

## Series IV Automation Instructions

### \* STANDARD SYSTEM FEATURES CONTROL OF:

- \* Projector Drive Motor
- \* Xenon Lamphouse
- \* Changeover Dowser
- \* Exciter Lamp
- \* House Light Dimmer
- \* Non-Sync Source
- \* Audio Processor
- \* Lights Up Early for House Light Dimmer
- \* Full Remote Control Capability
- \* User Assigned Option Circuits
- \* Optional Curtain Control
- \* Interlock Ready

### \*\* MANUAL CONTROL SWITCHES PROVIDED FOR:

- \* Projector Drive Motor
- \* Xenon Lamp
- \* Exciter Lamp
- \* Changeover Dowser
- \* House Light Dimmer
- \* Option

### \*\*\* STANDARD SYSTEM SEQUENCE OF OPERATIONS

#### A. SHOW START

1. Changeover CLOSE
2. Motor & Lamp ON
3. Non-Sync OFF
4. House Lights DIM
5. Changeover OPEN
6. Exciter ON
7. Audio Film

#### B. INBOARD CUE - House Light Dimmer (MID) or UP

## C. OUTBOARD CUE

1. House Light Dimmer (UP)
2. Changeover CLOSE, Exciter OFF, Audio Non-Sync
3. Motor & Lamp OFF  
(Selectable, as C.O. Closes or as Film Runs thru)
4. Non-Sync ON

## INSTALLATION INSTRUCTIONS

**GENERAL** - The Kelmar Standard Automation has been designed as an economical control system to meet the needs of the modern cinema as well as an ideal retro-fit system for existing installations.

The Kelmar Standard Automation is contained in one rugged, compact steel enclosure with dimensions as follows:

WIDTH = 12"	(305mm)
HEIGHT = 19"	(482mm)
DEPTH = 6 1/2"	(165mm)

The Standard Automation Cabinet should be mounted on the FRONT WALL of the Projection Room, Below the Observation Port, with the TOP of the cabinet 3'-9" A.F.F. (Above Finished Floor).

The Standard Automation System has a readily removable interior so that the Chassis -and Control panel may be removed as a unit by removing the 2 screws at the top of the Control Panel and Loosening 2 nuts below the chassis. This permits installation of the back-box, conduits and wires without damage to the Automation assembly.

The Backbox should be connected to the Projection Room Wireduct with 3 or 4 3/4" conduit stubs or 3/4" offset nipples. Remove the knockouts in the bottom of the Backbox, place on top of the wireduct and trace the openings. The wireduct can then be punched to suit the Backbox.

Pull in and tag all wires. Re-install the chassis and control panel, tighten the 2 nuts that secure the chassis to the Backbox. Terminate the wires to the terminal strips. Terminal Strip TB-1, that is mounted on the chassis is used for ALL line voltage power circuits. The P.C. Board terminal strips; TB-2, TB- 3 are intended for Low-voltage control circuits only (Less than 30 Volts RMS). If devices to be controlled have line voltage control, slave relays should be added to isolate the device from the Automation.

Please refer to the termination schedules for connection. Most circuits are dry contact circuits, the circuit type is indicated on the termination schedule.

Remote indicator light circuits have a 12 VAC Output, these are provided for connection to optional remote control/status systems that are available from Kelmar Systems Inc.

***Kelmar Systems Inc. offers upgrade modules for use with the Standard Automation to provide; Show Start Timer, Curtain Control, and Interlock.***

***NON-SYNC CONTROL*** - Dry Circuit terminals TB2-15 and TB2-16 are provided to control a Kelmar Non-Sync Fade-In module where intermission music is from a central source. This circuit provides a contact closure when the Projector motor is Off.

***HOUSE LIGHT DIMMER CONTROL*** - The Standard Automation has been designed to control a 3 position dimmer, UP-MID-DOWN. Connect the Dimmer to Terminals at TB3 as indicated on the termination schedule. A 2 position dimmer may be used, connect the UP control to TB3-3 and TB3-4, DOWN control to TB3-2.

