OSO 240B MKII operator

DMX controller

User manual

Any information and illustrations shown in this user manual are subject to change without further notice.

User manual version: 2.0 Creation date + author initials: 14-01-2014 RV Revision date + author initials: 14-01-2014 RV

Safety instructions

WARNING!

Always keep this device away from moisture and rain! Hazardous electrical shocks may occur!

WARNING!

Only connect this device to a matching power outlet. This device is intended to work on a specified AC currency. Connecting this device to power outlets with other voltages may result in permanent damage and possible hazardous situations, such as fire or electrical shocks!

WARNING!

Be careful with every operation of this device. Touching live wires inside and outside the unit may cause hazardous electrical shocks!

This unit must be operated by, or under the supervision of an adult. This device is not suitable for children.

Every person involved with the installation, operation and maintenance of this device has to:
- Be qualified
- Follow the instructions of this manual

- Make sure there is no damage caused by transport. If the device seems damaged from the outside, do not use it and contact your dealer for more information and consultation.
- To make sure the device maintains in perfect condition and for safe operation, it is necessary for the user to follow the instructions and warning notes of this user manual.
- Damage caused by improper use or modifications to the device are not covered by warranty.
- This device does not have any user-serviceable parts inside. Servicing of this device needs to be done by qualified technicians.

Important notes regarding safety and health:
- Never let the power cord come in contact with other cables. Handle the power cord and all connectors with the mains with caution.
- Never remove any warning or informative labels from the unit
- The ground contact always needs to be connected. Do not cover or remove the ground contact.
- Never leave cables lying around
- Do not open the device and do not modify any hard- or software of this unit.
- Do not insert this object into air vents.
- Do not connect this device to a dimmerpack.
- Do not switch the system on and off frequently as this will reduce the lifespan of the device.
- Do not drive the inputs of the fixture with a signal larger than required to work at full performance.
- Only use this device indoor, avoid contact with water, moist or other liquids. Do not place items filled with liquids on top of the unit.

- Avoid nearby flames or heat sources, do not place this device near flammable liquids, gas or flammable items.
- Always disconnect the device when it is not in use for a longer period or time, when servicing is needed or when the device needs cleaning.
- Only handle the power cord by its connectors. Never pull the cable to remove a connector from its socket, as this could lead to damage and electrical shocks.
- Always operate this device with a stable AC current.
- Always operate this device with the AC ground wire connected to the electrical system's ground.
- Never use other types of cables than specified in the manual, do not use defective or bad functioning cables. Contact your dealer when the included or required cables do not work properly with this device.
- When the device has been exposed to large temperature differences (for example, transport from outdoor to indoor), do not connect the device immediately. Do not activate the unit until it has reached room temperature, as moist might build up inside the unit, which may cause shortcuts and/or electrical shocks.

Guidelines and types of use:
- This device is intended to be used by professionals on stage, in theaters, clubs and other equal venues.
- This device is not suitable for children and always needs to be operated by an adult.
- Only use the device when the environment is suitable and will not cause any damage. Do not use the product in moist or dusty environments, or where long-term damage may occur such as:
    - indoor swimming pools where chlorine is used.
    - Beaches, where sand and salt are present.
    - Outdoor, without roof protection
    - Indoor areas where intense heat sources are present or where the temperature exceeds levels which are comfortable for humans.
- Only use the included power adapter and only connect the device to a suitable power outlet with the correct output voltage. Connecting the device to a power outlet with the wrong type of voltage or using the product with a wrong type of power supply may cause permanent damage to the device.
- Avoid shocks and collision during use and transport. Do not transport the device while in use. Avoid brute force during the installation and operation of this device.
- Familiarize yourself with the functions of the device before use. Do not allow operation of the device by unskilled or unqualified people.
- Use of the device in other ways than described in this user manual may cause damage and injury. Ayra does not take responsibility for any damage or injury caused by improper use.

Storage and transport:
- This device is intended for mobile use. When transported, use the original packaging of the product, or a fitting flightcase, preferably filled with foam.
- This device is not intended for permanent use. Operation breaks will ensure that the lifespan of the device remains unchanged.
- If the device is not used for a longer period of time, disconnect it from its power source and store it in its original packaging, or in a fitting flightcase.
- Store the device indoor, dry and do not expose the device to extreme temperature differences.

Housing:
- Inspect the housing of the device frequently. Severe dents, cracks and missing screws should be avoided at all costs. Do not use the device when the housing is not in optimal condition. Contact your dealer or a skilled technician when in doubt about the state of the device
- Check the fixture and screws for corrosion. Corrosion should not be present on the fixture. Contact your dealer or a skilled technician when corrosion is found on the fixture
- Every power or signal chassis/connector should be mounted tightly. Do not use the device when connectors are loose.
- Do not use the power cord when the cores are visible. Contact your dealer for a replacement if needed.
- Avoid the buildup of dust and dirt. Clean the exterior of the fixture every month with a dry or damp cloth. When using the device intensively, the cleaning frequency needs to be increased.

