

Environ 2

Programmable Control Operator's Manual

Strand Lighting

Operator's Manual Part #: 2-450042-010
Revision Level: B1
Revision Date: 12/15/91
Written By: D. Lammers

The material in this manual is for information purposes only and is subject to change without notice. Strand Lighting assumes no responsibility for any errors or omissions which may appear in this manual. For comments and suggestions regarding corrections and/or updates to this manual, please contact your nearest Strand Lighting office or write to the Technical Publications Manager at the Rancho Dominguez office.

El contenido de este manual es solamente para información y está sujeto a cambios sin previo aviso. Strand Lighting no asume responsabilidad por errores u omisiones que puedan aparecer. Cualquier comentario, sugerencia o corrección con respecto a este manual, favor de dirijirlo a la oficina de Strand Lighting más cercana o escribir al Director de Publicaciones Técnicas a la oficina de Rancho Dominguez, California.

Le matériel décrit dans ce manuel est pour information seulement et est sujet à changements sans préavis. La compagnie Strand Lighting n'assume aucune responsabilité sur toute erreur ou omission inscrite dans ce manuel. Pour tous commentaires ou suggestions concernant des corrections et/ou les mises à jour de ce manuel, veuillez s'il vous plait contacter le bureau de Strand Lighting le plus pros ou écrire au gérant publications techniques au bureau de Rancho Dominguez.

Copyright 1991, Strand Lighting. All rights reserved.

Information contained in this document may not be duplicated in full or in part by any person without prior written approval of Strand Lighting. Its sole purpose is to provide the user with detailed operational information for the equipment supplied. The use of this document for all other purposes is specifically prohibited.

Strand Lighting offices:

The phone numbers shown below do not include country code or other international access data. Please consult your own phone service for proper international access procedures.

U.S. West Coast: 18111 South Santa Fe Ave., Rancho Dominguez, CA 90221 U.S.A.	Tel: (310) 637-7500 Fax: (310) 632-5519
U.S. East Coast: 20 Bushes Lane, Elmwood Park, NJ 07407 U.S.A.	Tel: (201) 791-7000 Fax: (201) 791-3167
Canada: 2430 Lucknow Dr., Unit 15, Mississauga, Ontario L5S 1V3 Canada	Tel: (416) 677-7130 Fax: (416) 677-6859
England: 22 Grant Way (off Syon Lane), Isleworth, Middlesex TW7 5QD England	Tel: 081-560-3171 Fax: 081-568-2103
Asia: 802 Houston Centre, 63 Mody Road, Tsimshatsui East, Kowloon, Hong Kong	Tel: 3-685-161 Fax: 3-694-890
France: 26 Villa Des Fleurs, 92400 Courbevoie, France	Tel: 1-478-86666 Fax: 1-433-37175
Germany: P.O. Box 4449, 3300 Braunschweig, West Germany	Tel: 5-331-30080 Fax: 5-331-78883
Italy: 80 Via delle Gardenie (Pontia Vecchia KM 33,400), 00040 Pomezia-Roma, Italy	Tel: 6-919-7123/4/5/6 Fax: 6-919-7136

TABLE OF CONTENTS

Environ 2 Programmable Operator's Manual

INTRODUCTION

This section provides information on manual organization, and definition of the terms and conventions used in this manual. It also details procedures for getting your suggestions to Strand Lighting, and receiving help if necessary.

1. INTRODUCTION	3
1.1 Manual Organization	3
1.2 Definitions	3
1.3 Conventions	4
1. TECHNICAL ASSISTANCE	5
2.1 Problems	5
2.2 Technical Questions	5
2.3 Parts Purchases	5
2.4 Comments And Suggestions	5

CONTROL STATIONS

This section provides information on Environ 2 Programmable Control Stations. Each Control Station type is described separately, so you can learn only the controls for your system. Each chapter includes an illustration of the station and a quick reference guide.

3. SLIDER STATIONS (7000 SERIES)	9
3.1 Basic Description	9
3.2 Slider Station Quick Guide	9
3.3 Modify Light Levels With Sliders	10
4. SLIDER STATIONS WITH PRESET (7200 SERIES)	11
4.1 Basic Description	11
4.2 Programming Quick Guide	12
4.3 Modify Light Levels With Sliders	13
4.4 Select (Play Back) Presets	13
4.5 Record/Modify Light Levels With Push-buttons	13
4.6 Record Light Levels With Sliders	13
5. PUSH-BUTTON CONTROL STATIONS (7300 SERIES)	15
5.1 Basic Description	15
5.2 Programming Quick Guide	16
5.3 Select (Play Back) Presets	17
5.4 Record/Modify Light Levels With Push-buttons	17

6. MASTER STATION (7400 SERIES)	19
6.1 Basic Description	19
6.2 Programming Quick Guide	20
6.3 Select Room Number (System Wide Master Only)	24
6.4 Select (Play Back) Presets	24
6.5 Record/Modify Light Levels With Push-buttons	25
6.6 Control Multiple Channels With + (*PLUS*)	25
6.7 Preview Recorded Light Levels	25
6.8 Modify Channel Levels Blind	26
6.9 Record Fade Time	26
6.10 Preview Recorded Fade Times	27
6.11 Modify Fade Times Blind	27
6.12 Display Current Time	27
6.13 Modify Current Time	27
6.14 Record Time-Of-Day For Preset Execution	28
6.15 Record Same Time And Preset For Multiple Days	29
6.16 Clear Preset Times By Day	29
6.17 Clear Preset Times By Room	30
6.18 Clear A Single Preset Time Assignment	30
6.19 Limit Message	31
6.20 Preview Recorded Time-Of-Day	31
6.21 Station Lockout	32
6.22 Preset Only Lockout	33
6.23 Station Unlock	34
6.24 Auto Cycle	34
7. CUE SHEETS	37
7.1 Preset Cue Sheet - Example	37
7.2 Time Clock Cue Sheet - Example	37
8. AUXILIARY CONTROL STATIONS	41
8.1 Keyswitch Station (Cat. #7960)	41
8.2 Push-Button Entrance Station (Catalog #7963)	42
8.3 Fade Time Control Station (Cat.#7964)	43
8.4 Min/Max Limit Station (Cat. #7965)	44
8.5 Remote Take Control Station (7970 Series)	45
8.6 Fluorescent Adjustment Station (Cat. #7980)	46
8.7 Partition Switch Station	47

DIMMER CABINET

This section provides information on basic Environ 2 Dimmer Cabinet setup. Additional information on Dimmer Cabinet setup and operation is provided in the Installation Manual shipped with the Dimmer Cabinet.

9. DIMMER CABINET	51
9.1 Enclosure	51
9.2 Dimmer Cabinet Panic	52
9.3 Dimmer Modules	53
9.4 Electronics Modules (Cat. #7825 or #7830)	54

REFERENCES

LIST OF FIGURES

1. Slider Station	9
2. Slider Station With Preset	11
3. Push-Button Control Stations	15
4. Master Station	19
5. Keyswitch Station	41
6. Push-Button Entrance Station	42
7. Fade Time Control Station	43
8. Min/Max Limit Station	44
9. Remote Take Control Station	45
10. Fluorescent Adjustment Station	46
11. Typical Dimmer Cabinet	51
12. Remote Panic Station	52
13. Typical Dimmer Module	53
14. Program Module Front Panel	54
15. Expansion Module Front Panel	55

INDEX	57
--------------------	-----------

INTRODUCTION

Environ 2 Programmable Control Operator's Manual

This section provides information on manual organization, and definition of the terms and conventions used in this manual. It also details procedures for getting your suggestions to Strand Lighting, and receiving help if necessary.

1. INTRODUCTION

This manual provides information on operating procedures for Programmable Environ 2 systems manufactured by Strand Lighting North America or Strand Electro Controls, and designed for use in 120, 277, 100, and 220 VAC applications. Basic trouble-shooting information is included with the Installation Manual shipped with the Dimmer Cabinet.

A pocket sized "Environ 2 Programming Quick Guide" (Part #2-450047-010) is available for quick programming reference of this product. Copies are included with the contractors Ship Pack and the System Manual.

1.1 Manual Organization

This manual is divided into 3 major sections as shown below.

INTRODUCTION

Manual organization, and definitions and conventions (chapter 1)
How to get help (chapter 2)

CONTROL STATIONS

Control Stations (chapters 3 through 7)
Auxiliary Control Stations (chapter 8)

DIMMER CABINET

Dimmer Cabinet, Electronics, And Dimmers (chapter 9)

1.2 Definitions

The following definitions are used throughout this manual:

Circuit

The wiring to which a lighting fixture is connected. A single circuit is wired to a single dimmer or a single secondary branch breaker.

Dimmer

A device which controls power to one or more circuits through the use of terminal strips or secondary branch breaker terminations.

Channel

An arbitrary group of one or more dimmers controlled together as a fixed group. Selection of dimmers to channels is called "patching". System patching is shown on the Environ 2 system drawings and formatted on the factory recorded Data Cartridge.

Patch

The process of selecting the assignment of dimmers to channels. In Environ 2, patching is pre-recorded in the Data Cartridge, and can only be changed by installation of a differently recorded Data Cartridge.

Preset

A pre-defined arrangement of intensities for a group of channels that is stored in memory or set on manual controllers.

1.3 Conventions

The conventions of capitalization which will be used throughout this manual are as follows:

<PRESET> (All caps, normal type face) Refers to the actual function push-button labeled "PRESET". A sequence of button pushes is thus shown as <1><+><2><+><3> etc. An LED indicator associated with a push-button is shown as <PRESET>LED.

