

# Z40 LED Controller



03.LA.120

User's Manual Rel 1.0 **GB**

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



The Lighting Company

Made in Italy



Le informazioni contenute in questo documento sono state attentamente redatte e controllate. Tuttavia non è assunta alcuna responsabilità per eventuali inesattezze. Tutti i diritti sono riservati e questo documento non può essere copiato, fotocopiato, riprodotto per intero o in parte senza previo consenso scritto della D.T.S .

D.T.S. si riserva il diritto di apportare senza preavviso cambiamenti e modifiche estetiche , funzionali o di design a ciascun proprio prodotto. D.T.S. non assume alcuna responsabilità sull'uso o sull'applicazione dei prodotti o dei circuiti descritti.

The information contained in this publication has been carefully prepared and checked. However, no responsibility will be taken for any errors. All rights are reserved and this document cannot be copied, photocopied or reproduced, in part or completely, without prior written consent from D.T.S.

D.T.S. reserves the right to make any aesthetic, functional or design modifications to any of its products without prior notice. D.T.S. assumes no responsibility for the use or application of the products or circuits described herein.

Les informations contenues dans le présent manuel ont été rédigées et contrôlées avec le plus grand soin. Nous déclinons toutefois toute responsabilité en cas d'éventuelles inexactitudes. Tous droits réservés. Ce document ne peut être copié, photocopié ou reproduit, dans sa totalité ou partiellement, sans le consentement préalable de D.T.S.

D.T.S. se réserve le droit d'apporter toutes modifications et améliorations esthétiques, fonctionnelles ou de design, sans préavis, à chacun de ses produits. D.T.S. décline toute responsabilité sur l'utilisation ou sur l'application des produits ou des circuits décrits.

Las informaciones contenidas en este documento han sido cuidadosamente redactadas y controladas. Con todo, no se asume ninguna responsabilidad por eventuales inexactitudes. Todos los derechos han sido reservados y este documento no puede ser copiado, fotocopiado o reproducido, total o parcialmente, sin previa autorización escrita de D.T.S.

D.T.S. se reserva el derecho a aportar sin previo aviso cambios y modificaciones de carácter estético, funcional o de diseño a cada producto suyo. D.T.S. no se asume responsabilidad de ningún tipo sobre la utilización o sobre la aplicación de los productos o de los circuitos descritos.

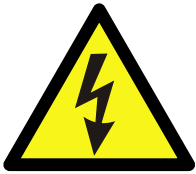


## SYMBOLS

Graphic symbols used on this manual



THIS SYMBOL INDICATES A HOT SURFACE



THIS SYMBOL INDICATES ELECTRIC SHOCK RISK



THIS SYMBOL INDICATES GENERAL RISK



THIS SYMBOL MEANS "DO NOT PLACE THE UNIT ON INFLAMMABLE SURFACES"



## **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

### **System**

Z8 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 FULL COLOUR
- \* max 4 x DELTA 8 heads RGB
- \* max 4 x DELTA 8 heads WHITE+AMBER

### **Interface**

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

### **DMX**

**Z40 LED CONTROLLER can be used in 4 DMX modes: 36 ch, 20 ch, 9 ch and 5 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: 2 XLR 5-poles by Neutrik and 2 XLR 3-poles by Neutrik

LEDs connector output: 4 X MR16 - 9 poles connectors

The Maximum distance between the Z40 and DELTA 8 head (all models) 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 and 50W Blue/Amber (CH4 is actually not used when DELTA 8 heads are connected).

