DOUG FLEENOR DESIGN

Preset12
OWNERS MANUAL

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PRODUCT DESCRIPTION

Preset12 is a lighting control station that uses the DMX512 control protocol to capture and play back up to twelve static looks. Looks are recorded by capturing the output of any DMX512 controller. When external DMX512 control is not present, the looks are recalled by pressing one of Preset12's buttons. When the DMX512 control signal is being generated by a source other than Preset12, Preset12 goes offline and allows the other source to control the lights.

Multiple Preset12s may be connected together with one station acting as a main station (it holds the recorded looks) and the others remotely controlling it. Preset12 requires 7 to 18 Volts DC or 10 to 12 Volts AC (typically provided by a 10V class 2 "doorbell" transformer). An inline adapter is available to run Preset12 off of 24 VDC.

Preset12 is the size of a single-wide (North American) switch plate: 2.75 x 4.5 inches. Preset12 is unique in that the entire unit is just over a quarter inch thick, allowing the unit to be surface mounted (no back box required), or mounted using shallow boxes or rings. Preset12 may also be mounted to solid surfaces with surface wiring to the bottom connector.

Preset12 is IP68 rated. It features a polycarbonate (Lexan) faceplate with membrane switches. The electronics are cast in epoxy. Connections are via five six-inch flying leads protruding out the back (bottom wiring is optional).

SPECIFICATIONS

Connections:	Five 6” 22 gauge flying leads: V+ (white): Power supply, 7 to 18 Volts DC, or 10 to 12 Volts AC V- (black): Supply common (internally tied to DMX512 common) COM. (brown): DMX512 common (pin 1 of a DMX512 connector) DATA- (red): DMX512 data- (pin 2 of a DMX512 connector) DATA+ (orange): DMX512 data+ (pin 3 of a DMX512 connector) Five 3-position Wago Lever-Nuts included.
Bottom Connector:	Micro USB-B (although it does not carry USB signals)

Connector Pinout:

Preset12 use	USB use (for reference only)
1 - Power supply, +5 VDC	+5 VDC
2 - Data- (pin 2 of a DMX512 connector)	Data-
3 - Data+ (pin 3 of a DMX512 connector)	Data+
4 - Reserved	ID
5 - Supply and DMX512 common (pin 1 of a DMX512 connector)	GND

Input/Output Circuit:	Protected EIA-485 transceiver (60V continuous, 15KV transients) (LT1785)
Indicators:	Twelve blue preset indicator LEDs One red offline LED One yellow timed-fade-in-progress LED
User Controls:	Twelve preset buttons (membrane switches, non-tactile, 0.007” travel)
Power Input:	AC: 10 to 12 volts (A 10 volt class 2 “doorbell” transformer is ideal) DC: 7 to 18 volts 200mA per station
Enclosure:	Lexan 940A polycarbonate front and sides, Thermally conductive epoxy filled.
I/P Rating:	IP68: Dust tight and submersible to three meters. Supplied lever-nuts are not IP-68.
Mounting:	Two 0.156” ($^{5}/_{32}$”) countersunk holes on 3.281” (3 $^{9}/_{32}$”) centers for #6 screws. Two 6-32 x 7/8” oval head machine screws included.
Color:	Available in black, white, and custom colors with black on white nomenclature.
Size:	4.5”h X 2.75”w X 0.281”d (Standard North American switch plate size).

INSTALLATION

WIRING

Signal and power are connected to Preset12's flying leads. Five Wago Lever Nuts are provided for this purpose. The supplied 3-position nuts are rated for 12 to 22 gauge wires. Wires are to be stripped to 7/16" (11mm) before insertion into the nut, with the lever up. Closing the lever secures the wire connection. The three nut positions are intended to connect: 1)The Preset12 lead, 2)Signal/power "IN", 3)Signal/power "THROUGH". Preset12's color codes are:

Black:	Power supply (Negative if DC power)
White:	Power supply (Positive if DC power)
Brown:	DMX512 common (pin 1 of an XLR connector)
Red:	DMX512 Data- (pin 2 of an XLR connector)
Orange:	DMX512 Data+ (pin 3 of an XLR connector)

Wiring Notes:

Color codes for DMX512 follow the resistor color code: 1=Brown, 2=Red, 3=Orange.

If multiple Preset12 are wired to the same AC supply, all Preset12's Black wires must be connected together as must all White wires.

The Brown wire (DMX512 common) and the Black wire (Power supply "Negative") are connected internally.

POWER SUPPLY

Preset12 has been designed to operate on a standard 10 Volt class 2 "doorbell" transformer, or 7 to 18 Volts regulated DC. Power is applied to the White and Black leads; if DC, positive to White and negative to Black. Although polarity does not matter with AC, if multiple Preset12s are supplied by the same transformer winding, the Black wires of all Preset12s must be connected to the same transformer terminal.