{M} (All caps, normal type face) Refers to a non push-button control or switch labeled "M" (e.g. {M} Slider).

"POWER" (All caps, normal typeface) Refers to a label on an indicator which is not otherwise associated with a control.

ON (All caps, normal type face) Status of a function or switch, as in "Turn the switch ON."

Preset (Normal type face with first letter capital) Name of a function or mode of operation, as in Live Mode.

PRESET (All capital type face, bold print) Characters displayed on the alphanumeric display.

<PRESET BUTTON> Refers to the <NUMBER> buttons plus </\> and <\/>.

<NUMBER> Refers to the Numeric Keypad Buttons only.

2. TECHNICAL ASSISTANCE

Environ 2 systems require a minimum of maintenance and servicing. All components are modular, allowing performance of service and maintenance operations without special tools or equipment.

2.1 Problems

If equipment fails to operate properly upon installation, or under normal load and temperature conditions, and the basic trouble-shooting procedures in the Installation Manual are not effective, please contact Strand Lighting Field Service or Strand Electro Controls Field Service at the office serving your area before returning any equipment. You will be issued an RGA (Return Goods Authorization), which will allow tracking of returned equipment, and speed its return to you.

2.2 Technical Questions

For technical questions regarding setup, operation, or maintenance of this equipment, please contact the Strand Lighting Field Service or Strand Electro Controls Field Service office serving your area (see reverse side of manual title sheet for addresses and phone numbers).

2.3 Parts Purchases

For purchase of spare parts or documentation, Please contact Strand Electro Controls Customer Service in the Salt Lake City office.

2.4 Comments and Suggestions

For comments regarding equipment functions and/or suggested enhancements, or for comments on this manual, please call or write to the Architectural Product Manager at the Salt Lake City office.

CONTROL STATIONS

Environ 2 Programmable Control Operator's Manual

This section provides information on Environ 2 Programmable Control Stations. Each Control Station type is described separately, so you can learn only the controls for your system. Each chapter includes an illustration of the station and a quick reference guide.

3. *SLIDER STATIONS (7000 SERIES)*

3.1 *Basic Description*

7000 Series Multiplex Slider Stations are available in standard configurations with up to 12 Numbered Sliders, each controlling one or more dimmers. Up to 24 channels may be provided in custom control stations. Models with more than two Numbered Sliders are supplied with an {M} Slider, which provides proportional mastering over all sliders on a station. <ON/OFF> activates the Slider Station and takes control from any other active station.

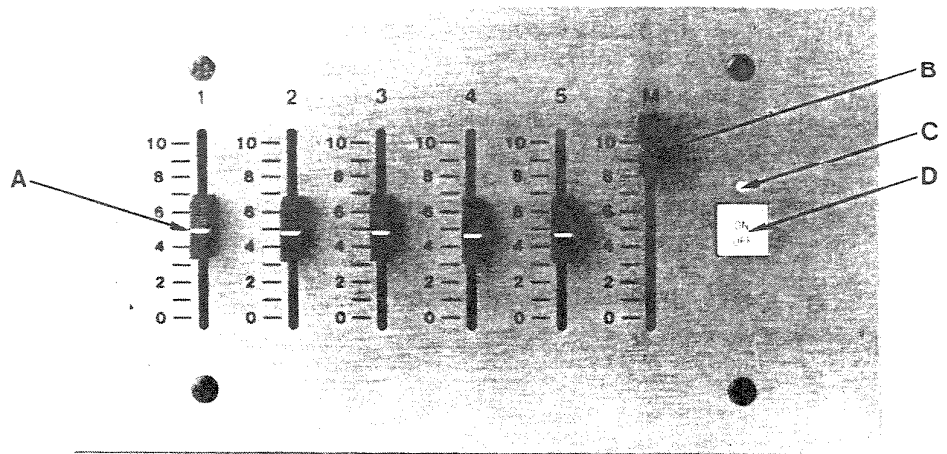


Figure 1. Slider Station

- | | | | |
|----|------------------|----|-----------------|
| A. | Numbered Sliders | C. | <ON/OFF>LED |
| B. | {M} Slider | D. | <ON/OFF> Button |

3.2 *Slider Station Quick Guide*

- A. Move {M} slider to "10"
- B. Set Numbered Sliders
- C. Push <ON/OFF>

3.3 *Modify Light Levels With Sliders*

- A. Station is OFF. <ON/OFF>LED is DIM.
- B. Adjust Numbered Sliders to required levels and {M} (Master) Slider to "10".
- C. Push <ON/OFF>.
Station turns ON. Lights fade to Slider levels. <ON/OFF>LED switches to BRIGHT.
- D. Adjust Numbered Sliders to required levels.
Lights increase and decrease in intensity as a Slider is moved up or down.
- E. Move {M} Slider down and up.
All lights decrease in intensity as {M} Slider is moved down, and increase in intensity as it is moved back up.
Lights fade "proportionally" (i.e., all lights reach OFF together if {M} Slider is moved to ZERO).
- F. Push <ON/OFF>.
Station turns OFF. All lights go OFF. <ON/OFF>LED switches to DIM.
- G. Push <ON/OFF>.
Station turns ON. Lights return to Slider levels. <ON/OFF>LED switches to BRIGHT.
- H. Go to another Slider Station and push <ON/OFF>.
New station takes control and is ON. Lights fade to Slider levels of new station. <ON/OFF>LED in old station switches to DIM. <ON/OFF>LED in new station switches to BRIGHT.
- I. Push <ON/OFF> at the active station.
Lights fade OFF. <ON/OFF>LED switches to DIM. To do this from an inactive station, push <ON/OFF> twice.

4. SLIDER STATIONS WITH PRESET (7200 SERIES)

4.1 Basic Description

7200 Series Multiplex Slider Stations with Preset are combination Slider and Push-Button stations. All stations include a preset push-button section identical to the 7304 station. Stations are available in standard configurations with up to 12 Numbered Sliders, each controlling one or more dimmers. Up to 24 channels can be provided in custom stations. A 7304 or 7308 may be used beside any Multiplex Slider Station and configured to perform 7200 style operations. Models with more than two Numbered Sliders are also supplied with an {M} Slider, which is a proportional master over all sliders in a station. <ON/OFF> activates the Slider section of the Station and takes control from any active station (including the push-buttons in the same station). <^> is the "Cleanup" preset and can be modified. <v> is a "Blackout" and cannot be modified.

In Preset Mode, <NUMBER>, <^> and <v> select presets. In Set Level Mode, <NUMBER> select a channel or channels for control by <^> ("UP") and <v> ("DOWN").

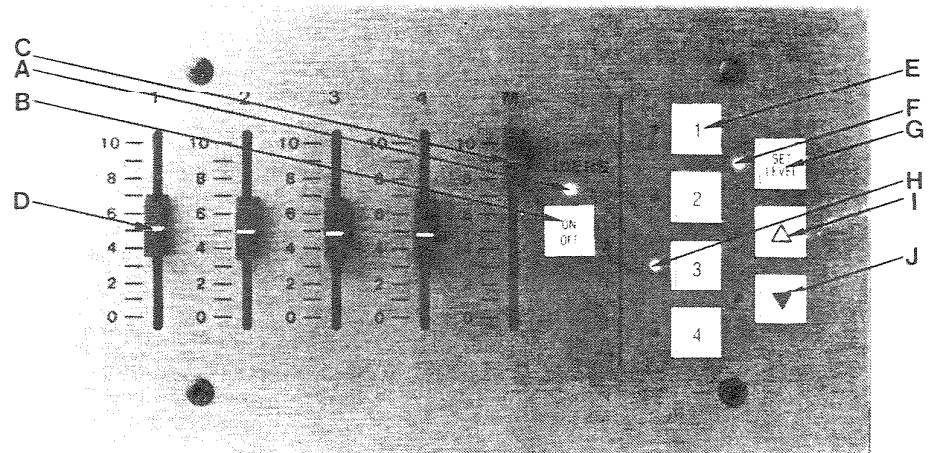
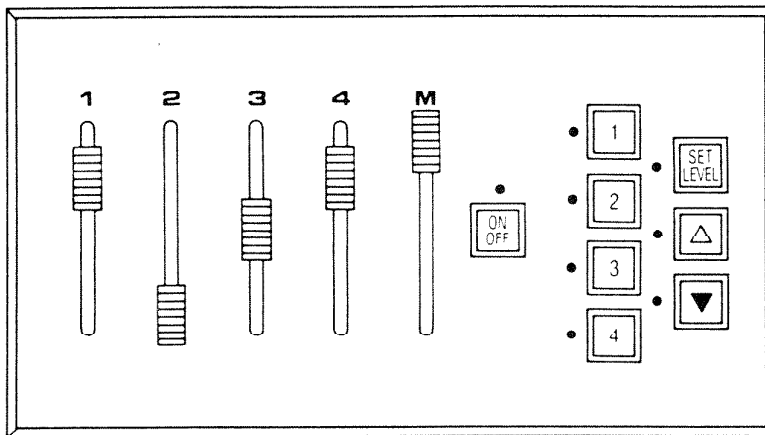


Figure 2. Slider Station With Preset

A.	<ON/OFF>LED	E.	<NUMBER> Buttons
B.	<ON/OFF> Button	F.	<SET LEVEL>LED
C.	{M} Slider	G.	<SET LEVEL> Button
D.	Numbered Sliders	H.	<NUMBER>LEDs
		I.	<^> Button
		J.	<v> Button

PRESET STATIONS WITH PUSH BUTTONS AND SLIDERS 7200 SERIES



NORMAL OPERATION:

Select Presets by pressing through or , .

