

# SM-240 DMX Controller

## User Manual

### Main Features

1. 240 control channel for 12 projectors each up to 20 channels
2. DMX 2401 with joystick
3. DMX 2402 with Pan / Tilt Wheels
4. Fine Pan / Tilt movements possible via Fine-button
5. 6 chasers with up to 240 scenes can be programmed
6. 30 banks each up to 8 scenes (240 scenes)
7. Copy function for the scenes, programs and chasers
8. Blackout function
9. Sound control via built-in microphone or Audio input socket
10. 19 inch mounting dimension (3 units)

### Front Panel

### Rear Panel

1. SCANNER SELECT BUTTONS choose desired projector
2. SCANNER INDICATOR LEDS
3. SCENE SELECT BUTTONS choose desired scene
4. CHANNEL FADERS for adjusting DMX values. Ch 1-8 can be adjusted directly after pressing the respective scanner select button. Ch 9-16 can be adjusted after pressing the page select button
5. FOG MACHINE BUTTON to activate the fog machine
6. FOG MACHINE HEATING INDICATOR
7. FOG MACHINE READY INDICATOR
8. PAGE A INDICATOR LED
9. PAGE B INDICATOR LED
10. PAGE SELECT BUTTON in manual mode, you press this button to control the Ch 1-8 (page A) or Ch 9-16 (page B) or both of them by the faders
11. PROGRAM BUTTON
12. MUSIC/BANK COPY BUTTON when you press this button, the controller is in audio mode (operated with sound control)
13. DISPLAY WINDOW
14. MODE INDICATOR LEDS (music/manual/auto)
15. BANK UP BUTTON
16. BANK DOWN BUTTON
17. TAP DISPLAY BUTTON
18. BLACKOUT BUTTON to close the light output of all connected projectors via the shutter
19. MIDI / REC BUTTON
20. ASSIGN LED
21. AUTO / DEL BUTTON
22. CHASER BUTTONS (chaser 1 – chaser 6)
23. SPEED FADER
24. FADE TIME FADER
25. FINE BUTTON for moving the joystick with the smallest increment
26. PILE UP / CHASE LED
27. JOYSTICK
  - 27A PAN WHEEL
  - 27B TILT WHEEL
28. MODE BUTTON
29. AUDIO INPUT SOCKET
30. MIDI INPUT SOCKET
31. DMX POLARITY SELECTOR
32. DMX OUTPUT SOCKET
33. DMX INPUT SOCKET
34. FOG MACHINE SOCKET
35. DC INPUT SOCKET

## 36. POWER ON / OFF SWITCH

### Setup

#### 1. Installation

Install the device on a plane surface or install it in a rack



Rack-installation: This device is built for 19" rack (483 mm). The rack you use should be a double-door-rack where you can open the front panel and the rear panel. The rack should be provided with a cooling fan. When mounting the device into the rack, please make sure that there is enough space around the device so that the hot air can be passed on. Steady overheating will damage your device. You can fix the controller with four screws M6 in the rack.

Connect the connection cable of the power-unit with the DC IN-socket. Plug the power unit into your outlet.

#### 2. Sound-control

The sound-control works via built-in microphone or via the Line In socket. Connect the sound-signal from the mixer (e.g. Master 2) with the RCA-socket on the rear panel (input sensitivity 0.1 V – 1 V)

#### 3. DMX-512 Connection with the projectors

	<b>The wires must not come into contact with each other, otherwise the fixtures will not work at all, or will not work properly.</b>	
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Only use a stereo shielded cable and 3-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

#### Occupation of the XLR-connection:

You can adjust the XLR polarity via the DMX POLARITY selector.

Building a serial DMX-chain:

Connect the DMX-output of the device with the DMX-input of the nearest dimmer pack. Always connect one output with the input of the next fixture until all fixtures are connected.

Caution: At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120 ohm resistor between Signal (-) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

Projector addressing

Please note that the DMX Operator assigns the DMX-starting addresses every 16 steps. You have to address every projector to the respective starting address. Otherwise, the channel assignment will not be correct. All projectors with the same starting address work synchronically.

Projector	Starting Address	Projector	Starting Address	Projector	Starting Address
Projector	1	Projector 5	81	Projector 9	161
Projector	21	Projector 6	101	Projector 10	181
Projector	41	Projector 7	121	Projector 11	201
Projector	61	Projector 8	141	Projector 12	221

#### 4. Setting Channel

This device can control 12 scanners each up to 20 channels.

