

Z40 LED Controller



03.LA.120 Z40 M16 Output

03.LA.130 Z40 Screw terminals Output

User's Manual rel 1.2 GB

D.T.S. Illuminazione s.r.l. - ITALY
<http://www.dts-lighting.it>



The Lighting Company

Made in Italy

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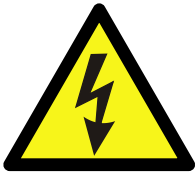
SYMBOLS

Graphic symbols used on this manual:



THIS SYMBOL INDICATES A HOT SURFACE

Never handle the unit until at least 5 minutes have elapsed since the unit was turned off.



THIS SYMBOL INDICATES ELECTRIC SHOCK RISK

High voltage is present inside the unit. Unplug the unit prior to performing any function which involves touching the inside of the unit.



THIS SYMBOL INDICATES GENERAL RISK



THIS SYMBOL MEANS YOU CAN PLACE THE UNIT ON NORMALLY FLAMMABLE SURFACES

Suitable for mounting on normally flammable surfaces greater than 200°C with some combustion time lag.

GENERAL WARNING

Read the instruction contained in this user manual carefully, as they give important information regarding safety during installation, use and maintenance.

The device is not for domestic use and must be installed by a qualified electrician or experienced person.

Always disconnect the device from the mains before servicing.

The device must always be equipped with an efficient ground connection.

GENERAL WARRANTY CONDITIONS

The unit is guaranteed for 36 months from the date of purchase against manufacturing material defects.

DESCRIPTION

Overview

Z40 is a power supply / DMX LED controllers designed to control four pcs DELTA 8 heads, four pcs DONUT, four pcs FOS 100 POWER or eight pcs FOS 50 POWER (minimum 2 pcs each output).

System

Z40 is fitted with 4 groups of 4 output channels each; max power of each channel is 50W (200W each group).

Each group can supply and control an independent set-up of D.T.S. LED products at the same time, like one of the following:

- * max 4 x DELTA 8 heads FC
- * max 4 x DELTA 8 heads CT
- * max 4 x DONUT
- * max 4 x FOS 100 POWER FC
- * max 4 x FOS 100 POWER CT
- * max 8 x FOS 50 POWER FC (minimum 2 pcs each output)

Interface

Z40 is fitted with a LED DISPLAY interface that lets you enter all functions of the internal menu.

DMX

Z40 LED CONTROLLER can be used in 10 DMX modes: 9 ch, 36 ch, 20 ch, 5 ch, 16 ch, 4 ch, 1 ch, 10 ch or 40 DMX channels.

Operating system update

Z40 internal operating system can be updated via computer, through the dedicated D.T.S. RED BOX interface.

Control

Z40 can be controlled by any DMX console.

Construction

Z40 is housed in a sturdy metal case, that offers high resistance to knocks and mechanical stress. Z40 is rack mountable (2 rack units).

The protection rating against external agents is IP20.

Connections

DMX IN / OUT connectors: 2x XLR 5 poles by Neutrik and 2x XLR 3 poles by Neutrik.

LEDs connector output: 4 x M16 - 9 poles connectors (03.LA.120);
4 x Screw terminals - 8 poles connectors (03.LA.130).

The Maximum distance between the Z40 and DELTA 8 head (all models), DONUT, FOS 100 POWER (all models) and FOS 50 POWER FC should not exceed 50 meters.

MAIN ELECTRICAL CHARACTERISTICS

Input Voltage Range

Vin 90 - 260 Vac

Frequency

50 - 60 HZ

Power Consumption Range

30 - 800 W

Power Factor (Pf)

0.95 electronic PFC controller

Efficiency

90% typical

Output

Power Output Range : 4 outputs of 4 channels each.

Max power of each output is 200W (50W per channel).

Max power of each channel is 50W; 50W Red, 50W Green, 50W Blue and 50W White.

Output Current : 1600mA

Output Voltage : Vout 48V (Constant Current PWM)

Max Load each output: 1x DELTA 8 head unit; 1x DONUT unit; 1x FOS 100 POWER unit;
minimum 2x FOS 50 POWER unit.

Control Input

Control Signal : DMX 512

Dimming System : Constant Current PWM

Address Range : DMX 512 channels addressable by display

IMPORTANT SAFETY INFORMATION

Fire prevention:



It is permissible to place the unit on normally flammable surfaces.
Suitable for mounting on normally flammable materials surfaces greater than 200°C with
Some combustion time lag.

Replace any blown or damaged fuses only with those of identical value (10AT).

Prevention from electric shock:



High voltage is present inside the unit.

Unplug the unit prior to performing any operation which involves touching the inside of the unit.

This equipment must be grounded, do not connect to non-grounded supplies.

The use of a thermal magnetic circuit breaker is recommended for each Z40.

Use only AC supplies 90-260V, 50/60 Hz.

The unit should never be located in position exposed to rain or in areas of extreme humidity.

A good air ventilation is essential for proper equipment work.

Safety:

The external surface of the unit may exceed 50°C; never handle the unit until at least 5 minutes have elapsed since the unit was turned off.

Never install the unit in an enclosed area lacking sufficient air flow.

The ambient temperature should not exceed 40°C and should not be lower than -10°C.



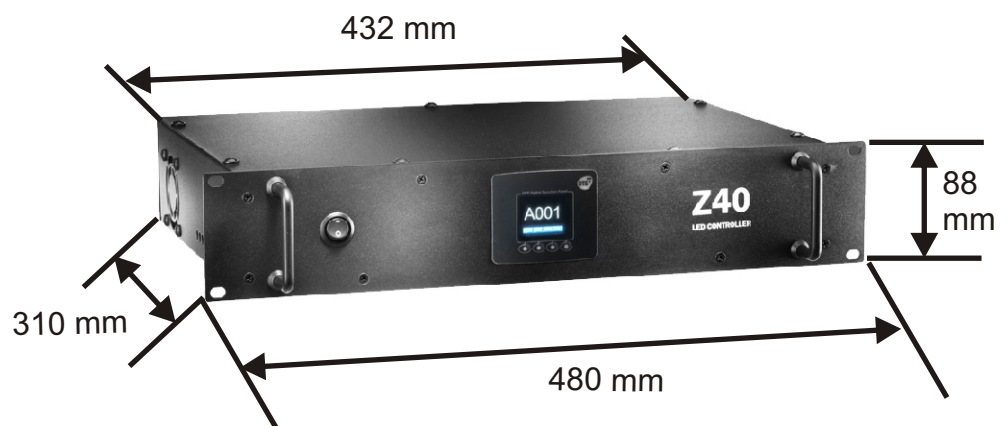
Level of protection against the penetration of solid and liquid objects:

The unit is classified as an ordinary appliance and its protection level against the penetration of solid and liquid objects is IP 20.

UNIT DIMENSIONS

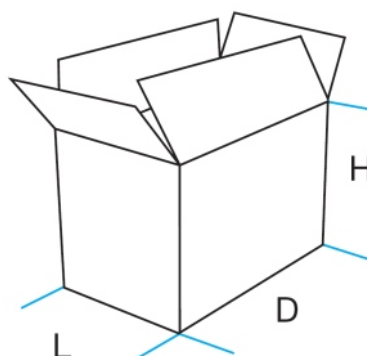
Unit Dimensions
(LxDxH)
480 x 310 x 88 mm

Weight
7,5 Kg



Packing Dimensions
(LxDxH)
490 x 390 x 90 mm

Weight
8,5 Kg



INPUT/OUTPUT CONNECTIONS

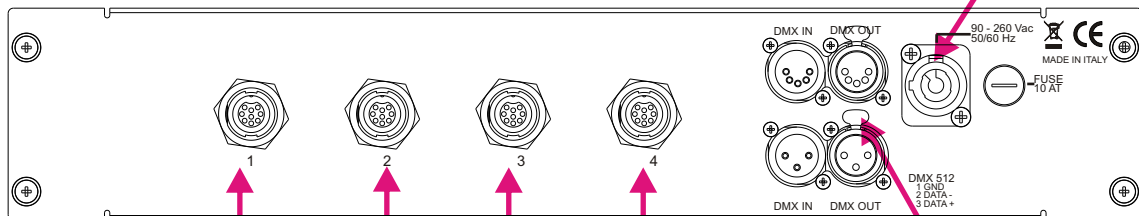
Z40 M16 Output (03.LA.120)