For manual control, adjust sliders and push .

ACTION

RECORDING PRESETS

- A. Push Preset to be recorded, e.g. .
 - B. Push .
 - C. Press .
 - D. Set master slider **M** to 10.
 - E. Adjust sliders as desired.
 - F. Push . Preset is recorded.
- Repeat for other Presets.

RESPONSE

- LED = ON**
- LED = ON**
- LED = ON**

LED turns back ON

Note:

Presets 5, 6, 7, 8 and 9 are phantom programmable with a System Wide Master if those pushbuttons are not present on a 7300 or 7200 series station.

4.3 *Modify Light Levels With Sliders*

Changing light levels and taking control with the Slider portion of this station is identical to the 7000 series Slider Stations (See page 6).

4.4 *Select (Play Back) Presets*

The following selects a preset for playback, recording, or modifying light levels.

- A. If <SET LEVEL>LED is ON, push <SET LEVEL>.

<SET LEVEL>LED switches OFF.

- B. Push a <PRESET NUMBER>.

Lights fade to preset levels. <PRESET NUMBER>LED switches ON.

4.5 *Record/Modify Light Levels With Push-buttons*

The procedure for recording or modifying light levels with the push-button section of this station is identical to 7300 series push-button stations (See page 13). Modifying light levels with the push-button section always modifies the active preset.

4.6 *Record Light Levels With Sliders*

- A. Push a <PRESET NUMBER> to select a Preset.

- B. Push <SET LEVEL>

<SET LEVEL>LED switches ON. <PRESET NUMBER>LED switches OFF. All actions will now modify the active preset.

- C. Push <ON/OFF>

<ON/OFF>LED switches to BRIGHT. Lights fade to levels set on sliders.

- D. Adjust sliders until lights are at required levels.

Light levels change as sliders are adjusted.

- E. Push <SET LEVEL>

<SET LEVEL>LED switches OFF. Slider levels are recorded in selected preset.

5. PUSH-BUTTON CONTROL STATIONS (7300 SERIES)

5.1 Basic Description

7300 Series Push-Button Control Stations are available in four or eight preset versions.

Push-button control stations have two modes of operation. In Preset Mode, <NUMBER>, <^/> and <v/> select presets, and are collectively referred as <PRESET NUMBER>. <^/> is called the "Cleanup" preset and can be modified. <v/> is a "Blackout" and cannot be modified.

In Set Level Mode (<SET LEVEL>LED is ON), <NUMBER> selects a channel or channels for control by <^/> ("UP") and <v/> ("DOWN").

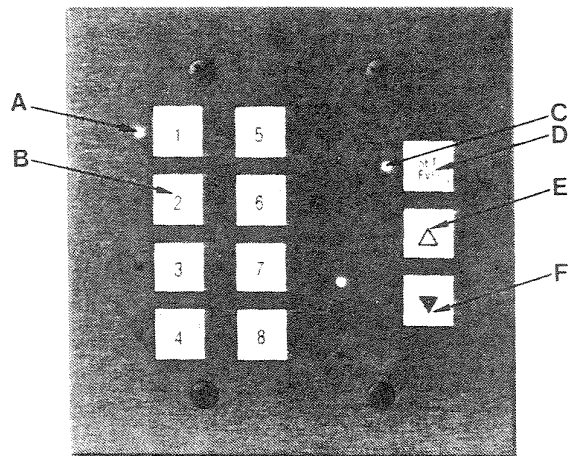
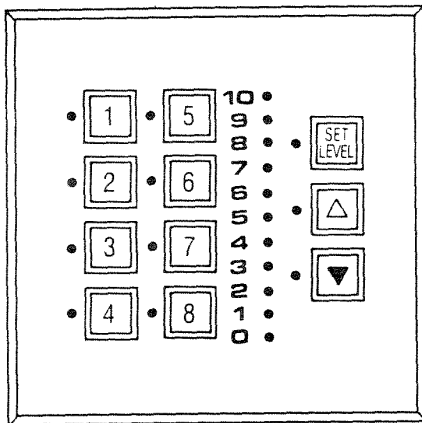


Figure 3. Push-Button Control Stations

- | | | | |
|----|------------------|----|-------------------|
| A. | <NUMBER>LEDs | C. | <SET LEVEL>LED |
| B. | <NUMBER> Buttons | D. | <SET LEVEL>Button |
| | | E. | <^/> Button |
| | | F. | <v/> Button |

PRESET STATIONS WITH PUSH BUTTONS 7300 SERIES



NORMAL OPERATION:

Select Presets by pressing **1** through **8** or **▲**, **▼**.

▲ selects "Clean Up" Preset.

▼ selects "Blackout."

ACTION

RECORDING PRESETS

- A. Push Preset to be recorded, e.g. **1**.
- B. Push **SET LEVEL**.
All Number buttons are now Channels.
- C. Select channel, e.g. **2**.
- D. Use **▲** or **▼** to adjust.
Repeat steps C and D for other channels.
- E. Push **SET LEVEL**. Preset is recorded.
Repeat for other Presets.

RESPONSE

1 LED = ON

SET LEVEL LED = ON

2 LED = ON

LEDs mimic intensity

1 LED turns back ON

5.3 *Select (Play Back) Presets*

The following selects a preset for playback, recording, or modifying of light levels.

- A. If <SET LEVEL>LED is ON, push <SET LEVEL>. <SET LEVEL>LED switches OFF.
- B. Push a <PRESET NUMBER>. Lights fade to preset levels. <PRESET NUMBER>LED switches ON.

5.4 *Record/Modify Light Levels With Push-buttons*

- A. Select a preset to record or modify <PRESET NUMBER>LED switches ON. Lights fade to levels in selected preset.
- D. Push <SET LEVEL>. <SET LEVEL>LED switches ON. <PRESET NUMBER>LED switches OFF. All actions now modify the active preset.
- E. Push <NUMBER> for desired channel(s). <NUMBER>LEDs switch ON and channel(s) may be controlled by <^/> ("Raise") and <v/> ("Lower").
- F. Push a <NUMBER> with a lighted LED. Since this is an alternate action button in this mode, the <NUMBER>LED switches OFF and the channel is de-selected from control.
- G. Use <^/> and <v/> to raise/lower channel(s) level. Channel(s) level increases with <^/> and decreases with <v/>, and are recorded at levels where they are left. Level Indicator LEDs mimic light levels. New levels are recorded in memory dynamically as these buttons are used.
- H. Repeat from step E to set other light levels or from step A to set additional presets.

6. MASTER STATION (7400 SERIES)

6.1 Basic Description

The 7401 Master Station incorporates capabilities of other Environ 2 stations plus the following:

- Set levels for up to 128 channels per system (99 maximum per room).
- Control lighting in up to 16 independent rooms.
- Record up to nine presets plus cleanup per room.
- Select fade times for each preset and blackout from 0 to 998 seconds.
- Program preset changes at predetermined times of day.
- Control several stations from one location, when system wide master option is used.
- Lockout all functions or only the Set Level function of a designated station.
- Monitor actions with alphanumeric display.
- Preview any recorded action and "blind" modify memory.

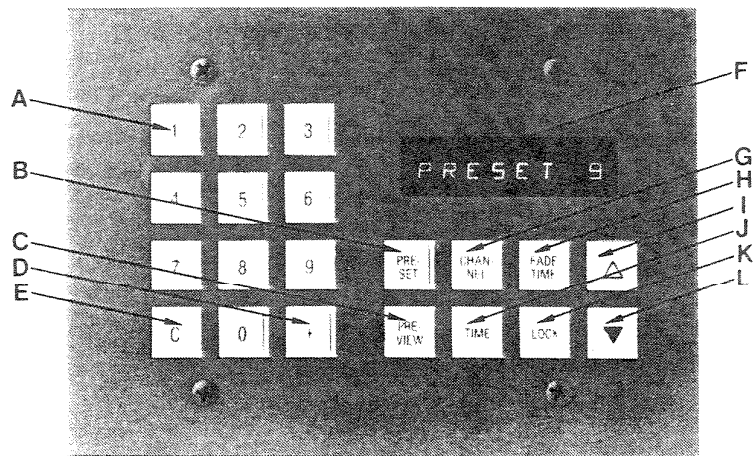
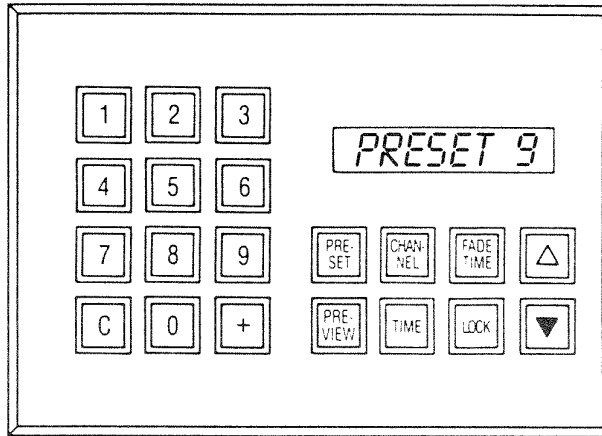


Figure 4. Master Station

A.	<NUMBER> Buttons	F.	Display
B.	<PRESET> Button	G.	<CHANNEL> Button
C.	<PREVIEW> Button	H.	<FADE TIME> Button
D.	<+> Button	I.	</\> Button
E.	<C> Button	J.	<TIME> Button
		K.	<LOCK> Button
		L.	<\> Button

6.2 Programming Quick Guide

MASTER STATIONS 7400 SERIES



NORMAL OPERATION:

Select Presets by pressing **1** through **9** or **▲** **▼**.