Output Current : 350 mA @ 100% per channel

500 mA @ 100% per channel in BOOST Mode

Output Voltage : Vout 48V (Constant Current PWM)

Max Load each output: 1 x DELTA 8 head 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:**

Never locate the fixture on any flammable surface.  
 Minimum distance from flammable materials: 10 cm  
 Replace any blown or damaged fuses only with those of identical value

**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 Z8.  
 Use only AC supplies 90-260V, 50-60Hz  
 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

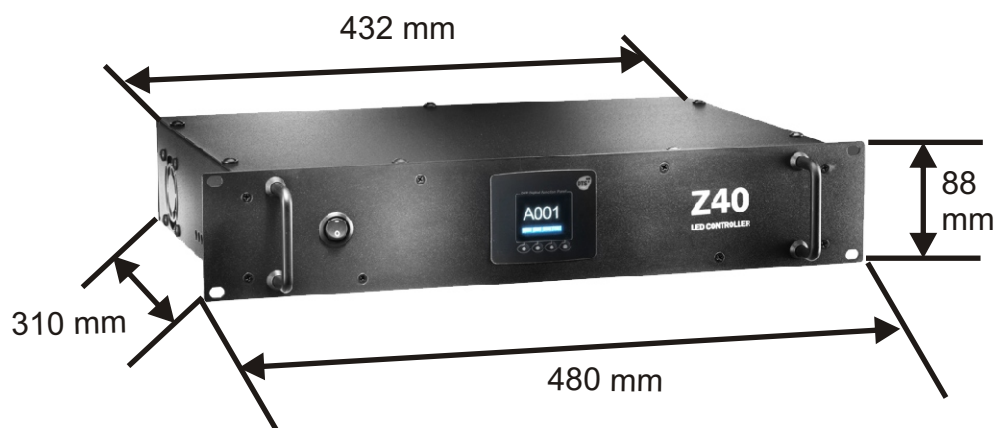
**Level of protection against the penetration of solid and liquid objects:**

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

**UNIT DIMENSION**

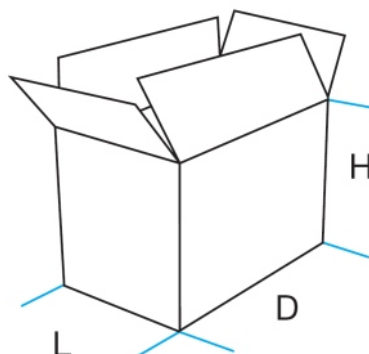
Unit Dimensions  
 (LxDxH)  
 480 x 310 x 88 mm

Weight  
 7,5 Kg



Packing Dimensions  
 (LxDxH)  
 490 x 390 x 90 mm

Weight  
 8,5 Kg



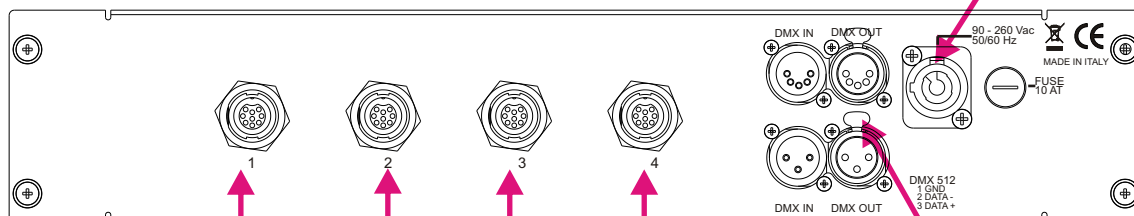


**INPUT/OUTPUT CONNECTIONS**

Mains Switch

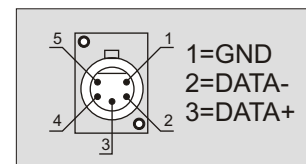
Displays

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

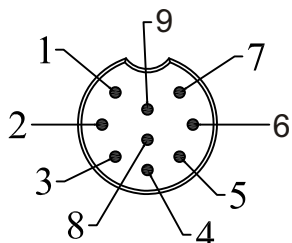


4 x LEDs outputs  
M16 Female panel connector

DMX IN-OUT connectors

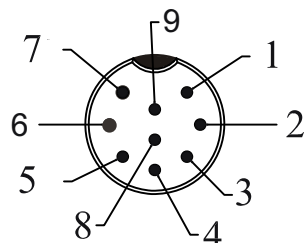


M16 Female  
panel connector  
on board Z40



Front View

M16 Male  
cable connector  
on board Delta 8 B HEAD



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 7: (GREEN -)
PIN 8 - GREY	PIN 8: (BLUE -)
PIN 9 - WHITE	PIN 9: (WHITE -)
	PIN 8: NTC (THERMAL)
	PIN 9: NTC (SENSOR)

