Operating Instructions

For
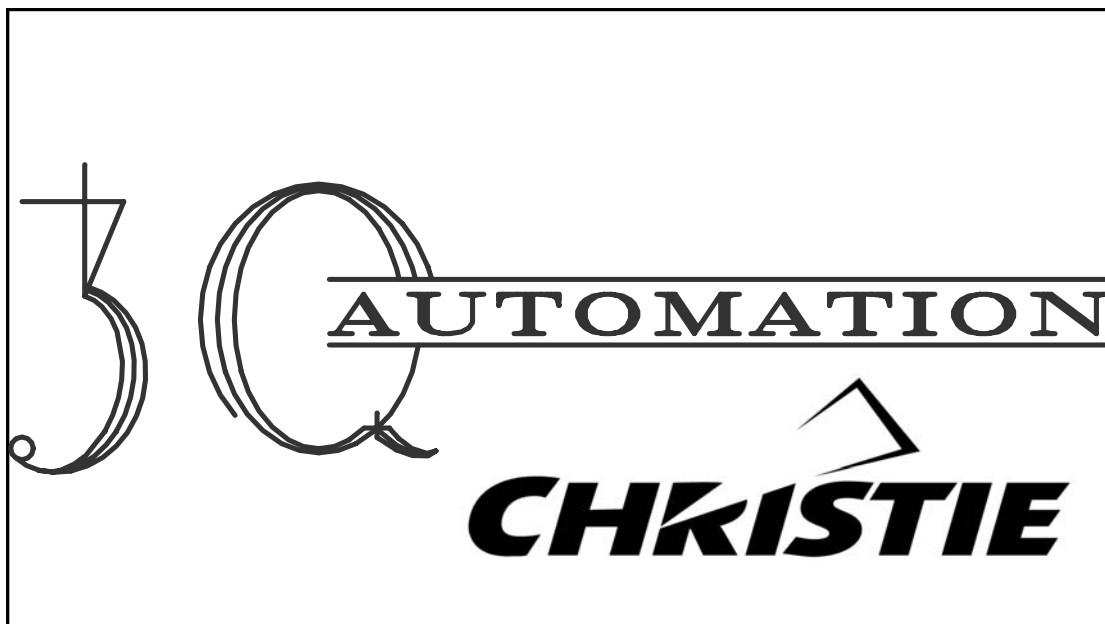
The CHRISTIE 3Q is a console mounted, cue driven automation designed specifically for the CHRISTIE P35GPS Projector/SLC console combination. This cost efficient design provides control of most booth and auditorium functions including: the projector motor, Xenon lamp, changeover douser, house light dimmer *(up/mid/down)*, audio switching *(Stereo/SR/Digital/Non-sync)*, stage curtains, slide projector, remote status indication *(run/stop/fault/ready)*, built-in two projector interlock, full remote capability, lens turret/masking and Xenon Auto-Focus control *(for properly equipped projectors and consoles)*. The automation provides manual control of all functions and cues as well as two user assignable option switches pre-wired to the main terminal board.

The automation utilizes a reliable cue detector instead of a cam timer, to initiate the various automated functions. A cue expander may be utilized to provide up to four additional custom functions *(i.e. special dimmer functions, mid-show stop, additional sound formats, etc.)*. The compact printed circuit board design provides reliable, trouble-free operation with the familiarity and simplicity of electro-mechanical relays.

SUMMARY OF FEATURES

♦   Designed specifically for P35GPS/SLC combination

♦   Separate trailer and feature pre-selects for picture and audio formats

♦   Reliable relay and PCB based design

♦   Built-in two projector interlock

♦   Full manual controls for all functions including cues

♦   All low voltage controls on PCB

♦   LED illuminated run, stop, and cue buttons for long service life

♦   Panel mounted alarm buzzer

♦   Two pre-wired, user assignable option switches

♦   Full remote control and status capabilities

NORMAL SHOW SEQUENCE

♦ **Start Button**

        Motor On
        Lamp On
        Douser Close
        Slide Projector Off
        Lens/Masking/AutoFocus to Start Format *(selectable)*

♦ **Start Cue** ------ **at beginning of trailers**

        Dimmer Mid or Down
        Curtain Open
        Douser Open
        Start Audio to Stereo or SR *(selectable)*
        Status Indicator to Run

♦ **Feature Cue** ------ **at beginning of feature**

        Dimmer Down
        Feature Audio to Stereo, SR or Digital *(selectable)*
        Lens/Masking/AutoFocus to Feature Format *(selectable)*

♦ **Show End Cue** ------ **at end of feature credits**

        Curtain Close
        Douser Close
        Dimmer Up
        Audio to Non-Sync
        Lens/Masking/Auto Focus to Start Format *(selectable)*

♦ **Film Run Out**

        Motor Off
        Lamp Off
        Slide Projector On
        Status Indicator to Stop

♦ **Fault (Film Break)**

        Motor Off
        Lamp Off
        Dimmer Up
        Slide Projector On
        Status Indicator to Fault
        Alarm Sounds

♦ **Cancel Alarm**

        Shuts off Alarm
        Douser Close
        Audio to Non-Sync

CUE PLACEMENT

The **CHRISTIE 3Q** automation utilizes three different cues for normal show operation.

- ♦ **Show Start** - (inboard cue)
  - ➢ placed two feet prior to the start of the trailers.

- ♦ **Feature** - (center cue)
  - ➢ placed two feet prior to the start of the feature or policy trailer.

- ♦ **Show End** - (outboard cue)
  - ➢ placed two feet prior to the end of the credits.

Note

> The automation may be used with any cue sensor which provides at least three cues with consistent duration contact closure when a cue is detected**.**

> Although only three cues are required for normal show operation, an expander board may be added to further customize show operations.

COMPONENT FUNCTION

SWITCH		FUNCTION
Start	**(PB - 1)**	Latches Start Relay, engaging motor and lamp. Turret/masking to start format, closes douser, audio to non-sync. Slide projector OFF. Will not start if fail-safes are down. L.E.D. illuminated, green when active.
Stop	**(PB - 2)**	Disengages Start Relay, motor and lamp OFF. Slide projector ON. L.E.D. illuminated, red when active or fail-safes are down.
Motor	**(S1)**	Manual motor control.
Lamp	**(S2)**	Manual lamp control.
Douser	**(S3)**	Manual opening and closing of changeover douser.
Dimmer	**(S4)**	Manual raising or lowering of house lights.
Format	**(S5)**	Manual control of lens turret/aperture/masking/Auto-Focus.
Start Audio	**(S6)**	Selects trailer audio format to Stereo or SR.
Start Format	**(S7)**	Selects trailer picture format to Flat or Scope.
Feature Audio	**(S8)**	Selects feature audio format to Stereo, SR or Digital.

SWITCH		FUNCTION
Feature Format	**(S9)**	Selects feature picture format to Flat or Scope.
Start Cue	**(PB - 3)**	Manual Show Start Cue. Active only when Start Relay is latched. Brings lights to MID, audio to Mono/Stereo, douser open, curtain open.
Feature Cue	**(PB - 4)**	Manual Feature Cue. Active only when Start Relay is latched. Brings lights to LOW, audio to Stereo/SR, feature picture format to Flat or Scope.
Show End Cue	**(PB - 5)**	Manual Show End Cue And Alarm Cancel. Brings lights UP, audio to non-sync, douser close, curtain close, start picture format to Flat or Scope.
Option 1	**(S10)**	ON/OFF Switch. May be used for interlock activation. Pre-wired to TB5 38-41. *(see wiring diagram)*.
Option 2	**(S11)**	Momentary Switch. May be used for manual curtain control. Pre-wired to TB5 42-44. *(see wiring diagram)*.
Buzzer	**(LS1)**	Sounds alarm if a film break occurs.
Fuse	**(F1)**	Automation main fuse, 2 Amp., 3AGC.