Note:

* **PRE-SET** = dual function for system-wide master operation, e.g.:

- A. Push **PRE-SET**.
- B. Push **2**.
- C. Push **PRE-SET**. Presets may now be set for Room #2.
Maximum of 16 Rooms are programmable.



▲ = "Clean Up" is a programmable Preset.

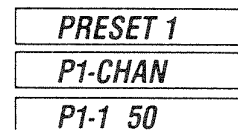
▼ = "Blackout" is always an OFF.

ACTION

DISPLAY

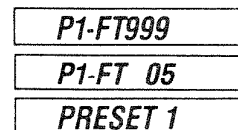
SET PRESETS

- A. Push **PRE-SET***, e.g. **1**.
- B. Push **CHAN-NEL**.
- C. Select Channel, e.g. **1**.
- D. Use **▲** and **▼** to adjust intensity.
Repeat steps B, C and D for other channels.
+ adds **CHAN-NEL** together for group level setting.
- E. Push **PRE-SET** to record in memory, or continue to step F.



SET FADE TIME

- F. Push **FADE TIME**.
- G. Enter Fade Time, e.g. **0** **5** for 5 seconds.
- H. Push **PRE-SET** to record in memory.



All Presets and **▼** permit independent **FADE TIME** programming.

FADE TIME may be from 0 to 998 seconds, 999 defaults to Program Module.

SET CURRENT TIME

- A. Push **TIME**.
- B. Push **0**.
- C. Enter Day, e.g. **1** for Monday. Sunday=7.
- D. Enter Time in 24-hour notation,
e.g. 1:30 p.m. = **1** **3** **3** **0**.

MON 9.00

TIME NOW

MONDAY

MO 13.30

SET AUTOMATIC PRESET CHANGE

- A. Push **TIME**.
 - B. Enter Day, e.g. **1** for Monday.
 - C. Enter time for Preset execution,
e.g. 6:30 a.m. = **0** **6** **3** **0**.
 - D. Enter Preset, e.g. **1**.
- Repeat steps B, C and D for additional programming.
- +** groups days together, e.g. **1** **+** **2** **+** **3**
+ **4** **+** **5**. = Monday through Friday.

MO 13.30

MONDAY

MO6.30P

MO6.30P1

TO PREVIEW **PRE-SET**, **FADE TIME** AND **TIME**

- A. Push **PRE-SET**.
- B. Push **PRE-VIEW**.
- C. Enter Preset number, e.g. **2** for Preset 2.
- D. Push **CHAN-NEL**.
- E. Enter Channel number, e.g. **1**.
- F. Use **▲** and **▼** to “blind” modify intensity, e.g. Full.
- G. Push **FADE TIME**.
- H. Push **2** for Preset 2.
- I. Modify Fade Time, e.g. **1** **5** for 15 seconds.
- J. Push **TIME** for current time.
- K. Push **PRE-VIEW**.

PRESET 1

VIEW 1

VIEW 2

V2-CHAN

V2-1 25

V2-1 FL

P1-FT 05

P2-FT999

P2-FT 15

MO 13.30

MO6.30P1

Pressing **PRE-VIEW** pages display sequentially.

Repeat as required to preview **PRE-SET**, **FADE TIME** or **TIME**.

MASTER STATIONS 7400 SERIES (cont.)

ACTION

DISPLAY

LOCKOUT A STATION

Total Station Lockout:

- A. Push .
- B. Push .
- C. Enter Station number, e.g. .
- D. Push again. Code 0=123.
- E. Enter three-digit Lock Code .
- To unlock, see below. Step F is optional.
- F. To change Lock Code, enter new number, e.g. .

Unlocking a Station:

- A. Push .
- B. Push .
- C. Enter Station number, e.g. .
- D. Push again.
- E. Enter Lock Code 0.

Locking for Preset Only Operation:

Use steps A, B, C, D and F, G.

- F. Push .
- G. Enter three-digit Lock No. for Code 1, i.e. .

Repeat steps as required for selective locking in either mode.

Lock Code	Lock No.	Lock Code	Lock No.	Lock Code	Lock No.
0	123	4	296	7	742
1	351	5	901	8	036
2	460	6	619	9	589
3	822				

Note:

Lock Code modification is optional.

Only one code is active at a time.

Codes are provided for selective security and optional modification.

CLEAR

Normal Operation:

- A. Use **C** to clear a wrong key entry.
- B. Pushing **C** steps display backwards to current Preset/Room, then to Room 1.

Clear Timed Presets by Room/Week:

- A. Push **PRE-SET**.
- B. Push **TIME**.
- C. Push **9**.
- D. Push **9**.
- E. Push **9**.

ROOM - 1
MO 13.30
ALL CLR?
R-U-SURE
ALL-CLRD

All timed Presets for Room 1 are cleared.

Clear Timed Presets by Room/Day:

- A. Push **PRE-SET**.
- B. Push **TIME**.
- C. Push **1**.
- D. Push **9**.
- E. Push **9**.
- F. Push **9**.

ROOM - 1
MO 13.30
MONDAY
MO CLR?
R-U-SURE
MO CLRD

Days may be **+** 'd together for group clearing.

Note:

Presets may only be cleared by recording channels at 0 or pressing Program Module Reset button. Warning: This erases *all* memory, loads default lighting presets and resets system to Preset 1.

Default Presets are:

- Preset 1 = All channels at 50%.
- Preset 2 = All channels at 25%.
- Preset **△** = All channels at 100%.

P1-1 50
P2-1 25
P[△]-1 FL

6.3 *Select Room Number (System Wide Master Only)*

Master Stations may function as single room control stations or as a System Wide Masters. System Wide Master is a special feature incorporated into the System Data Cartridge. This permits programming and lockout of remote stations from the Master Station location. In a System Wide Master, <PRESET> is a dual function button used to first select the room and then the preset of that room. For systems with this feature, perform all the procedures in this section. For systems without this feature, start at section 5.4.

- A. Push <PRESET>

Display shows **ROOM--** and current room number (e.g., **ROOM--16**).

- B. Select Room Number using <NUMBER>.

Display shows new room number.

- C. Push <PRESET>

Display shows **PRESET** and active preset (e.g., **PRESET 8**).

- D. Select preset number using <NUMBER>.

Display shows **PRESET** and new active preset. When <PRESET> is pushed again, Room Mode is reactivated. In a System Wide Master, room identification must be repeated to select each preset.

6.4 *Select (Play Back) Presets*

The following selects a preset for playback, recording, or modifying of light levels.

- A. If <SET LEVEL>LED is ON, push <SET LEVEL>.

<SET LEVEL>LED switches OFF.

- B. Push a <PRESET NUMBER>.

Lights fade to preset levels. <PRESET NUMBER>LED switches ON.

6.5 *Record/Modify Light Levels With Push-buttons*

The procedure for recording or modifying light levels with the push-button section of this station is identical to the procedure for the 7300 series push-button stations except that one additional preset (preset 9) is available (See page 17).

6.6 *Control Multiple Channels With + ("PLUS")*

A. Select room (if applicable), and preset.

B. Select channel numbers using <NUMBER> separated by <+>.

Display shows last channel entered and its channel level (e.g., **P1+23 75**). + in front of channel number indicates multiple channel selection.

D. Adjust combined channels as required using </\> ("Raise") and <\/> ("Lower").

Display mimics level of last channel entered. Differences in channel levels are maintained until one channel reaches FULL or OFF. Remaining channels continue changing until they reach FULL or OFF.

6.7 *Preview Recorded Light Levels*

A. Select room (System Wide Masters only).

B. Push <PRESET>

Display shows **PRESET** and active preset (e.g., **PRESET 9**).

C. Push <PREVIEW>

Display shows **VIEW** and active preset (e.g., **VIEW 9**).

D. Push <CHANNEL>

This allows channel preview. Display shows preview preset followed by **-CHAN 1** (e.g., **V9-CHAN 1**).

E. Select preview channel using <NUMBER>.

Display shows preview preset and new channel. Multiple channels can be selected by using <+>.

F. Push <PREVIEW>

Channel levels are added to display (e.g., **V9-5 20**).

- G. Push <PREVIEW>

Channel number advances by one. Display shows new channel and level. If multiple channels were chosen, new channel is channel after last selected channel.

- H. To modify channel level, use <^> and <v>.

Display changes to show new level. **Lights will change at this time.**

- I. Push <PRESET> to preview next channel.

Display shows next channel. When last channel in preset is displayed, pushing <PRESET> selects first channel of next preset.

6.8 *Modify Channel Levels Blind*

Channel levels can be modified while previewing by using <^> and <v> while required channel is displayed. Room light levels change only if preview preset and active preset are the same.

6.9 *Record Fade Time*

Default fade time for presets is set on the Dimmer Cabinet Program Module. Fade times set for individual presets override the default fade time.

- A. Select room (System Wide Master only) and preset.

- B. Push <FADE TIME>

Display shows preset and fade time in seconds (e.g., P/-T25). If fade time is T999, default fade time is used.

- C. Select fade time in seconds using <NUMBER>.

Display shows new fade time.

- D. Repeat steps A through C to set fade times for all presets. To return fade time to default, set to "999".

6.10 *Preview Recorded Fade Times*

- A. Select room (System Wide Master only) and preset.
Display shows **PRESET** and active preset (e.g., **PRESET 9**).
- B. Push <PREVIEW>
Display shows **VIEW** and active preset (e.g., **VIEW 9**).
- C. Push <FADE TIME>
Fade time is added to display (e.g., **P9-FT 20**).
- D. Push <PREVIEW>
Display shows next preset fade time.
- E. Continue pushing <PREVIEW> to preview fade times for all presets.