Fuses:
- The main fuse of this device is to be found on the rear of the device. In most cases, directly next to the power inlet.
- Only replace a fuse for a new one with the same type and rating! Do not use a fuse with a higher or lower rating.
- Do not bridge the fuse with electrical wires, aluminum foil, as the fuse is used for protection against electrical shocks and short circuit.
- Always mount the fuse cover back to the fuse compartment.

Box contents

Box contents
1x OSO 240B MKII console
1x power supply
1x USB light

Unit and accessory inspection
- Always check the unit, box and accessories for possible damage before use. If you suspect that something is wrong with the unit, do not connect it to a power source! When you suspect that your unit is broken or damaged, contact your local dealer or a certified technician to inspect the unit.
- If any of the parts that should be included is missing, contact your local dealer for help.
- If the box appears severely damaged, soaked with liquid or ripped apart, do not unpack the product and contact your local dealer for help and more information.
- Always preserve the original box and packaging materials as long as the warranty period is active. This way, the device can be transported for repair and inspection safely.

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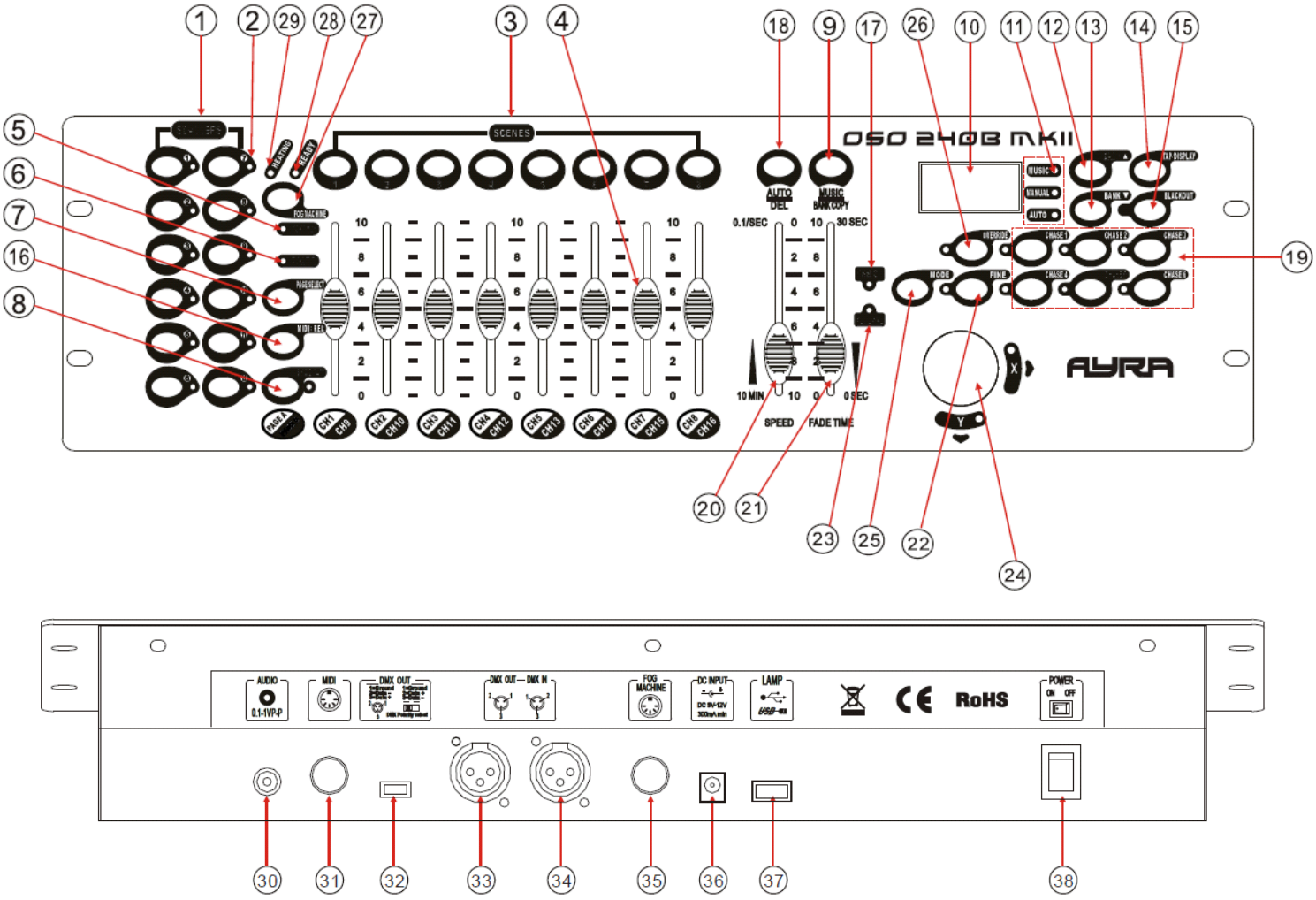
Device overview



