DOUG FLEENOR DESIGN

PRESET TEN ARCHITECTURAL TWO OWNERS MANUAL

model PRE10-A2

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≥ Serial # 08B001

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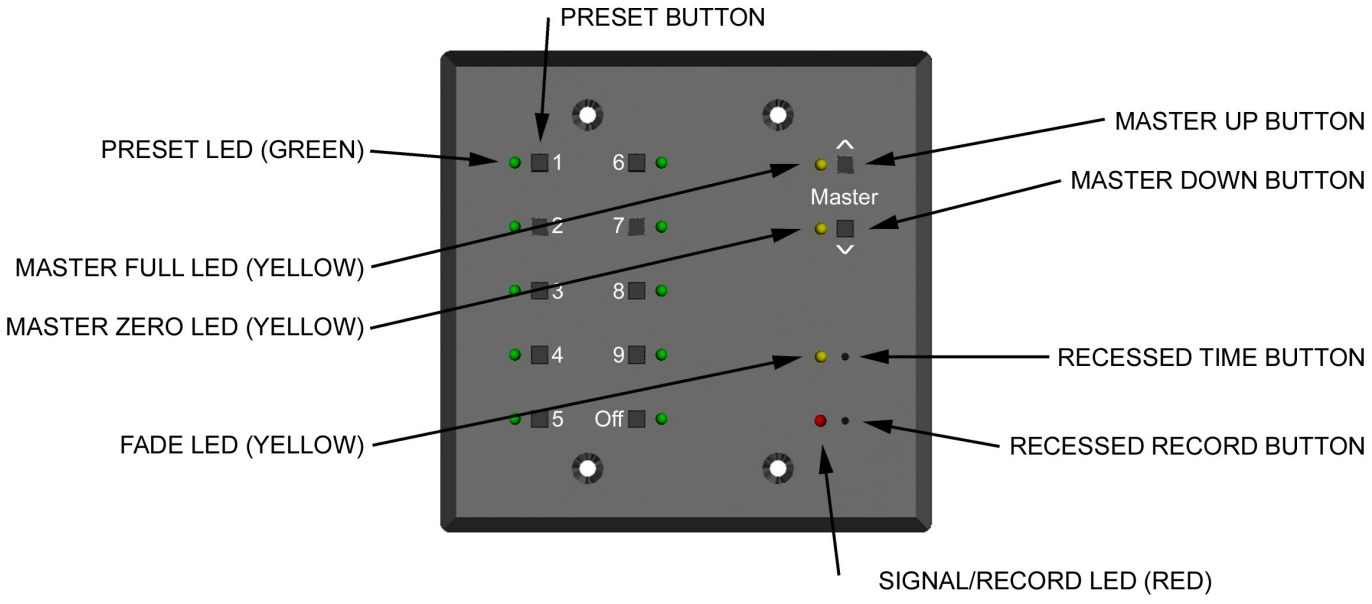
PRODUCT DESCRIPTION

The *Preset 10 Architectural Two* is an enhanced version of our award winning *Preset 10 Architectural* controller. The *Preset 10 Architectural Two* (model PRE10A2) offers new features and different wiring options. New features of the PRE10A2 include a master, a merge mode (DMX input merged with the *Preset 10* output), jumper selectable button modes (radio or push-on/push-off), and a two-gang design that fits all North American two-gang electrical boxes. The PRE10A2 has separate input and output ports which allows incoming levels to be merged with the local preset. This merge capability allows multiple *Preset 10s* and/or a live theatrical console to share control of the same devices. Multi-room control of a single dimmer rack is another possible use.

The *Preset 10 Architectural Two* control station is capable of storing up to ten presets. These presets are recorded by capturing the output of a DMX512 console. Each preset can be assigned a unique fade time, from 0 to 999 seconds. Presets are recalled by pressing one of ten PRESET buttons.

