Specifications

Control protocol: DMX512
Channel usage: 3 channels occupied
LED outputs: 12Vdc 3 channels per output (Red/Green/Blue)
　　　500mA max drive per output
LED outputs overload/short protected

Connector pinouts

8 way RJ45 connector for DMX

Pin 1 Data+
Pin 2 Data -
Pin 3 Gnd
Pin 4 Gnd
Pin 5 12V
Pin 6 12V
Pin 7 12V
Pin 8 Gnd

MFD-10

AVR

RGB or single colour LED strip driver

Start-up configuration

Some options may be set on the unit using the start-up configuration mode.

To enter start-up configuration, switch ON all switches with the power off. Then turn on the power and flip switch 1 up and down 4 times (i.e. up – down – up – down). You have 10 seconds to start the switch sequence after power up, after that the switch is used for DMX addressing or pattern selection.

The green LED will flash. This indicates that you are in start-up configuration mode. Dip switches 2-10 then have the following functions.

1	Turn off to store configuration
2	ON=RGB mode, OFF=RGBD mode (DMX ch4=dimmer)
3	ON=Use preprograms when no dmx, OFF=hold last state when no dmx (disable preprograms)
4	ON=Enable DMX, OFF=disable DMX *note 1
5	Always set to ON
6	ON=Multi output mode, OFF=All outputs same as output 1
7	not used
8	not used
9	not used
10	not used

*1: This option may be used when the unit is in internal preprogram mode, but interference causes it to think it is detecting DMX.

The ON option is always the default (factory) setting.

To store the configuration, turn off switch 1. The green LED will flash rapidly. Then turn off the unit and select the correct dip switch settings for normal operation. Repower the unit.

The configuration will be stored indefinitely in the unit's non-volatile memory. It is only necessary to set the options when the unit is first installed.

If linking multiple units in a master-slave setup or for DMX Macro, ensure options 2 and 5 are set to OFF (default) on all the units.

Internal Programmes

If no DMX is detected, the dip switches are used to select internal programmes.

Master-slave operation is possible with internal programmes. The slave units run in standard DMX mode.

Dip Switches	Output
10 on, 9 off 1-8 set speed (1=fastest)	R-G-B continuous fade
10+9+1	Red static
10+9+2	Green static
10+9+3	Blue static
10+9+4	Orange static
10+9+5	Cyan static
10+9+6	Magenta static
10+9+7	Cool White static
10+9+8	Warm White static
10+9	All LEDs on full power

What will this unit do?

This unit is a dimmable power unit to control colour changing or single colour AVR Ledion flexible LED strip. It will not operate 1 watt or 3 watt Luxeon-based fixtures. It is controlled by a DMX512 lighting controller or its own built in programmes.

The unit has two linked outputs each of which can drive 5 metres of flexible LED strip (1 amp per colour per output).

Do not exceed the loading of each output. This will result in reduced LED brightness. The unit is fully protected and no damage will be caused to the driver or the LEDs.

Connecting up

First install the Ledion flexible strips in the desired location, then connect them to the MFD-10 driver units using 4-way cabling. The LED strips connect to the 4 way terminal blocks. Up to 5 metres of strip may be connected to each terminal block; alternatively you may connect 10 metres and make a return connection to the far end of the strip into the other terminal block. The correct wiring for the terminal blocks is:

Terminal 1 (nearest the DMX sockets): Blue negative
Terminal 2: Red negative
Terminal 3: Green negative
Terminal 4 (furthest from DMX sockets): +12V common

Install a mains power feed to the MFD-10 unit.

If your installation includes several MFD-10 units, you can control them all together by linking them using straight-through RJ45 cables. The cables should be plug-to-socket, wired straight through.

The red light on the unit indicates power to the unit is OK. The green light indicates that DMX data is being received OK.

System controllers

The system may be controlled using a LUC01 or LMC-08 programmable controller, or any other lighting controller using the DMX control standard. It can also run built in programmes with no controller.

If you use a LMC-08 control unit, connect it to the first MFD-10 unit in the line using a 4-way RJ11 to 8 way RJ-45 cable into one of the DMX sockets. An LUC01 controller connects with a straight through RJ45 cable. Ensure the "Power" switch is set to "on" on this unit only, and "off" on any slave units.

If you are using a standard DMX controller, connect it to the first MFD-10 unit in the line using an RJ45 cable. The wiring of the DMX signal should be ground on pin 8, "Hot" signal on pin 1, "Cold" signal on pin 2.

Setting dip switches

The dip switches allow you to set the DMX start address of the unit, or select built in programmes.

The switches may be changed at any time and the unit will begin to use the new settings immediately.

DMX control

The DMX base address is set on the dip switches using binary code. Each switch adds a value to the address as shown. The start address may be set at any channel from 1 to 510.

Switch	1	2	3	4	5	6	7	8	9
Value	1	2	4	8	16	32	64	129	256

Switch 10 sets DMX Macro mode, allowing DMX control of the internal programmes:
sw 10 OFF (up) = standard DMX mode (RGB control of each fixture),
sw 10 ON (down) = DMX macro mode (control of internal programmes),

Standard DMX mode

The unit recognises the following DMX commands for each output channel:

Base	Red
Base+1	Green
Base+2	Blue

Special DMX modes

Using the start-up configuration mode, it is possible to set different DMX modes for the unit.

If RGBD mode is enabled, then the 4th DMX channel becomes an overall dimmer for each output.

Base	Red
Base+1	Green
Base+2	Blue
Base+3	Dimmer