COMPONENT	FUNCTION

P.C.B. Assembly — All low voltage control circuitry.

Start Relay **(K1)** — Latches through Stop Relay. Holds Power Relay latched engaging motor and lamp.

Stop Relay **(K2)** — Disengages Start Relay. Relay is latched when fail-safes are down.

Alarm Relay **(K3)** — Sounds alarm if Stop Relay is latched due to fail-safe. Alarm sounds if show is between the Show Start and Show End Cues.

Show End Relay **(K4)** — Actuates Show End Cue functions. Disengages Alarm Relay.

Feature Relay **(K5)** — Actuates all Feature Cue functions.

Show Start Relay **(K6)** — Actuates all Show Start Cue functions. Latches Alarm Relay.

Power Relay **(K7)** — Activated by Start Relay engages motor and lamp. 3PDT, 12VAC coil, with 10A rated contacts

Open Relay **(K8)** — Opens douser and stage curtains. 3PDT, 12VAC coil, with 10A rated contacts.

Close Relay **(K9)** — Closes douser and stage curtains. 3PDT, 12VAC coil, with 10A rated contacts.

Transformer **(T1)** — 12VAC , 2 Amp transformer. Provides 12V power for automation.

All relays are 4PDT, 12VAC coil with contacts rated at 5A @125V except where designated.

Note

Make sure both Automations are on the same phase. TB5-25 should read 0 VAC between the two Automations. *(see wiring diagram).*

♦ Connect Remote Start (46) to Option 1A Common (38) in each automation.

♦ Connect Fail-safe Interlock (45) to Option 1B Common (40) in each automation.

♦ Connect Option 1A N.O. (39) and Option 1B N.O. (41) from projector 1 to their corresponding terminals on projector 2.

Check

- Switching on the Option 1 switches in both automations will activate interlock.

- Tie-up both sets of fail-safes to ready position.

- Press start on either automation. Both projectors' motors and lamps will start.

- As the cues pass through each automation, functions will be performed independently as usual.

- Once the Show Start Cue has gone through both automations, fail-safe protection for the interlock will be active. Dropping of the fail-safes on either projector will stop both projectors, raise the house lights, and sound the alarms. Once the Show End Cue has gone through one of the automations, interlock fail-safe will be discontinued and the projectors will shut off independently as the film runs out.

TERMINAL ASSIGNMENT

TB-1　　　Automation PCB (Reference Only)

1.	Dimmer Switching Common	(W78)
2.	Dimmer Up	(W79)
3.	Dimmer Mid	(W13)
4.	Dimmer Down	(W80)
5.	Audio Switching Common	(W15)
6.	Start Audio Format	(W62)
7.	Feature Audio Format	(W63)
8.	Non-Sync	(W19)
9.	Show Start Cue	(W64)
10.	Feature Cue	(W81)
11.	Show End Cue	(W82)
12.	Cue Common	(W65)
13.	Fail-Safe	(W83)
14.	Remote Start	(W88)
15.	Ground *(Automation Switching Common)*	(W84)
16.	12VAC	(W85)
17.	Run Indicator	(W26)
18.	Stop Indicator	(W27)
19.	Fault Indicator/Alarm	(W86)
20.	Format Switching Common	(W87)
21.	Start Format	(W89)
22.	Feature Format	(W90)
23.	Interlock Fail-Safe *(Input/Output)*	(W45)
24.	Buzzer output	(W91)

TB-2　　　Automation PCB (194898-001)

1.	12 VAC	(W117/W122)
2.	Ground	(W118/W123)
3.	Power Relay	(W119)
4.	Open Relay	(W120)
5.	Close Relay	(W121)
6.	Alarm Active (12VAC when active)	

TB-3   Automation Chassis (195631-001)

1.	Line 115VAC	(W61)
2.	Neutral	(W2)
3.	Ground	(W3)
4.	Motor	(W71)
5.	Motor	(W72)
6.	Lamp	(W73)
7.	Lamp	(W74)
8.	Douser Common	(W75)
9.	Douser Open	(W76)
10.	Douser Close	(W77)
11.	Curtain Common	(W35)
12.	Curtain Open	(W36)
13.	Curtain Close	(W37)
14.	Dry Circuit Common	(W29)
15.	Dry Circuit N.C.	(W30)
16.	Dry Circuit N.O.	(W31)

TB-5   Main Console Terminal Board (Field Terminations)

1.	Line 115VAC Feed to Automation		(W1)
2.	Neutral to Automation		(W2)
3.	Ground		(W3)
4.	Motor		(W4/W71)
5.	Motor		(W5/W72)
6.	Xenon		(W6/W73)
7.	Xenon		(W7/W74)
8.	Douser Common		(W8/W75)
9.	Douser Open		(W9/W76)
10.	Douser Close		(W10/W77)
11.	Dimmer Switching Common		(W11/W78)
12.	Dimmer Up		(W12/W79)
13.	Dimmer Mid		(W13)
14.	Dimmer Down		(W14/W80)
15.	Audio Switching Common		(W15)
16.	Stereo		(W16)
17.	SR		(W17)
18.	Digital		(W18)
19.	Non-Sync		(W19)
20.	Show Start Cue	[N.O. CIRCUIT]	(W20/W64)
21.	Feature Cue	[N.O. CIRCUIT]	(W21/W81)
22.	Show End Cue	[N.O. CIRCUIT]	(W22/W82)

23.	Fail-Safe *(Fire Alarm Shutdown)*	(W23/W83)
24.	Ground *(Switching Common)*	(W24/W84)
25.	12VAC	(W25W85)
26.	Run Indicator	(W26)
27.	Stop Indicator	(W27)
28.	Fault Indicator/Alarm	(W28/W86)
29.	Dry Circuit Common	(W29)
30.	Dry Circuit N.C. [15A CONTACT]	(W30)
31.	Dry Circuit N.O.	(W31)
32.	Lens Common	(W32/W87)
33.	Lens Flat	(W33)
34.	Lens Scope	(W34)
35.	Curtain Common	(W35)
36.	Curtain Open	(W36)
37.	Curtain Close	(W37)
38.	Option 1A Common	(W38)
39.	Option 1A N.O.	(W39)
40.	Option 1B Common	(W40)
41.	Option 1B N.O.	(W41)
42.	Option 2 Common	(W42)
43.	Option 2 A	(W43)
44.	Option 2 B	(W44)
45.	Fail-Safe Buss *(Input/Output)*	(W45)
46.	Start Buss [N.O. CIRCUIT]	(W46/W88)
47.	Masking Common	(W47)
48.	Masking Flat	(W48)
49.	Masking Scope	(W49)

Note

Unless otherwise noted, all circuits are dry contact closure and are rated for low voltage controls only.