6.11 *Modify Fade Times Blind*

To modify a fade time without displaying required preset in room, follow instructions for previewing fade times and enter new fade time when the required preset and fade time is displayed.

6.12 *Display Current Time*

When <TIME> is pushed, Time-of-day in 24 hour notation (including day-of-week) is displayed. Display is live until another function is chosen.

6.13 *Modify Current Time*

- A. Push <TIME>
Display shows time (e.g., **SA 09.37**).
- B. Push <0>
Display shows **TIME NOW**.
- C. Select day-of-week with a <NUMBER> (1=Monday, 2=Tuesday, 3=Wednesday, 4=Thursday, 5=Friday, 6=Saturday, 7=Sunday).
Display shows day (e.g., **TUESDAY**).

- D. Enter current time using <NUMBER>. For hour or minute designations less than *10*, *0* must precede number.

Display shows time just entered.

- E. Push <TIME>.

Display shows newly set time.

6.14 Record Time-Of-Day For Preset Execution

Presets may be assigned to more than one day, and multiple execution times per day, but each time entry can have only one preset (i.e., 12:00 NOON may have seven presets if the execution times for these presets are on different days of the week).

- A. Display current time.

- B. Select day of week using <NUMBER>.

- C. Select time-of-day for preset execution using <NUMBER>.

Display shows selected time and *P* (e.g., **F11.58P**), indicating that a preset may be assigned to selected time.

- D. Select preset using a <PRESET NUMBER>.

Preset symbol is added to display (e.g., **F11.58P2**).

- E. Repeat B, C, and D until all times are set.

6.15 Record Same Time And Preset For Multiple Days

A. Display current time.

B. Select days using <NUMBER>, and <+>.

<1><+><3><+><5> selects Monday, Wednesday and Friday. Display sequence is:

**MONDAY
AND
WEDNESDA
AND
FRIDAY**

C. Select time-of-day using <NUMBER>.

Display shows + and time, followed by *P*. (e.g., +17.25P). + shows more than one day-of-week assigned to time. *P* shows that preset may be assigned.

D. Select preset using a <PRESET NUMBER>.

Preset symbol is added to display (e.g., +17.25P4).

6.16 Clear Preset Times By Day

A. Display current time.

B. Select day-of-week using <NUMBER>.

Display is day-of week (e.g., **SATURDAY**).

C. Push <9>

Display is day-of-week abbreviation and **CLEAR** (e.g., **SA CLEAR**).

D. Push <9>

Display shows **R-U-SURE**.

E. Push <9>

All times for selected day are cleared. Display is day-of-week abbreviation and **CLRD** (e.g., **SA CLRD**).

Pushing any other button aborts Clear.

6.17 *Clear Preset Times By Room*

A. Display current time.

B. Push <0>

Display shows **TIME NOW**.

C. Push <9>

Display shows **ALL CLR?**.

D. Push <9>

Display shows **R-U-SURE**.

E. Push <9>

Times for selected day are cleared. Display shows **ALL CLR**.

Pushing any other button aborts Clear.

6.18 *Clear A Single Preset Time Assignment*

A. Display current time.

B. Push <PREVIEW>

Display shows **MONDAY**, since this is the first day of the 7-day clock.

C. Select day-of-week using <NUMBER>.

Display shows day (e.g., **FRIDAY**).

D. Push <PREVIEW>

Display shows first execution time on selected day (e.g., **F11.58P1**). To clear a different time, sequence through times using <PREVIEW> until it is displayed.

E. Push <9>

Display shows **FR CLR?**.

F. Push <9>

Display shows **R-U-SURE**.

- G. Push <9>

Selected time is cleared. Display shows day-of-week abbreviation and **CLRD** (e.g., **FR CLRD**).

Pushing any other button aborts Clear.

6.19 Limit Message

When maximum allowed number of execution times are recorded and operator attempts to preset a time, display shows day-of-week abbreviation and **LIMIT** (e.g., **MO LIMIT**). A recorded preset time must be cleared before another can be recorded. A maximum of 24 time clock executions are per system are allowed (19 maximum per room) with E2V2C1 software.

6.20 Preview Recorded Time-Of-Day

- A. Display current time.

- B. Push <PREVIEW>

Display shows **MONDAY**, since this is the first day of the 7-day clock.

- C. Push <PREVIEW>

Display shows first execution time recorded in Monday (e.g., **M19 .25P9**).

- D. Preview remaining times by pushing <PREVIEW>.

Display changes to next recorded time each time <PREVIEW> is pushed.

6.21 Station Lockout

Station lockout is provided in System Wide Master Stations to permit selective Control Station Lockout, preventing unauthorized operation. The Master Station may be locked out if necessary. It is possible to lock out all station functions or only the Set Level function for preset-only operation. This allows an operator to select presets but will not allow modification of their contents. This also permits time display on a locked master station, but does not allow time to be modified. <NUMBER>. Lock Codes and associated Lock Numbers are:

<u>Lock Code</u>	<u>Lock No.</u>	<u>Lock Code</u>	<u>Lock No.</u>
0	123	5	901
1	351	6	619
2	460	7	742
3	822	8	036
4	296	9	589

Room number is irrelevant when locking and unlocking stations. The lock function independently addresses all stations by their hardware port number. See the system drawings for these station numbers. Generally, stations are numbered starting with room 1, with room 2 station numbers starting with the number after the last room 1 station.

Stations wired in daisy chain fashion are considered one station for locking purposes (they are attached to the same hardware port), and will lock as a group. Locking a System Wide Master station also locks all rooms and stations which it masters.

- A. Push <LOCK>

Display shows **STA-----1**, indicating that station #1 can be locked or unlocked.

- B. Select station number using <NUMBER>.

Display shows new station number (e.g. **STA----4**).

- C. Push <LOCK>

Display shows station number, lock status, and Lock Code (e.g. **S4 LOCK0**). The example message shows station 4 can be locked using the Lock Number for Lock Code 0.

- D. Enter Lock Number using <NUMBER>.

Display is **LOCKED**. Station is locked.

- E. To modify the Lock Code, enter the new Lock Code using <NUMBER>.

Lock code is now modified. Display shows **CODE =** and new lock code (e.g., **CODE =3**).

If you do not want to change the Lock Code, activate another mode by pushing any button except a <NUMBER> button.

6.22 *Preset Only Lockout*

Stations can be locked out on a "Preset Only" basis. Presets and time are available for playback but cannot be modified from the locked station. To change a station from Full Lockout to Preset Only Lockout from Full Lockout, it must first be unlocked. Stations specified "Preset Only" for permanent "Set Level" lockout in the Data Cartridge cannot be fully locked out. Lock Codes and Lock Numbers are the same as for full lockout.

- A. Push <LOCK>

Display is **STA---1**, indicating that station #1 can be locked or unlocked.

- B. Select station number using <NUMBER>.

Display shows new station number (e.g. **STA---4**).

- C. Push <PRESET>

Display is **PRE-ONLY**.

- D. Push <LOCK>

Display shows station number, lock status, and lock code (e.g. **S4 LOCK0**). The example message shows station 4 may be locked using the Lock Number for Lock Code 0.

- E. Enter Lock Number using <NUMBER>.

Display shows **LOCKED**. Station is now locked.

- F. To modify Lock Code, enter new Lock Code using <NUMBER>.

Lock Code is now modified. Display shows **CODE =** and new Lock Code (e.g., **CODE =3**).

If you do not want to change the Lock Code, activate another mode by pushing any button except a <NUMBER> button.

6.23 *Station Unlock*

Lock is an alternate action function. To unlock a station, follow the same procedure as for locking the station.

- A. Push <LOCK> and select station number using <NUMBER>.

Display shows selected station number (e.g. **STA----4**).

- C. Push <LOCK>

Display shows station number, lock status, and current lock code (e.g. **S4 UNLOCK0**). The example message shows station 4 may be unlocked using the Lock Number for Lock Code 0.

- D. Enter Lock Number using <NUMBER>.

Display shows **UNLOCKED**. Station is unlocked.

- E. To modify Lock Code, enter new Lock Code using <NUMBER>.

Lock Code is now modified. Display shows **CODE =** and new code (e.g., **CODE =3**).

If you do not want to change the Lock Code, activate another mode by pushing any button except a <NUMBER> button.

6.24 Auto Cycle

This feature must be specified in advance and formatted in the Data Cartridge to be active. It provides automatic sequencing of a preprogrammed series of presets (not channels or dimmers) in a continuous loop. This sequence is assigned to a specific room, and started or stopped from a signal to an input terminal (usually from a custom engraved control station with a momentary contact toggle switch or keyswitch). For activation from other sources, consult the factory. The same preset may be repeated several times within a random or sequential loop of 2 to 19 steps.

Set Fade Time and Dwell Time (length of time a preset stays active before fading to the next preset) as follows:

A. Select room and preset number.

B. Push <FADE TIME>.

Display shows **P1-FT999**.

C. Select Fade Time (e.g., 5 seconds).

Display shows **P1-FT 05**.

B. Push <FADE TIME>.

Display shows **P1-DT 00**.

C. Enter dwell time (1-998 seconds) using <NUMBER> (e.g., 5 seconds).

Display shows **P1-DT 05**. Dwell time display is only shown when Auto Cycle is provided in the Data Cartridge.

Start Auto-cycle from a toggle switch as follows:

A. Switch toggle ON, or switch it OFF and back ON if it is in the ON position

Auto Cycle starts at step 1, crossfading with the current active room preset.