Mains Switch

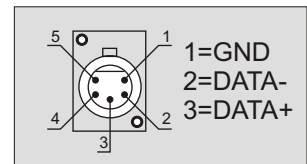
Display

Mains 90-260 Vac
50-60 Hz
Powercon female panel connector

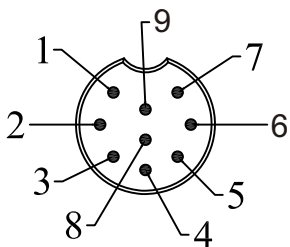


4 x LEDs outputs
M16 Female panel connector

DMX IN-OUT connectors

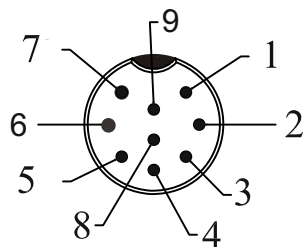


M16 Female panel connector on board Z40



Front View

M16 Male cable connector on board DELTA 8 B HEAD; FOS 100 and FOS 50 POWER



Front View

LED OUTPUTS

WIRES SEQUENCE COLOURS	PIN OUT
PIN 1 - BLUE	PIN 1: RED +
PIN 2 - GREEN	PIN 2: GREEN +
PIN 3 - YELLOW	PIN 3: BLUE +
PIN 4 - ORANGE	PIN 4: WHITE +
PIN 5 - RED	PIN 5: COMMON
PIN 6 - BROWN	PIN 6: (RED -)
PIN 7 - BLACK	PIN 6: (GREEN -)
PIN 8 - GREY	PIN 6: (BLUE -)
PIN 9 - WHITE	PIN 7: (WHITE -)
	PIN 8: NTC (THERMAL)
	PIN 9: NTC (SENSOR)

The Maximum distance between the Z40 and DELTA 8 head (all models), DONUT, FOS 100 POWER (all models) and FOS 50 POWER FC should not exceed 50 meters.

INPUT/OUTPUT CONNECTIONS

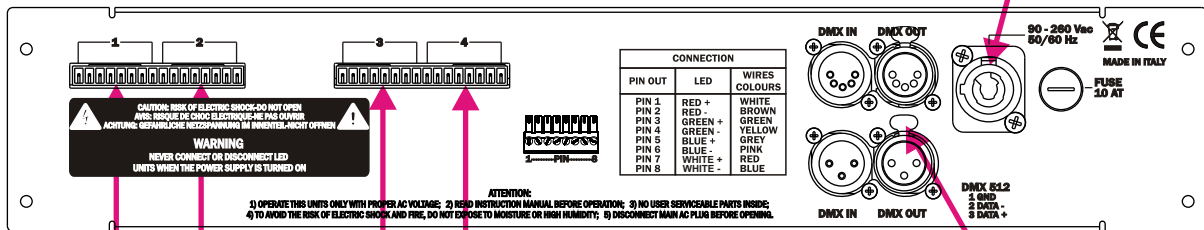
Z40 Screw terminals Output (03.LA.130)



Mains Switch

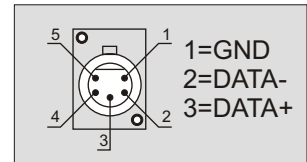
Display

Mains 90-260 Vac
50-60 Hz
Powercon female panel connector

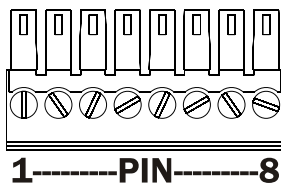


4 x LEDs outputs
Screw terminal panel connector

DMX IN-OUT connectors



8 poles screw terminals



CONNECTION		
PIN OUT	LED	WIRES COLOURS
PIN 1	RED +	WHITE
PIN 2	RED -	BROWN
PIN 3	GREEN +	GREEN
PIN 4	GREEN -	YELLOW
PIN 5	BLUE +	GREY
PIN 6	BLUE -	PINK
PIN 7	WHITE +	RED
PIN 8	WHITE -	BLUE

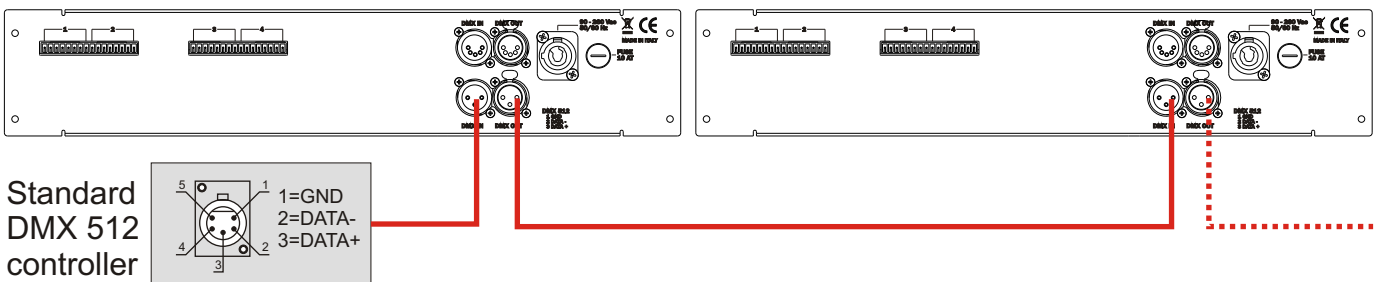
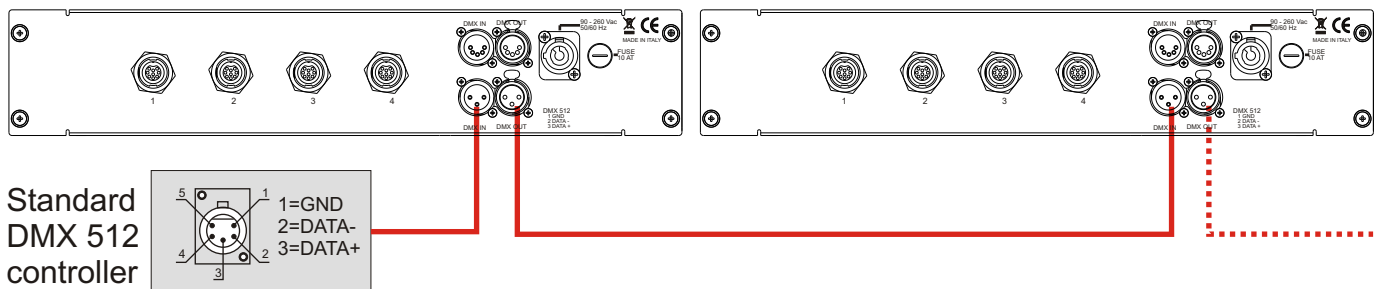
The Maximum distance between the Z40 and DELTA 8 head (all models), DONUT, FOS 100 POWER (all models) and FOS 50 POWER FC should not exceed 50 meters.

DMX SIGNAL CONNECTION

The unit operates using a digital DMX 512 signal. Connection between the controller and the unit or between units must be carried out using a two pair screened \varnothing 0.5 mm cable and a CANNON XLR 5 pins connector.

Ensure that the conductors do not touch each other. Do not connect the cable ground to the XLR chassis. The plug housing must be isolated. Connect the mixer signal to the DMX IN of the Z40 plug and connect it to the next unit by connecting the DMX OUT plug on the first Z40 to the DMX IN plug of the second one.

This way, all the projectors are cascade connected.

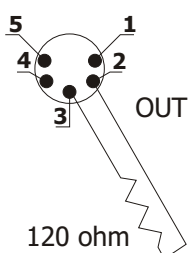


P.S: If the display showing the DMX address flashes, then one of the following errors has occurred:

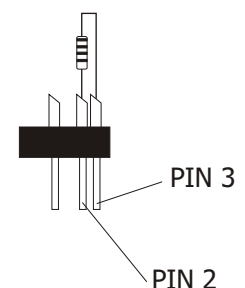
- DMX signal not present
- DMX reception problem

For Installations where long distance DMX cable connections are needed, we suggest to use a DMX terminator.

The DMX terminator is a male XLR 3-5 pins connector with a 120 ohm resistor Between pin 2 and 3. The DMX terminator must be plugged into the last unit (DMX out panel connector) of the DMX line.