The first 8 channels of each scanner can be controlled via the 8 faders directly. The second 8 channels can be controlled via the 8 faders and the Page select button (with Page B LED lit).

If the scanner has more than 16 channels, you need to set the channels as below:

- 1) Press Program until the LED blinks.
- 2) Press Fine + Mode buttons until Assign LED be lit.
- 3) Select a scanner by pressing one of the scanner buttons.
- 4) Adjust the Speed fader to select the channel of the scanner. E.g. Channel 9 or 10.
- 5) Adjust the Fade Time fader to select the respective control channel of the controller. E.g. X or Y.
- 6) To set channel 19 and 20, press Page Select button, the Page B LED will be lit. Then repeat step 4 and 5.

E.g. Set Speed fader to channel 9. Set Fade Time fader to X.

This means the 9<sup>th</sup> channel of the scanner will be controlled by the X (pan) of the Joystick or the Pan wheel.

E.g. Set Speed fader to channel 9. Set fade Time fader to 1. Set Speed fader to channel 1. Set Fade Time fader to X.

This means the 9<sup>th</sup> channel of the scanner will be controlled by the 1<sup>st</sup> fader of the controller when Page A LED is lit, and the 1<sup>st</sup> channel of the scanner will be controlled by the X (pan) of the Joystick or the Pan wheel.

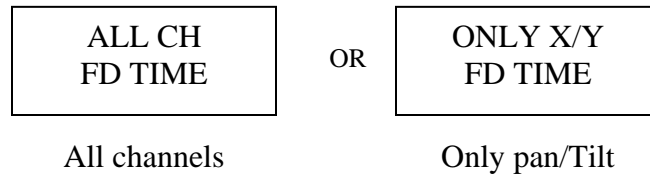
### Assigning the Fade Time

With this function, you can determine if the Fade Time should be assigned only for the Pan/Tilt movement or for all DMX-channels. This makes especially sense when the mirror or Moving-Head movement should be carried out slowly, but the gobos and colors should be changed quickly.

Turn the device off.

Press and hold the Mode and Tap/Display-button at the same time.

Turn the device on again. Press the Tap/Display-button in order to switch between the two modes.



Press the Mode and Tap/Display-button at the same time in order to memorize your settings. All LEDs on the panel will flash indicating your setting is saved.

### Operation

1. Manual-mode: Call up scanners manually  
To select the manual mode, press Auto/Del until Manual LED is lit

In Manual-mode (Program-LED off), you can call up the connected scanners manually and control them via the channel faders. Please note that adjusted settings cannot be memorized.

Select the desired scanner via the respective scanner select button. Adjust the desired function via the channel faders.

#### Check a Bank / Scene

Select the bank you want to check via the chaser buttons. Press Tap/Display button, the display will show the steps in the chaser. Press Bank buttons to see each scene.

Page Select-button: Via the Page Select-button, you can adjust the channel faders from CH 1-8 (Page A led lit) to CH 9-16 (Page B LED lit) or both of them (Page A and B LED lit together).

Display-button: Via the Display-button, you can switch the display of the faderway from DMX-value (0-255) to percent (0-100%).

## 2. Programming

A program (bank) is a sequence of different scenes (steps) that will be called up one after another. With this DMX Operator, you can program up to 30 different programs (banks) with up to 8 scenes (steps) each.