Systems consist of one or more stations and a power supply. The solid aluminum faceplate is designed to install over a standard two-gang electrical box. Connections to the *Preset 10 Architectural Two* are power (2 wires) and DMX512 (3 wires). Power for the *Preset 10* can be supplied from a variety of sources, including a 10V class 2 “doorbell” transformer.

The *Preset 10 Architectural Two* system can work in conjunction with a lighting console, automatically switching between the *Preset 10* and the console or by merging the console’s levels with the *Preset 10's* levels. In this switch-over mode, when there is DMX512 present at the *Preset 10's* input, the *Preset 10* goes off-line and the console has control. Upon loss of DMX from the console, the *Preset 10* takes control and either returns to its pervious preset or holds the last console look (jumper selectable). In merge mode the *Preset 10* merges the levels from the console with the levels of the currently active preset.



SPECIFICATIONS

Connector: Phoenix Contact MSTB series 3 position plug in terminal block
Model: MSTB MSTB 2,5/3-ST-5,08 Order Number: 17 57 02 2

Phoenix Contact MSTB series 5 position plug in terminal block
Model: MSTB 2,5/5-ST-5,08 Order Number: 17 57 04 8

Connector pin out:
1 (C) DMX512 common
2 (-) DMX512 data - (input)
3 (+) DMX512 data + (input)

1 (C) DMX512 common
2 (-) DMX512 data - (output)
3 (+) DMX512 data + (output)
4 (C) Supply common (internally tied to pin1)
5 (V) Supply voltage “hot”

Input/Output Circuit: ESD protected EIA-485 transceiver (LT1785)

Indicators:
Ten green Preset LEDs
One yellow Master at full LED
One yellow Master at zero LED
One yellow Fade LED
One red Signal / Record LED

User controls:
Ten Preset buttons
One Master Up button
One Master Down button
One recessed Record button
One recessed Time button

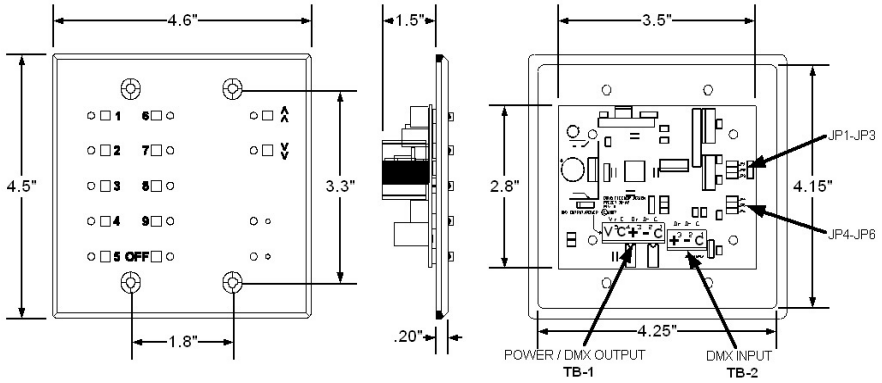
Option Jumpers: For a single station installation all jumpers should be installed.

	INSTALLED	REMOVED
JP1	Recording Enabled	Recording Disabled
JP2	Master Station	Slave Station
JP3	Fade to last active preset	Hold Last Look
JP4	Single Station Mode	Multi Station Mode
JP5	Switch-over Mode	Highest Takes Precedence (HTP) Mode
JP6	Radio-button Mode	Push-On / Push-Off Mode

Power input:
9 to 24 volts DC or 10 to 16 volts AC / 200mA per station
(A 10 volt class 2 “doorbell” transformer works nicely)

Color: Black anodized with laser engraved nomenclature

Size :
Faceplate: 4.5"h X 4.6"w X 0.2"d
Faceplate rear inset: 4.15"h X 4.25"w X 0.1"d
Electrical box minimum inside dimensions: 3.6"h X 2.9"w X 1.26"d



Preset 10 Architectural Two - INSTALLATION

WIRING INFORMATION

The *Preset 10 Architectural Two* uses daisy-chain wiring topology; one station's output feeds the next station's input. Its predecessor, the *Preset 10A,* had only a single DMX in/out connector; input and output were married together on the same three terminals. The *Preset 10 Architectural Two* has two plug-in terminal connectors, a 3-pin DMX input connector (TB2) and a 5-pin DMX output/power connector (TB1).