PLACE A 120 OHM RESISTOR BETWEEN PIN 2 AND 3 OF A MALE XLR CONNECTOR AND PLUG IT INTO THE DMX OUT PANEL CONNECTOR OF THE LAST UNIT CONNECTED TO THE DMX LINE



DMX ADDRESS

Z40 LED CONTROLLER can be used in 10 DMX modes: 9 ch (Default), 20 ch, 36 ch, 5 ch, 16 ch, 4 ch, 1 ch, 10 ch or 40 DMX channels.

If you want to use the Z40 in 36 channels mode, select the " DMX MODE 36 CH " under the DMX SET menu and set the following addresses on the mixer:

Projector 1	A001	
Projector 2	A037	If you want to select the next projector, just add "36"
Projector 3	A073	
.....	A....	
projector 6	A184	

If you want to use the Z40 in 9 channels mode, select the " DMX MODE 9 CH " under the DMX SET menu and set the following addresses on the mixer:

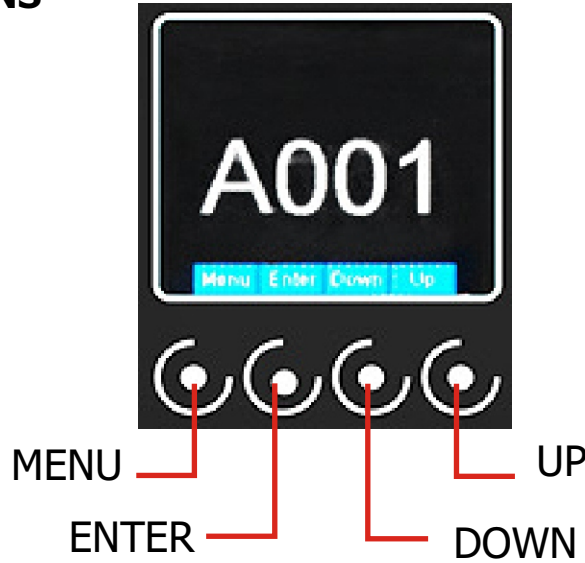
Projector 1	A001	
Projector 2	A010	If you want to select the next projector, just add "9"
Projector 3	A019	
.....	A....	
projector 6	A045	

Selecting the DMX address

- 1) Press the UP-DOWN key until you reach the required DMX address. The numbers on the display will start flashing (but the new DMX address hasn't yet been set).
- 2) Press ENTER to confirm your selection. The numbers on the display will stop flashing and the projector is now controlled by the new DMX address.

TIPS: if you keep pushed the UP or DOWN keys, the channels are calculated more quickly and you get a faster selection.

DISPLAY FUNCTIONS



DISPLAY FUNCTIONS

The Z40 display panel shows all the available functions . Using these functions, it is possible to change some of the parameters and add some functions. Changing the DTS setting can vary the functions of the unit so that it does not respond to the DMX 512 used to control it. Carefully follow the instructions below before carrying out any variations or selections.

NOTE: the symbol  shows which key has to be pushed to obtain the desired function.

Z40 Software version 2.01

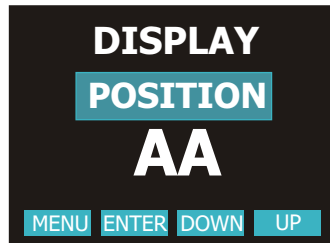
  Display

DISPLAY POSITION / STAND BY

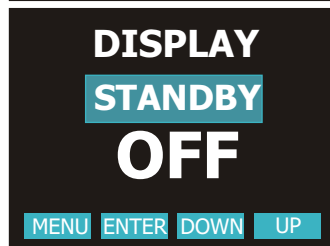
Display Position:
Reverses display's reading depending on the mounting position (on the ground or suspended).

Display Standby:
To turn off the display (after 30 seconds) or leave it always on.



Display Position
ON THE GROUND (Default)
SUSPENDED





Display Standby
OFF = Display Standby disabled (Default)
ON = Display goes off after 30 seconds

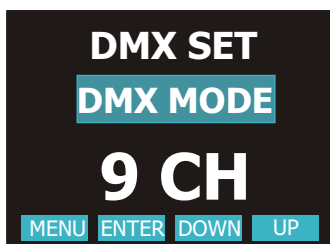


  DMX Set

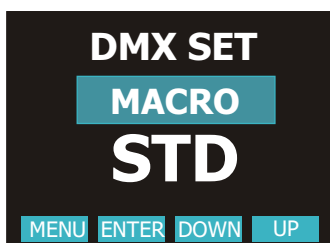
DMX MODE / MACRO
DMX Mode
To select DMX mode : 9 ch (default), 36 ch, 20 ch, 5 ch, 16 ch, 4 ch, 1 ch, 10 ch or 40 DMX channels mode

Macro
Macro Function, enable channel mapping macro rainbow effects STD (default)



DMX mode
36 ch , 20 ch, 9 ch (Default) or 5 channels mode.





MACRO
Standard mode enabled (Default)
Extended mode enabled: Rainbow effects on MACRO channel



RGBA MINIMUM VALUES

This menu allows to select the minimum levels for Red, Green, Blue and Amber/White

RGBA MAXIMUM VALUES

This menu allows to select the maximum levels for Red, Green, Blue and Amber/White

These settings have priority on Master Dimmer (DMX channel 2)

SMOOTH VALUE

This menu allows to select the value of the delay (in milliseconds) for RGBA and Dimmer channels reaction to DMX or Program variation.

4 = 25 ms delay (Fast response)

20 = 250 ms delay (Slow response)

GAMMA CORRECTION

This menu allows to select between Linear current output or Quadratic current output for LEDs.

Default = Quadratic

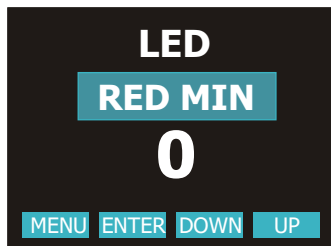
OUTPUT FREQUENCY

This menu allows to adjust the PWM frequency value (Hz) in order to reduce flickering in the process of your camera recordings.

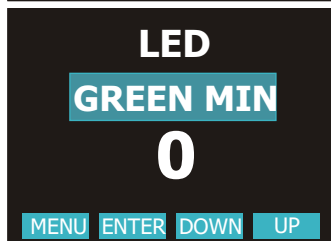
BOOST DRIVING

This menu allows to increase the LED's current from 350mA to 500 mA

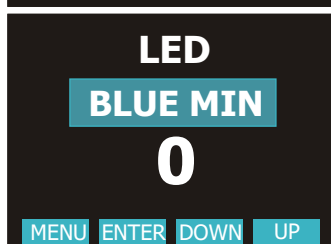
Default = Disabled



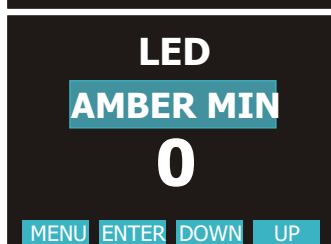
RED Min default = 0
RED Max default = 255



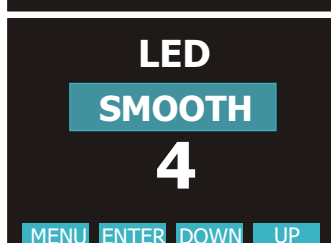
BLUE Min default = 0
BLUE Max default = 255



GREEN Min default = 0
GREEN Max default = 255



AMBER Min default = 0
AMBER Max default = 255



SMOOTH
Range = Off - 20
Default = 4



GAMMA CORRECTION

This menu allow to select between Linear current output or Quadratic current output for LEDs

Default = Linear

OUTPUT FREQUENCY

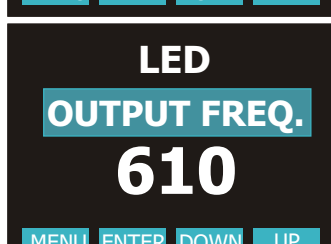
This menu allow to adjust the PWM frequency value (Hz) in order to reduce flickering in the process of your camera recordings

BOOST DRIVING

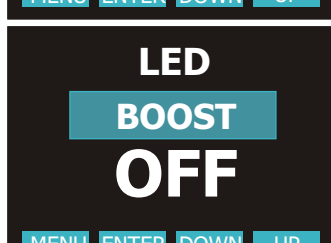
This menu allow to increase the LED's current from 350mA to 500 mA



GAMMA CORRECTION
Linear = Linear current output
Quadratic = Linear light output
(Default)



OUTPUT FREQUENCY
Range = 610 Hz -10 KHz
Default = 610 Hz



BOOST
Whit BOOST active, the LED's current is set to 500mA (30% more gain).
Default = Disabled



AUTO




AUTOMATIC MODE
Automatic demo game without DMX controller.