B. Switch toggle OFF or activate a preset on the station which is cycling.

Cycle stops and restores the last preset used before the cycle was started, or fades to the selected preset.

Auto Cycle may be stopped by pushing a preset push-button on any remote control station whose presets are executing the Auto-cycle loop, or by activating a preset in the designated room using a System Wide Master Station.

7. CUE SHEETS

Documentation of lighting presets is an important procedure for archival purposes. Sample Preset and Time Clock Cue Sheets are provided for this purpose. The Cue Sheets included in this manual may be photocopied directly or modified as required for specific applications.

7.1 Preset Cue Sheet - Example

ENVIRON 2 CUE SHEET PRESET CUE SHEET 1 of 4 ROOM # 1

CHANNEL No. & DESCRIPTION		PRESETS										
		1	2	3	4	5	6	7	8	9	Δ	
1	DOWN LIGHTS	25%	60%	75%	75%	85%	12%	65%	25%	10%	FL	
2	DOWN LIGHTS	25%	60%	75%	75%	85%	12%	65%	25%	10%	FL	
3	COVE LIGHTS	20%	70%	FL	FL	FL	0	55%	25%	0	FL	
4	WALL SCONCES	15%	40%	60%	60%	50%	0	50%	70%	65%	0	
5	CHANDELIER	15%	70%	FL	FL	70%	10%	65%	70%	60%	0	
6	SPOTLIGHT/LECTURN	0	0	0	FL	FL	FL	0	0	0	0	
FADE TIME:		1	2	3	4	5	6	7	8	9	Δ	▼
		03	05	05	05	08	10	05	05	08	03	05
PRESET DESCRIPTION		ENVIRON	GENERAL	GENERAL	GENERAL	LECTURE	LECTURE	LECTURE	DINING	DANCE	CLEANUP	BLACKOUT
		#1	#1	#2	#1	RE	AV	NO				

7.2 Time Clock Cue Sheet - Example

ENVIRON 2 CUE SHEET TIME CLOCK CUE SHEET 2 of 4 ROOM # 2

		DAYS OF THE WEEK						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time/Preset:	06.30P1	06.30P1	06.30P1	06.30P1	06.30P1	06.30P1	09.00P2	10.00P2
	09.00P2	09.00P2	09.00P2	09.00P2	09.00P2	09.00P2	11.00P3	11.00P3
	11.00P3	11.00P3	11.00P3	11.00P3	11.00P3	11.00P3	14.30P4	14.30P4
	13.30P4	13.30P4	13.30P4	14.30P4	14.30P4	17.30P5	17.30P5	
	17.30P5	17.30P5	17.30P5	17.30P5	17.30P5	20.00P8	20.00P8	
	20.00P6	20.00P6	20.00P6	20.00P6	20.00P6	23.00P9	22.30P9	

ENVIRON 2 CUE SHEET

PRESET CUE SHEET ____ ROOM # ____

CHANNEL No. & DESCRIPTION		PRESETS									△	
		1	2	3	4	5	6	7	8	9		
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
FADE TIME:		1	2	3	4	5	6	7	8	9	△	▼
PRESET DESCRIPTION											CLEAN UP	BLACK OUT

ENVIRON 2 CUE SHEET
TIME CLOCK CUE SHEET ____ **ROOM #** ____

DAYS OF THE WEEK

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time/Presel:							

8. *AUXILIARY CONTROL STATIONS*

A variety of auxiliary control stations are available for Programmable Environ 2 systems, and are described here.

8.1 *Keyswitch Station (Cat. #7960)*

A Keyswitch Station activates one of several dedicated functions. These stations are often used to perform lockout functions inherent in a Master Station when the system contains no Master Station.

The operational functions of Keyswitch Stations are preset via hardwiring, or programming in the Data Cartridge. The operation of specific Keyswitch Stations is described on the system drawings, and may also be indicated on the control station through custom engraving.

A Keyswitch Station may perform one of the following preselected tasks.

- A. Total lockout of all control stations, or any individual or group of stations.
- B. Preset-only lockout of all control stations, or any individual or group of stations.
- C. A combination of total and Preset-only lockout on individual stations, groups or on all stations.

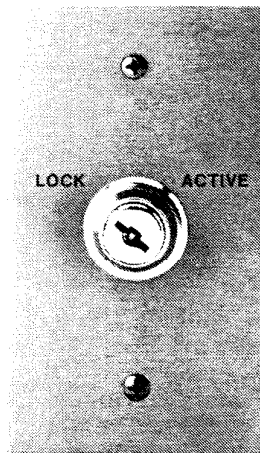


Figure 5. Keyswitch Station

8.2 *Push-Button Entrance Station (Catalog #7963)*

The Push-Button Entrance Station is a three push-button station. <ON> selects "Cleanup" preset (the same as </\> on other push-button stations). <OFF> selects "Blackout" preset (the same as </\> on other push-button stations). <PRESET> restores the last activated preset (except "Cleanup"). <PRESET> may also be assigned a dedicated preset by being so recorded in the Data Cartridge. The <ON>LED is always illuminated at 50% so the station may be located in the dark, and switches to FULL when the station is activated.

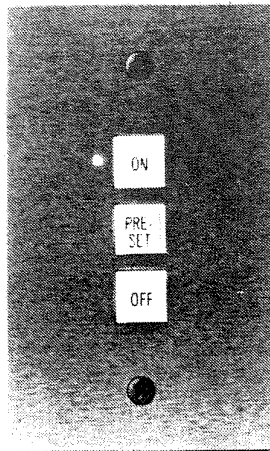


Figure 6. Push-Button Entrance Station

8.3 *Fade Time Control Station (Cat.#7964)*

The Fade Time Station contains a single rotary controller which sets fade time for presets in a designated room. This station overrides the default fade time controller on the program module to the designated room for which it is programmed in the Data Cartridge.

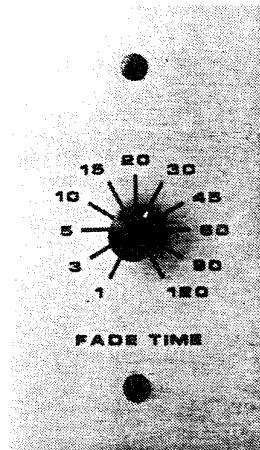


Figure 7. Fade Time Control Station

8.4 *Min/Max Limit Station (Cat. #7965)*

The Min/Max limit Station contains rotary controllers which are adjusted to set upper and lower light levels of specified dimmers. Minimum adjustment is from 0% to 50% and maximum adjustment is from 50% to 100%. Dimmers to be controlled by the Min/Max Limit Station are programmed in the Data Cartridge.

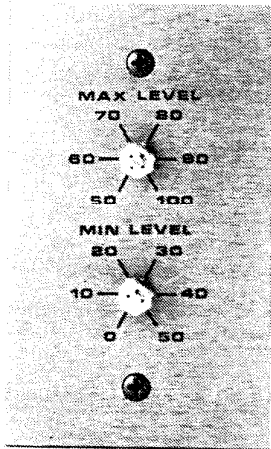


Figure 8. Min/Max Limit Station

8.5 *Remote Take Control Station (7970 Series)*

Remote Take Control Stations are available in 1 (Cat. #7971), 2 (Cat. #7972), or 3 (Cat. #7973) push-button configurations. Each push-button has a corresponding LED indicator that shows push-button status. This station is used with the 7000 series Multiplex Slider Stations to return control of designated channels from a remote station to the main station. The main station has control of designated channels when the Take Control Button LED is lit. Designation of stations and channels affected by this station is programmed in the Data Cartridge.

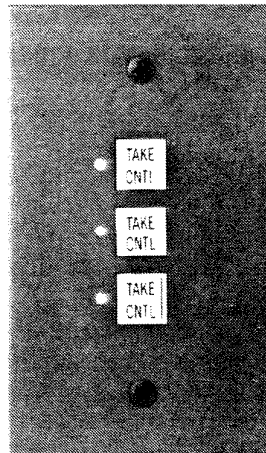


Figure 9. Remote Take Control Station

8.6 *Fluorescent Adjustment Station (Cat. #7980)*

The Fluorescent Cutoff Adjustment Station contains a single rotary controller which is adjustable with a screwdriver, and determines the low end cutoff voltage for one or more fluorescent dimmers. The dimmers to be controlled are programmed in the Data Cartridge.

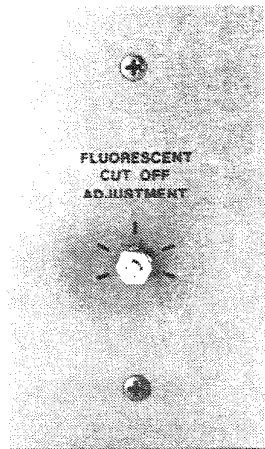


Figure 10. Fluorescent Adjustment Station

To ignite properly, fluorescent dimming fixtures need at least 80 to 85 volts AC at their input. This controller is used to visually set the voltage present at fluorescent fixtures to eliminate flicker or swirl when the controller is at about 3% (just before power relay cutoff). The adjustment in the fluorescent dimmer module is factory set, and should not be adjusted once installed.

- A. Set dimmer controls so fluorescent fixtures have just turned on.
- B. Set rotary controller to minimize low end flicker and swirl. It is possible to get fixtures closer to OFF prior to relay cutoff if a bit of swirl is tolerated at low levels.

Fluorescent fixture characteristics change as lamps age. This adjustment should be checked once every six months to maintain fixture dimming as close to ideal as possible.

