TDC 444 MKII
DMX LED light effect with 4 scan mirrors

User manual

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 intented to be used by professionals on stage, in theatres, 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 prodcut with a wrong type of power supply may cause permanent damage to the device.
- Avoid shocks and collission during use and transport. Do not transport the device while in use. Avoid brute force during the installation and operation of this device.
- Familiarise 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.
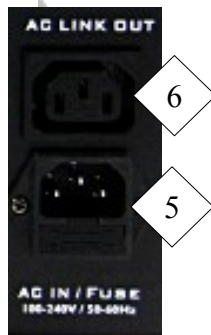
Box contents

Box contents
1x TDC 444 MKII fixture
1x power cable

Unit and accessory inspection
- Always use the supplied power cable to connect the unit to a power supply. If the cable appears broken or has visible damage, do not use it.
- If the unit is not going to be used for a longer period of time, disconnect it from the power supply and store it in a dust-free environment.
- Always check the unit 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.

Device overview

1. Moving mirror
2. Beam output
3. Adjustable bracket
4. Ventilation slots
5. IEC Power inlet with integrated fuse holder
6. IEC Power outlet (link)
7. Control panel display with MENU, UP and DOWN buttons
8. Sound sensitivity potentiometer
9. Safety eye, for optional safety cable
10. Built-in microphone for sound active mode
11. DMX input (3P XLR)
12. DMX output (3P XLR)

Setting up the unit

To activate the unit, connect the included power supply to the unit and a suitable 230V, 50 Hz power outlet.

The fixture will start up and show the last chosen setting on the display. Usually, with a new product, this is the DMX mode with the value set on 001.
The display shows several settings, each with the possibility to set several values.

Use the display and the menu buttons to set preferences, change settings and scroll through the menu. "Enter" is used to save a certain setting or preset, press "Menu" for at least 2 seconds to discard the change and return to the main menu.

The table below shows an explanation for every feature and value.

display	Mode	Function
ADDR	DMX address setting	A001-A512
CHND	Channel mode	9CH/12CH
SLND	Master/slave mode	Master (default) Slave 1 - Slave 2
SHND	Auto mode	Show 0-16 – Speed 1-9
SOUN	Sound controlled mode	Sound controlled mode on/off SOU1: Keep running slow without sound SOU2: Stop moving without sound
Led	LED mode	ON-OFF
DISP	Display inversion	Display Inversion, Idsp-dspl
TEST	Test mode	Self test
Hour	Using time of light	Fixture hours,0 ~ 9999

ADDR: DMX address setting, used to determine the DMX starting channel. From this channel on, the fixture will respond to values, corresponding with the amount of channels that the fixture is occupying. (For example, when set the starting address to value 003, the fixture will respond to channels 3, 4, 5 etc..)

CHND: The channel mode of the fixture makes it possible to use the correct channel mode setting for every application. For simple and basic setups, users may prefer to use the 9CH mode. For advanced setup, users may prefer to control each pixel in detail, by using the 12-channel mode.

SLND: When using the master/slave function, you need to connect 2 or more fixtures with XLR-XLR cable. The first fixture in line needs to be set as master, the others as Slave 1 or 2 (synchronized or mirrored performance). This way, the slaves will mimic the behavior of the master fixture for wonderful synchronized lighting shows.

SHND: Auto mode. Select one of the built-in programs (0-16) and select the correct speed (1-9)

SOUN: Activate or disable the built-in sound controlled mode. This way, the fixture will respond to the beat of the music.
SOU1 is setting 1, which makes the fixture continue its light show when no music is detected, with slow movement and slow color changes.
SOU2 is setting 2, which makes the fixture 'freeze' when no music is detected.

Led: The LED display will shut off automatically after a few seconds when this function is activated. When pressing any button, the display will activate again. When deactivating the feature, the display will be lit permanently.

DISP: Display invert version – When using the fixture in a hanging setup, it is possible to flip the display, so the characters will be shown upside down. This makes reading the several statuses much easier.

TEST: Self test mode, to control all segments and LEDs

Hour: The fixture shows how much hours it has been active. This is very practical for rental companies which need to perform service intervals on all fixtures after several hours of performing, to maintain optimal shape.