STEP 01/16
Chase with 16 steps previously created in REC MODE
Speed time, Wait time and Dimmer selectable by user.

PERSONAL COLOURS
RGBA, Dimmer and Shutter values selectable by user.

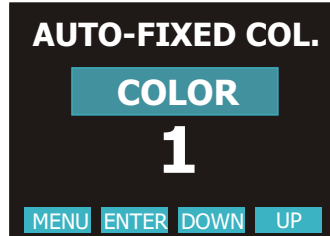
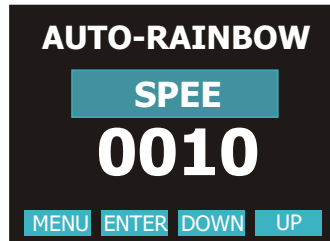
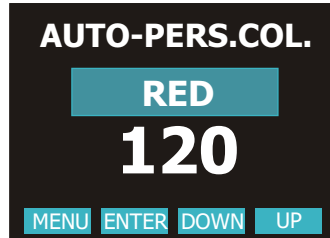
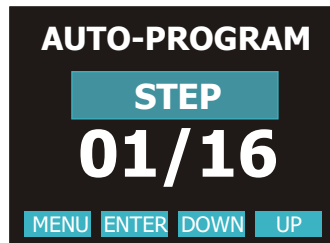
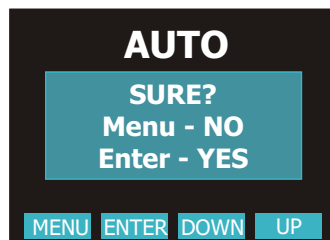
RAINBOW
Rainbow colours effect.
Speed time, Dimmer and Shutter values selectable by user.

FIXED COLOURS
Sixteen Colour Macros as on "MACRO" channel.
Dimmer and Shutter values selectable by user.

WHITE MACROS
Sixteen macros for White colour from 2800 to 6500 °K.
Dimmer and Shutter values selectable by user.

FIXED COLOURS
Sixteen Colour Macros as on "MACRO" channel.
Dimmer and Shutter values selectable by user.

WHITE MACROS
Sixteen macros for White colour from 2800 to 6500 °K.
Dimmer and Shutter values selectable by user.




SLAVE




SLAVE MODE SETTING
This menu allow to set the Z40 as slave unit.
DMX signal must be present from MASTER unit (set in AUTO MODE) in order to ran the units in SLAVE mode.

By setting all the SLAVE units connected to the MASTER, to DMX address 1, them will be synchronized with the Master unit following the chase selected on MASTER unit.



The SLAVE unit receive DMX signal from the MASTER unit.
By setting all the SLAVE units connected to the MASTER, to DMX address 1, them will be synchronized with the Master unit following the chase selected on it.


WIRELESS

WIRELESS DMX
Wireless DMX enabled / disabled.
By activating WDMX MODE, it will
be possible to control Z40 via
D.T.S. ANTENNA Wireless DMX
Transmitter (cod. 03.E1271).

**WIRELESS DMX system on Z40
is not implemented.**

**WIRELESS DMX system on Z40
is available on request**




WIRELESS DMX SYSTEM
DISABLED



WIRELESS DMX SYSTEM
ENABLED



UNLINK = LOG OUT



Logging on Z40 (WIRELESS DMX must be enabled on the unit)

To log on the Z40 in the WIRELESS system simply press and quickly release the function button on the transmitter .
The transmitter will start flashing rapidly red/green scanning for new free receivers / Z40 units. When a Z40 logs on to the transmitter the LINK green light on transmitter starts to flash rapidly.

After approximately 10 seconds the transmitter will jump back to normal mode and continue transmitting data. The Z40 now try to synchronize to the transmitter.

When synchronized to the transmitter, 2 different modes are possible:

1. Antenna transmitter has detected and transmits a DMX signal, in this mode a solid green light is seen on the transmitter and solid display is seen on Z40.
2. No DMX signal connected, the Antenna transmitter will flash red/green; display blinking on Z40

To log off Z40 from a transmitter simply select UNLINK function under WIRELESS DMX MENU and press ENTER.

When Z40 is logged off the display is blinking, meaning its available for log in on a new transmitter.

Logging out a Z40

Select UNLINK function under WIRELESS DMX MENU and press ENTER.

When Z40 is logged off the display is blinking, meaning its available for log in on a new transmitter.

Logging out all Z40 units linked to a transmitter

Press and hold the function button of the transmitter for about 3 seconds. When the display is blinking on Z40, it mean that the units are logged out.

Transmitter, Status LED

Flashing red/green, no dmx connected.

Solid green, dmx signal detected and transmitted.

Fast flashing red/green, log in mode (every free Z40 unit, not logged in to any other transmitter, will be logged on)

Z40 Status

Display blinking, not logged on to a transmitter (free).

Solid display, logged on to a transmitter and receiving dmx data.

  **EMERGENCY**

EMERGENCY
Emergency operating mode.
By setting Emergency mode, it will be possible to select one of the 16 pre-programmed WHITE cues that will then ran if DMX signal is missing or not available. Usefull for Emergency EXIT ilumination on public areas. Dimmer level, Pan&Tilt and Zoom values selectable by user.



EMERGENCY
Disabled = Default





EMERGENCY
Enabled



WHITE 1-16
Default = WHITE 1

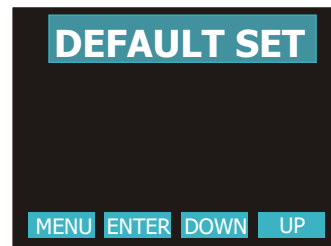


DIMMER
Default = 255

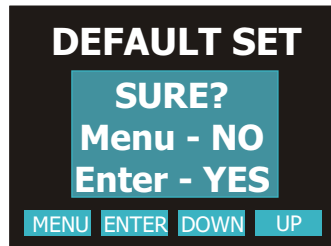
  **DEFAULT SET**

DEFAULT SETTINGS
To restore default settings



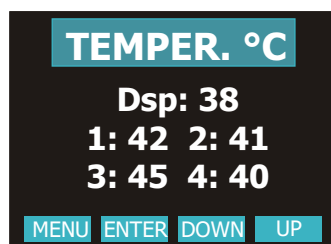




  **TEMPER. °C**

TEMPERATURE
Unit Display temperature visualisation and LEDs output groups 1-4 temperature visualisation. (°C= Celsius)





  **TIME**



LIFE TIME
This menu shows the total unit life time and the RGBA life time.

TIME
UNIT
13 Hr - 08 min
MENU ENTER DOWN UP

TIME
RED
0 Hr - 08 min
MENU ENTER DOWN UP

TIME
GREEN
0 Hr - 08 min
MENU ENTER DOWN UP

TIME
BLUE
0 Hr - 08 min
MENU ENTER DOWN UP

TIME
AMBER
0 Hr - 08 min
MENU ENTER DOWN UP

  **SYSTEM**

FAN MAX SPEED
This menu allows to select the internal fans speed.

FAN MAX SPEED
50% - 100%
Default = 100%

SYSTEM
FAN MAX SPEED
100%
MENU ENTER DOWN UP

  **SOFTWARE**

SOFTWARE
Display software and four LED driver board software.