PARTS LIST

COMPONENT	PART NUMBER

♦ **Push Buttons**

Start (Green)	578000-079
Stop (Red)	578000-078
Cues (White)	578000-077

♦ **Switches**

S1, S2, S10 (DPST)	578722-024
S3, S4, S5, S11 (SPDT, Mom.)	578712-018
S6, S7, S8 (SPDT)	578722-017
S9 (SPDT, Center off)	578712-003

♦ **Relays**

K1-K6 (4PDT,Small)	599000-122
K7-K9 (3PDT, Large)	571312-001

♦ **Other**

Buzzer	546900-035
Transformer	587700-077
Fuse	546102-011

♦ **Cable**

Automation Cable Assembly	195838-001

Appendix A: Wiring Diagrams

Appendix A contains wiring diagrams associated with options available with the 3Q automation.

- ➢ Cue Detector Wiring, for 598931-690 3Q Failsafe

- ➢ Option One Wiring, Two Projector Interlock

- ➢ Option Two Wiring, Manual Curtain Control

- ➢ Option Two Wiring, Manual Masking Control

- ➢ 3Q Status Panel Wiring

- ➢ 3Q Status Wiring Riser Diagram

- ➢ Phase Check, Two Projector Interlock

- ➢ 3Q Wiring w/o P35GPS Projector

- ➢ 3Q Automation Schematic

Cue Detector
Wiring and Cue Placement

SOUNDTRACK

(Show Start)
INBOARD CUE

(Feature)
CENTER CUE

(Show End)
OUTBOARD CUE

SENSORS   RELAYS

12-24V   BLACK
GROUND   BROWN

WHITE
INBOARD CUE   GRAY
PURPLE
FEATURE CUE   BLUE
GREEN
OUTBOARD CUE   YELLOW
ORANGE
RED
FAIL SAFE   N/C

PROXIMITY CUE/FAILSAFE P/N: 598931-690
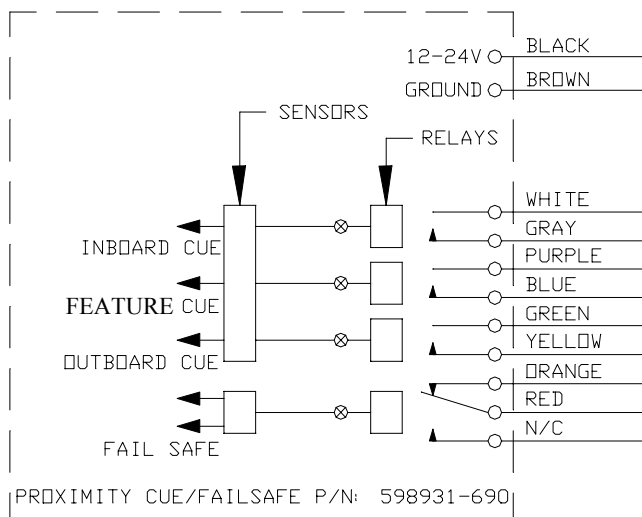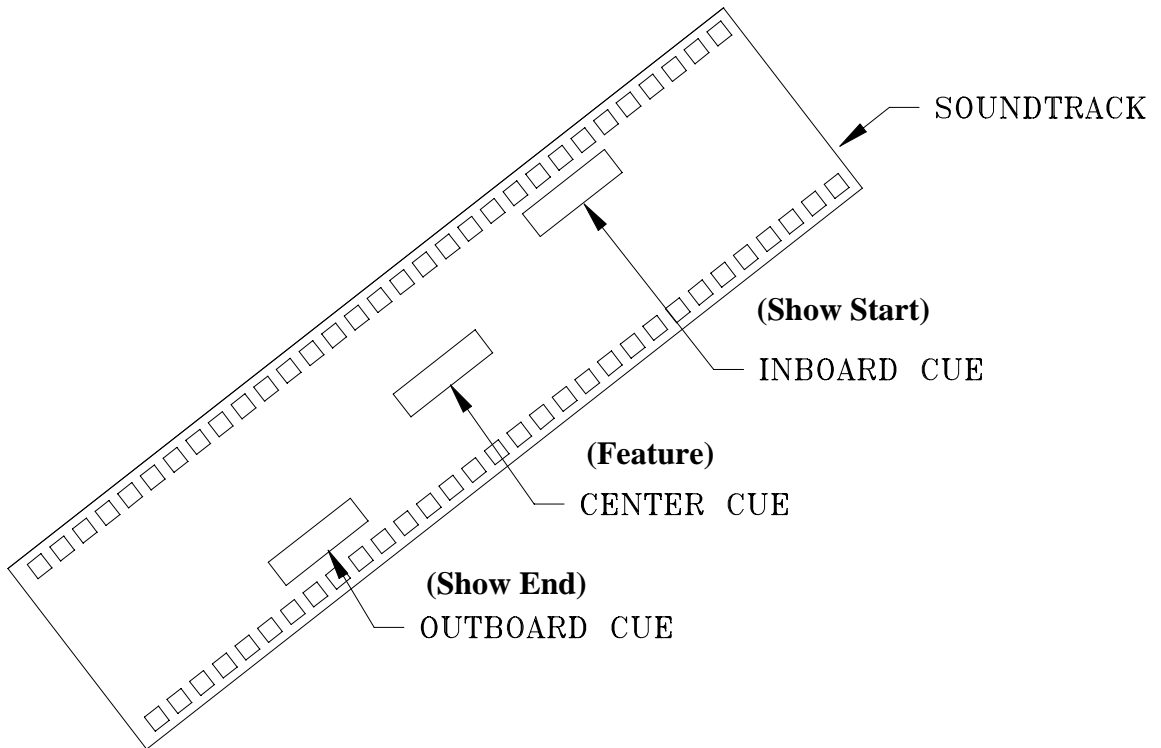
Option 1 Wiring
Two Projector Interlock

Option 1A Com (38)
Option 1A N.O. (39)
Option 1B Com (40)
Option 1B N.O. (41)
Failsafe I/L (45)
Remote Start (46)

TB5

Jumper

Jumper

Projector #1

Projector #2

Jumper

Jumper

Option 1A Com (38)
Option 1A N.O. (39)
Option 1B Com (40)
Option 1B N.O. (41)
Failsafe I/L (45)
Remote Start (46)