1. **Scanner select button:** Select the fixture you wish to operate with the faders
2. **Scanner indicator LEDs:** Indicates if a scanner is active or not
3. **Scene select buttons:** 8 scene buttons, representing storing locations for sceens
4. **Channel faders:** Sliders to adjust the DMX-values of each channel. 8 faders
5. **Page A indicator LED:** Indicates channel 1-8 on page A
6. **Page B indicator LED:** Indicates channel 9-16 on page B
7. **Page select button:** Toggle between page A and B to change channels 1-8 and 9-16
8. **Program button:** used to enter the programming mode
9. **Music/bank copy button:** Used to activate the music mode. Used to copy values and scenes while programming
10. **LCD display window:** displays values such as chase- and scenenumbers, and/or speed values and DMX values
11. **Mode indicator LEDs:** operating mode status LED (music, manual, auto)
12. **Bank up button:** Scroll up in the bank selection
13. **Bank down button:** Scroll down in the bank selection
14. **Tap display button:** tap-sync during playback, toggles DMX-values to % while programming
15. **Blackout button:** Blocks all output and sets all values to 0
16. **MIDI/Rec button:** activates external MIDI control to trigger scenes and banks
17. **Assign LED:** indicates that the controller is in Channel assign mode

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18. **Auto/Del button:** used to activate the auto mode, used as delete button while programming
19. **Chase buttons:** used to activate or de-activate chase 1-6
20. **Speed fader:** adjust the hold time of a scene or step in a chase
21. **Fade time fader:** adjust the speed of valuechange between two scenes in a chase
22. **Fine button:** Activates 16-bit movement if applicable, for X and Y channels, for fine movement optimalisation
23. **Reverse LED:** indicates reverse channel function (to invert channel values, for pan and/or tilt)
24. **Pan/Tilt joystick:** Used to change the values of selected X/Y channels on one or several fixtures
25. **Mode button**
26. **Override button**
27. **Fog machine button:** Activates the fog machine **(NOTE: not all fog machines work with this function)**
28. **Fog machine ready indicator**
29. **Fog machine heating indicator**
30. **Audio input jack:** direct audio input from a line signal audio source, connected with mono RCA
31. **MIDI input port:** 5-pin DIN connector for external MIDI signals
32. **DMX polarity switch:** switches the polarity of your XLR 3-pin connector (for Martin protocol)
33. **DMX output connector:** 3-pin XLR connector
34. **DMX input connector:** For File Dump data exchange only, using a 3-pin XLR connector
35. **Fog machine input:** 5-pin DIN connector for fog machines **(NOTE: not all fog machines work with this function)**
36. **DC input:** Connector for the included power supply
37. **USB lamp socket:** USB connector, to power the included LED gooseneck light. Not suitable for any kinds of data transmission!
38. **ON/OFF switch:** switches the power on or off.

Common terms

Blackout: A state where all DMX values are set to 0, causing all output to be blocked from your lighting fixtures. The functions on your controller will be still operating

Fixture: Also called scanner, a term which describes a lighting device, such as a movinghead, scanner, lighting effect or LED-projector.

DMX-512: An industry standard for digital communication between lighting controllers and lighting fixtures, used in the entertainment sector.

Programs: also called chases, a term which indicates a series of scenes or steps, put together in order, continuously looping.

Scene: A static lighting pattern, saved as a preset

Sliders: Also known as faders, in this case describing knobs which move in a vertical direction, used to determine certain values of channels

Scanner: See: fixture. Used to describe a fixture with pan and tilt functionality (movement)

MIDI: A music industry standard for data-communication between musical devices, such as keyboards. In this case used for triggering scenes and banks

Stand alone: Refers to the ability of a fixture to operate without any controlling device connected. In most cases, an automatic program or music activated show must be selected.

Fade time: Determines the time it takes for one value to change to another value in a chase

Speed: Determines the time it takes for one step in a chase, to go to another step in a chase

Shutter: A mechanical device in a lighting fixture, capable of blocking the output of a fixture while leaving the light source on

Patching: The process of assigning several DMX-channels to one fader for easy operation.

Setting up the system

Place the unit on a solid surface, or mount it in a 19 inch flightcase/rack. Connect the included DC power supply at the rear of the panel and plug it into a suitable wall outlet or power distribution box.
Plug in the DMX-cables from the controller to all your fixtures and daisy-chain every fixture you wish to connect.
Make sure that every fixture has the right DMX-address for optimal programming benefits. The device has 12 fixtures, with 16 channels each. Thus, if you wish to address every fixture to a fixture button, you need to select the following addresses:

Fixture	DMX-address	Dipswitch settings
1	1	1
2	17	1 , 5
3	33	1 , 6
4	49	1 ,5 ,6
5	65	1 , 7
6	81	1 , 5 , 7
7	97	1 , 6 , 7
8	113	1 , 5 , 6 ,7
9	129	1 , 8
10	145	1 , 5 , 8
11	161	1 , 6 , 8
12	177	1 ,5 ,6 , 8

NOTE: The last column describes the dipswitches you would have to turn on to select the right DMX address. Some fixtures require DMX dipswitch 10 to be turned ON, to activate the DMX mode.