***OPTIONAL SWITCHING CIRCUITS*** - There are 3 Optional switching circuits that may be user assigned at installation time. In addition, Switch S8 is a SPDT center off control switch that terminates at terminal strip TB-S. This switch can be user assigned to act as a manual switch for the optional control circuits or used as desired for control of a different device.

***"A Option"*** circuit is intended to control an Audio processor. The processor should be connected to terminals TB1-14, TB1-15, TB1-16. Connect the feed to TB1-14, "film" to TB1-15 and "Non-Sync" to TB1-16. As the C.O. Dowser Opens at the start of the show, the processor will be set to Film, and as the C.O. Dowser closes at the end of the show, the processor will be set to Non-Sync. Refer to instructions with processor.

***"B Option"*** circuit may be used for a Curtain, Curtain Light Dimmer or a Wall Wash dimmer. This circuit provides a long contact closure as the Automation Timer cycles. If a curtain is to be used, it is suggested that the optional Kelmar #7895 P.C. Board be added to the "D Logic" circuit. Refer to this section of instructions.

***"C Option"*** circuit provides a contact closure as the Inboard Cue (Lights Up) is detected. This circuit may be used to control a Curtain or Wall dimmer or as a signal that the end of the show is coming up.

***"D Logic"*** circuit is for use with the Optional #7895 Curtain Control P.C. Board. This board mounts in the bottom of the enclosure (Mounting holes are provided) and provides control for a screen curtain. "D Logic" is **NOT A DRY CIRCUIT AND SHOULD ONLY BE USED WITH THE KELMAR #7895.**

**"D Logic" Circuit - continued CONNECT AS FOLLOWS:**

#7895 Term. No.	Auto. Term. No.	Function:
1	TB3-13	12 VAC
3	TB3-11	Open Logic
4	TB3-12	Close Logic
5-6	TB5-1*	Curtain Control Feed **
9	TB5-2*	Curtain Open **
10	TB5-3*	Curtain Close **

\* S8 assigned as Manual Curtain Switch

\*\* Connection to Curtain Motor

**FORMAT CONTROL** - The Standard Automation requires 2 cue functions for operation; Inboard is for Lights Up and Outboard is for Show End. The "Center" detector is available for use with Format or Audio as a user assigned function. This circuit is available on the Detector Interface P.C. Board.

As Projector, Xenon Lamps, etc., may vary, refer to instructions furnished with these units for interface information.

For assistance with terminations CONTACT:

Kelmar Systems Inc.  
284 Broadway  
Huntington Station, New York 11746  
Phone (631) 421-1230  
FAX (631) 421-1274

**OPERATION INSTRUCTIONS**

**CONTROL PANEL** - The Standard Automation control panel is divided into 2 sections: Automation Control and Manual Control. The Manual Control section contains switches that can be used to operate each device separately for testing, or Manual Operation. The Automation Control section is to be used for Normal Automation Operation.

## **The Automation Section Contains controls as follows:**

***PB-1 START*** - Used to Start the Show. Press the Start button, the Automation will cycle. The following sequence will happen; C.O. Dowser CLOSE, Timer will cycle, Motor ON, Xenon Lamp ON, Dimmer DOWN after 7 seconds; C.O. Dowser OPEN, Exciter Lamp ON.

As Inboard Cue is Detected; Dimmer MID.

As Outboard Cue is Detected; Timer Cycle, Dimmer UP, after 7 seconds, C.O. Dowser CLOSE, Exciter Lamp OFF. As film runs out; Motor OFF, Lamp OFF, Non-Sync ON.

***PB-2 STOP*** - Used to Stop the show. This button is NOT in the circuit (Active) for the first 5 seconds after the Start button is pressed. If it is necessary to Stop the show during this 5 second period, turn the Automation OFF with Power switch S2 and then back on. PB-2 Stop button will shut OFF Projector Motor and Lamp, Timer will cycle an Auto. Intermission cycle. Alarm output is activated at the remote.