TB5
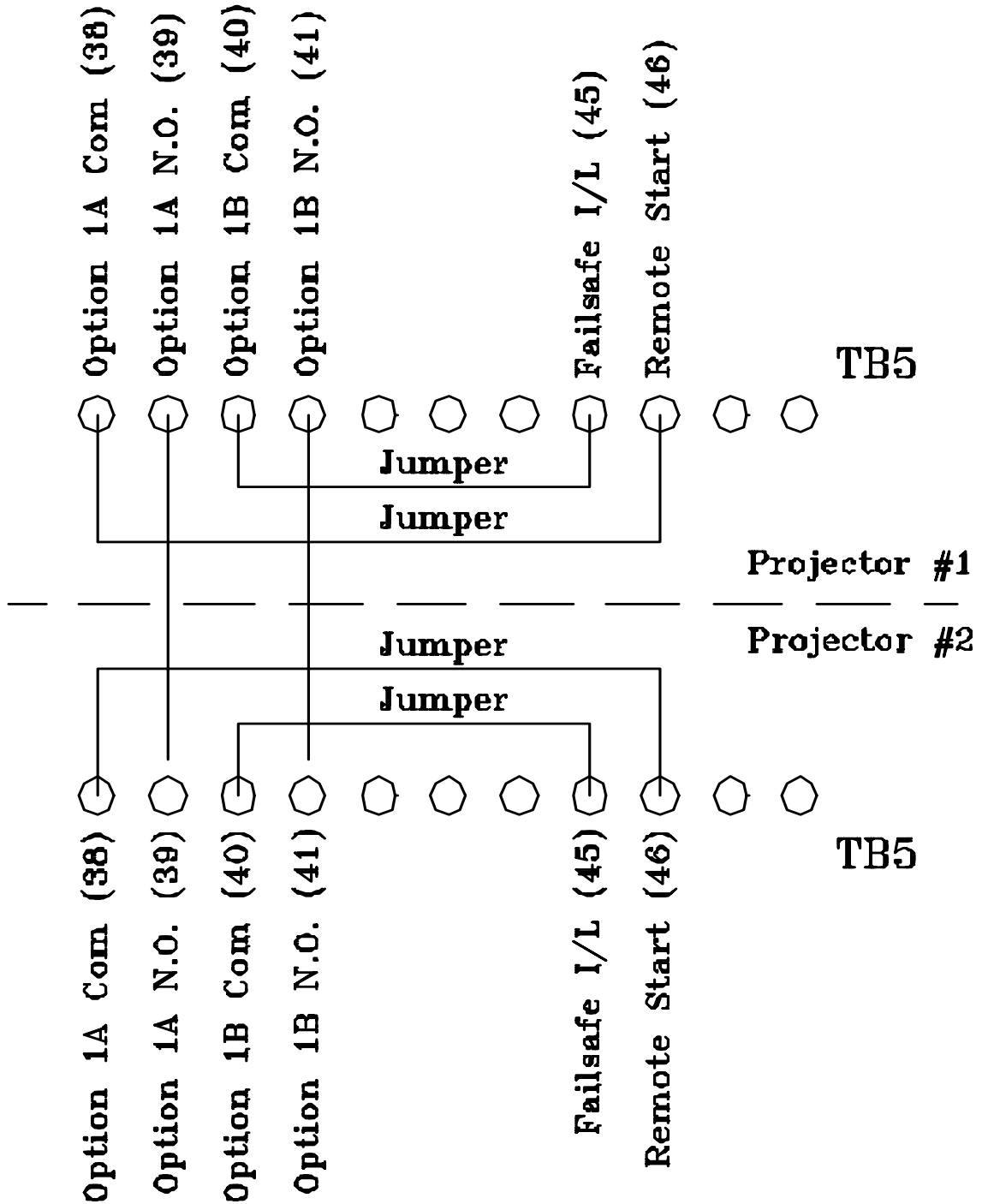
Option 2 Wiring
Manual Curtain Control

Curtain Com (35)
Curtain Open (36)
Curtain Close (37)

Option 2 Com (42)
Option 2A (43)
Option 2B (44)

TB5

Jumper

Jumper

Jumper

To Curtain
motor
(Low voltage
only)

NOTE: Automation will
automatically open/close
curtain with c.o. dowser.
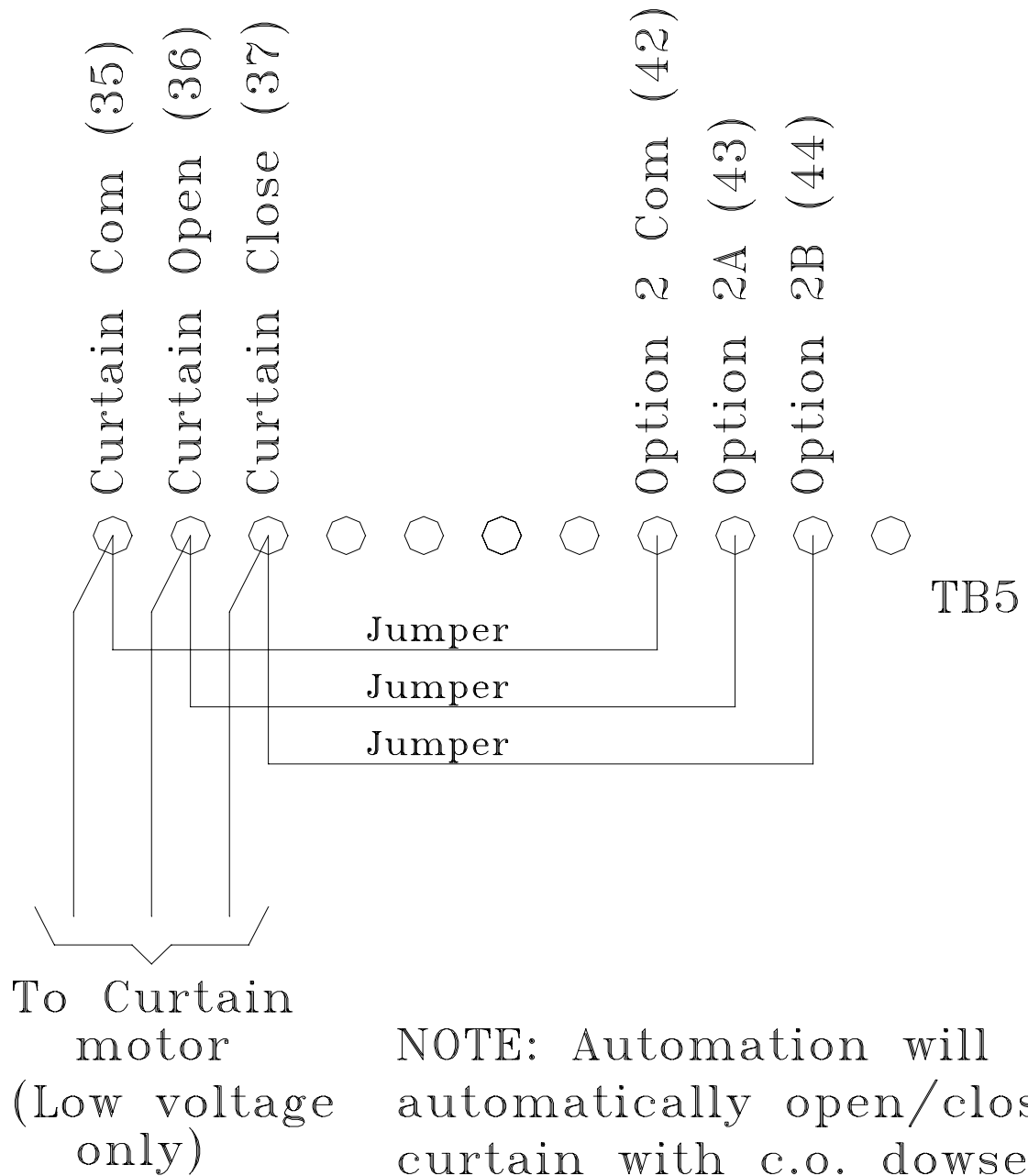
Option 2 Wiring
Independent Masking Control

Option 2 Com (42)
Option 2A (43)
Option 2B (44)
Masking Com (47)
Masking Flat (48)
Masking Scope (49)