NOTE: For DMX fixtures with a LED display for the DMX addressing, you don't need to use the DMX dipswitch settings.

Joystick assignment

- Press and hold the Program button until the corresponding LED blinks
- Press and hold Fine & Mode buttons together (2 times) to access the Channel Assignment mode. The Assign LED will light up.
- Press a Scanner number, for the fixture you wish to apply the joystick to (pan and tilt)
- Use the Bank UP/DOWN buttons to select Pan and Tilt wheel and the Pan/Tilt LED will turn on.
- Press Tap/Display button to switch pages, if necessary.
- Press and hold MODE button, then press the Scene button to select the DMX channel you wish to apply pan and tilt for.
- Press and hold Fine and Mode buttons to exit the assignment mode.

NOTE: The joystick can be reassigned to an output on another DMX channel. Press Auto/Del and Mode buttons at the same time to delete the assignment

NOTE: You can re-assign the DMX channel to all controller fader channels

Reverse review
- Press and hold Fine & Mode buttons together to access the wheel assignment mode
- Press a Scanner button to select a scanner
- Press and hold Fine & Mode buttons (2 times) to exit the assignment mode

Joystick reverse
- Press and hold Fine & Mode buttons together to access the wheel assignment mode
- Press a Scanner button to select a scanner
- Press and hold Fine & Mode buttons to exit the assignment mode

Copy scanner
It is possible to copy the programming values of one scanner to another scanner. This way, it makes it easier to create synchronized lightshows, without having to add the separate values each time.
- Press and hold Scanner button 1
- Press Scanner button 2
- Release Scanner button 1
- Release scanner button 2
- All Scanner LED indicators will flash, indicating that the copy was successful.

Reverse channel output
It is possible to reverse certain channel values. This way, you are able to invert certain pan and tilt values, without having to invert the values manually.
- Press and hold the Program button until the LED blinks
- Press and hold Fine & Mode buttons together to access the channel assignment mode
- Press the scanner button of which you wish to invert a channel
- Use the Bank Up/Down buttons to select pan and tilt
- Press the Tap/Display button to switch pages, if needed
- Press and hold the Mode button, then press the corresponding Scene button to select the DMX channel of which you wish to invert the channel
- Press and hold the Fine & Mode buttons 2 times to exit

Fade time assign
It is possible that you want to change the Fade Time behavior of the controller. This way, you are able to only affect the pan and tilt channels of your fixtures, instead of all channels. This way, color changes, gobo changes and macro's will move very fast and direct, while your movements will go smoother.
- Turn off the controller
- Hold the Mode and Tap Display buttons simultaneously
- Turn on the controller
- Press the Tap Display button to toggle between two modes (ALL CH / ONLY X/Y)
- Press Mode and Tap Display buttons to save the settings. All LEDs will blink to confirm the change.

Manual operation
The manual mode provides direct access to all scanners. This way, you are able to move and change attributes by using the channel faders and/or joystick.
- Press the Auto Del button repeatedly until the Manual LED is lit
- Select a Scanner button
- Move faders and/or joystick as you wish
- Select Page A (1-8) or Page B (9-16) to change values for all channels in a fixture
- Tap Display button: Change the values on the display between 0-255 (DMX) and 0-100 (%)

NOTE: all changes made in manual mode are temporary and will not be recorded.

Review a scene or chase
It is possible to load a scene or step (from a chase) to use as example for your lighting setup in live operation

mode. For example, if you already have a scene with correct positioning of pan and tilt values (for example in a fan), you can recall a scene to load these values. All you have to do is apply correct gobo and color settings.

Recall a scene
- Select one of the 30 banks by using the Bank UP/DOWN buttons
- Select a scene (1-8)
- load the scene and apply changes

Reload a chase
- Press any of the 6 Chase buttons
- Press the Tap Display button to view the step number on the display
- Press the Bank UP/DOWN buttons to review all scenes in the chase

Creating a scene
A scene is a static lighting state, stored into a location for later recall. Scenes are stored in banks, up to 8 scene can be stored in a bank. So in total, there are 240 scene storing locations available.

- Press the Program button until the LED blinks
- Position Speed and Fade Time faders all the way down
- Select the Scanners you wish to include in this scene
- compose a certain look by changing channel values
- Tap the MIDI/Rec button
- choose a bank (01-30) for storage
- Tap one of the Scene buttons (1-8) to store the scene
- Repeat steps as much as necessary (select scanners – store scene)
- to exit the Program mode, hold the Program button.