DISPLAY SOFTWARE



SOFTWARE
Z40-DISPLAY
Id 0D0F055A
V1.04 Jul 12 2011
MENU ENTER DOWN UP

4 LED DRIVER BOARD SOFTWARE

SOFTWARE
Z40-DRIVER#1
Id 0D10048D
v1.02
MENU ENTER DOWN UP

DMX PROTOCOL

9 CHANNELS MODE (Default)

Outputs 1-4 have same DMX starting address previously selected on unit display

- 1 SHUTTER**
- 2 DIMMER**
- 3 RED**
- 4 GREEN**
- 5 BLUE**
- 6 WHITE (Pre-programmed whites at different color temperatures)**
- 7 CTC**
- 8 COLOURS MACRO**
- 9 FUNCTIONS**

DMX CHANNEL	1	Parameter: SHUTTER
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-9	5				Black-out
10-19	14				Open
20-29	24				Black-out
30-119					Strobe at variable speed from slow to fast (3,27 s - 30 ms)
120-149					Pulse open at variable speed from slow to fast (42,6 s - 120 ms)
150-179					Pulse close at variable speed from slow to fast (42,6 s - 120 ms)
180-204	192				Random Strobe (Master and RGB active)
205-229	218				Random Strobe (Full)
230-255	240				Open

DMX CHANNEL	2	Parameter: DIMMER
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional dimmer

DMX CHANNEL	3	Parameter: RED
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour

DMX CHANNEL	4	Parameter: GREEN
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour

DMX CHANNEL	5	Parameter: BLUE
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour

DMX CHANNEL	6	Parameter: WHITE (Pre-programmed White at diff. color temperature)
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-55	23				No Function
56-105	80				Full (Red-Green-Blue at Full)
106-155	130				White DTS

IF CHANNEL 9 (FUNCTIONS) = CUSTOM WHITE RECALL (Dmx range value 0 - 79)

156-205	180				Custom White Recall
206-255	225				White CTC (Channel 7 CTC enabled 256 color temp. Correction Macros: 2000°K-7200°K)

IF CHANNEL 9 (FUNCTIONS) = CUSTOM WHITE CREATE (Dmx range value 80 - 160)

156-205	180				Custom White Create (RGB levels selectable by DMX)
206-255	225				White CTC (Channel 7 CTC enabled 256 color temp. Correction Macros: 2000°K-7200°K)

DMX CHANNEL	7	Parameter: CTC (Colour temperature correction)
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
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IF CHANNEL 6 (White Pre-programmed) = WHITE CTC (Dmx range value 206 - 255)

0-255	256 color temp. Correction Macros: 0 = 2000°K / 128 = 5500°K / 255 = 7200°K				
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IF CHANNEL 6 (White Pre-programmed) = NO FUNCTION (Dmx range value 0 - 55)

0-255	No Function				
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DMX CHANNEL	8	Parameter: COLOUR MACROS
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IF:  **DMX SET**  **MACRO**  **STD** 

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-14					No Function
15-29					Macro 1
30-44					Macro 2
45-59					Macro 3
60-74					Macro 4
75-89					Macro 5
90-104					Macro 6
105-119					Macro 7
120-134					Macro 8
135-149					Macro 9
150-164					Macro 10
165-179					Macro 11
180-194					Macro 12
195-209					Macro 13
210-225					Macro 14
226-239					Macro 15
240-255					Macro 16

DMX CHANNEL	8	Parameter: COLOUR MACROS
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IF:  **DMX SET**  **MACRO**  **EXT** 

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-14					No Function
15-24					Macro 1
25-34					Macro 2
35-44					Macro 3
45-54					Macro 4
55-64					Macro 5
65-74					Macro 6
75-84					Macro 7
85-94					Macro 8
95-104					Macro 9
105-114					Macro 10
115-124					Macro 11
125-134					Macro 12
135-144					Macro 13
145-154					Macro 14
155-164					Macro 15
165-174					Macro 16

DMX CHANNEL	8	Parameter: COLOUR MACROS
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IF:   **DMX SET**   **MACRO**  **EXT** 

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
175-184					Rainbow Speed 1 (6 Sec.)
185-194					Rainbow Speed 2 (15 Sec.)
195-204					Rainbow Speed 3 (30 Sec.)
205-214					Rainbow Speed 4 (45 Sec.)
215-224					Rainbow Speed 5 (60 Sec.)
225-234					Rainbow Speed 6 (120 Sec.)
235-244					Rainbow Speed 7 (150 Sec.)
245-255					Rainbow Speed 8 (180 Sec.)

DMX CHANNEL	9	Parameter: FUNCTIONS (Recall, Create and Store the Custom white)
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-79					Custom White Recall (Enable CH 6 for Custom white Recall)
80-160					Custom White Create (Enable CH 6 for Custom white Creation)
161-255					Custom White Store (Store the Custom White created)

36 CHANNELS MODE

Same DMX chart as per 9ch mode but Outputs 1-4 are automatically assigned to different DMX starting address.

Ch 1 to 9 = Output 1 with DMX chart as per 9ch mode

Ch 10 to 18 = Output 2 with DMX chart as per 9ch mode

Ch 19 to 27 = Output 3 with DMX chart as per 9ch mode

Ch 28 to 36 = Output 4 with DMX chart as per 9ch mode

OUTPUT 1

- 1 SHUTTER
- 2 DIMMER
- 3 RED
- 4 GREEN
- 5 BLUE
- 6 WHITE (Pre-programmed whites at different color temperatures)
- 7 CTC
- 8 COLOURS MACRO
- 9 FUNCTIONS

OUTPUT 2

- 10 SHUTTER
- 11 DIMMER
- 12 RED
- 13 GREEN
- 14 BLUE
- 15 WHITE (Pre-programmed whites at different color temperatures)
- 16 CTC
- 17 COLOURS MACRO
- 18 FUNCTIONS

OUTPUT 3

- 19 SHUTTER
- 20 DIMMER
- 21 RED
- 22 GREEN
- 23 BLUE
- 24 WHITE (Pre-programmed whites at different color temperatures)
- 25 CTC
- 26 COLOURS MACRO
- 27 FUNCTIONS

OUTPUT 4

- 28 SHUTTER
- 29 DIMMER
- 30 RED
- 31 GREEN
- 32 BLUE
- 33 WHITE (Pre-programmed whites at different color temperatures)
- 34 CTC
- 35 COLOURS MACRO
- 36 FUNCTIONS

5 CHANNELS MODE

Outputs 1-4 have same DMX starting address previously selected on unit display

- 1 **SHUTTER**
- 2 **DIMMER**
- 3 **RED**
- 4 **GREEN**
- 5 **BLUE**

DMX CHANNEL	1	Parameter: SHUTTER
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-9	5				Black-out
10-19	14				Open
20-29	24				Black-out
30-119					Strobe at variable speed from slow to fast (3,27 s - 30 ms)
120-149					Pulse open at variable speed from slow to fast (42,6 s - 120 ms)
150-179					Pulse close at variable speed from slow to fast (42,6 s - 120 ms)
180-204	192				Random Strobe (Master and RGB active)
205-229	218				Random Strobe (Full)
230-255	240				Open

DMX CHANNEL	2	Parameter: DIMMER
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional dimmer

DMX CHANNEL	3	Parameter: RED
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour

DMX CHANNEL	4	Parameter: GREEN
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour

DMX CHANNEL	5	Parameter: BLUE
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour

20 CHANNELS MODE

Same DMX chart as per 5ch mode but Outputs 1-4 are automatically assigned to different DMX starting address.

Ch 1 to 5 = Output 1 with DMX chart as per 5ch mode

Ch 6 to 10 = Output 2 with DMX chart as per 5ch mode

Ch 11 to 15 = Output 3 with DMX chart as per 5ch mode

Ch 16 to 20 = Output 4 with DMX chart as per 5ch mode

OUTPUT 1

- 1 SHUTTER
- 2 DIMMER
- 3 RED
- 4 GREEN
- 5 BLUE

OUTPUT 2

- 6 SHUTTER
- 7 DIMMER
- 8 RED
- 9 GREEN
- 10 BLUE

OUTPUT 3

- 11 SHUTTER
- 12 DIMMER
- 13 RED
- 14 GREEN
- 15 BLUE

OUTPUT 4

- 16 SHUTTER
- 17 DIMMER
- 18 RED
- 19 GREEN
- 20 BLUE

4 CHANNELS MODE

Outputs 1-4 have same DMX starting address previously selected on unit display

- 1 **RED**
- 2 **GREEN**
- 3 **BLUE**
- 4 **WHITE**

DMX CHANNEL	1	Parameter: RED			
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour

DMX CHANNEL	2	Parameter: GREEN			
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour

DMX CHANNEL	3	Parameter: BLUE			
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour

DMX CHANNEL	4	Parameter: WHITE			
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour

16 CHANNELS MODE

Same DMX chart as per 4ch mode but Outputs 1-4 are automatically assigned to different DMX starting address.

Ch 1 to 4 = Output 1 with DMX chart as per 4ch mode

Ch 5 to 8 = Output 2 with DMX chart as per 4ch mode

Ch 9 to 12 = Output 3 with DMX chart as per 4ch mode

Ch 13 to 16 = Output 4 with DMX chart as per 4ch mode

OUTPUT 1

- 1 RED
- 2 GREEN
- 3 BLUE
- 4 WHITE

OUTPUT 2

- 5 RED
- 6 GREEN
- 7 BLUE
- 8 WHITE

OUTPUT 3

- 9 RED
- 10 GREEN
- 11 BLUE
- 12 WHITE

OUTPUT 4

- 13 RED
- 14 GREEN
- 15 BLUE
- 16 WHITE

32 CHANNELS MODE (16 bit)

Outputs 1-4 are automatically assigned to different DMX starting address.