TB5

Jumpers
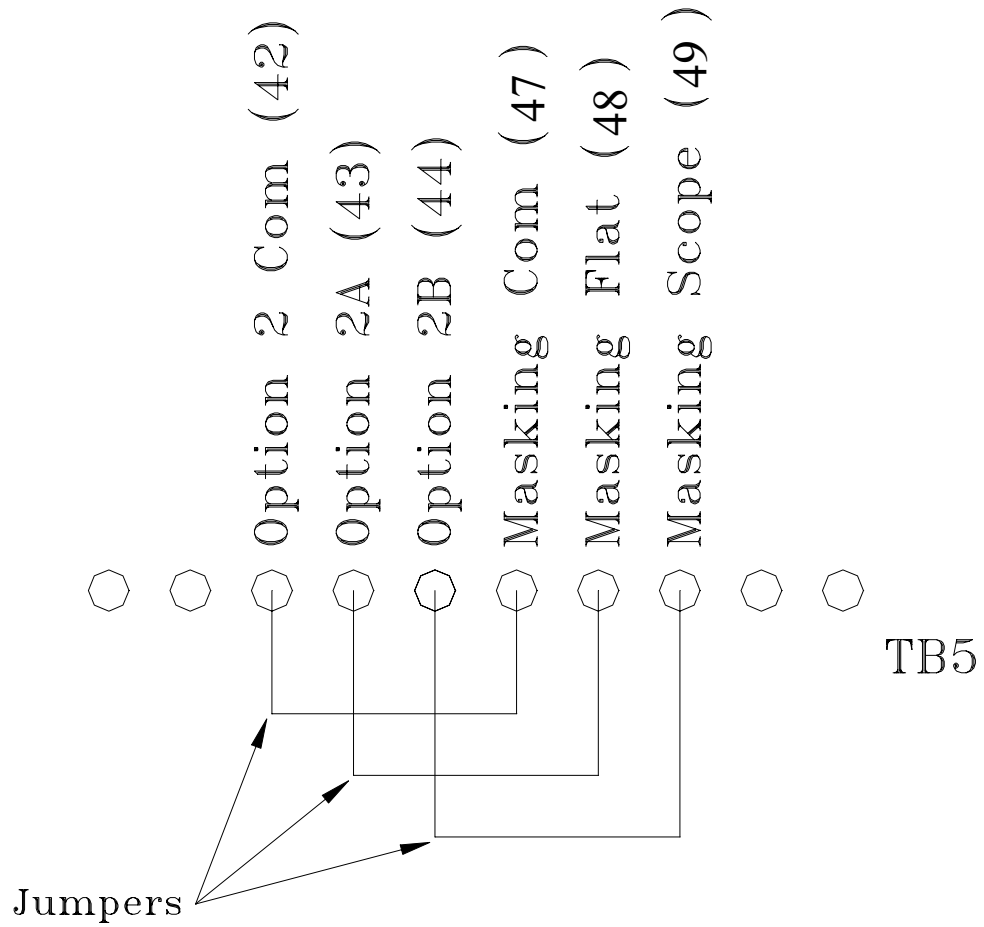
NOTE: Automation will automatically change masking with turret.

CHRISITE 3Q STATUS INDICATOR

STATUS PCB	STATUS PCB	STATUS PCB
P/N 195645−001	P/N 195645−001	P/N 195645−001

Ⓐ Ⓑ Ⓒ

1	2	5	4	3

1	2	5	4	3

1	2	5	4	3

25	26	27	28

AUTOMATION "A"

25	26	27	28

AUTOMATION "B"

25	26	27	28
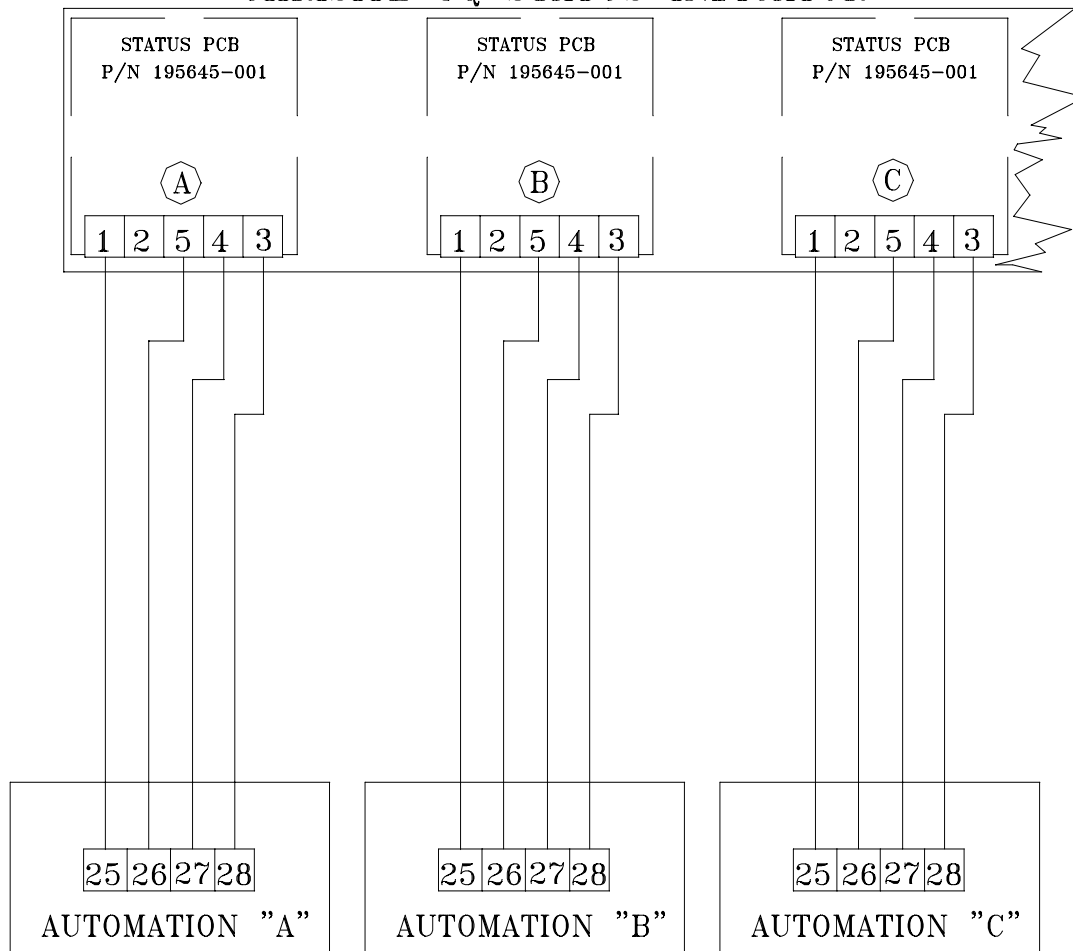
AUTOMATION "C"

CHRISTIE 3Q STATUS INTERFACE

P.C.B. WIRING TO AUTOMATION MAIN TERMINAL BOARD.