NOTE: Deselect the Blackout button if it's lit.
NOTE: Access channel 9-16 on a fixture with Page A/B buttons
NOTE: There are only 8 scenes available in every bank
NOTE: All LEDs will flash as a confirmation when a scene is stored successfully. After this, the LED display will show the scene number and bank which is used now.
TIP: Press the Fine button when you are programming, so values will only increase or decrease by '1'.

SHORTCUT: [Program][Scanners][Faders/Wheels][Bank][Scene][Program]

Running a program
NOTE: A 'Program' in this manual is described as a series of scenes inside a bank, placed after each other in a continuous loop. It is comparable to a Chase, but has a logical order and only consists of the scenes that are stored in that bank.

- Use the Bank UP/DOWN buttons to change Program banks
- Press the Auto/Del button until the Auto LED turns on
- Adjust the Program speed with the Speed fader
- Adjust the loop rate with the Fade Time fader
- Alternitavely, you are able to tap the Tap Display button twice. The time between these two determine the speed.

Review a program
- Press and hold the Program button until the LED blinks
- Use the Bank UP/DOWN buttons to select the Program bank to review
- Press Scene buttons to review each scene individually

Editing a program bank
- Press and hold the Program button until the LED blinks

- Use the Bank UP/DOWN buttons to change Program banks
- Select the desired fixture with the Scanners button
- Adjust and change fixture values with the faders and joystick
- Press the MIDI/REC button to prepare the save
- Select the desired Scene button to save the scene to

Copy a program bank

- Press and hold the Program button until the LED blinks
- Use Bank UP/DOWN buttons to change Program banks
- Press the MIDI/REC button to prepare the copy
- Use the Bank UP/DOWN buttons to select the destination Program bank
- Press the Music Bank Copy button to execute the copy. All LEDs will blink
- All 8 scenes of the Program bank are copied to the new location.

NOTE: This will override any saved scenes in the bank you selected!

Create a chase

NOTE: A chase consists of multiple scenes, arranged in a chosen order by the programmer. Up to 240 scenes can be added to a single chase.
NOTE: A step in a chase consists of a scene, stored in the Program Banks

- Press the Program button until the LED blinks
- Press the chase (1-6) you wish to select
- Change the Bank if necessary, to locate a scene
- Select the scene you wish to insert
- Tap the MIDI/REC button to store the scene to this step
- Repeat the steps above to add additional steps (change bank – tap MIDI/REC)
- Press and hold the Program button to save the chase

Running a chase

- Press the Chase button, then press the Auto/Del button
- Adjust the Speed and Fade Time by using the corresponding faders (or use Tap Sync)

Review a chase

- Press and hold the Program button until the LED is lit
- Select the desired Chase button
- Press the Tap Display button to switch the LCD button to steps
- Review each scene/step individually by using the Bank UP/DOWN buttons

Edit a chase

Copy bank into chase

- Press and hold the Program button to enter programming mode
- Press the desired Chase button
- Select the Bank to be copied, using the Bank UP/DOWN buttons
- Press the MUSIC/BANK Copy button to prepare copy
- Press MIDI/REC to copy the bank. All LEDs will blink

Insert scene into chase

- Press and hold the Program button to enter programming mode
- Press the desired Chase button
- Press the Tap Display to switch the LCD to steps view
- Use the Bank UP/DOWN buttons to navigate steps and to locate the insert point of the new scene. The display will read the step number
- Press MIDI/REC button to prepare the insert
- Use the Bank UP/DOWN button to locate the scene
- Press the Scene button that corresponds with the scene to be inserted

- Press MIDI/REC button to insert the scene. All LEDs will blink

Delete a scene in a chase
- Press and hold the Program button to enter programming mode
- Press the desired Chase button
- Press the Tap Display button to switch the LCD display to steps
- Select the Scene/Step to be deleted by using the Bank UP/DOWN buttons
- Press Auto/Del button to delete the step/scene. All LEDs will blink

Delete a chase
- Press and hold the Program button to enter programming mode
- Press the Chase button (1-6) to be deleted
- Press and hold Auto/Del button and the respective Chase button to delete the chase. All LEDs will blink.

Delete all chases
NOTE: This action will result in the loss of all saved chases! The individual scenes and step memory will be saved.
- Turn off the controller
- Press and hold the Bank DOWN button and the Auto Del button while turning on the controller
- All LEDs will blink

Scene programming (steps)
Insert a scene
- Press and hold the Program button to enter programming mode
- Press the desired Chase button
- Press the Tap Display button to switch the LCD display to steps view
- Use the Bank UP/DOWN buttons to navigate steps and locate the insert point of the new scene. The display will read the step number
- Press the MIDI/REC button to prepare the insert
- Use the Bank UP/DOWN buttons locate the Scene
- Press the Scene button that corresponds to the scene to be inserted
- Press MIDI/REC button to insert the scene. All LEDs will blink.