- 2.1 Press and hold the Program-button for about 2 seconds to enter the programming mode. The Program-LED will flash in display.  
Select the desired scanner via the scanner select buttons.  
Adjust the desired settings (the value will be shown in the display) via the respective channel faders.  
Press MIDI/REC button to prepare saving.  
Select the desired program (bank 01-30) you will save via the Bank-buttons.  
Press one of the Scene-buttons in order to save the data. All LEDs on the panel will be flashing indicating the data is saved.  
Select the next scanner via the scanner select buttons and repeat the steps above until the program is finished or the maximum number of steps – 8 – has been reached.  
Press and hold the Program-button in order to exit programming mode.
- 2.2 Running a program  
Press the Bank-buttons and select the desired program.  
Press the Auto-button, and Auto LED will be lit.  
Adjust the program speed via the Speed-Fader and the repetition rate via the Fade Time-Fader.  
As an alternative, you can adjust the program speed by tapping the Tap button twice. The time interval between the two taps corresponds to the program speed (up to 10 minutes).
- 2.3 Checking a program  
Press and hold the Program-button and select the desired program via the Bank-buttons.  
Check every scene individually by pressing the respective Scene-button.
- 2.4 Editing a program  
When programs have to be edited, it is necessary to modify a scene manually.  
Press and hold the Program-button to enter programming mode.  
Select the program to be edited via the Bank-buttons.  
Select the desired scanner via scanner buttons.  
Adjust the desired settings via the respective channel faders.  
Press MIDI/REC button to prepare saving.  
Select the desired scene via the scene button to save.
- 2.5 Copying a program  
Press and hold the Program-button to enter programming mode.  
Select the bank to be copied via bank buttons.  
Press the MIDI/REC-button to prepare copying.  
Select the bank where you want to copy the bank to via bank buttons.  
Press the Music/Bank Copy-button to copy the bank. All LEDs on the panel will flash.

## 3. Chaser

A chaser is a sequence of different programs (banks) that will be called up one after another. With the DMX Operator, you can program up to 6 different chasers each up to 240 steps.

- 3.1 Programming a chaser  
Press and hold the Program-button to enter programming mode.  
Select the chaser to be programmed via the Chaser-buttons.  
Select the desired program via the Bank-buttons.  
Select the desired scene via the Scene-buttons.  
Press the MIDI/REC-button.  
Program and hold the Program-button in order to save the chaser.
- 3.2 Running a chaser  
Press the respective Chaser-button and press the Auto-button. You can adjust the chaser speed by tapping the Tap/Display-button twice. The time interval between the 2 taps corresponds to the chaser speed (up to 10 minutes). Press the REC-button and select the desired record via the projector select buttons.
- 3.3 Checking a chaser  
Press and hold the Program-button and select the desired chaser via the Chaser-buttons. Press the Display-button in order to switch the display to step. Check every scene individually by pressing the respective Bank-button.
- 3.4 Editing a chaser

#### Copying a bank into a chaser

Press and hold the Program-button to enter programming mode.

Select the desired chaser via chaser-buttons. The respective LED will be lit.

Select the bank in which the scene will be copied via bank buttons.

Select the scene you want to copy via scene buttons.

Press MIDI/REC button to copy the scene. All LEDs on the panel will flash.

#### Copying a scene into a chaser

Press and hold the Program button to enter programming mode.

Select the desired chaser via chaser-buttons. The respective LED will be lit.

Select the bank in which the scene will be copied via bank buttons.

Select the scene you want to copy via scene buttons.

Press MIDI/REC button to copy the scene. All LEDs on the panel will flash.

#### Inserting a scene in a chaser

Press and hold the Program button to enter programming mode.

Select the chaser in which a scene will be inserted via chaser-buttons. The respective LED will be lit.

Press the Tap/Display-button in order to switch the display to step.

Select the scene where a new scene is to be inserted via bank buttons. Now the display will show the scene. E.g. If you want to insert a scene between scene 5 and 6, press the Bank Up/Down button so that the display show STEP05.

Press MIDI/REC to prepare inserting. Now the display will show the next scene.

Select the bank where the scene to be inserted via bank buttons.

Select the scene to be inserted via scene buttons.

Press MIDI/REC button to insert the scene. All LEDs on the panel will flash.

#### Deleting a scene in a chaser

Press and hold the Program button to enter programming mode.

Select the chaser in which a scene will be deleted via chaser-buttons.

Press tap/Display-button in order to switch the display to step.

Select the scene to be deleted via bank buttons.

Press Auto/Del button to delete the scene. All LEDs on the panel will flash.

#### 3.5 Delete a chaser

Press and hold the Program button to enter programming mode.

Select the chaser to be deleted via chaser-buttons.

Press and hold Auto/Del button and the respective chaser button to delete the chaser. All LEDs on the panel will flash.

#### 3.6 Delete all chasers

##### **Caution:**

When you select this function: all programmed chasers will irrevocably be lost. The individual scenes and programs are still maintained.

Switch off the device.

Press and hold the Bank Down-button and the Del-button while switching on the device. All LEDs on the panel will flash.