8.7 *Partition Switch Station*

Partition Switch Stations are custom designed and programmed for specific room division applications and pre-recorded in the Data Cartridge. This feature must be specified in advance. Room partition closures are opened and closed from a signal to an input terminal. This is usually from a custom engraved switch panel with status LEDs. For activation from other sources, consult the factory.

A. **Definitions**

Master Room - The designated room whose presets take control over presets used in subordinate rooms. Master Room designation is pre-recorded in the Data Cartridge.

ON - Moving a partition switch to its ON position (open) mimics the opening of a wall partition and causes the Master Room presets to control channels in the Subordinate Room.

OFF - Moving a partition switch to its OFF position (closed) mimics the closing of a movable wall partition and restores independent control to the Subordinate Room's last used preset.

B. **General Description**

Setting a partition switch ON combines two rooms. Upon activation, all recorded presets in the designated Master Room are duplicated at all control stations in the Subordinate Room, and lights in the Subordinate Room fade to levels set in the currently active Master Room Preset.

Setting a partition switch OFF restores the Subordinate Room to its last used preset. This should not be done while rooms are in use.

C. **Room Combine and 7400 Series Master Stations**

When room combine switches are used with a System Wide Master, partition switch combining inhibits system wide control for the combined rooms. The System Wide Master will only be able to activate presets of the designated Master Room. Independent control of uncombined rooms within the system is still possible.

Subordinate Room presets are locked OFF in system memory from manual or time clock execution. Blind modification of these presets is possible only in Preview Mode.

D. Special Features

At each switch action, partition switches may be programmed to perform one of the following preselected lockouts in addition to their combining action:

- 1) Total lockout of all control stations, or any individual or group of stations.
- 2) Preset-only lockout of all control stations, or any individual or group of stations.
- 3) A combination of total and Preset-only lockout on individual stations, groups or on all stations.

For example, a three room system with two partition switches/walls has a total of 4 possible switch activation functions.

E. Slider Stations With Partition Switches

Partition switches are designed for use with push-button preset stations. With push-button controllers, a preset may be selected in a Subordinate Room prior to combining, so that the selected preset appears in the Subordinate Room when the rooms are uncombined. Since a preset cannot be selected prior to combining in a slider-only system, the Subordinate Room (always the numerically smaller room number for Slider Stations) is programmed to revert to the default preset 1 (all lights at 50%) when rooms are uncombined. It is necessary to then go to a station in the the previously Subordinate Room (now independent) and push <ON/OFF> to gain control. The previous Master Room will maintain its levels. This default preset activation may only be modified if a 7400 Series System Wide Master is used in conjunction with the Slider Stations.

DIMMER CABINET

Environ 2 Programmable Control Operator's Manual

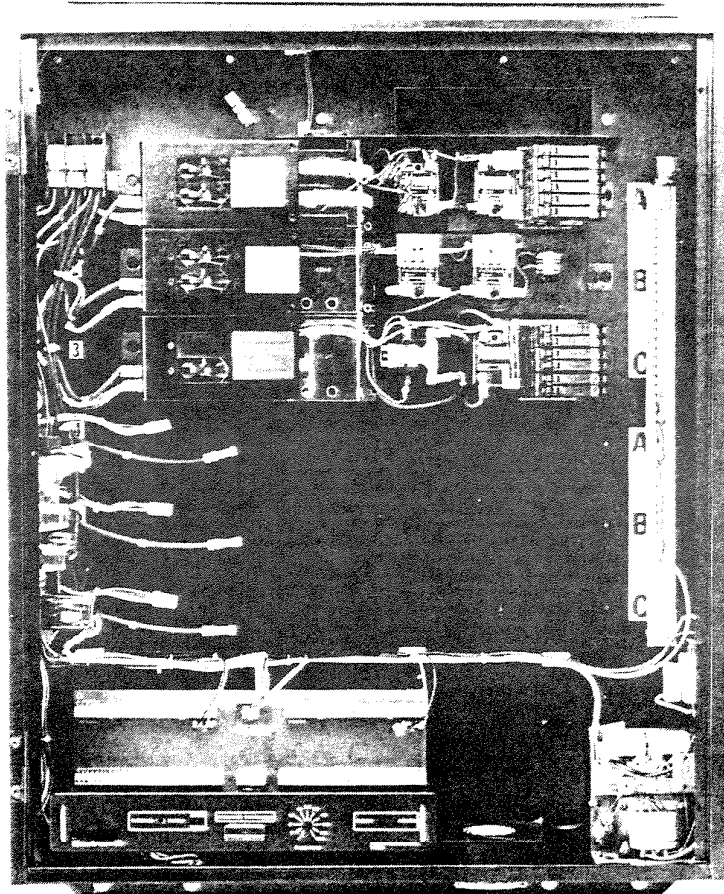
This section provides information on basic Environ 2 Dimmer Cabinet setup. Additional information on Dimmer Cabinet setup and operation is provided in the Installation Manual shipped with the Dimmer Cabinet.

9. DIMMER CABINET

Dimmer Cabinets consist of an enclosure, an electronics module (Program Module, Cat. #7825, or Expansion Module, Cat. #7830), and Dimmer Modules which are installed and wired by the contractor. Large and Small Dimmer Cabinets are available, depending on needs of individual systems.

9.1 Enclosure

The Dimmer Cabinet Enclosure contains mounting hardware for Dimmer Modules, a Power Supply and AC Reference Module to support the electronics module, a Termination PCB into which the electronics module plugs, and a Wiring Harness to connect all components. Most of the contractor's wiring is landed on the Termination PCB (control wiring) or the Dimmer Modules (load wiring).



**Figure 11. Typical Dimmer Cabinet
(Small Cabinet Shown)**

9.2 *Dimmer Cabinet Panic*

Panic turns on any single dimmer, combination of dimmers, or all dimmers, bypassing system electronics. It is activated in one of three ways:

- A. Pushing "PANIC" on a Remote Panic Station (#7951 or equivalent) turns enabled dimmers ON.
- B. Switching "NORMAL/PANIC" switch on electronics module to PANIC while electronics module is installed turns enabled dimmers ON.
- C. Removing electronics module while main power is ON turns enabled dimmers ON.

Panic is selected for a dimmer using DIP switches located on the Termination Board (see Installation Manual).

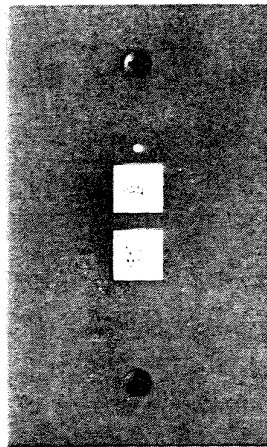


Figure 12. Remote Panic Station

9.3 Dimmer Modules

Dimmer Modules are the systems power switching devices. All Dimmer Modules contain a Circuit Breaker, and either one or two power switching devices (Solid State Relays, or SSR).

All incandescent and "Low Voltage" (inductive load) Dimmer Modules also contain a filtering choke to minimize lamp noise and interference with other electronic devices.

"Low Voltage" Dimmer Modules (used for inductive loads) also contain a sensing circuit to shut the dimmer primary circuit breaker OFF if DC voltage is sensed.

Fluorescent dimmers contain a circuit which shuts off both power and control wires to dimming ballasts when controls are at about 3% or lower.

Non-Dim Modules, which switch lights full-ON and full-OFF, are also available for slider controllers.

The first component to suspect and replace in case of any dimmer module failure is the Solid State Relay. When replacing a Solid State Relay, make certain that it is replaced with an SSR from Strand designed for this purpose. Incorrect SSRs may not function correctly, and may cause damage to equipment.

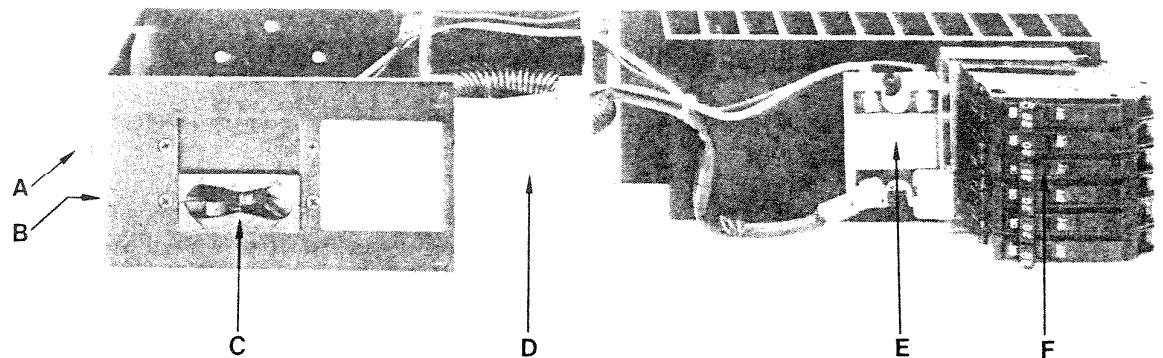


Figure 13. Typical Dimmer Module

- | | | | |
|----|-------------------------|----|--------------------------------|
| A. | Power Input Lug | D. | Choke |
| B. | Control Input Connector | E. | Solid State Relay |
| C. | Primary Circuit Breaker | F. | Branch Breakers (or terminals) |

9.4 Electronics Modules (Cat. #7825 or #7830)

There are two types of control electronics modules used in Programmable Environ 2 Systems. The Program Module (7825) is always in the first Dimmer Cabinet, and controls up to 24 dimmers in this cabinet. The Expansion Module allows additional dimmers to be controlled by the Program Module.