DMX512 wiring requires cable suitable for carrying high speed digital data. Specifications for this wire are: 120 Ohm characteristic impedance with capacitance of less than 20pF per foot. Most cables specified for the following uses are acceptable: RS-422, EIA-422, RS-485, EIA-485, DMX512, CAT-5, CAT-5e, CAT-6, or better. It is not recommended to mix CAT cables and shielded twist pair cables on the same physical run.

Eighteen gauge stranded wire is suggested for power supply wiring. Larger wire may be used for long runs or for mechanical strength. The terminals will accept up to 12 gauge. Smaller wire may be used for short runs. The minimum recommended wire size is 24 gauge (CAT cable is 24 gauge). The chart below shows maximum distances between the power supply and a single *Preset 10* for various wire sizes and popular power supply voltages. Systems containing two *Preset 10s* on a single power supply should cut these distances in half. Systems with three *Preset 10s* on a single power supply should divide these distances by three. Systems containing multiple *Preset 10s* may contain multiple power supplies.

			Wire Gauge				
Supply Voltage	24	22	20	18	16	14	12
Resistance per foot	51mΩ	35mΩ	22mΩ	14mΩ	9mΩ	6mΩ	4mΩ
9VDC or 10VAC	90'	140'	225'	350'	550'	900'	1500'
12VDC or 12VAC	360'	460'	900'	1400'	2200'	3000'	3000'
15VDC or 16VAC	540'	840'	1350'	2100'	3000'	3000'	3000'
18VDC	810'	1260'	2025'	3000'	3000'	3000'	3000'
24VDC	1500'	3000'	3000'	3000'	3000'	3000'	3000'

MAXIMUM POWER SUPPLY CABLE LENGTH

The determining factor for wire length is voltage drop in the wire. The *Preset 10* must receive 9 volts (8 volts absolute minimum) at its terminals for proper operation. Using Ohms Law, a skilled technician can calculate the voltage drop using the *Preset 10s* current draw of 0.2 Amps, the resistance per foot shown below, and the length of the wire.

			Wire Gauge				
	24	22	20	18	16	14	12
Resistance per foot	51 mΩ	35 mΩ	2 2mΩ	14 mΩ	9 mΩ	6 mΩ	4 mΩ

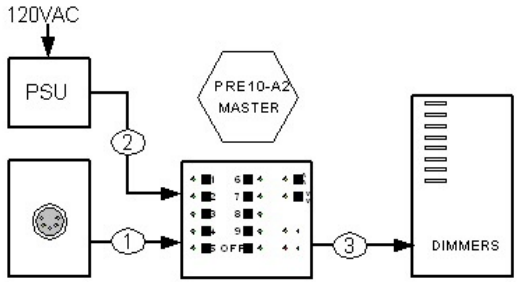
POWER SUPPLY

The voltage provided to the *Preset 10 Architectural Two* must be between 9 and 24 volts DC or 10 and 16 volts AC. The *Preset 10 Architectural Two* has been designed to operate on a standard class 2 “doorbell” transformer. For example Ace Hardware’s model# ACE36483 10 volt 5 watt transformer.