The TDC 444 MK2 is equipped with several working modes, each with its own advantages. For simple events there are stand-alone modes, for advanced situations there are options to create synchronized lightshows, or controlled with a DMX-512 controller. A short description for each mode can be found below:

Auto:
Automatic lightshow with a pre-programmed internal show, on a pre-defined speed.

Sound:
Automatic lightshow with a pre-programmed internal show, on the beat of the music, thanks to an internal microphone which senses the beat of the music and will change a step every time a beat is detected.

Slave:
In master/slave mode, it is possible to link several TDC 444 MK2 fixtures together, to create synchronized lightshows in the Auto or Sound mode. The first fixture in the chain needs to be set in the Auto or Music mode. All the next fixtures need to be set to Slave and will mimic the behavior of the first fixture. The master/slave function requires XLR – XLR cables (not included).

DMX:
The TDC 444 MK2 can be connected to a DMX-controller with standard XLR – XLR cable. While doing so, a DMX-terminator must be connected to the last fixture, at the end of the DMX-chain. This prevents reflections in the DMX-signal, which could cause flickering and unwanted behavior from your intelligent fixtures.

A DMX terminator is a XLR connector with a resistor of 120 Ohm, placed between pin 2 and 3 as a bridge.

With the following channel assignment, it is possible to control the TDC 444 MK2:

9CH mode:

CH1	0-7	Black out
	8-200	Dimmer
	201-247	Strobe
	248-255	Full bright
CH2	1-255	RGBW color mix
CH3	0-255	X-axis motor
CH4	0-255	Y-axis Motor
CH5	0-7	Black out
	8-255	Led lamp run effect
CH6	0-255	Led lamp run effect speed
CH7	0-7	Black out
	8-255	Motor run
CH8	0-255	Motor run speed
CH9	0-127	Sound off
	128-255	Sound on

12CH Mode:

CH1	0-7	Black out
Color mix head 1	8-24	Red
	25-41	Green
	42-57	Blue
	58-74	White
	75-90	Red Green
	91-107	Red Blue
	108-123	Red White
	124-140	Green Blue
	141-156	Green White
	157-173	Blue White
	174-189	Red Blue Green
	190-206	Blue Green White
	207-222	Red Blue White
	223-239	Red Green White
	240-255	Red Green Blue White
CH2	0-255	The first X-axis motor
CH3	0-255	The first Y-axis motor
CH4	0-7	Black out
	8-255	The second head light Color mix(same as CH1, but for the second head)
CH5	0-255	The second X-axis motor
CH6	0-255	The second Y-axis motor
CH7	0-7	Black out
	8-255	The Third head light Color mix(same as CH1, but for the third head)
CH8	0-255	The Third X-axis motor
CH9	0-255	The Third Y-axis motor
CH10	0-7	Black out
	8-255	The fourth head light Color mix(same as CH1, but for the fourth head)
CH11	0-255	The fourth X-axis motor
CH12	0-255	The fourth Y-axis motor

Technical specifications

- Unique light effect with four scanners in one device
- Powerful 10W RGBW 4-in-1 LED light source
- Intense and colourful beams
- Smooth mirror movement – Accurate stepping motors
- Seperate control for each of the four scanner systems
- Working modes: Automatic, music-controlled, master/slave, DMX
- DMX operation: 9 or 12 channels
- Adjustable microphone sensitivity for music-controlled mode
- Scan speed adjustable for the automatic mode
- IEC in- and output for easy power daisy-chaining
- Menu display and buttons for easy adjustment of settings
- Low power consumption – High output – Long lifespan

Power:
- Voltage: AC100-240V, 50/60 Hz
- Power consumption: 100W

Physical:
- Dimensions: 700 x 400 x 160 mm
- Weight: 7 kg

Connectors:
- DMX: 3p XLR male and female
- Power: IEC power connector

Included accessories:
- Power cable with Schuko & IEC connectors

Connectors and wiring schematics:

DMX-connections:

DMX-output
XLR mounting-socket:

1: Ground
2: Signal (–)
3: Signal (+)

DMX-input
XLR mounting-plug:

1: Ground
2: Signal (–)
3: Signal (+)

Electrical wiring:

Cable	Pin	International
Brown	Live	L
Blue	Neutral	N
Yellow/Green	Earth	⏚