NOTE: Scenes will be inserted after the selected step.

Copy a scene
- Press and hold the Program button to enter programming mode
- Select the bank that contains the scene to be copied, using the Bank UP/DOWN buttons
- Press the Scene button that corresponds to the scene to be copied
- Press the MIDI/REC button to copy the scene
- Select the destination Bank that contains the scene memory to record onto, using the Bank UP/DOWN buttons
- Press the desired Scene button to complete the copy process. All LEDs will blink

NOTE: When deleting a scene, the physical location isn't deleted, however, all 192 DMX channels will be set to 0.

Delete a scene
- Press and hold the Program button to enter the programming mode
- Select the bank that contains the scene to be deleted, using the Bank UP/DOWN buttons
- Press and hold the Auto Del button
- Press the Scene button that corresponds to the scene you want to delete. All LEDs will blink.

Delete all scenes
- Press and hold the Program button and the Bank Down button while turning off the power to the controller
- Turn the controller back on

NOTE: This process is irreversible! All scenes with data will be reset to 0!

Playback

Sound-mode playback

- Press the Music / Bank copy button until the Music LED turns on
- Select the program bank to run in sound active mode, using the Bank UP/DOWN buttons OR Select a Chase button (1-6) OR select several Chase buttons (which will loop all pressed chases in sequence
- Adjust the fade time as you wish

Auto mode playback

- Press the Auto/DEL button until the AUTO LED turns on
- if a Chase button is not pressed, the controller will automatically run a bank program
- Change Bank programs by using the Bank UP/DOWN buttons OR press a chase button OR press several chase buttons (which will loop all pressed chases in sequence
- Adjust the fade time as you wish

Run multiple chases simultaneously

- Press and hold the Auto/DEL button
- While holding down the Auto/DEL button, press each chase one at a time which you want to run simultaneously

NOTE: Do not use this function when you want to combine chases which contain values for the same channels. This can result in strange lighting behavior. Consider making separate movement and color/gobo/effect chases for optimal result.

Blackout

Press the Blackout button to cancel all DMX-output to your lighting (effectively setting all values to 0, which will turn off all light output on your DMX devices)

MIDI operation

NOTE: The controller will only respond to the commands which are sent to the correct channel. For example, the controller will not respond when its receiving channel is 4 and you are sending out signals on channel 1.

- Press and hold the MIDI/REC button
- Select the MIDI control channel (1-16) with the Bank UP/DOWN buttons
- Press and hold the MIDI/REC button
- to release MIDI control, press any other button except the Bank buttons

MIDI NOTE	FUNCTION (TURN ON/OFF)
00 to 07	Scenes 1~8 in BANK 1
08 to 15	Scenes 1~8 in BANK 2
16 to 23	Scenes 1~8 in BANK 3
24 to 31	Scenes 1~8 in BANK 4
32 to 39	Scenes 1~8 in BANK 5
40 to 47	Scenes 1~8 in BANK 6
48 to 55	Scenes 1~8 in BANK 7
56 to 63	Scenes 1~8 in BANK 8
64 to 71	Scenes 1~8 in BANK 9
72 to 79	Scenes 1~8 in BANK 10
80 to 87	Scenes 1~8 in BANK 11

MIDI NOTE	FUNCTION (TURN ON/OFF)
88 to 95	Scenes 1~8 in BANK 12
96 to 103	Scenes 1~8 in BANK 13
104 to 111	Scenes 1~8 in BANK 14
112 to 119	Scenes 1~8 in BANK 15
120	Chase 1
121	Chase 2
122	Chase 3
123	Chase 4
124	Chase 5
125	Chase 6
126	BLACKOUT

Data transfer (file dump)

NOTE: This function will transfer all stored data from one controller to another. **This function does not work with different types and/or brands of DMX controller. Trying so may permanently damage your DMX console memory.**

NOTE: For this function, you will need a standard XLR-XLR cable. Connect the output from the source unit to the input of the destination unit.

NOTE: The XLR input and output are not suitable for any other kind of data transmission. An exception is the DMX output, which sends a DMX-signal to your DMX devices.

Source unit:
- Turn the unit off, press and hold Scanner buttons 2 and 3, plus Scene button 1, then turn on the controller

Destination unit:
- Turn the unit off, press and hold Scanner buttons 8 and 9, plus Scene button 2, then turn on the controller

Both units are now ready to transfer and receive data. Press Scene buttons 7 and 8 simultaneously on the Source device to start transmitting.

NOTE: The display should show TRANSMIT for the transmitting unit, and RECEIVE for the receiving unit.

Practical options and information

DMX:
DMX is a protocol with 512 channels. Each channel may contain a value between 0 and 255 (256 values).

A lighting fixture 'listens' to certain channels by setting the correct DMX starting address. From that position, the unit will listen to that particular channel and if needed, also the following channels.

