



# FLASHMASTER 1000

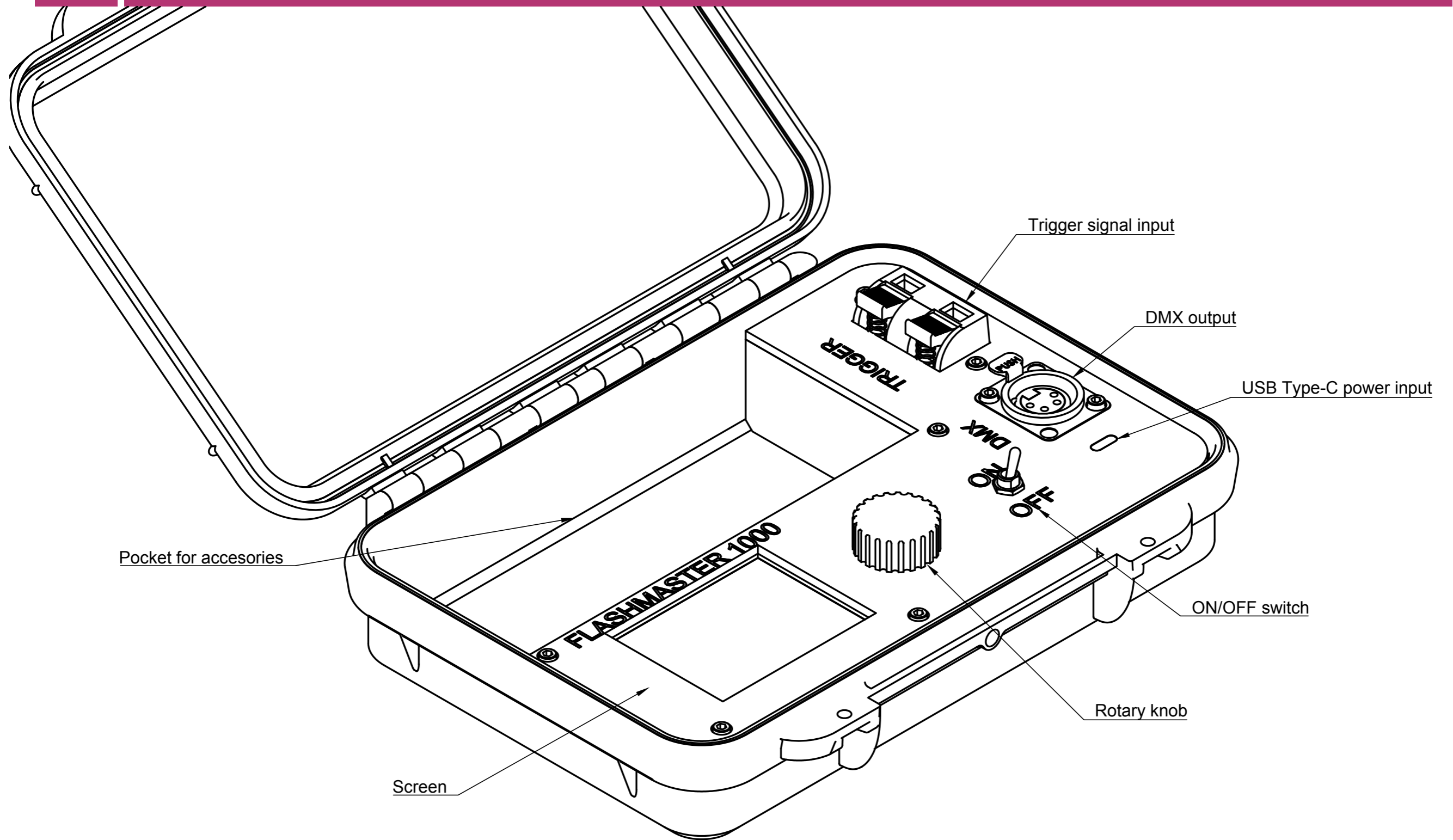
User Manual

Flashmaster 1000 is a battery powered device, which synchronizes flashing of DMX-controlled lights to an external trigger signal.

## **Main features:**

- Rugged case
- Built-in 2500mAh Li-ion battery - working time on full charge over 12h (depends on external temperature).
- 16 DMX control channels
- Either semi or full automatic mode of operation
- Adjustable start-up delay of flashing sequence from 0 to 5 seconds in 0.001 second steps.
- 0-999 flashes in sequence
- Duration of of one flash 0.001 - 10 seconds
- Time delay between flashes selectable from 0.001 - 10 seconds in 0.001 second steps.
- 800Hz refresh rate of transmitted DMX universe

## 02 Main parts



## 03 Basic operation

1. Connect the DMX controlled fixture to the Flashmaster using 5-pin DMX cable. NOTE: Only one DMX controller should be connected to a DMX universe at a time, otherwise results may be unexpected. DMX fixtures can be daisy-chained with up to 128 fixtures in a chain.
2. Set the address of the DMX fixture to be controlled to 1. (For performance reasons the Flashmaster outputs a DMX universe consisting of 24 channels). Refer to the user manual of the light fixture as how to do this.
3. If not connected to external power, switch on the Flashmaster using the ON/OFF switch (while connected to external power the Flashmaster is always on, regardless of ON/OFF switch setting).
4. Use the rotary knob to navigate the on-screen menu
5. Set the light settings to your liking. There are 16 selectable channels, each can be given a value of 0 to 255. While the user is in the light settings menu, the light fixture will preview selected channel values in real time. Refer to the user manual of your specific light fixture as how to set it up.