**The Maximum distance between the Z40 and DELTA 8 head (all models) should not exceed 50 meters.**

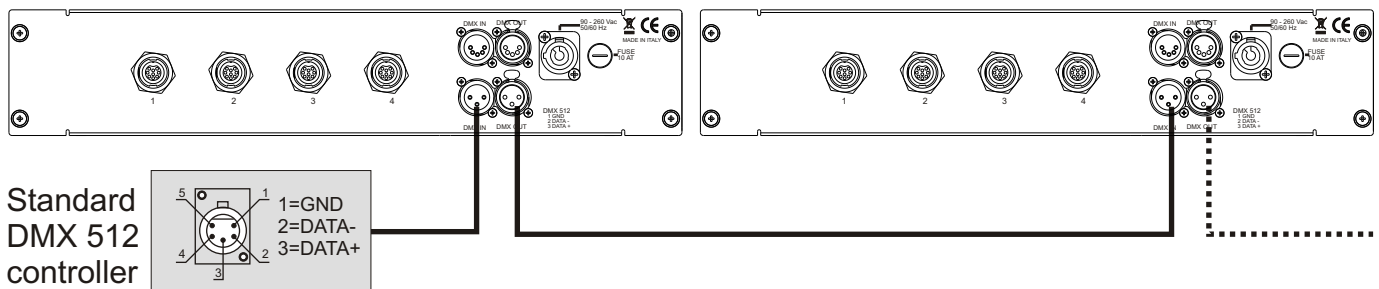


## DMX SIGNAL CONNECTION

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.

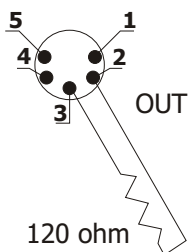


P.S: If the display showing the DMX address flashes, then one of the following errors has occurred:

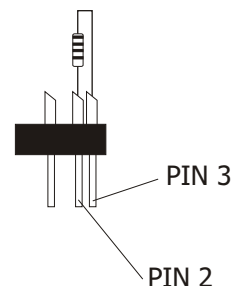
- DMX signal not present
- DMX reception problem

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 4 DMX modes: 36 ch, 20 ch, 9 ch (Default) and 5 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 "10"
Projector 3	A019	
.....	A....	
projector 6	A045	

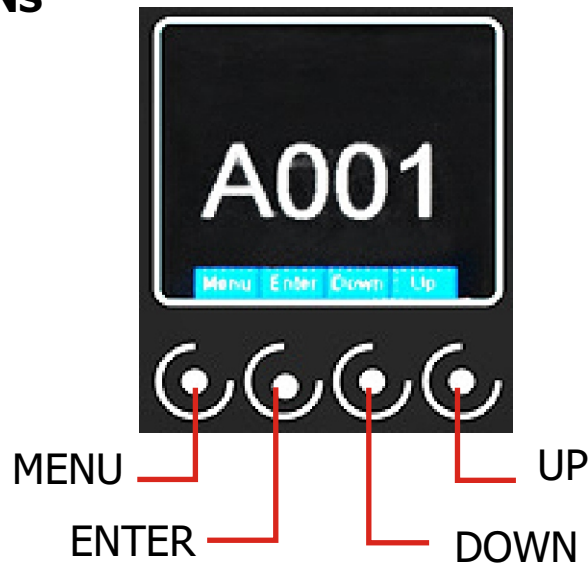
**Selecting the DMX address**

- 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 1.04

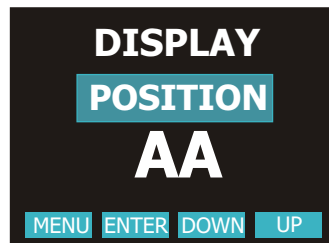
  Display

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 5 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 5 seconds