***S1 MODE*** - Used to select shut down of the Projector Motor and Lamp. In the Normal position, the Motor and Lamp will turn off as the film runs through and the Failsafe arms drop. In the Auto-Stop position, the Motor and Lamp will turn Off as the C.O. Dowser Closes. This is used with a continuous loop film system or other similar film delivery system. This function may also be used where there is more than 1 show on a platter disc and an Intermission is desired red.

***S2 POWER ON/OFF SWITCH*** - Turns the power of the Automation section ON or OFF. Switch is illuminated when power is ON. This switch is normally left in the ON position and the power to the Automation is turned off at the Projection Room Circuit Breaker panel. As power is turned ON, the STOP button will also illuminate indicating power to the system.

***INDICATOR LIGHTS*** - The Standard Automation has 2 illuminated pushbutton switches which contain 2 Indicator Lights each. These lights indicate the Status, function and operation of the system.

The Start Button contains a "Timer Cycle" Light (TOP) which is illuminated whenever the cam timer is energized. The RUN light (Bottom) is illuminated when the Motor and Lamp are running on Automation. As the Start Button is pressed, both lights should come on, the Cycle light will go OFF after the timer has stopped (30 seconds).

The STOP button contains the Stop (TOP) light which is illuminated when the Automation Power Switch is ON and the Motor and Lamp are OFF. This operates opposite of the RUN light in the START Button, only 1 is illuminated at a time. The FAULT Light (BOTTOM) indicates the position of the Failsafe arms. When either of the arms are down, the Fault light is illuminated. This serves as a check that the film is threaded properly through the FAILSAFE and that the platter take-up tension has been set. The Automation WILL NOT START OR CYCLE if the Fault light is illuminated. This is a built-in safety interlock circuit that prevents the show from Starting and then Stopping.

*CUE PLACEMENT* - There are 2 film cues used with the Standard Automation: INBOARD Lights Up and OUTBOARD = Show End.

The INBOARD Cue should be located on the film, Inboard Side (Opposite sound track) at the start of the credits.

The OUTBOARD Cue (Soundtrack side) should be located 7 seconds prior to the last frame of the show. This is between 12 and 13 feet.

*PROBLEM ?* - If the system DOES NOT operate as outlined above, check for power and make certain that all circuit breakers are turned ON. Use the manual switch to test each device, if the manual switch turns the device on and off but the Automation does not, there may be a problem in the Automation section. The Manual switches function at all times and do not require that the power switch to the Automation be ON. Please be certain what the nature of the problem is prior to calling for service. The Standard Automation system has been designed for simple service. Relays are interchangeable. Check the power fuse if the Indicator Lights do not come on as the power is turned ON.

## ***TB1 FIELD TERMINATIONS***

TB1-1	120 VAC FEED TO THIS UNIT	
TB1-2	120 VAC NEUTRAL FEED TO THIS UNIT	
TB1-3	GROUND	
TB1-4	PROJECTOR MOTOR IN	[DRY CIRCUIT]
TB1-5	PROJECTOR MOTOR OUT	
TB1-6	LAMP CONTROL IN	[DRY CIRCUIT]
TB1-7	LAMP CONTROL OUT	
TB1-8	C.O. DOWSER FEED	[DRY CIRCUIT]
TB1-9	C.O.DOWSER OPEN	
TB1-10	C.O. DOWSER CLOSE	
TB1-11	C.O. DOWSER CLOSE NORMALLY CLOSED	[SPECIAL]
TB1-12	EXCITER LAMP IN	[DRY CIRCUIT]
TB1-13	EXCITER LAMP OUT	
TB1-14	"A OPTION" SWITCHING-FEED	
TB1-15	"A OPTION" SWITCHING- (C.O.OPEN)	
TB1-16	"A OPTION" SWITCHING- (C.O.CLOSE)	
TB1-17	12 VAC CONSTANT	
TB1-18	GROUND - SWITCHING COMMON (DENOTES TIME OF COMMAND)	