## 4. Scene (step)

### 4.1 Insert a scene

Press and hold the program button to enter programming mode.

Select the desired chaser via chaser-buttons. The respective LED will be lit.

Press the Display-button in order to switch the display to step. The display will show the scenes (steps) in this chaser.

Select the scene where the scene will be inserted via bank buttons. E.g. If you want to insert a scene between scene 5 and scene 6, press Bank Up or Bank Down buttons so that the display will show STEP05.

Press MIDI/REC button to prepare inserting. Now the display will show the next step. E.g. STEP06.

Select the bank where the scene will be inserted via bank buttons.

- Select the scene you want to copy via scene buttons.  
Press MIDI/REC button to insert. All LEDs on the panel will flash.
- 4.2 Copy a scene  
Press and hold the Program-button to enter programming mode.  
Select the bank where the scene to be copied via bank buttons.  
Select the scene to be copied by pressing the respective Scene-button.  
Press the MIDI/REC-button to prepare copying.  
Select the bank where you want to copy the scene to via bank buttons.  
Press the desired Scene-button. All LEDs on the panel will flash.
- 4.3 Delete a scene  
Press and hold the Program button to enter programming mode.  
Select the bank in which a scene will be deleted via bank-buttons.  
Press and hold the Auto/Del-button.  
Press the scene button corresponding to the scene to be deleted.  
Now you have deleted the scene. All LEDs on the panel will flash.  
All 240 DMX channels of the deleted scene will be set to 0.
- 4.4 Delete all scenes  
**Caution:** When you select this function, all programmed scenes will be irrevocably lost!
- Press and hold the Program-button and the Bank Down-button while disconnecting the device from the mains. Connect the device to the mains again.
5. Sound-control  
Pressing the Music/Bank Copy-button, the Music LED will be lit. When the device receives a music-signal, it will work in sound-control mode.  
Select the bank to be sound-controlled via bank buttons.  
You may adjust the fade time by the Fader time fader.  
Press a chaser button, the chaser will be sound-controlled. You may press more than one chaser to run them one by one.  
You may adjust the duration time via Fade-time fader.
6. Auto mode  
To select the Auto mode, press Auto/Del button until Auto LED is lit.  
If no chaser buttons are pressed, it will run bank automatically. Select the desired bank via bank buttons.  
Press a chaser button, it will run the chaser automatically. You may press more than one chaser to run them one by one.  
You may adjust the interval time between steps via Speed fader, and adjust the duration time via Fade-time fader.
7. MIDI-operation  
Press and hold MIDI/REC-button for about 2 seconds.  
Select the respective 1-20 MIDI-channel via the Bank-buttons. Press the MIDI/REC-button again in order to save your settings and exit.
8. Data transmission  
It is possible to transmit the settings and programs from one device to another.  
Connect the DMX-output of the pre-programmed device with the DMX-input of another device (un-programmed).
- Send data  
Turn the first (programmed) device off.  
Press and hold the Scanner Select buttons 2 and 3, and Scene-button 1 together.  
Turn the device on again. The display shows TRANSMIT; it is ready to send data.
- Receive data  
Turn the second device (unprogrammed) off.  
Press and hold the Scanner Select buttons 8 and 9, and Select-button 2 together.  
Turn the device on again. The display shows RECEIVE; it is ready to receive data.

Transmit data

When the both devices are ready, press and hold the Scene-buttons 7 and 8 at the same time.

It will begin to transmit data between the two devices.

After the transmission is over, the devices return to manual mode.

### Cleaning and Maintenance



#### **DANGER TO LIFE!**

Disconnect from mains before starting maintenance operation!



We recommend a frequent cleaning of the device. Please use a soft lint-free and moistened cloth. Never use alcohol or solvents!

Should you need any spare parts, please use genuine parts.

Should you have further questions, please contact your dealer.

### Technical Specifications

Power supply:	230V AC, 50Hz~
	Via 9-12V DC, 300mA min. Adaptor in the package
Power consumption:	4W
Number of control channels:	240
Sound control:	Via built-in microphone
DMX512 output	3pin XLR connector with polarity selector
Free chasers:	6x240 scenes
Dimension:	482x132x80mm (19 in. x 3U)
Minimum mounting depth:	170mm
Weight:	2.5kgs

Please note: Every information is subject to change without prior notice.