Ch 1 to 8 = Output 1

Ch 9 to 16 = Output 2

Ch 17 to 24 = Output 3

Ch 25 to 32 = Output 4

OUTPUT 1

- 1 RED
- 2 RED FINE
- 3 GREEN
- 4 GREEN FINE
- 5 BLUE
- 6 BLUE FINE
- 7 WHITE
- 8 WHITE FINE

OUTPUT 2

- 9 RED
- 10 RED FINE
- 11 GREEN
- 12 GREEN FINE
- 13 BLUE
- 14 BLUE FINE
- 15 WHITE
- 16 WHITE FINE

OUTPUT 3

- 17 RED
- 18 RED FINE
- 19 GREEN
- 20 GREEN FINE
- 21 BLUE
- 22 BLUE FINE
- 23 WHITE
- 24 WHITE FINE

OUTPUT 4

- 25 RED
- 26 RED FINE
- 27 GREEN
- 28 GREEN FINE
- 29 BLUE
- 30 BLUE FINE
- 31 WHITE
- 32 WHITE FINE

1 CHANNEL MODE

Outputs 1-4 have same DMX starting address previously selected on unit display

1 DIMMER (RGBW of all outputs at the same time)

DMX CHANNEL	1	Parameter: DIMMER			
DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional dimmer

4 CHANNELS MODE

Outputs 1-4 are automatically assigned to different DMX starting address.

Ch 1 = Output 1

Ch 2 = Output 2

Ch 3 = Output 3

Ch 4 = Output 4

DMX CHANNEL	1	Parameter: DIMMER (RGBW of the output 1)			
DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional dimmer

DMX CHANNEL	2	Parameter: DIMMER (RGBW of the output 2)			
DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional dimmer

DMX CHANNEL	3	Parameter: DIMMER (RGBW of the output 3)			
DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional dimmer

DMX CHANNEL	4	Parameter: DIMMER (RGBW of the output 4)			
DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional dimmer

10 CHANNELS MODE

Outputs 1-4 have same DMX starting address previously selected on unit display

- 1 SHUTTER
- 2 DIMMER
- 3 RED
- 4 GREEN
- 5 BLUE
- 6 WHITE
- 7 WHITE (Pre-programmed whites at different color temperatures)
- 8 CTC
- 9 COLOURS MACRO
- 10 FUNCTIONS

DMX CHANNEL	1	Parameter: SHUTTER
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-9	5				Black-out
10-19	14				Open
20-29	24				Black-out
30-119					Strobe at variable speed from slow to fast (3,27 s - 30 ms)
120-149					Pulse open at variable speed from slow to fast (42,6 s - 120 ms)
150-179					Pulse close at variable speed from slow to fast (42,6 s - 120 ms)
180-204	192				Random Strobe (Master and RGB active)
205-229	218				Random Strobe (Full)
230-255	240				Open

DMX CHANNEL	2	Parameter: DIMMER
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional dimmer

DMX CHANNEL	3	Parameter: RED
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour

DMX CHANNEL	4	Parameter: GREEN			
DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour
DMX CHANNEL	5	Parameter: BLUE			
DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour
DMX CHANNEL	6	Parameter: WHITE			
DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					Proportional colour
DMX CHANNEL	7	Parameter: WHITE (Pre-programmed White at diff. color temperature)			
DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-55	23				No Function
56-105	80				Full (Red-Green-Blue-White at Full)
106-155	130				White DTS
IF CHANNEL 10 (FUNCTIONS) = CUSTOM WHITE RECALL (Dmx range value 0 - 79)					
156-205	180				Custom White Recall
206-255	225	White CTC (Channel 8 CTC enabled 256 color temp. Correction Macros: 2000°K-7200°K)			
IF CHANNEL 10 (FUNCTIONS) = CUSTOM WHITE CREATE (Dmx range value 80 - 160)					
156-205	180	Custom White Create (RGBW levels selectable by DMX)			
206-255	225	White CTC (Channel 8 CTC enabled 256 color temp. Correction Macros: 2000°K-7200°K)			
DMX CHANNEL	8	Parameter: CTC (Colour temperature correction)			
DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
IF CHANNEL 7 (White Pre-programmed) = WHITE CTC (Dmx range value 206 - 255)					
0-255	256 color temp. Correction Macros: 0 = 2000°K / 128 = 5500°K / 255 = 7200°K				
IF CHANNEL 7 (White Pre-programmed) = NO FUNCTION (Dmx range value 0 - 55)					
0-255	No Function				

DMX CHANNEL	9	Parameter: COLOUR MACROS
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IF:  **DMX SET**  **MACRO**  **STD** 

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-14					No Function
15-29					Macro 1
30-44					Macro 2
45-59					Macro 3
60-74					Macro 4
75-89					Macro 5
90-104					Macro 6
105-119					Macro 7
120-134					Macro 8
135-149					Macro 9
150-164					Macro 10
165-179					Macro 11
180-194					Macro 12
195-209					Macro 13
210-225					Macro 14
226-239					Macro 15
240-255					Macro 16

DMX CHANNEL	9	Parameter: COLOUR MACROS
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IF:  **DMX SET**  **MACRO**  **EXT** 

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-14					No Function
15-24					Macro 1
25-34					Macro 2
35-44					Macro 3
45-54					Macro 4
55-64					Macro 5
65-74					Macro 6
75-84					Macro 7
85-94					Macro 8
95-104					Macro 9
105-114					Macro 10
115-124					Macro 11
125-134					Macro 12
135-144					Macro 13
145-154					Macro 14
155-164					Macro 15
165-174					Macro 16

DMX CHANNEL	9	Parameter: COLOUR MACROS
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IF:   **DMX SET**   **MACRO**  **EXT** 

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
175-184					Rainbow Speed 1 (6 Sec.)
185-194					Rainbow Speed 2 (15 Sec.)
195-204					Rainbow Speed 3 (30 Sec.)
205-214					Rainbow Speed 4 (45 Sec.)
215-224					Rainbow Speed 5 (60 Sec.)
225-234					Rainbow Speed 6 (120 Sec.)
235-244					Rainbow Speed 7 (150 Sec.)
245-255					Rainbow Speed 8 (180 Sec.)

DMX CHANNEL	10	Parameter: FUNCTIONS (Recall, Create and Store the Custom white)
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-79					Custom White Recall (Enable CH 7 for Custom white Recall)
80-160					Custom White Create (Enable CH 7 for Custom white Creation)
161-255					Custom White Store (Store the Custom White created)

40 CHANNELS MODE

Same DMX chart as per 10ch mode but Outputs 1-4 are automatically assigned to different DMX starting address.

Ch 1 to 10 = Output 1 with DMX chart as per 10ch mode

Ch 11 to 20 = Output 2 with DMX chart as per 10ch mode

Ch 21 to 30 = Output 3 with DMX chart as per 10ch mode

Ch 31 to 40 = Output 4 with DMX chart as per 10ch mode

OUTPUT 1

- 1 SHUTTER
- 2 DIMMER
- 3 RED
- 4 GREEN
- 5 BLUE
- 6 WHITE
- 7 WHITE (Pre-programmed whites at different color temperatures)
- 8 CTC
- 9 COLOURS MACRO
- 10 FUNCTIONS

OUTPUT 2

- 11 SHUTTER
- 12 DIMMER
- 13 RED
- 14 GREEN
- 15 BLUE
- 16 WHITE
- 17 WHITE (Pre-programmed whites at different color temperatures)
- 18 CTC
- 19 COLOURS MACRO
- 20 FUNCTIONS