**TB2 FIELD TERMINATIONS**

**REFER TO PAGE 13 FOR CUE DETECTOR  
CABLE HOOK UP**

TB2-1	OUTBOARD CUE DETECTOR INPUT	N.O. CIRCUIT TO GROUND
TB2-2	INBOARD CUE DETECTOR INPUT	N.O. CIRCUIT TO GROUND
TB2-3	FAILSAFE	N.O. CIRCUIT TO GROUND
TB2-4	GROUND — SWITCHING COMMON	
TB2-5	REMOTE START "1" [CYCLE]	
TB2-6	REMOTE START "2" [C.O. CLOSE]	2 POLE N.O. CIR. TO GND,
TB2-7	REMOTE STOP	N.O. CIRCUIT TO GROUND
TB2-8	REMOTE RUN INDICATOR	12 VAC
TB2-9	REMOTE STOP INDICATOR	12 VAC
TB2-10	REMOTE FAULT INDICATOR	12 VAC
TB2-11	REMOTE ALARM OUTPUT	12 VAC
TB2-12	HOLD FOR INTERLOCK	N.C. CIRCUIT TO GROUND
TB2-13	12 VAC CONSTANT	
TB2-14	GROUND — SWITCHING COMMON	
TB2-15	NON-SYNC IN	[DRY CIRCUIT]
TB2-16	NON-SYNC OUT	



***TB3 FIELD TERMINATIONS***

TB3-1	HOUSE LIGHTS CONTROL - FEED	[DRY CIRCUIT]
TB3-2	HOUSE LIGHTS CONTROL - (SHOW START)	
TB3-3	HOUSE LIGHTS CONTROL - (INBOARD CUE)	
TB3-4	HOUSE LIGHTS CONTROL - (SHOW END)	
TB3-5	"B OPTION" SWITCHING - FEED	
TB3-6	"B OPTION" SWITCHING - (SHOW START)	N.O. [DRY CIRCUIT]
TB3-7	"B OPTION" SWITCHING - (SHOW END)	N.O. [DRY CIRCUIT]
TB3-8	"C OPTION" SWITCHING - FEED	(INBOARD CUE)
TB3-9	"C OPTION" SWITCHING - OUT	N.O. [DRY CIRCUIT]
TB3-10	GROUND - SWITCHING COMMON	
TB3-11	"D LOGIC" OPTION - (C.O. OPEN) **	
TB3-12	"D LOGIC" OPTION - (SHOW END) **	
TB3-13	12 VAC CONSTANT **	

\*\*FOR OPTIONAL CURTAIN CONTROL MODULE  
REFER TO INSTRUCTIONS FOR USE  
(DENOTES TIME OF COMMAND)