Program Module

The Program Module is the main system computer for Programmable Environ 2 systems. It provides dimmer drive signals to dimmers in its own Dimmer Cabinet, and control signals for the entire system. Each Programmable Environ 2 system may consist of up to 192 dimmers controlled by up to 128 channels. System configuration is defined in the Data Cartridge plugged into this module. Upon initial installation of the Data Cartridge, the "RESET" button must be pushed to load Data Cartridge information into the system.

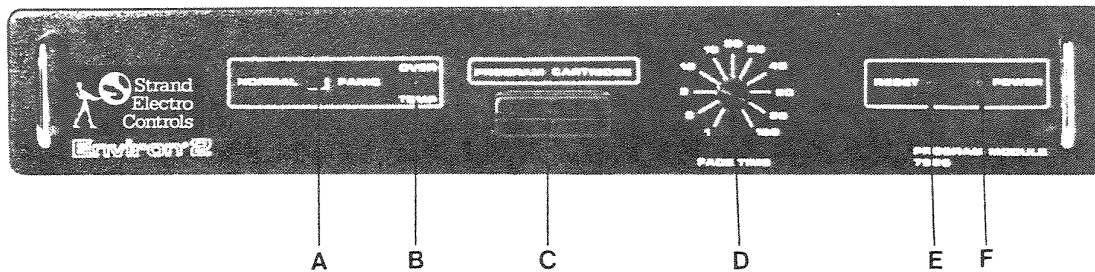


Figure 14. Program Module Front Panel

- A. {NORMAL/PANIC} Switch - Enables/Disables Panic for its own Dimmer Cabinet. Does not affect other Dimmer Cabinet(s).
- B. "OVERTEMP" Indicator - Lights when Dimmer Cabinet internal temperature reaches 65° C. System shuts down at this time, and will not re-activate until temperatures return to acceptable levels. For emergency purposes, activating PANIC will re-activate all lights enabled on PANIC, bypassing the overtemperature shutoff mechanism. **This procedure should be used only in an extreme emergency, as this is an override of a safety system, and damage to the dimming system may result.**
- C. System Data Cartridge slot.
- D. {FADE TIME} Control - Sets default fade time.
- E. {RESET} Switch (behind front panel hole) - Resets system. Preset information will be cleared. Activate with a small plastic tool.
- F. "POWER" Indicator - Lights when +12 volts DC from Power Supply is available.

Expansion Module

The Expansion Module is used when more than one Dimmer Cabinet is required. It is a "slave" module, and requires a control signal from a Program Module or other controlling device. One is required per cabinet.

The thumbwheel switch selects the dimmer numbers represented in its own cabinet. Switch positions correspond to dimmers as follows:

<u>DIMMER NUMBER</u>	<u>POSITION</u>
1 thru 24	0
25 thru 48	1
49 thru 72	2
73 thru 96	3
97 thru 120	4
121 thru 144	5
145 thru 168	6
169 thru 192	7

The Program Module controls dimmers 1-24 (position "0"). Expansion Module #1 controls dimmers 25-48 and its switch set to "1". Expansion Module #2 is set to "2" and controls dimmers 49-72, etc.

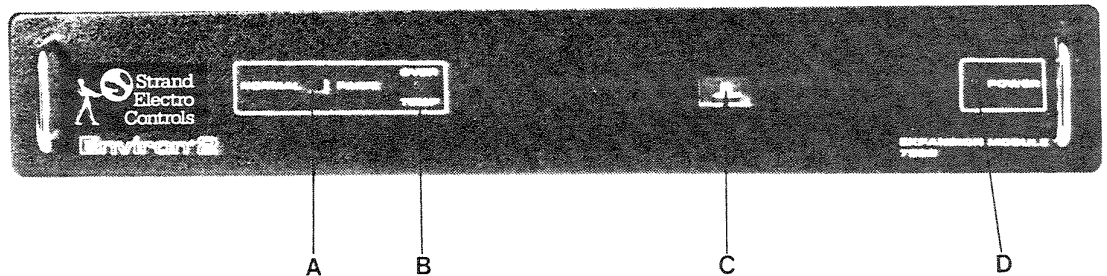


Figure 15. Expansion Module Front Panel

- A. {NORMAL/PANIC} Switch - Enables/Disables Panic for its own Dimmer Cabinet. Does not affect other Dimmer Cabinet(s).
- B. "OVERTEMP" Indicator - Lights when Dimmer Cabinet internal temperature reaches 65° C. System shuts down at this time, and will not reactivate until temperatures return to acceptable levels. For emergency purposes, activating PANIC will re-activate all lights enabled on PANIC, bypassing the overtemperature shutoff mechanism. **This procedure should be used only in an extreme emergency, as this is an override of a safety system, and damage to the dimming system may result.**
- C. Thumbwheel Switch - Used to select starting dimmer number of the cabinet.
- D. "POWER" Indicator - Lights when +12 volts from Power Supply is available.

INDEX

Environ 2 Programmable Control Operator's Manual

A

- About This Manual, 3
- Auto Cycle, 35
- Auxiliary Control Station, 41
 - Entrance, 42
 - Fade Time Control, 43
 - Fluorescent Adjustment, 46
 - Min/Max Limit, 44
 - Remote Take Control, 45

B

- Blind
 - Modify Levels, 26

C

- Channel, 3
 - Multiple Control, 25
- Circuit, 3
- Clear
 - Single Time, 30
 - Time By Day, 29
 - Time By Room, 30
- Control Electronics
 - Expansion Module, 55
 - Program Module, 54
 - Thumbwheel Settings, 55
- Control Station
 - Auto Cycle, 35
 - Auxiliary, 41
 - Entrance, 42
 - Fade Time, 43
 - Fluorescent Adjustment, 46
 - Lockout, 32
 - Master, 19
 - Min/Max Limit, 44
 - Preset-Only Lockout, 33
 - Push-button Only, 15
 - Push-button With Sliders, 11
 - Remote Take Control, 45
 - Sliders Only, 9
 - System Wide Master, 19
 - Unlock, 34
- Cue Sheet, 37

D

- Data Cartridge, 54
- Dimmer, 3
 - Panic, 52
- Dimmer cabinet, 51
 - Enclosure, 51
 - Panic, 52
- Dimmer Module, 53
 - DC Sensing, 53
 - Filter Choke, 53
 - Fluorescent, 53
 - Incandescent, 53
 - Inductive Load, 53
 - Low Voltage, 53
 - Non-Dim, 53
 - Solid State Relay, 53
- Dwell Time, 35

E

- Electronics Module, 54
 - Panic, 52
- Entrance Station, 42
- Expansion Module, 55
 - Thumbwheel Settings, 55

F

- Fade Time
 - Modify Blind, 27
 - Preview, 27
 - Record, 26
- Fade Time Station, 43
- Fluorescent Adjustment Station, 46

L

- Levels
 - Modify Blind, 26
 - Preview, 25
 - Record With Push-buttons, 13
 - Record With Sliders, 13
- Lockout
 - Preset-Only, 33
 - Station, 32
 - Unlock, 34

M

- Manual Organization, 3
- Master
 - Proportional, 10
 - System Wide, 24
- Master Station, 19
 - Auto Cycle, 35
 - Clear Single Time, 30
 - Clear Time By Day, 29
 - Clear Time By Room, 30
 - Display Current Time, 27
 - Limit Message, 31
 - Modify Current Time, 27
 - Multiple Channel Control, 25
 - Multiple Day Time Recording, 29
 - Preset-Only Lockout, 33
 - Preview Fade Times, 27
 - Preview Light Levels, 25
 - Preview Time-Of-Day, 31
 - Record Fade Time, 26
 - Set Room Number, 24
 - Station Lockout, 32
 - Station Unlock, 34
- Min/Max Limit Station, 44
- Modify
 - Current Time, 27
 - Fade Time, Blind, 27
 - Levels With Sliders, 10, 13
 - Levels, Blind, 26
 - Time-Of-Day, 28
- Module
 - Electronics, 54

O

- OVERTEMP Indicator, 54, 55

P

- Panic, 52
 - Automatic, 52
 - Electronics Module, 52
 - Enable/Disable, 52
 - Panic Station, 52
- Patch, 4
- POWER Indicator, 54, 55

- Preset, 4
 - Clear All Times, 30
 - Clear Single Time, 30
 - Clear Times For Whole Day, 29
 - Playback, 13, 17, 24
 - Record Fade Time, 26
 - Record Time-Of-Day For, 28
 - Record To Multiple Days, 29
 - Record With Push-buttons, 13, 25
 - Record With Pushbuttons, 17
 - Record With Sliders, 13
- Preset Button, 4
- Preview
 - Current Time, 27
 - Fade Times, 27
 - Recorded Light Levels, 25
 - Time-Of-Day, 31
- Program Module, 54
- Push-button Station, 15
 - Play Back Preset, 17
 - Record Presets, 17

R

- Record
 - Dwell Time, 35
 - Fade Time, 26
 - Levels With Push-buttons, 13, 17, 25
 - Levels With Sliders, 13
 - Time-Of-Day, 28
- Remote Take Control Station, 45

S

- Select
 - Multiple Channels, 25
 - Room Number, 24
- Slider Station
 - Modify Light Levels, 10
 - Sliders Only, 9
 - With Push-button Control, 11
- Solid State Relay, 53
- System Wide Master, 24

T

Take Control, 9, 11

Thumbwheel Switch, 55

Time

Display Current Time, 27

Modify Current Time, 27

Time-Of-Day

Clear By Day, 29

Clear By Room, 30

Clear Single Entry, 30

Limit Message, 31

Preview Recorded Times, 31

Record For Preset, 28

U

Unlock, 34