OUTPUT 3

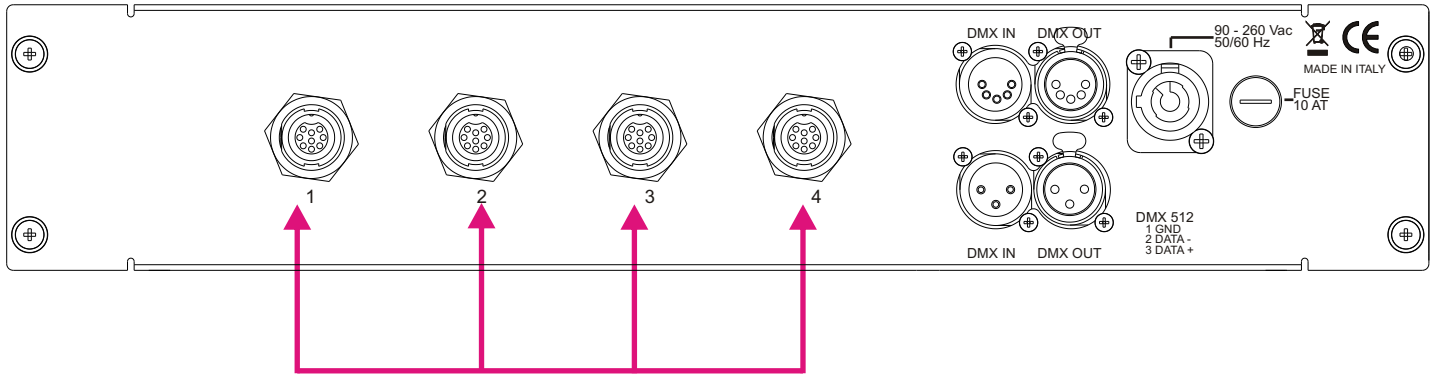
- 21 SHUTTER
- 22 DIMMER
- 23 RED
- 24 GREEN
- 25 BLUE
- 26 WHITE
- 27 WHITE (Pre-programmed whites at different color temperatures)
- 28 CTC
- 29 COLOURS MACRO
- 30 FUNCTIONS

OUTPUT 4

- 31 SHUTTER
- 32 DIMMER
- 33 RED
- 34 GREEN
- 35 BLUE
- 36 WHITE
- 37 WHITE (Pre-programmed whites at different color temperatures)
- 38 CTC
- 39 COLOURS MACRO
- 40 FUNCTIONS

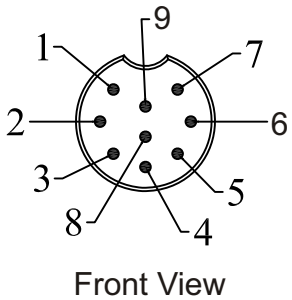
WIRING DIAGRAMS

Z40 M16 Output (03.LA.120)

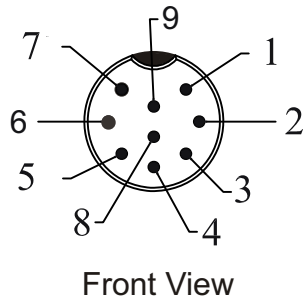


4 x LEDs outputs
M16 Female panel connector

M16 Female panel connector on board Z40



M16 Male cable connector on board Delta 8 B HEAD



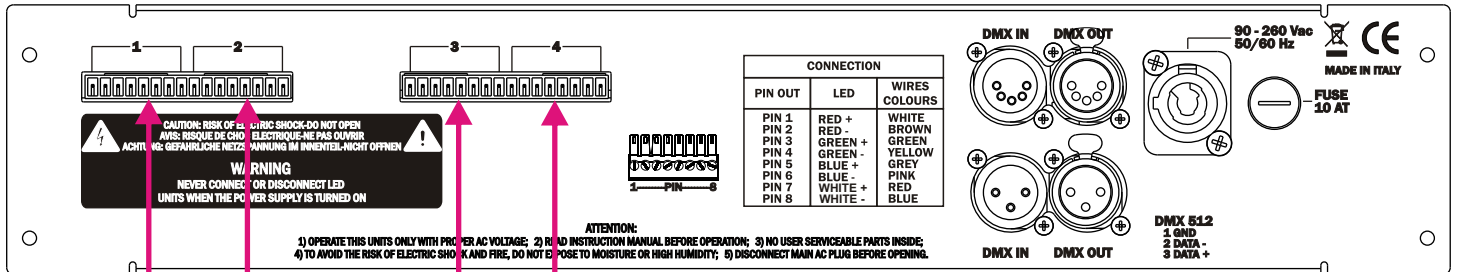
LED OUTPUTS

WIRES SEQUENCE COLOURS	PIN OUT
PIN 1 - BLUE	PIN 1: RED +
PIN 2 - GREEN	PIN 2: GREEN +
PIN 3 - YELLOW	PIN 3: BLUE +
PIN 4 - ORANGE	PIN 4: WHITE +
PIN 5 - RED	PIN 5: COMMON
PIN 6 - BROWN	PIN 6: (RED - GREEN - BLUE -)
PIN 7 - BLACK	
PIN 8 - GREY	
PIN 9 - WHITE	PIN 7: WHITE -
	PIN 8: NTC (THERMAL)
	PIN 9: NTC (SENSOR)

The Maximum distance between the Z40 and DELTA 8 head (all models), DONUT, FOS 100 POWER (all models) and FOS 50 POWER FC should not exceed 50 meters.

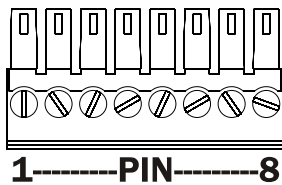
WIRING DIAGRAMS

Z40 Screw terminals output (03.LA.130)



4 x LEDs outputs
Screw terminal panel connector

8 poles screw terminals

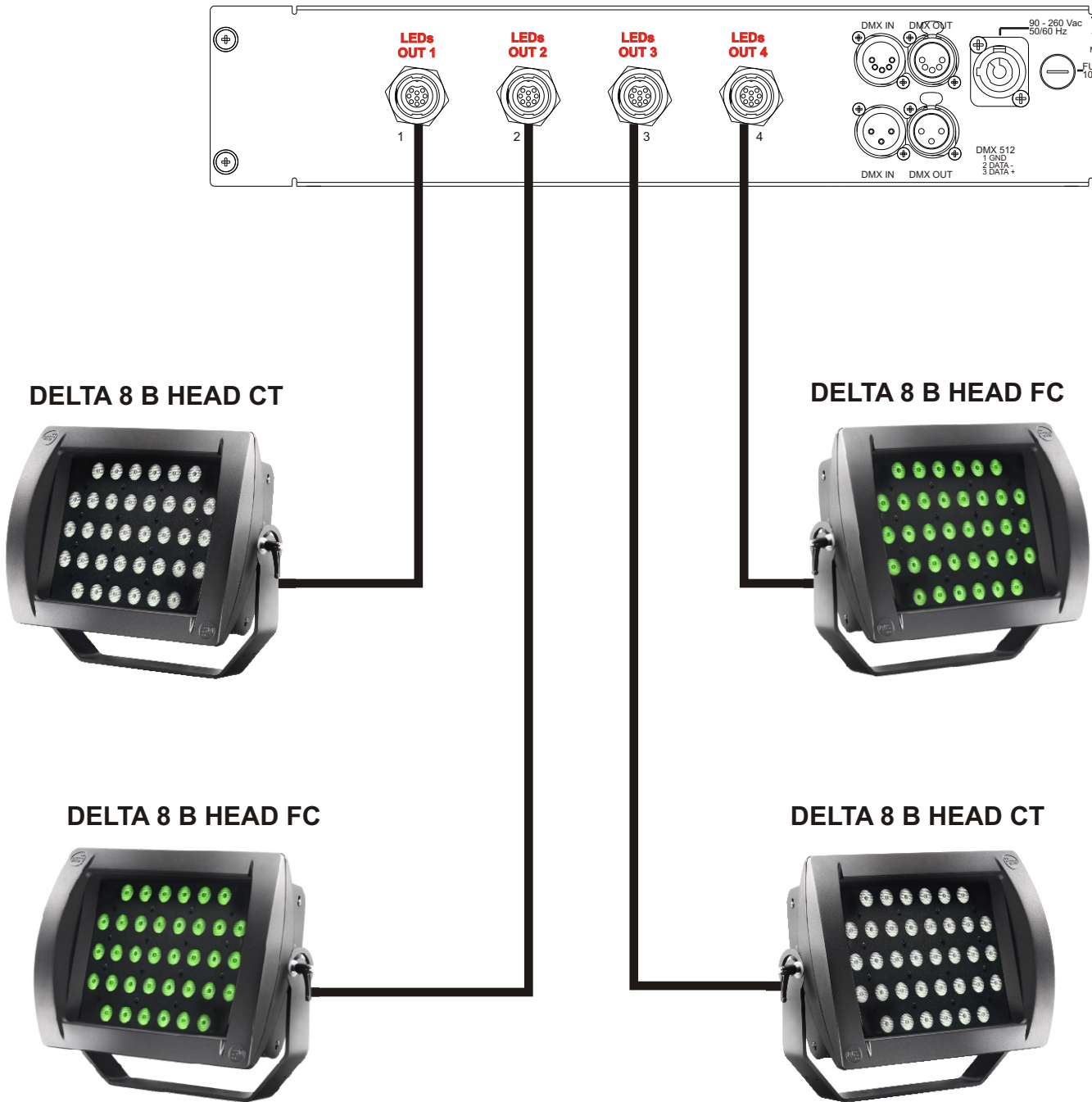


CONNECTION		
PIN OUT	LED	WIRES COLOURS
PIN 1	RED +	WHITE
PIN 2	RED -	BROWN
PIN 3	GREEN +	GREEN
PIN 4	GREEN -	YELLOW
PIN 5	BLUE +	GREY
PIN 6	BLUE -	PINK
PIN 7	WHITE +	RED
PIN 8	WHITE -	BLUE

The Maximum distance between the Z40 and DELTA 8 head (all models), DONUT, FOS 100 POWER (all models) and FOS 50 POWER FC should not exceed 50 meters.