SAMPLE WIRING DIAGRAMS

Single Master

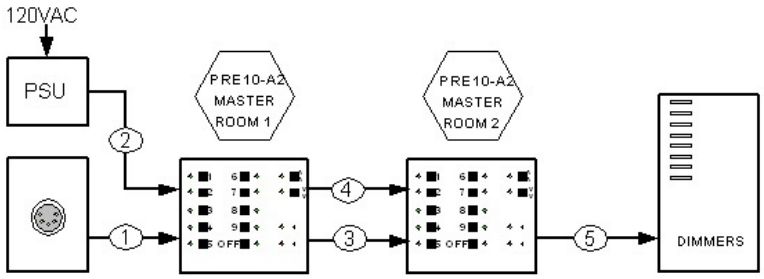
Note: All jumpers installed



	CABLE	COLOR	FROM		TO		USE
1	120 Ohm Data Cable Belden 9829 or Equivalent	Shield	5 Pin XLR Plate	Pin 1	PRE10-A2 Master	TB2-1	Common
		White/Blue Stripe		Pin 2		TB2-2	Data -
		Blue/White Stripe		Pin 3		TB2-3	Data +
2	(2) #18 AWG Stranded Wires	Black	Power Supply	Common		TB1-4	Supply
		Red		Power		TB1-5	Supply “hot”
3	120 Ohm Data Cable Belden 9829 or Equivalent	Shield	PRE10-A2 Master	TB1-1	Dimmer Cabinet		Common
		White/Blue		TB1-2			Data -
		Blue/White Stripe		TB1-3			Data +

Multi Master

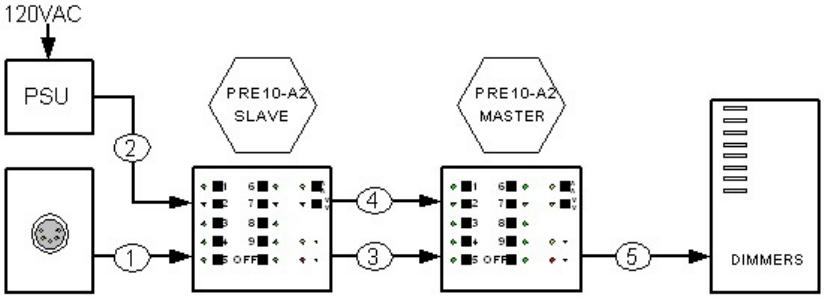
Note: Place in HTP mode (Remove JP5)



	CABLE	COLOR	FROM		TO		USE
1	120 Ohm Data Cable Belden 9829 or Equivalent	Shield	5 Pin XLR Plate	Pin 1	PRE10-A2 Master Room 1	TB2-1	Common
		White/Blue Stripe		Pin 2		TB2-2	Data -
		Blue/White Stripe		Pin 3		TB2-3	Data +
2	(2) #18 AWG Stranded Wires	Black	Power Supply	Common		TB1-4	Supply
		Red		Power		TB1-5	Supply "hot"
3	120 Ohm Data Cable Belden 9829 or Equivalent	Shield	PRE10-A2 Master Room 1	TB1-1	PRE10-A2 Master Room 2	TB2-1	Common
		White/Blue Stripe		TB1-2		TB2-2	Data -
		Blue/White Stripe		TB1-3		TB2-3	Data +
4	(2) #18 AWG Stranded Wires	Black		TB1-4		TB1-4	Supply
		Red		TB1-5		TB1-5	Supply "hot"
5	120 Ohm Data Cable Belden 9829 or Equivalent	Shield	PRE10-A2 Master Room 2	TB1-1	Dimmer Cabinet	?	Common
		White/Blue Stripe		TB1-2		?	Data -
		Blue/White Stripe		TB1-3		?	Data +