MOUNTING

Two 6-32 x 7/8" oval head mounting screws are provided. Alternate #6 hardware may be used. Preset12's mounting holes are on 3.281" (3 $^{9}/_{32}$") centers for mounting to North American single gang electrical boxes or rings. When surface mounting (no back-box) a ½" diameter through-hole is required, centered between the mounting holes, for Preset12's flying leads.

SET UP

Prior to installation, power may be supplied to Preset12 via the bottom mounted USB connector. Smart chargers that try to communicate with the device being charged might not work, try a different charger or use a power-only cable.

Entering set up requires a power up reset of the processor. If cycling power is inconvinient, the processor may be reset by momentarily shorting out the V+ line on the USB connector. To make a shorting plug, cut any micro-USB cable and short all the wires together. To enter set up, press and hold buttons 1 and 7, momentarily insert and remove the shorting plug into the USB connector. Note that the if the USB shorting plug is not super skinny, the mounting screws may have to be loosened.

Things to set up:

Fade time

When a button is pressed, Preset12 fades from the current look to the new look in the fade time associated with that button. The factory default time is 2 seconds (for all buttons). During set up, the fade time(s) may be changed. Each button may have its own fade time from 0 to 99 seconds.

Lock status

Each button may have one of four lockout states:

1) Locked. The preset cannot be altered until unlocked.
2) Unlocked. The preset can be recorded from other presets or from DMX512.
3) Offline Recordable. The preset can be recorded from external DMX512.
4) Local Recordable. The preset can be recorded from other presets.

Main/remote

Preset12 may have one of three main/remote states:

1) Stand-alone. This is the only Preset12 on this DMX512 link. It does not attempt to communicate using alternate start codes.
2) Main station. This Preset12 holds all the looks in its memory and communicates with Remote stations using an alternate DMX512 start code.
3) Remote station. This Preset12 receives indicator status from, and transmits button presses to, the Main station.

Canceling groups

Buttons are grouped into Canceling Groups. When a button is pressed, other buttons in that group will be turned off. Factory default is all buttons are grouped together; pressing any button turns off all other buttons (only one preset may be on at a time). The opposite of all buttons grouped together is no buttons grouped together. With no buttons grouped, any combination of presets may be on; pressing a button never cancels another button. There is no limitation on which buttons may be grouped together.

Action upon loss of external DMX512

One of the attractions of Preset12 is the ability to sense the presence of an external DMX512 source and back off when one is present. Upon the loss of an external DMX512 signal, Preset12 may be configured to hold the last look generated by the external source or fade to the last look generated by Preset12 (prior to the external source taking over).

Making an “all-off” button

An option on Preset12 is the “all-off” button. Any button may be configured as all-off: Pressing an all-off button will cancel all other presets and pressing any other preset will cancel an all-off preset. Button 12 is recommended for this purpose as it also has the stop-sending-dmx function.

Factory defaults:

Fade time: 2 seconds.
Lock status: Unlocked.
Main/remote: Stand-alone.
Canceling groups: All buttons grouped together.
Loss of external DMX512 action: Fade to most recent Preset12 state.
All-off function: Preset number 12.

To Return to Factory Defaults:

Enter set up mode then press button 12 followed by button 7.
This does not erase the presets.

To Enter Set Up Mode

Power down Preset12.
Press and hold buttons 1 and 7. Press buttons firmly, they are not touch sensitive.
Power up Preset12 while holding down buttons 1 and 7.
All twelve blue LEDs will begin chasing.
Release buttons 1 and 7.

To Set Canceling Groups to Predefined Options

Enter set up mode.
Press and release button 1. LEDs will stop chasing.
Press and release the button for one of the following predefined options:

1) All presets grouped together. Buttons are ‘radio’ buttons; only one preset may be on at a time. This is the original Preset 10 functionality.
2) No presets grouped. Buttons are ‘push-on-push-off.’ Any number of presets may be on at a time. This is the original P.O.P.O. functionality.
3) Presets 1 thru 6 are grouped, presets 7 thru 12 are grouped. One left-column preset, and one right-column preset may be on at a time.
4) Presets 1 thru 6 are ungrouped, presets 7 thru 12 are grouped. Useful where 1 thru 6 are individual zones (down-lights, wall-wash, chandelier, podium…) and 7 thru 12 are complete looks (dinner, a/v presentation, clean-up, classroom…).

LEDs will begin chasing.

