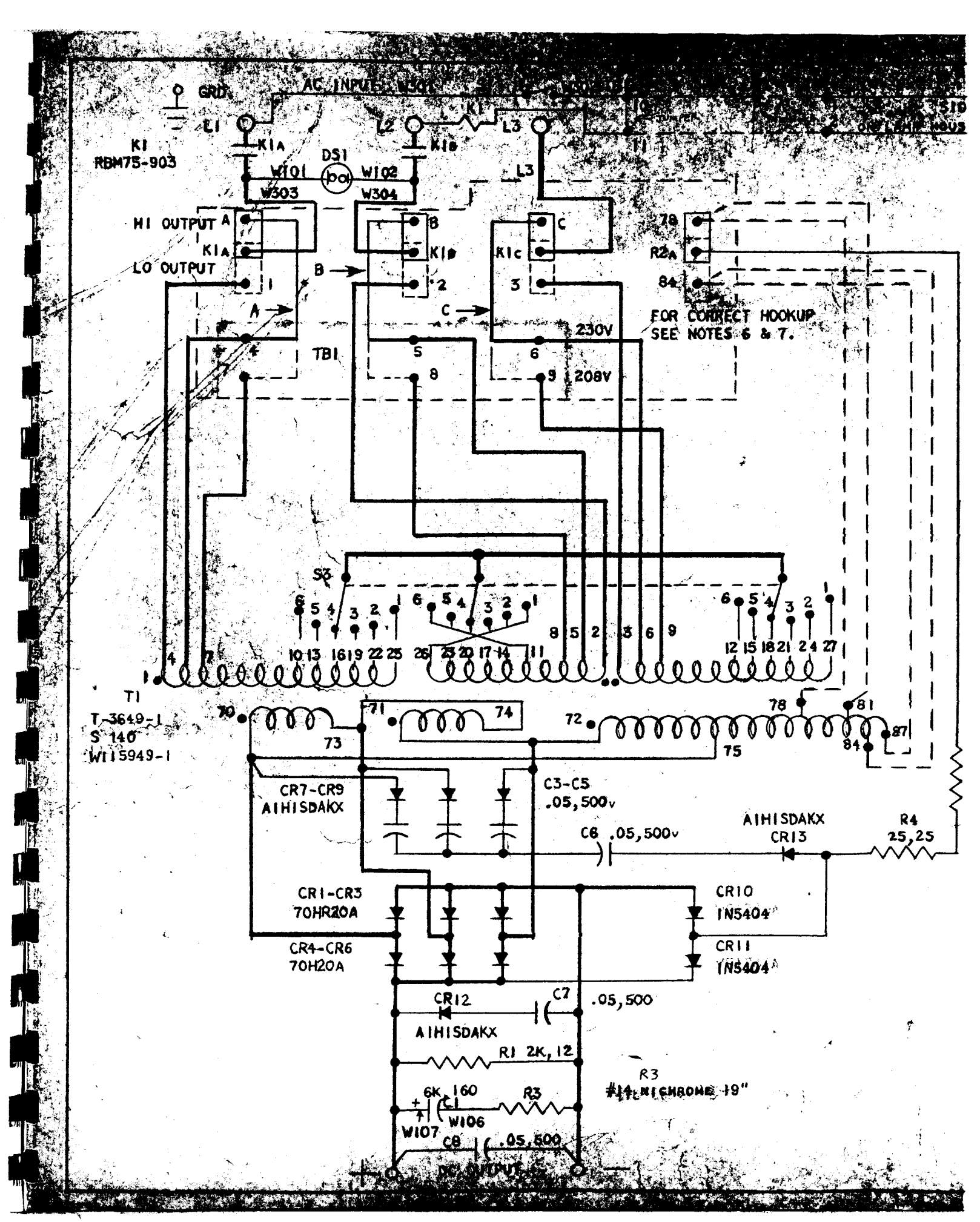
POWER SUPPLY

FXM1600-02S U115558-1

CHRISTIE ELECTRIC CORP.
FORMERLY MCCOLPIN-CHRISTIE CORP
LOS ANGELES 63, CALIFORNIA

SCHEMATIC WIRING DIAGRAM

DRAWN W. MANAHAN
DATE
CHECKED
APP'D
SUPERSEDES
SUPERSEDED


GRD.
AC INPUTS
L1
L2
L3
K1
K1A
K1B
K1C
K1
RBM75-903
DS1
W101
W102
W303
W304
HI OUTPUT
LO OUTPUT
A
B
C
TB1
1
2
3
5
6
8
9
230V
208V
78
R2A
84
FOR CORRECT HOOKUP
SEE NOTES 6 & 7.
S3
T1
T-3649-1
S 140
W115949-1
70
71
72
73
74
75
78
81
84
87
CR7-CR9
A1HISDAKX
C3-C5
.05,500v
C6 .05,500v
A1HISDAKX
CR13
R4
25,25
CR1-CR3
70HR20A
CR4-CR6
70H20A
CR10
IN5404
CR11
IN5404
CR12
C7
.05,500
A1HISDAKX
R1 2K,12
R3
#14 NICHROME 19"
6K 160
C1
R3
W107
W106
C8
.05,500
DC OUTPUT

CHRISTIE
ELECTRIC CORP.

3410 WEST 67TH ST. • BOX 60020. LOS ANGELES. CALIF. 90060 • PHONE (213) 750-1151

WARRANTY

COVERING

XENOLITE THEATRE PRODUCTS

Manufactured by: CHRISTIE ELECTRIC CORP.
(herein referred to as "Christie")

Christie warrants the apparatus sold to the extent of the parts necessary to correct any defect in workmanship or materials which may develop under proper or normal use for a period of one (1) full year (90 days on electric motors) from date of installation (except as noted below) but not to exceed eighteen (18) months from date of shipment from Christie Electric Corp. Christie reserves the right to have the apparatus returned, freight prepaid, to the Christie factory to effect the warranty repairs.

Replacement parts for warranty repairs will be shipped promptly by Christie f.o.b. factory, and invoiced to the customer. Credit will be issued upon return of the defective part or parts, prepaid, to the Christie factory.

The above shall constitute a fulfillment of all Christie liabilities in respect to said apparatus.

This warranty does not cover the following items:
Special customer specified purchased parts or materials; also, xenon, mercury and other types of lamps (bulbs).

Christie shall not be liable for any consequential damages except:
Christie will replace standard Christie glass reflectors under warranty in XENOLITE lamphouse damaged by failure of a Christie xenon bulb during its warranted life and if properly operated, under the following terms and conditions: If the original reflector installed is less than one year old, full credit will be issued. If the original reflector is more than one year, but less than two years old, one half credit will be issued. If the original reflector is more than two years, but less than three years old, one quarter credit will be issued. After three years from date of original installation, no credit will be issued. (Mirror castings must be returned to Christie to receive credit.)