UP STREAM SLAVE

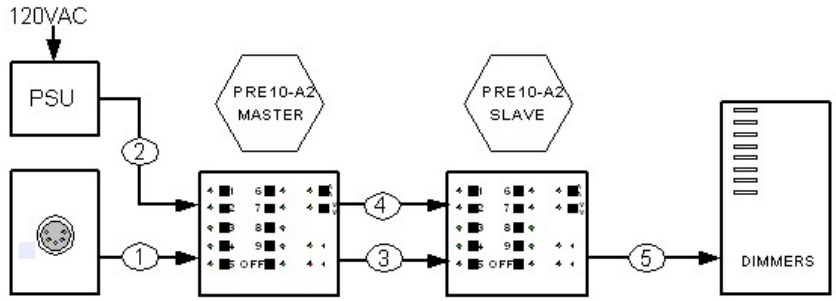
Note: Master - Remove JP4
Slave - Remove JP2 & JP4



	CABLE	COLOR	FROM		TO		USE
1	120 Ohm Data Cable Belden 9829 or Equivalent	Shield	5 Pin XLR Plate	Pin 1	PRE10-A2 Slave	TB1-1	Common
		White/Blue Stripe		Pin 2		TB1-2	Data -
		Blue/White Stripe		Pin 3		TB1-3	Data +
2	(2) #18 AWG Stranded Wires	Black	Power Supply	Common		TB1-4	Supply
		Red		Power		TB1-5	Supply "hot"
3	120 Ohm Data Cable Belden 9829 or Equivalent	Shield	PRE10-A2 Slave	TB1-1	PRE10-A2 Master	TB2-1	Common
		White/Blue Stripe		TB1-2		TB2-2	Data -
		Blue/White Stripe		TB1-3		TB2-3	Data +
4	(2) #18 AWG Stranded Wires	Black		TB1-4		TB1-4	Supply
		Red		TB1-5		TB1-5	Supply "hot"
5	120 Ohm Data Cable Belden 9829 or Equivalent	Shield	PRE10-A2 Master	TB1-1	Dimmer Cabinet	?	Common
		White/Blue Stripe		TB1-2		?	Data -
		Blue/White Stripe		TB1-3		?	Data +

DOWN STREAM SLAVE

Note: Master - Remove JP4
Slave - Remove JP2 & JP4



	CABLE	COLOR	FROM		TO		USE
1	120 Ohm Data Cable Belden 9829 or Equivalent	Shield	5 Pin XLR Plate	Pin 1	PRE10-A2 Master	TB2-1	Common
		White/Blue Stripe		Pin 2		TB2-2	Data -
		Blue/White Stripe		Pin 3		TB2-3	Data +
2	**(**2) #18 AWG Stranded Wires	Black	Power Supply	Common		TB1-4	Supply
		Red		Power		TB1-5	Supply “hot”
3	120 Ohm Data Cable Belden 9829 **or** Equivalent	Shield	PRE10-A2 Master	TB1-1	PRE10-A2 Slave	TB1-1	Common
		White/Blue Stripe		TB1-2		TB1-2	Data -
		Blue/White Stripe		TB1-3		TB1-3	Data +
4	(2) #18 AWG Stranded Wires	Black		TB1-4		TB1-4	Supply
		Red		TB1-5		TB1-5	Supply “hot”
5	120 Ohm Data Cable Belden 9829 **or** Equivalent	Shield	PRE10-A2 Slave	TB1-1	Dimmer Cabinet	?	Common
		White/Blue Stripe		TB1-2		?	Data -
		Blue/White Stripe		TB1-3		?	Data +

Preset 10 Architectural Two - SETUP

CONFIGURATION

The *Preset 10 Architectural Two* has six jumpers that select different modes of operation. The factory default is to have all jumpers installed. It is suggested that unused jumpers be stored by offsetting the jumper over just one of the pins when removed.

JP1 Record Lockout — When installed, recording of presets is enabled. When removed, the TIME and RECORD buttons are disabled. The position of JP1 on a SLAVE has no affect.