To Set Canceling Groups to Custom Configurations

Enter set up mode.
Press and release button 7. LEDs will stop chasing.
Press and release the first preset in the group.
Press and release other presets in the group, one by one.
Press and release the first preset in the group again. This cancels the grouping.
LEDs will begin chasing.
To set another canceling group, press and release button 7 and proceed as above.

To Set All Fade Times to One Value

Enter set up mode.
Press and release button 2. LEDs will stop chasing.
Enter a two digit fade time (use button 10 for the digit zero).
LEDs will begin chasing.

To Set Individual Fade Times

Enter set up mode.
Press and release button 8. LEDs will stop chasing
Press and release the preset button for which the fade time is to be set.
Enter the two digit fade time (use button 10 for the digit zero).
LEDs will begin chasing.
To set another fade time, press and release button 8 and proceed as above.

To Set Lock Status for All Presets

Enter set up mode.
Press and release button 3. LEDs will stop chasing.
Press and release the button for one of the following configurations:
1) All presets unlocked. Any preset can be recorded at any time.
2) All presets recordable only from external DMX512. (Locked if DMX is absent)
3) All presets recordable only from Preset12. (Locked if DMX is present)
4) All presets locked.

LEDs will begin chasing.

To Set Lock Status for Individual Presets

Enter set up mode.
Press and release button 9. LEDs will stop chasing.
Press and release the preset button for which the lock mode is to be set.
Press and release the button for one of the following configurations:
1) This preset is unlocked. This preset can be recorded at any time.
2) This preset is recordable only from external DMX512. (Locked if DMX is absent)
3) This preset is recordable only from Preset12. (Locked if DMX is present)
4) This preset is locked.

LEDs will begin chasing.
To set another lock status, press and release button 9 and proceed as above.

To Set Main/Remote

Enter set up mode.
Press and release button 6. LEDs will stop chasing.
Press and release the button for one of the following states:
1) Stand-alone. This is the only Preset12 on this DMX512 link.
2) Main. This is a Main station and will send poll messages to remotes.
3) Remote. This is a Remote station and will stay silent until polled.

LEDs will begin chasing.

To Set Loss of DMX512 Action

Enter set up mode.
Press and release button 12. LEDs will stop chasing.
Press and release the button for one of the following states:
1) Upon loss of external DMX512, hold last look.
2) Upon loss of external DMX512, fade to last look generated by Preset 12.

LEDs will begin chasing.

To Set a Button as an All-Off button

Enter set up mode.
Press and release button 1. LEDs will stop chasing.
Press and release button 12.
Press and release the button to be an all-off preset.
LEDs will begin chasing.

To Remove a Button's All-Off function

Assign the preset to a canceling group.

OPERATION

Buttons

There are twelve preset buttons. The buttons are non-tactile (no discernable 'click') switches with about a hundredth of an inch of travel; they are not touch sensitive. They must be pushed, not just touched. Each button has four functions.

Quick Press

Upon initial press, the current look is saved for future use. The preset is toggled (if on, it is turned off, if off, it is turned on full) and other buttons in its group (if any) are turned off. The new look is calculated, and a timed fade is initiated from the saved (current) look to the new look. The yellow 'fade-in-progress' LED is illuminated.

Long Press

A long press (one second) completes the fade in progress, if any. This is useful if a long fade time has been programmed but the user wants the change NOW. The yellow 'fade-in-progress' LED is extinguished.

Button Held
A held button, after two seconds, causes the intensity of the preset to dim in a five second count. The primary use is to adjust the intensity of a preset when setting up a look to be recorded into another preset.

Long Hold
Holding a button for fifteen seconds causes that preset to be recorded with the initial saved look, provided it is unlocked. Recording is confirmed by all blue LEDs illuminating for ½ second. If recording is denied (preset is locked) the display will say uh-uh (left column LEDs illuminate followed by right column LEDs).

Preset12 processes one button at a time. Pressing multiple buttons simultaneously will not hurt anything, but only the lowest number will be processed.

Indicators
An illuminated blue LED in a button indicates the associated preset is on. If a particular channel is recorded in more than one 'on' preset, the preset with the channel at the highest level prevails.

An illuminated yellow LED (below button 6) indicates a timed fade is in progress. Useful knowledge if a long fade time has been programmed, leading to a non-immediate change in levels upon a button press.

An illuminated red LED (located below button 12) indicates the Preset12 is offline; an external DMX512 source is controlling the system.

The red ‘offline’ LED will blink when Preset12 is holding the external source’s last look, until a Preset12 button is pressed.

The blue LEDs indicate certain operations:

Blue LEDs chasing: Preset12 is in set up mode.
All blue LEDs flash for ½ second: confirms preset has been recorded.
Left column of blue LEDs flash followed by right column (uh-uh): preset is locked.