***TB5 OPTION SWITCH TERMINATION***

TB5-1	OPTION SWITCH FEED
TB5-2	OPTION SWITCH UP
TB5-3	OPTION SWITCH DOWN

**TB4 INTERNAL P.C. BOARD INTERFACE TERMINATION FOR REFERENCE ONLY - NO FIELD TERMINATIONS**

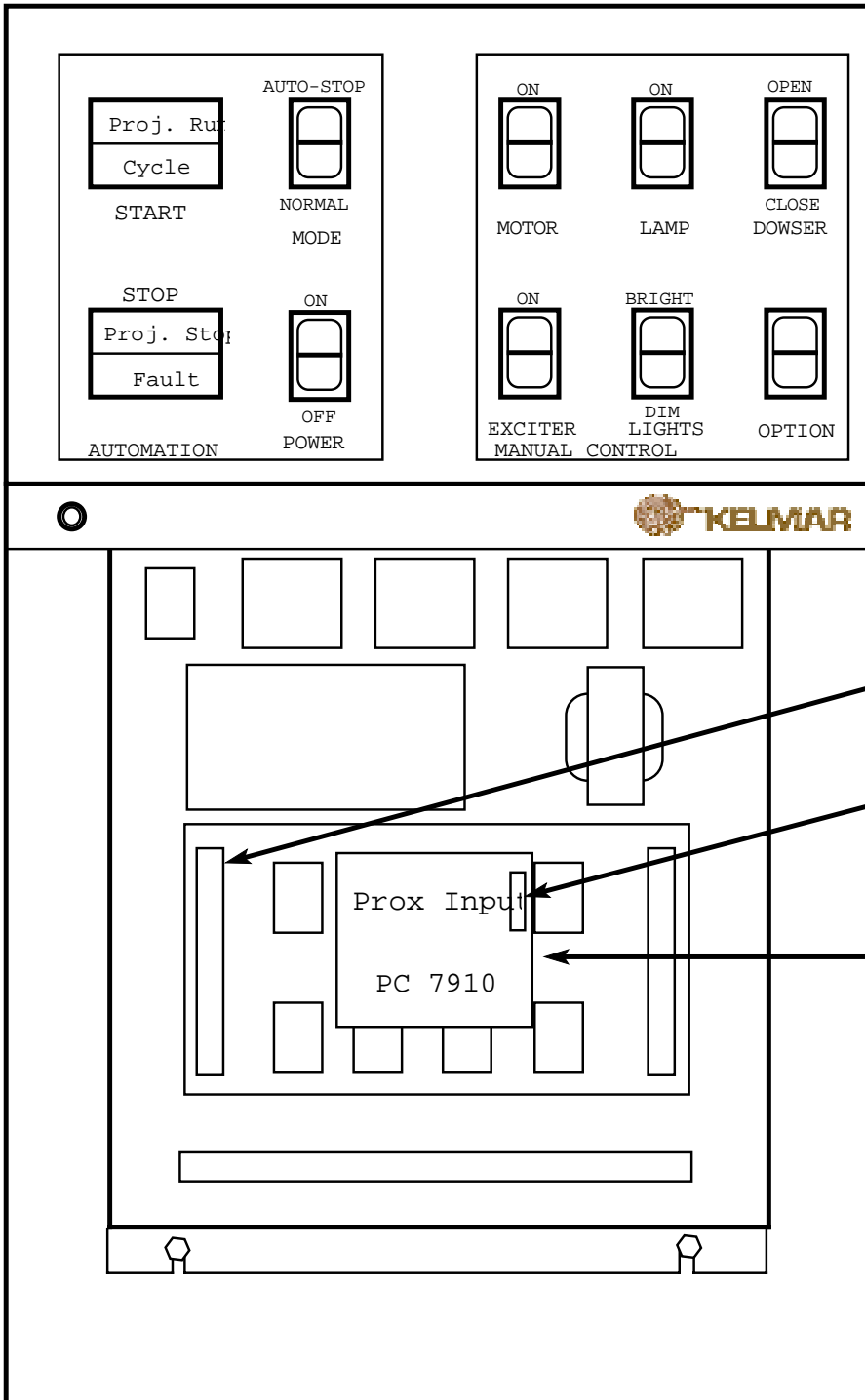
TB4-1	12 VAC FEED	
TB4-2	GROUND-SWITCHING COMMON-FEED	
TB4-3	START "1" [CYCLE]	
TB4-4	START "2" [C.O. CLOSE]	[2 POLE N.O. CIR. TO GROUND]
TB4-5	STOP	[N.O. TO GROUND]
TB4-6	RUN INDICATOR	[K9 COIL], [PB-1]
TB4-7	STOP INDICATOR	[PB-2]
TB4-8	FAULT INDICATOR	[PB-2]
TB4-9	CYCLE INDICATOR	[K8 COIL], [PB-1]
TB4-10	HOLD INPUT FROM K11	
TB4-11	LIGHTS SWITCH FEED	[S6]
TB4-12	LIGHTS SWITCH UP	[S6]
TB4-13	LIGHTS SWITCH DOWN	[S6]
TB4-14	HOLD FOR EXCITER RELAY	[K12]
TB4-15	C.O. OPEN RELAY COIL	[K10]
TB4-16	C.O. CLOSE RELAY COIL	[K11]