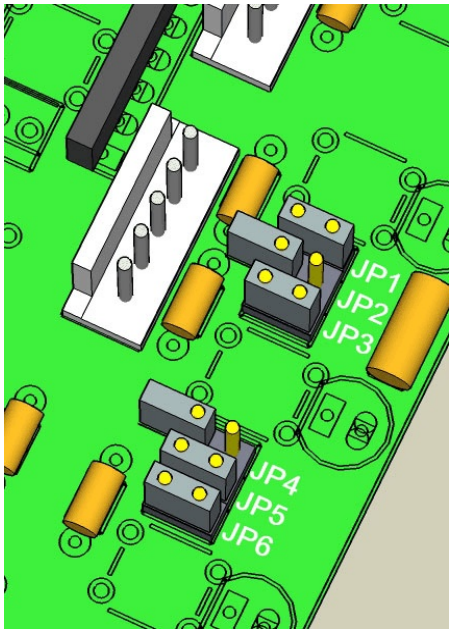
JP2 Master / Slave — When installed, the station is a MASTER. The MASTER is responsible for transmitting and receiving DMX, storing presets and communicating with SLAVES. When removed, the station is a SLAVE. A SLAVE communicates button presses and mimics the indicators of the MASTER.

JP3 Restore / Hold — When installed, upon loss of DMX at its input, the *Preset 10* will return to the preset selected prior to receipt of DMX. When removed, upon loss of DMX at its input, the *Preset 10* will hold the last received DMX levels until a PRESET button is pressed.

JP4 Single station — When installed, the station is prevented from communicating with SLAVE units. Slave communication uses Alternate Start Code messages. Some poorly implemented DMX512 devices fail to ignore these messages, resulting in flicker. To reduce troubleshooting calls, slave communication defaults to off. When removed, slave communication is enabled.

JP5 Merge off — When installed, the *Preset 10* does not merge the incoming DMX with the presets. Instead, if there is a DMX input, the levels are passed directly to the DMX output. When removed, if there is a DMX input, it is merged with the output of the *Preset 10* in a Highest Takes Precedence (HTP) manner.

JP6 Radio-buttons — When installed, the PRESET buttons act like “radio buttons”; selecting a new preset cancels the current preset. When removed, the PRESET buttons act in a push-on/push-off manner; all selected presets pile on to each other in a Highest Takes Precedence (HTP) manner.



MASTER SELECTION

All systems contain at least one MASTER. Jumper JP4 is installed (default condition) for normal MASTER operation. In systems that contain SLAVES jumperJP4 must be removed. This enables MASTER/SLAVE communication.

SLAVE SELECTION

SLAVE stations communicate button presses to the MASTER, and MASTER stations communicate indicator status to the SLAVES. A *Preset 10 Architectural Two* is placed in SLAVE mode by removing JP2.