8 AUD.STAT.MODULES
195655-001 (SURFACE)
OR JUNCTION BOX

BELDEN 8632
(32 WIRES)
ALTERNATE

BELDEN 9444
(4 WIRES)
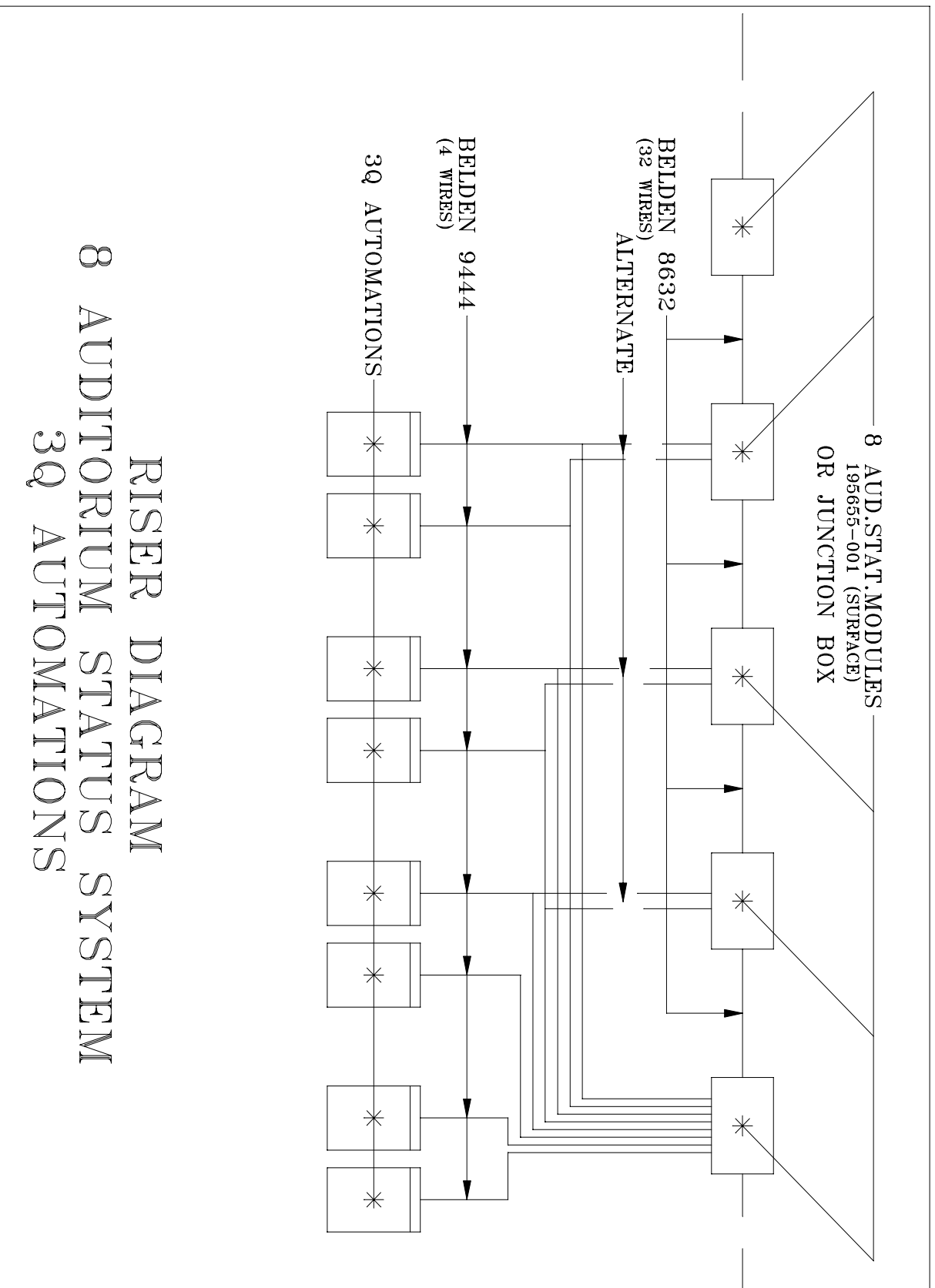
3Q AUTOMATIONS

RISER DIAGRAM
8 AUDITORIUM STATUS SYSTEM
3Q AUTOMATIONS

Phase Check
Two Projector Interlock

12 VAC (25)

TB5

Projector #1

0 Volts A.C.
between automations.

Projector #2

12 VAC (25)

TB5
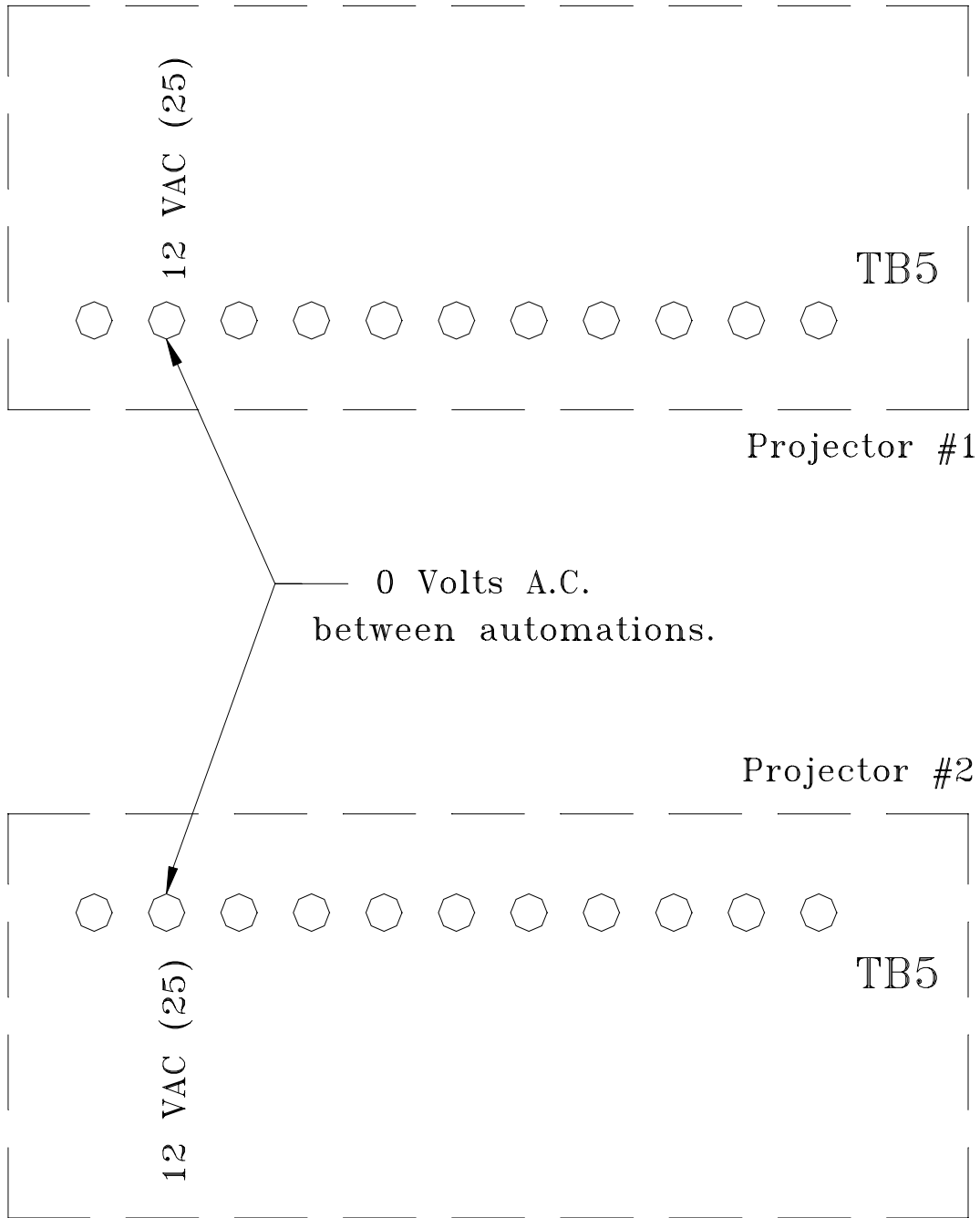
3Q Without P35GP
AutoTurret/Masking/AutoFocus