LED UNITS WIRING CONNECTION

Z40 M16 Output (03.LA.120)

**IMPORTANT:**

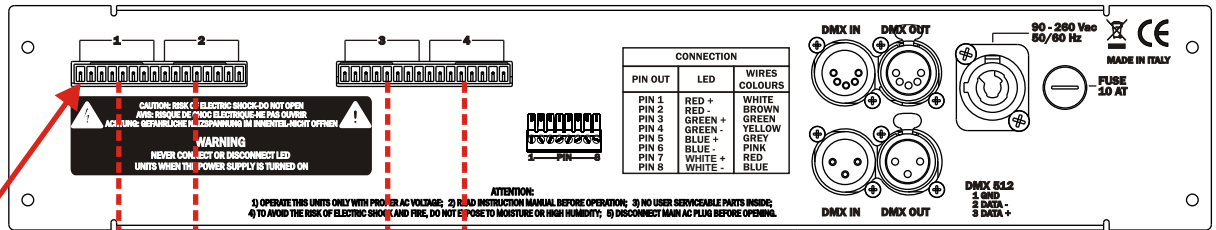
The maximum number of DELTA 8 B HEAD projector connectable to each Z40 LEDs output is 1 pc.

NEVER CONNECT OR DISCONNECT A DELTA 8 UNIT WHEN THE POWER SUPPLY IS TURNED ON.

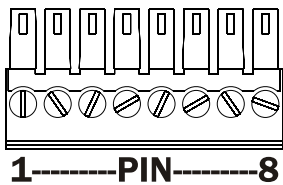
The Maximum distance between the Z40 and the DELTA 8 B HEAD unit (all models) should not exceed 50 meters.

LED UNITS WIRING CONNECTION

Z40 Screw terminals output (03.LA.130)



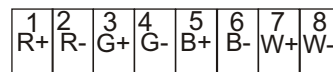
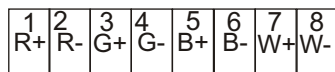
8 poles screw terminals



LEDs OUT 1 LEDs OUT 2 LEDs OUT 3 LEDs OUT 4

LEDs OUTPUT

LEDs OUTPUT



CONNECTION		
PIN OUT	LED	WIRES COLOURS
PIN 1	RED +	WHITE
PIN 2	RED -	BROWN
PIN 3	GREEN +	GREEN
PIN 4	GREEN -	YELLOW
PIN 5	BLUE +	GREY
PIN 6	BLUE -	PINK
PIN 7	WHITE +	RED
PIN 8	WHITE -	BLUE

DONUT RGBW



DONUT RGBW



IMPORTANT:

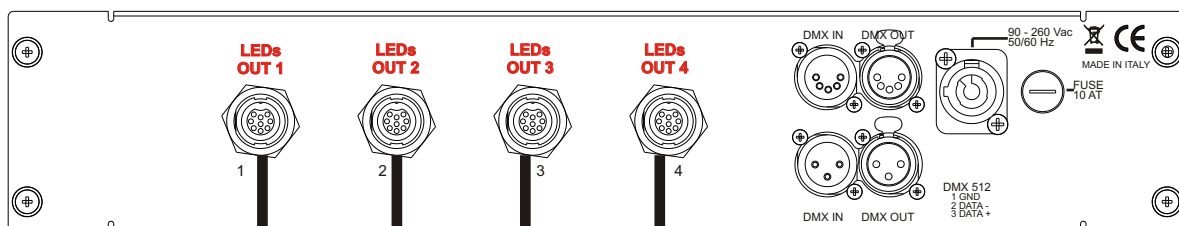
The maximum number of DONUT unit connectable to each Z40 LEDs output is 1 pc.

NEVER CONNECT OR DISCONNECT DONUT UNIT WHEN THE POWER SUPPLY IS TURNED ON.

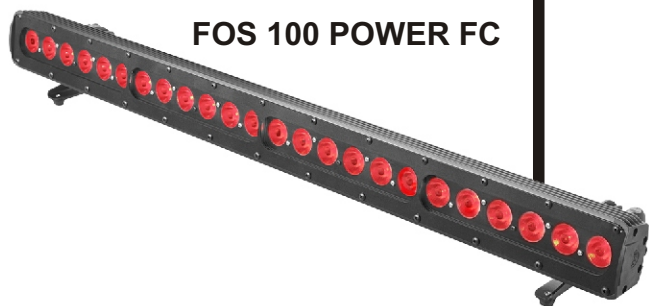
The Maximum distance between the Z40 and the DONUT unit (all models) should not exceed 50 meters.

LED UNITS WIRING CONNECTION

Z40 M16 Output (03.LA.120)



FOS 100 POWER FC



FOS 100 POWER CT



FOS 100 POWER CT



FOS 100 POWER FC

**IMPORTANT:**

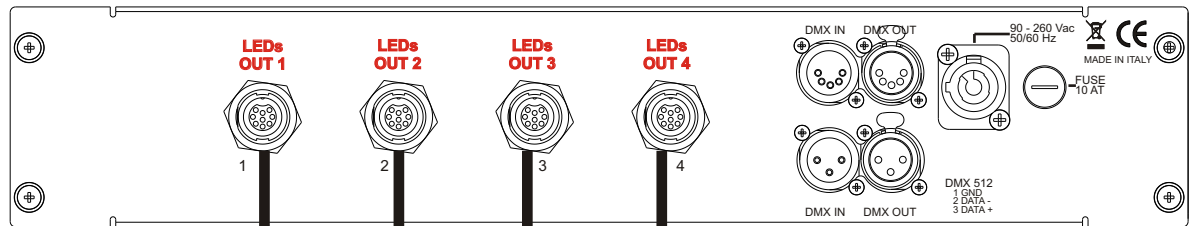
The maximum number of FOS 100 POWER LED bar connectable to each Z40 LEDs output is 1 pc.

NEVER CONNECT OR DISCONNECT THE LED BAR WHEN THE POWER SUPPLY IS TURNED ON.

The Maximum distance between the Z40 and the FOS 100 POWER LED bar (all models) should not exceed 50 meters.

LED UNITS WIRING CONNECTION

Z40 M16 Output (03.LA.120)



FOS 50 POWER FC
IN / OUT



FOS 50 POWER FC
IN / OUT



FOS 50 POWER FC
END



FOS 50 POWER FC
END



FOS 50 POWER FC
IN / OUT



FOS 50 POWER FC
IN / OUT



FOS 50 POWER
FC END



FOS 50 POWER FC
END

**IMPORTANT:**

The minimum number of FOS 50 POWER FC LED bar connectable to each Z40 LEDs output is 2 pcs (1x FOS 50 POWER FC IN / OUT + 1x FOS 50 POWER FC END).

NEVER CONNECT OR DISCONNECT THE LED BARS WHEN THE POWER SUPPLY IS TURNED ON.

The Maximum distance between the Z40 and the FOS 50 POWER FC LED bar should not exceed 50 meters.

The Maximum distance between the Z40 and the last FOS 50 POWER FC unit in the line (2 pcs) should not exceed 50 meters.

NOTES

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The Lighting Company

ISO 9001:2008

D.T.S. quality system
is certified to the
ISO 9001:2008 standard



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and manufactured at the D.T.S.
plants in Italy



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