Preset 10 Architectural Two - OPERATION

INDICATORS

GREEN LEDS
ON = CURRENTLY SELECTED PRESET
FLASHING = SETTING FADE TIME FOR THIS PRESET

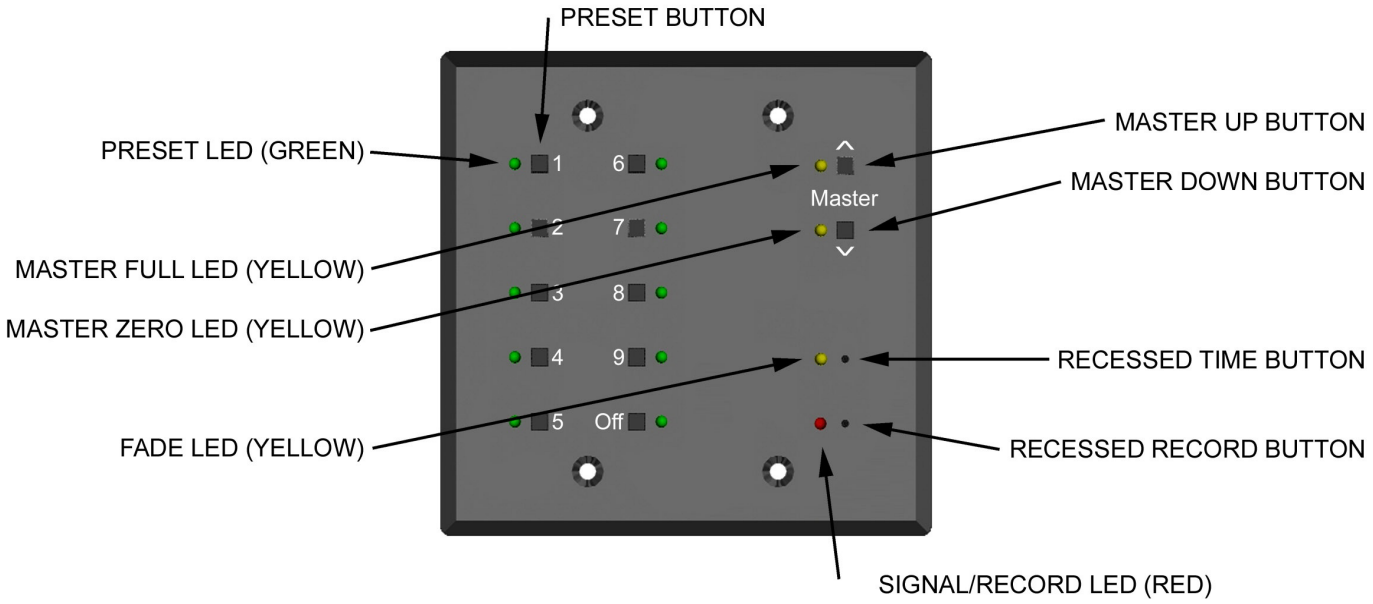
YELLOW FADE LED
ON = FADE IN PROGRESS
FLASHING = SETTING FADE TIME

YELLOW MASTER FULL LED
ON= MASTER AT 100%
OFF= MASTER LESS THAN 100%

YELLOW MASTER ZERO LED
ON= MASTER AT 0%
OFF= MASTER GREATER THAN 0%

RED LED
ON = STATION LOCKED OUT / RECEIVING DMX512 FROM EXTERNAL CONSOLE
FLASHING = RECORD MODE SELECTED

GREEN LEDS	YELLOW TIME LED	RED LED	STATE
OFF	OFF	OFF	NO POWER
N/A	OFF	ON	RECEIVING DMX512 If in switch-over mode: *PRESET 10* IS LOCKED OUT If in merge mode: Received DMX is merged with *PRESET 10* signal
OFF	OFF	FLASHING	RECORD MODE ACTIVE CURRENT LOOK WILL BE STORED TO THE NEXT PRESSED PRESET
FLASHING	FLASHING	OFF	SETTING FADE TIME FOR THE SELECTED PRESET
ON	OFF	OFF	*PRESET 10* TRANSMITTING DMX512 NO DMX512 INPUT
ON	ON	OFF	*PRESET 10* TRANSMITTING DMX512 CURRENTLY FADING TO NEW PRESET



RECORDING PRESETS

1. Set the look to be recorded using any DMX512 lighting console.

2. Using a small blunt object (i.e. paper clip), press the recessed RECORD button located next to the red LED. The LED will begin to flash. To cancel the record operation, press the RECORD button again.

3. Press the PRESET button of the preset you wish to record. The adjacent green LED will illuminate as you press the button. A snapshot of the DMX512 signal is taken at the time the PRESET button is pressed.

Repeat steps 1 through 3 for each preset.

SETTING FADE TIMES

Each preset can have its own fade time. Upon recording a preset, the fade time defaults to two seconds. A preset's fade time is the time it will take that preset to fade in when selected.

To set a different fade time:

1. Remove the DMX512 signal from the *Preset 10 Architectural Two*. (Required only if the *Preset 10* is in switch-over mode)

2. Select the preset for which you wish to set the fade time.

3. Using a small blunt object (i.e. paper clip), press the recessed TIME button next to the yellow LED. The yellow time indicator and the green preset indicator will begin flashing. You have ten seconds to set the fade time. To cancel the operation, press the TIME button again.