KELMAR
7927
598931-676

K1   K2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

52 53 54 — Turret Control

COM FLAT SCOPE — Masking

COM FLAT SCOPE — Option

115VAC (TB5-1)

Optional

AutoFocus PCB

P1

Neutral (TB5-2)

P3

Jumper

Ground (24)

12VAC (25)

Format Com (32)

Format Flat (33)

Format Scope (34)

TB5
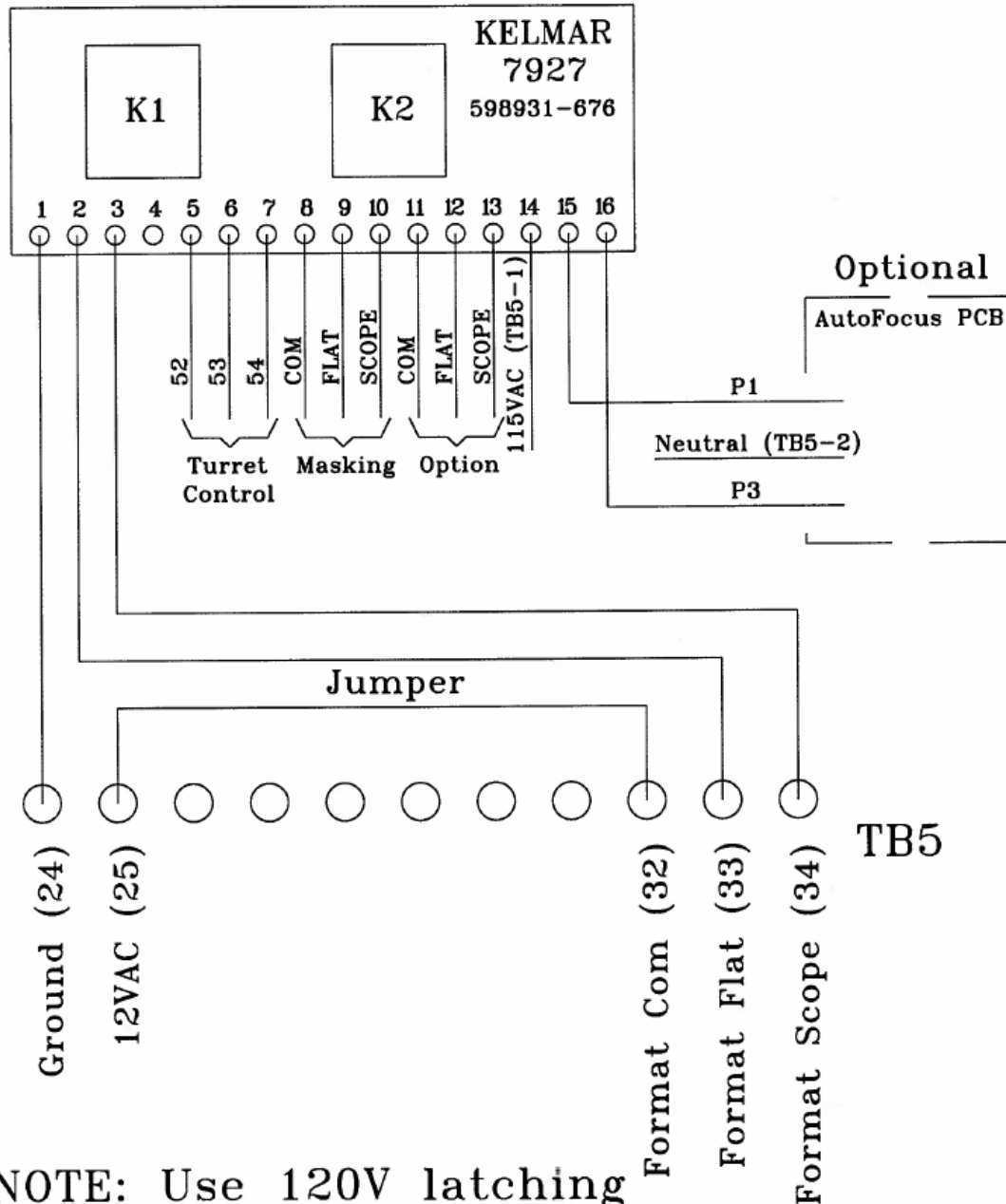
NOTE: Use 120V latching relay for AutoFocus.

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
	REV PER ECO# 23751	02/27/96	GJS
A	REV PER ECO# 23766	04/01/96	GJS
2	REV PER ECO# 05-2499	08/04/05	GVB

TB5

115VAC LINE	1
115VAC NEUTRAL	2
GROUND	3
MOTOR	4
MOTOR	5
LAMP	6
LAMP	7
DOUSER COM	8
DOUSER OPEN	9
DOUSER CLOSE	10
DIMMER SW COM	11
DIMMER UP	12
DIMMER MID	13
DIMMER DOWN	14
AUDIO SW COM	15
STEREO	16
SR	17
DIGITAL	18
NON-SYNC	19
SHOW START CUE	20
FEATURE CUE	21
SHOW END CUE	22
FAIL SAFE	23
GROUND	24
12VAC	25
RUN INDICATOR	26
STOP INDICATOR	27
FAULT ALARM	28
DRY CURCUIT COM	29
DRY CURCUIT N.C.	30
DRY CURCUIT N.O.	31
LENS COM	32
LENS FLAT	33
LENS SCOPE	34
CURTAIN COM	35
CURTAIN OPEN	36
CURTAIN CLOSE	37
OPTION 1A COM	38
OPTION 1A N.O.	39
OPTION 1B COM	40
OPTION 1B N.O.	41
OPTION 2 COM	42
OPTION 2 A	43
OPTION 2 B	44
FAIL SAFE BUSS	45
START BUSS	46
MASKING COM	47
MASKING FLAT	48
MASKING SCOPE	49
	50

TB3 — ON CHASSIS

F1 2A

115VAC LINE	1
115VAC NEUTRAL	2
GROUND	3
MOTOR	4
MOTOR	5
LAMP	6
LAMP	7
DOUSER COM	8
DOUSER OPEN	9
DOUSER CLOSE	10
CURTAIN COM	11
CURTAIN OPEN	12
CURTAIN CLOSE	13
DRY CIRCUIT COM	14
DRY CIRCUIT N.C.	15
DRY CIRCUIT N.O.	16

LS1 — Piezo Alarm

Switches:
- MOTOR S1 — ON-OFF
- LAMP S2 — ON-OFF
- DOUSER S3 — (ON)-OFF-(ON) OPEN/CLOSE
- DIMMER S4 — (ON)-OFF-(ON) UP/DOWN
- FORMAT S5 — (ON)-OFF-(ON) FLAT/SCOPE