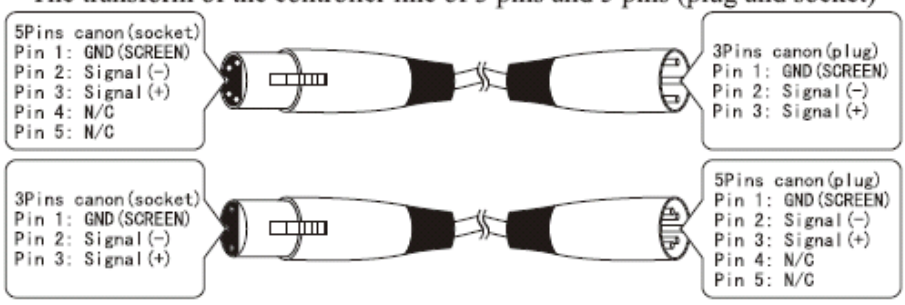
For example, a 6-channel device, with a starting address of 22, will 'listen' to channel 22 – 27. Starting addresses can be chosen in any particular order of connected fixtures. Also the order of the connected fixtures is not important.

DMX-controlled devices can be daisy-chained using XLR-XLR cables. AYRA recommends the use of 110 Ohm DMX cables and a DMX terminator **(110 Ohm, see below)** at the end of a DMX chain.

DMX terminators can be purchased at your local dealer, or you can make them yourself if you have the right technical abilities and tools.

The DMX connections of the OSO 240B are equipped with 3-pin XLR outputs. It might be possible that you have certain DMX devices that only support 5-pin XLR in- and outputs. In that case, you need to make or purchase adapter cables, which transform the 3-pin connectors to 5-pin connectors.

The transform of the controller line of 3 pins and 5 pins (plug and socket)



DMX Display quick reference chart

DMX Address Quick Reference Chart																					
Dip Switch Position																					
DMX DIP SWITCH SET 0=OFF 1=ON X=OFF or ON					#9	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
					#8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
					#7	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
					#6	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
#1	#2	#3	#4	#5																	
0	0	0	0	0			32	64	96	128	160	192	224	256	288	320	352	384	416	448	480
1	0	0	0	0		1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481
0	1	0	0	0		2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482
1	1	0	0	0		3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483
0	0	1	0	0		4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484
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0	1	1	1	1		30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510
1	1	1	1	1		31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511

Dip Switch Position

DMX Address

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DMX lighting troubleshooting

If you have any problems with DMX lighting, consult this troubleshooting section to solve any difficulties with your product. If this troubleshooting section does not solve your problem, contact your dealer for more information and help.

This troubleshooting section contains the most frequent problems and is not a complete collection of possible faults, defects and solutions. The troubleshooting section applies for DMX controllers, DMX cabling and DMX lighting fixtures. It is possible that not all described problems, causes and solutions apply to your situation as product details may vary from product to product.

Problem	**Possible Cause**	**Solution**
The fixture does not activate itself	Blown fuse	Check the fuse compartiment for blown fuses and replace it if necessary.
	No power cable plugged in	Plug in the power supply to a matching power outlet
	Power switch is not in the ON position	Turn on the device by switching the ON/OFF switch to the ON position, if available
The fixture does not respond to DMX signals	Wrong DMX address	Set the DMX address to the right value
	DMX controller blackout function activated	Deactivate the blackout function of your DMX controller
	Faulty positioning of the DMX polarity switch on the controller	flip the polarity switch on your DMX controller
	No response or DMX activity signal LEDs active	Check your DMX cables for possible connection breaks and replace them if necessary.
The fixture does not respond to sound	Wrong working mode selected.	Check if the sound activated mode of the fixture is activated.
	Microphone sensitivity level is set too low	Increase the microphone sensitivity of the built-in microphone
	Speaker placed too far away or lack of bass	Place your lighting effect closer to your speakers (or vice versa) and/or increase low frequency volumes. The microphone will not be triggered with high pitched sounds.
The beam output is very low	Dirty/dusty optics	Clean the lens and/or other optics with a dry or damp cloth
	Dimmer is not set to full output	Set all dimmer levels to 100% on your DMX console
Sometimes the DMX signal is lost and/or some fixtures are flickering / behaving odd sometimes	Faulty/broken DMX cables	Check your DMX cables for possible connection breaks and replace them if necessary.
	Power cable interference on your	Avoid installing the DMX and

	DMX signal	(high) power cables parallel to each other.
	No DMX terminator	Apply a DMX terminator at the end of your DMX-chain
	Signal loss or distortion in DMX values	Apply a DMX booster in your DMX chain after 32 fixtures or less. After a maximum of 32 fixtures the DMX signal needs to be refreshed.
Moving parts are not functioning well, values do not match and/or rattling sounds are noticed	Faulty stepping motor positioning	Possible value loss of stepping motors. Activate the reset function, or unplug the power supply and plug it back in to activate the reset program. This will reset all values to the original 0-point.
The fixture does not respond fast enough to the set speed on my DMX controller	Moving parts can not keep up with the set speed	Decrease the chase speed of your DMX controller, as the stepping motors of your fixture need some time to move from one point to another.
The fixture does not respond to all DMX-channels	Wrong DMX channel mode	Check the DMX channel mode of the fixture. If the wrong value is set, change the channel mode to a different setting and try again.