4. Enter the three digit fade time (in seconds) using the PRESET buttons (for the digit zero, use the OFF button). For example, to enter 120 seconds, press 1, 2, OFF). The operation is completed by:

    a. Entering a three digit time. The operation will complete upon the entry of the third digit. A one or two digit time may be entered with leading zeros (five seconds entered as OFF, OFF, 5).

    b. Entering a one or two digit time followed by pressing the TIME button.

    c. Entering a one or two digit time and waiting ten seconds for the operation to time out.

RECALLING PRESETS

Preset are recalled by pressing one of the PRESET buttons. The indicator next to the selected preset will illuminate and the fade to the new preset will begin. Note that the lighting levels may not change quickly if the recorded fade time is long. The yellow TIME indicator will illuminate during the fade.

In radio-button mode (JP6 installed), pressing a PRESET button will cancel the current preset and fade to the selected preset.

In push-on/push-off mode (JP6 removed), selecting a preset that was off will fade in the selected preset using a Highest Takes Precedence technique. Deselecting a preset that was on, will fade out the preset, removing it from the output. Preset 10(OFF) is special in that when selected, it cancels presets 1 through 9 just as it does in radio-button mode. Similarly, selecting any preset other than preset 10(OFF) cancels it.

AUTO-FOLLOW

Auto-follow is typically used where a *Preset 10* is dedicated to a specific task such as a continuously fading cove lighting or from one look to another in a night club. A *Preset 10* that loses power while in auto-follow will resume auto-follow when power is restored.

Auto-follow is a mode in which each of the ten presets is recalled in order. To begin auto-follow, press and hold PRESET 1 until all of the LEDs flash (about 5 seconds). Preset 1 will then fade in, using its recorded fade time. When the fade is complete, a fade from preset 1 to preset 2 will begin automatically, using the fade time for preset 2. When that fade is complete, a fade from preset 2 to preset 3 will begin, using the fade time for preset 3. This auto following of presets will continue through preset 10(OFF) and then wrap around to preset 1 again. Auto-follow mode is canceled by pressing any PRESET button. Auto-follow is only available in radio-button mode (JP6 installed).

To skip a preset in the auto follow progression, set its fade time to 999.

A fade time of zero will cause the auto following preset to pop on instantly. This is useful if followed by a preset whose fade time is other than zero. For example: Recording presets 1 and 2 as red, 3 and 4 as green, and 5 and 6 as blue, then setting the odd fade times to zero and the even fade times to two seconds would create an auto follow show of red bumping to green, bumping to blue, and bumping back to red, with each color staying on for two seconds (presets 7-10 fade times set to 999). (Bump is a theatrical lighting term meaning to fade to in zero time.)

PRESET 10 (OFF) - SPECIAL FUNCTION

If the levels stored in preset 10(OFF) are all zeros, a special function is enabled. When preset 10(OFF) is selected, and the fade is complete, the *Preset 10 Architectural Two* stops sending DMX. By ending DMX transmission, many moving lights and dimming systems will enter their standby mode. To defeat this feature, and enable continuous transmission of DMX, record a DMX level other than zero in preset 10 (for example, record DMX channel 512 at a level of 1%).

MASTER

The MASTER up and down buttons allow proportional control of the current look. When the master is at full (100%), the yellow LED adjacent to the MASTER UP button is illuminated. When the master is at zero (0%), the yellow LED adjacent to the MASTER DOWN button is illuminated. Pressing the MASTER UP or MASTER DOWN button increments or decrements the master level by 1%. Holding the MASTER UP or MASTER DOWN button will fade the master level. It takes 5 seconds to fade the master fully up or down.

The master only affects the levels of the *Preset 10*, not the levels from the console (DMX512 input).