- PB1 AUTO START
- PB2 AUTO STOP

- START FORMAT S6 — ON-NONE-ON (FLAT/SCOPE)
- START AUDIO S7 — ON-NONE-ON (STEREO/SR)
- FEATURE FORMAT S8 — ON-NONE-ON (FLAT/SCOPE)
- FEATURE AUDIO S9 — ON-OFF-ON (SR/DIGITAL)
- OPTION1 S10 — ON/OFF (ON/OFF)
- OPTION2 S11 — (ON)-OFF-(ON) (A/B)

- START PB3 — ON-(ON) / LAMP
- FEATURE PB4 — ON-(ON) / LAMP
- END PB5 — ON-(ON) / LAMP

TB1 — ON PCB ASSY

DIMMER COM	1
DIMMER UP	2
DIMMER MID	3
DIMMER DOWN	4
AUDIO SW COM	5
START AUDIO FORMAT	6
FEATURE AUDIO	7
NON-SYNC	8
SHOW START CUE	9
FEATURE CUE	10
SHOW END CUE	11
CUE COM	12
FAIL-SAFE	13
REMOTE START	14
GROUND	15
12VAC	16
RUN INDICATOR	17
STOP INDICATOR	18
FAULT ALARM	19
FORMAT SW COM	20
START FORMAT	21
FEATURE FORMAT	22
INTERLOCK FAIL-SAFE	23
BUZZER OUT	24

FRONT PANEL AND HARNESS

PARTS LIST

	QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR SPECIFICATION	MATERIAL SPECIFICATION	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE
FRACTIONS DECIMALS ANGLES
±   .XX±   ±
             .XXX±

MATERIAL

FINISH

	APPROVALS	DATE
DRAWN	G. BERGMAN	07/07/05
CHECKED		
APPROVED		
ISSUED		

CONTRACT NO.

NEXT ASSY | USED ON

3Q | -

APPLICATION

DO NOT SCALE DRAWING

CHRISTIE

3Q AUTOMATION WIRING DIAGRAM

SIZE	CAGE NO.	DWG NO.	REV.
B		503380	2

SCALE NONE Friday, August 05, 2005 SHEET 1 OF 3

TB2

K1 — START LATCH

JP2
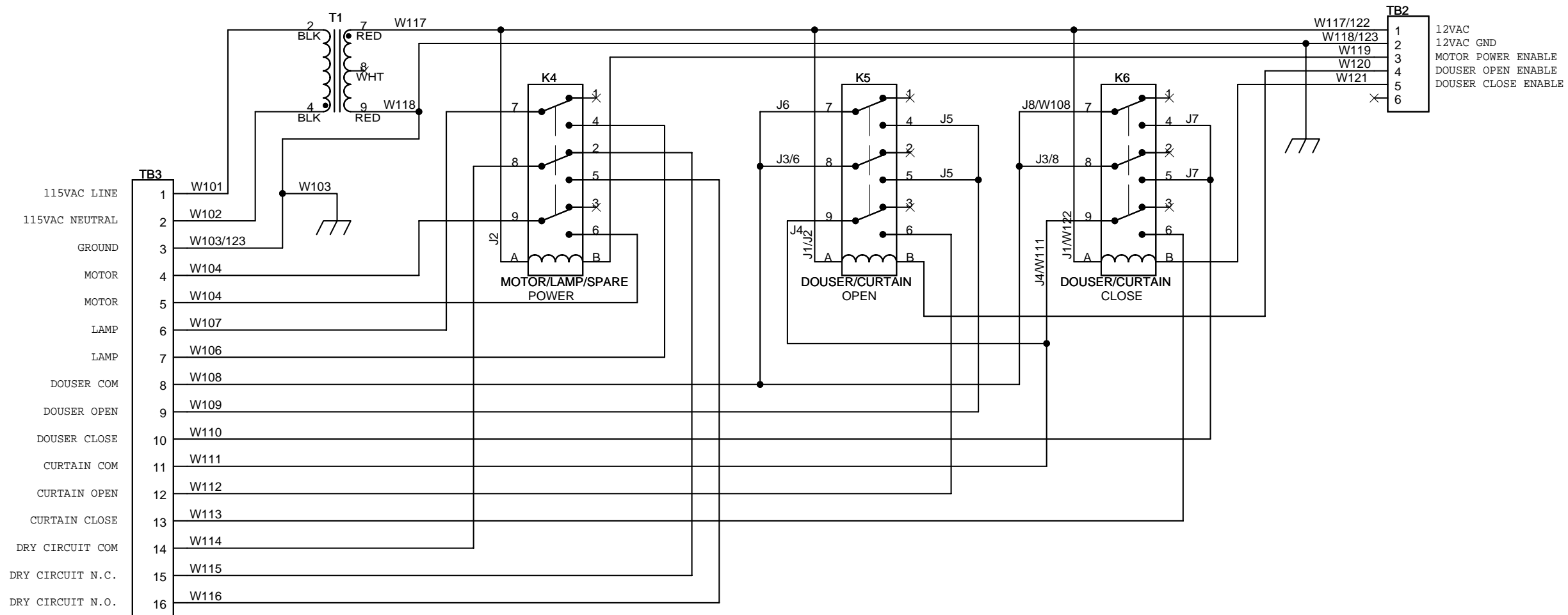
C2
22uF
50V

K2 — STOP

K3 — ALARM

K4 — SHOW END

K5 — FEATURE

K6 — SHOW START

1N4004
CR1

TB1

DIMMER COM
DIMMER UP
DIMMER MID
DIMMER DOWN
AUDIO SW COM
START AUDIO FORMAT
FEATURE AUDIO
NON-SYNC
SHOW START CUE
FEATURE CUE
SHOW END CUE
CUE COM
FAIL SAFE
REMOTE START
GROUND
12VAC
RUN INDICATOR
STOP INDICATOR
FAULT ALARM
FORMAT SW COM
START FORMAT
FEATURE FORMAT
INTERLOCK FAIL-SAFE
BUZZER OUT

PCB ASSY

Size	Document Number		Rev
B		503380	2
Date:	Thursday, August 04, 2005	Sheet 2 of 3	

T1

2	BLK	7	RED	W117
8	WHT			
4	BLK	9	RED	W118

TB2

1	12VAC
2	12VAC GND
3	MOTOR POWER ENABLE
4	DOUSER OPEN ENABLE
5	DOUSER CLOSE ENABLE
6	

W117/122
W118/123
W119
W120
W121

K4 — MOTOR/LAMP/SPARE POWER

7 1
8 4
9 2
A 5
B 3
6
J2

K5 — DOUSER/CURTAIN OPEN

J6 7 1
J3/6 8 4 J5
9 2 J5
J4 A 5
J1/J2 B 3
6

K6 — DOUSER/CURTAIN CLOSE

J8/W108 7 1
J3/8 8 4 J7
9 2 J7
J4/W111 A 5
J1/W122 B 3
6

TB3

1	115VAC LINE	W101	W103
2	115VAC NEUTRAL	W102	
3	GROUND	W103/123	
4	MOTOR	W104	
5	MOTOR	W104	
6	LAMP	W107	
7	LAMP	W106	
8	DOUSER COM	W108	
9	DOUSER OPEN	W109	
10	DOUSER CLOSE	W110	
11	CURTAIN COM	W111	
12	CURTAIN OPEN	W112	
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14	DRY CIRCUIT COM	W114	
15	DRY CIRCUIT N.C.	W115	
16	DRY CIRCUIT N.O.	W116	

POWER RELAYS

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