### **EXAMPLE:**

Case: a simple 4-channel RGB light, where channels 1 - 3 control red, green and blue LEDs of the light and channel 4 controls overall intensity. In order to get maximum output and brightness during flashes, set values of channels 1 - 4 to 255 and leave the rest at 0.

When happy with the light preview results, exit the menu using Back button in the lower right part of the screen. The light settings are saved and upon a restart of the device will be reloaded.

6. Set up the firing mode - single shots or automatic sequence
7. Set up the light sequence parameters - start-up delay, duration of flash, number of flashes, time between flashes. The numbers are milliseconds (1/1000 of a second). The sequence settings are saved and are reloaded upon a restart of the device.
8. Use the Test button to test the sequence. DMX-controlled light fixture will preview the flashing sequence. The screen will display "TESTING" while the sequence is playing. Upon finishing the sequence, the device will return to the main menu.

## 03 Basic operation continued

9. Connect the external trigger signal. Trigger signal input on Flashmaster is not dependent on polarity. Trigger signal must be in the range of 11V - 28V. NOTE: higher than 28V voltage on trigger input can damage the device.
10. Choose Arm. The screen will display “ARMED”. The device will wait for an external trigger signal. Upon receiving said signal, it will flash the desired sequence.
  - In single shots mode the Flashmaster will stay in armed state and will trigger the light fixture every time it receives a trigger signal. Only the following parameters are taken into account: start-up delay, duration of flash
  - In automatic sequence mode the Flashmaster will start the flash sequence when it receives a trigger signal and will exit back into main menu upon completion of the sequence.

## 04 Maintenance and general care

1. The device is not waterproof when the case is open.
2. The battery of the device should be charged only when ambient temperature is above zero, otherwise the lifespan of the battery is reduced dramatically.
3. The battery is 18650 form-factor Li-ion type and can be replaced using a few tools.
4. Battery replacement procedure:
  1. Remove the top panel of the device from the case by unscrewing the screws in the top panel using 2.5mm allen key.
  2. Remove the glue holding the battery to its holder.
  3. Replace the battery and add glue to hold it on tighter to the device for added ruggedness.
5. Firmware upgrade process:
  1. Make sure the device is switched off and charging cable is unplugged
  2. Hold down the rotary button while connecting the device to a computer USB port (note: the USB-C cable must be data-capable).
  3. A new external disk should appear on the computer. The screen of the Flasmaster will light up but display nothing. You can now let go of the rotary button.
  4. Drag and drop the new firmware file on the external disk. The device restarts and the new firmware is loaded. Note: the firmware version is displayed in the lower right corner of the main menu.

- **DMX** : The acronym for **D**igital **M**ultiple**X**. Also referred to as **DMX-512**, which references the number of DMX channels available in one DMX «Universe». Standard is created in 1986 and it is based on RS-485.
- **Universe** : DMX lighting fixtures are typically linked together via cable networks that connect their DMX IN and OUT ports in a daisy-chain series. DMX commands are sent from the DMX OUT port of a controller that broadcasts up to 512 channels over one cable run to the connected fixtures.
- **DMX Address** : Each fixture in a DMX network includes an onboard decoder that receives and translates the DMX commands received from the controller. Each fixture must be set to a unique ID, i.e., its DMX address. Possible addresses range from DMX channels 001 ~ 512 and this « starting address » is typically selected by DIP switch or an LED/LCD display menu.
- **DMX Channel** : An individual control channel with a range of values from 0 – 255 that correspond to 0 – 100% output or to various fixture functions and presets. Common channel types and functions include dimmer, shutter, RGB, CMY, pan, tilt, focus, zoom, color wheel, gobo wheel, gobo rotation, prism, and iris.
- **Fixture Profile** : Intelligent (i.e., DMX-capable) lighting fixtures typically feature multiple channels, with channel presets (determined by the manufacturer) that control various functions. For example, a 5-channel LED fixture might utilize five DMX channels, allocating specific functions to each channel :

Channel 1 : Dimmer

Channel 2 : Red

Channel 3 : Green

Channel 4 : Blue

Channel 5 : Shutter

- **Starting Address** (aka **Starting Channel**) : In the example of a 5-channel fixture, the five channels would typically occupy a sequential range of five DMX channels in the particular 512-channel universe determined by the DMX network layout. Whereas the channel functions are predetermined by the manufacturer, the « Starting Address » is determined by the operator / programmer.

## 05 Basics of DMX512 continued

- The DMX standard specifies cable runs up to 4,000 feet (1,200 meters) but in practice potential cable lengths are affected by cable quality, the characteristics of the DMX fixtures being daisy-chained together, and other factors.

For cable runs over 1,000 feet (300 meters) a repeater/booster may be needed. Placing a terminator at the end of each cable run will help avoid degraded data transmission. Best practice calls for twisted-pair, shielded, low-capacitance data cable, *not* audio cable.

Using wireless DMX transmitters-receivers (i.e Lumenradio Moonlite) instead of cabling introduces a few ms of latency and thus should be avoided when precise timing is required.