Technical specifications

- 192 channel DMX controller
- 19 inch construction, 3U
- designed to control intelligent lighting devices
- for use with movingheads, scanners and other types of DMX controlled light effects
- 12 fixture buttons
- 16 channels for each fixtures
- 8 physical faders for each fixture (with A/B page function for 1-8 and 9-16 control)
- 8 scene buttons for easy triggering of scenes
- 6 chase buttons for easy triggering of chases
- faders for speed and fade time for fluent speed and value change controls
- black-out button
- DMX polarity switch
- built-in microphone for sound controlled mode
- audio input mode for sound controlled shows

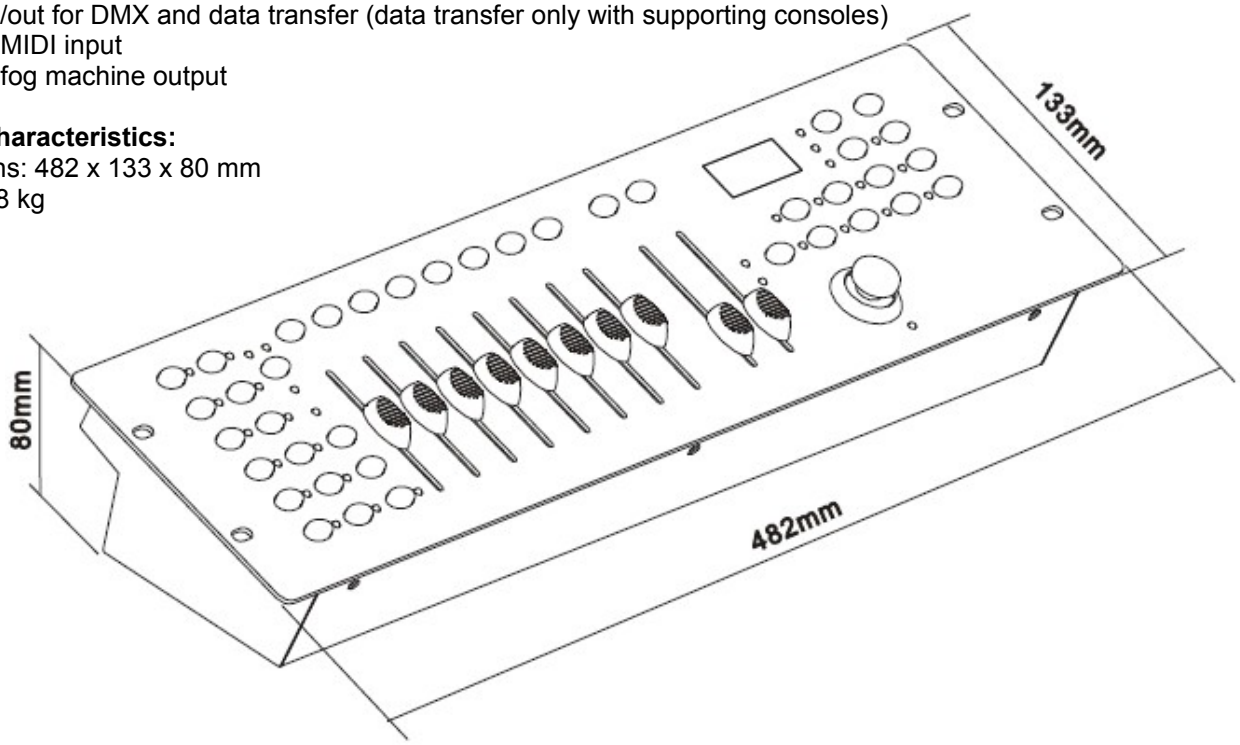
Extra:
- Assignable joystick
- Fade Time assign to X/Y channels (or other channels, soft-patched)
- Pan/tilt fine support
- File Dump transfer support
- Reversible DMX channel outputs
- Manual override button
- Built-in microphone for sound controlled mode without audio input

- Extended chase edit mode
- simultaneous playback of chases (multi-chase playback)
- USB connector for included gooseneck LED light or other low-power accessories

Power requirements:
- Fixture working voltage: 9-12V DC, 500mA
- Power supply working voltage: 230V AC, 50Hz

Connectors:
- 3P XLR in/out for DMX and data transfer (data transfer only with supporting consoles)
- 5-pin DIN MIDI input
- 5-pin DIN fog machine output

Physical characteristics:
- Dimensions: 482 x 133 x 80 mm
- weight: 2.8 kg



Any information and illustrations shown in this user manual are subject to change without further notice.

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