Recording Presets
To record a preset, set the look then press and hold the button for the preset to be recorded (note that the look may change upon pressing the button however the look has been captured). Hold the button until all blue indicators flash (about fifteen seconds), then release the button. If, instead of all flashing, the indicators in 1 through 6 flash followed by the indicators in 7 through 12 (we call this display uh-uh), that preset is locked and may not be recorded. Recording from an external DMX512 source may only be done from a main or stand-alone staion (not from a remote station).

Stop Sending DMX512 Feature
Many DMX512 receivers will enter their stand-by mode when the DMX512 signal goes away. Preset12 supports this by stopping DMX512 transmission after sending 2 seconds of “all-levels-at-zero” if the last button pressed was button 12 (think of button 12 as the Off button). This feature is disabled by recording a non-zero level in preset number 12.

Miscellaneous
Preset12 indicates its software version at power up by flashing two blue LEDs. For example, if the software version is 2.1 Preset12 will flash LED 2 followed by flashing LED 1.

Preset12 processes one button at a time. If two buttons are pressed simultaneously, the lowest number button will be recognized.

Preset12 is shipped from the factory with preset 1 recorded as channel 1 at full, preset 2 recorded as channel 2 at full, through preset 11 recorded as channel 11 at full. Preset number 12 has all channels at zero.

WARRANTY

Products manufactured by Doug Fleenor Design carry a five year parts and labor warranty against manufacturing defects. It is the customer's responsibility to return the product to Doug Fleenor Design (at the customer's expense) for service. Doug Fleenor Design will repair the unit and return it to the customer (at Doug Fleenor Design's expense). If a trip is necessary to the customer's site to solve a problem, the expenses of the trip must be paid by the customer. Note that this warranty covers Manufacturing Defects. It does not include damage due to misuse or abuse. Most non-warranty repairs are made for a fixed $50.00 fee.

Preset12 Cheat Sheet

To Enter Set Up
Remove power.
Press firmly and hold buttons 1 and 7.
Apply power.
Release buttons. LEDs will chase to confirm set up mode.

To Set Preset12 to Factory Defaults
Press 12 then press 7. This does not erase the presets.

To Set Predefined Grouping Options (Factory default is all in the same group)
Press 1 then:
- Press 1 to set all presets to the same group (Original Preset 10 functionality).
- Press 2 to set all presets to their own group (Original P.O.P.O functionality).
- Press 3 to group presets 1-6 together and, 7-12 together (two sets of radio buttons).
- Press 4 to make 1-6 independent (each alone in its group), and 7-12 grouped together.

To Set an "ALL-OFF" Button (Factory default is button 12 is all-off)
Press 1, then press 12, then press the button to be an all-off preset.

To Set All Fade Times the Same (Factory default is two seconds)
Press 2 then enter a two digit fade time (use button 10 for zero).

To Lock/Unlock All Presets (Factory default is all unlocked)
Press 3 then:
- Press 1 to unlock all presets (any preset can be recorded at any time).
- Press 2 to lock presets if DMX512 is absent (only recordable from external DMX512 source).
- Press 3 to lock presets if DMX512 is present (only recordable from other Preset12 presets).
- Press 4 to lock all presets (presets must be unlocked here in set up before they can be altered).

To Select Main/Remote Operation (Factory default is stand-alone)
Press 6 then:
- Press 1 if this is the only Preset12 in the system (stand-alone mode).
- Press 2 if this is a Main station with Remote station(s) in the system.
- Press 3 if this is a Remote station which will remotely control the Main station.

To Create A Custom Preset Group
Press 7 then:
- Press the first preset in the group.
- Press other presets in the group.
- Press the first preset in the group again; this ends this group.

To Set the Fade Time For A Single Preset
Press 8 then:
- Press the chosen preset.
- Enter a two digit fade time (use button 10 for zero).

To Lock/Unlock a Single Preset
Press 9 then:
- Press the chosen preset, then:
  - Press 1 to unlock this preset (this preset can be recorded at any time).
  - Press 2 to lock this preset if DMX512 is absent (only recordable from external DMX512 source).
  - Press 3 to lock this preset if DMX512 is present (only recordable from other Preset12 presets).
  - Press 4 to lock this preset (preset must be unlocked here, in set up, before it can be altered).

To Select Loss-Of-DMX behavior (Factory default is fade to Preset12's last look)
Press 12 then:
- Press 1 to hold the external DMX512 look upon loss of the external source.
- Press 2 to fade to the most recent Preset12 look upon loss of the external DMX512 source.

To Exit Set Up
Cycle power or Press 12 then Press 12 again.