**RELAY SCHEDULE**

<u>No.</u>	<u>FUNCTION/DESIGNATION</u>	<u>TYPE</u>	<u>LOCATION</u>
K1	START	4PDT	P.C. BOARD
K2	SHOW START	4PDT	P.C. BOARD
K3	SHOW END	4PDT	P.C. BOARD
K4	HOLD	4PDT	P.C. BOARD
K5	FAILSAFE/STOP	4PDT	P.C. BOARD
K6	ALARM	4PDT	P.C. BOARD
K7	INBOARD CUE	4PDT	P.C. BOARD
K8	TIMER CYCLE	4PDT	CHASSIS
K9	POWER	3PDT	CHASSIS
K10	C.O. OPEN	3PDT	CHASSIS
K11	C.O. CLOSE	3PDT	CHASSIS
K12	EXCITER	3PDT	CHASSIS

**SWITCHES**

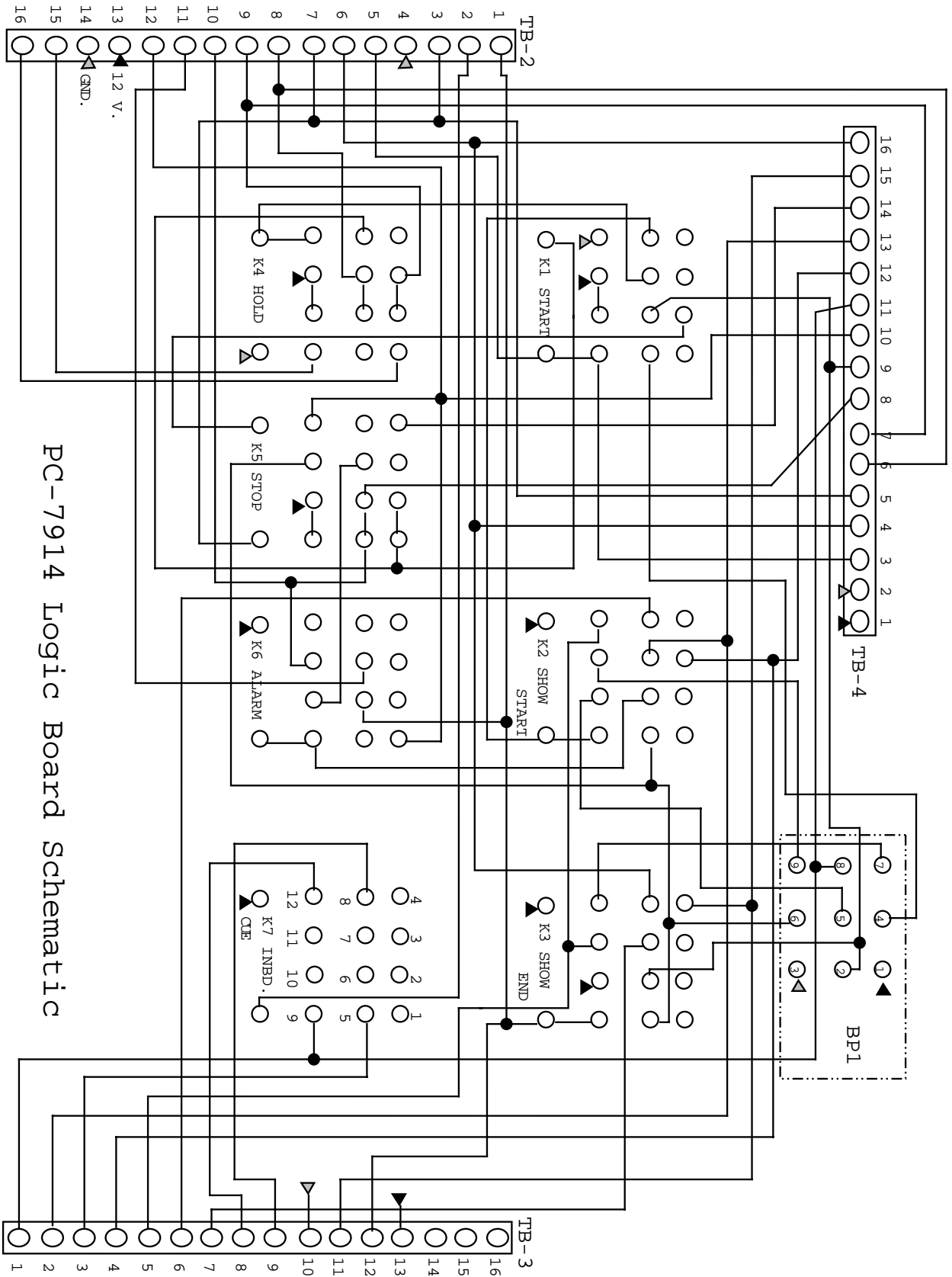
<b>AUTOMATION DESIGNATION:</b>	<b>FUNCTION</b>	<b>TYPE</b>
F1	MAIN FUSE	3 AMP
PB-1	START	2POLE, 2LIGHT
PB-2	STOP	1POLE, 2LIGHT
S1	MODE	SPST
S2	POWER ON/OFF	SPST
<b>MANUAL CONTROL:</b>		
S3	MANUAL MOTOR	SPST
S4	MANUAL EXCITER	SPST
S5	MANUAL LAMP	SPST
S6	MANUAL LIGHTS	SPDT, MOMENTARY ON-OFF-ON
S7	MANUAL C.O.	SPDT, MOMENTARY ON-OFF-ON
S8	OPTION	SPDT, MOMENTARY ON-OFF-ON



CUE DETECTOR CABLE  
 FAILSAFE WIRES  
 HOOK UP HERE

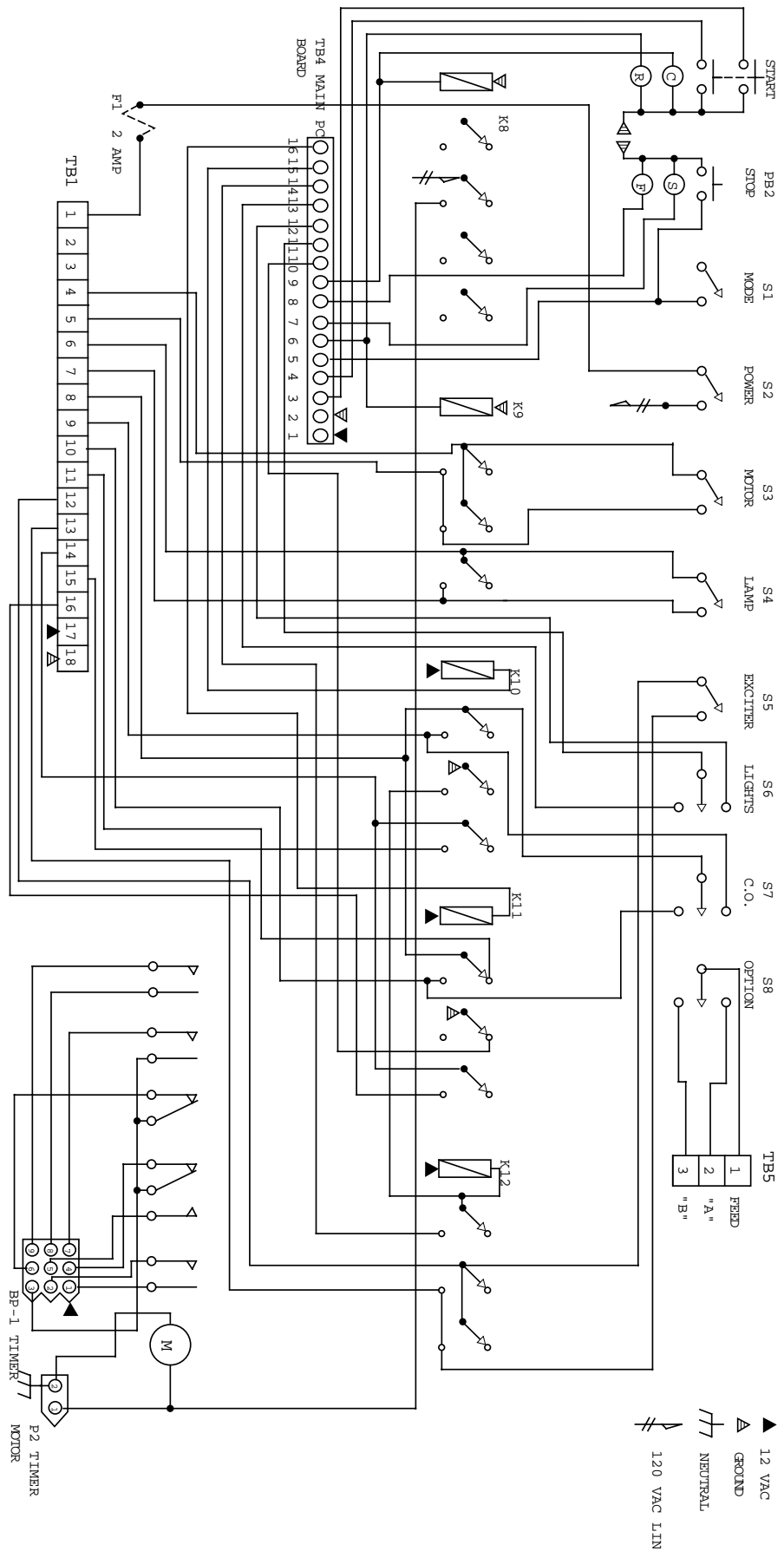
CUE DETECTOR CABLE  
 PROXIMITY DETECTOR  
 POWER AND OUTPUT WIRES  
 HOOK UP HERE

2-3 Cue Decoder  
 Board  
 SEE INSTUCTIONS  
 FOR UDH-2-2335/2H



PC-7914 Logic Board Schematic

- TB1-1 120 VAC FEED TO THIS UNIT
- TB1-2 120 VAC NEUTRAL FEED TO THIS UNIT
- TB1-3 GROUND
- TB1-4 PROJECTOR MOTOR IN
- TB1-5 PROJECTOR MOTOR OUT
- TB1-5 LAMP CONTROL IN
- TB1-7 LAMP CONTROL OUT
- TB1-8 C.O. DOWSER FEED
- TB1-9 C.O. DOWSER OPEN
- TB1-10 C.O. DOWSER CLOSE
- TB1-11 C.O. DOWSER CLOSE NORMALLY CLOSED
- TB1-12 EXCITER LAMP IN
- TB1-13 EXCITER LAMP OUT
- TB1-14 "A OPTION" SWITCHING-FEED
- TB1-15 "A OPTION" SWITCHING- (C.O.OPEN)
- TB1-16 "A OPTION" SWITCHING- (C.O.CLOSE)
- TB1-17 12 VAC CONSTANT
- TB1-18 GROUND - SWITCHING COMMON



Parts needed to add the Cross Cue Function to a Series IV Automation:

- (1) 4 Pole Relay with a 12 Volt AC Coil
- (2) Single Pole Double Throw Toggle Switches

Parts needed to add the Remote Status to a Series IV Automation for interface to Kelmar 9558 Remote Status:

- (1) 4 Pole Relay with a 12 Volt AC Coil
- (2) 1N4004 Diodes