  DMX Set

DMX MODE / MACRO  
DMX Mode  
To select DMX mode : 36 ch, 20 ch, 9 ch (default) and 5 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 allow to select the minimum levels for Red, Green, Blue and Amber/White

**RGBA MAXIMUM VALUES**

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

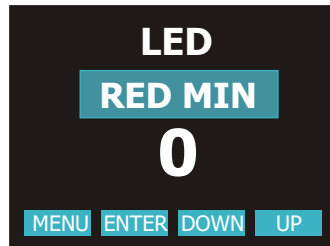
**OUTPUT FREQUENCY**

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

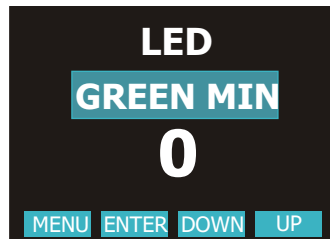
**BOOST DRIVING**

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

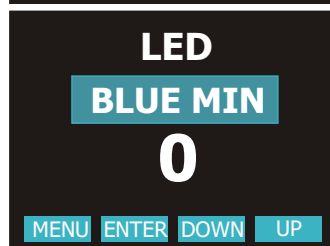
Default = Disabled



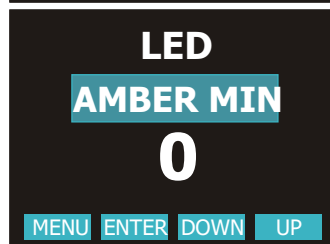
RED Min default =0  
RED Max default = 255



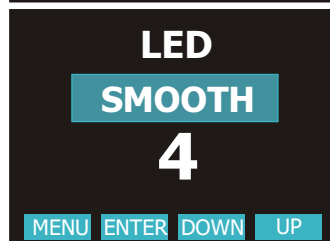
BLUE Min default =0  
BLUE Max default = 255



GREEN Min default =0  
GREEN Max default = 255



AMBER Min default =0  
AMBER Max default = 255



SMOOTH  
Range = Off - 20  
Default = 4

**GAMMA CORRECTION**

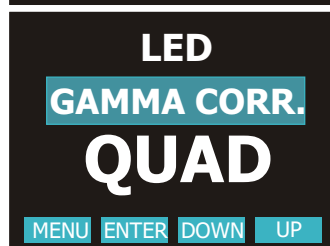
This menu allow to select between Linear current output or Quadratic current output for LEDs  
Default = Linear

**OUTPUT FREQUENCY**

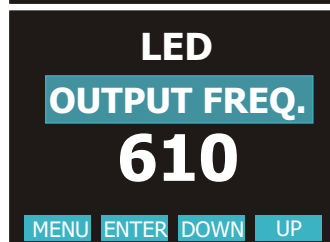
This menu allow to adjust the PWM frequency value (Hz) in order to reduce flickering in the process of your camera recordings

**BOOST DRIVING**

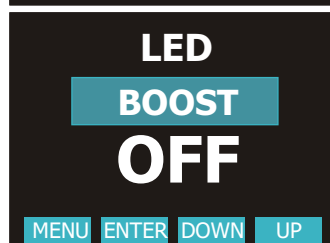
This menu allow to increase the LED's current from 350mA to 500 mA



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



ENTER Up-Down



ENTER

#### 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, Dimme 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 color from 2800 to 6500 ° K.

Dimmer and Shutte 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 color from 2800 to 6500 ° K.

Dimmer and Shutter values selectable by user.

**AUTO**

**SURE?**  
Menu - NO  
Enter - YES

MENU ENTER DOWN UP

**AUTO-PROGRAM**

**STEP**  
**01/16**

MENU ENTER DOWN UP

**AUTO-PERS.COL.**

**RED**  
**120**

MENU ENTER DOWN UP

**AUTO-RAINBOW**

**SPEE**  
**0010**

MENU ENTER DOWN UP

**AUTO-FIXED COL.**

**COLOR**  
**1**

MENU ENTER DOWN UP

**AUTO-WHITE**

**WHITE NO.**  
**1**

MENU ENTER DOWN UP



SLAVE



ENTER Up-Down



ENTER

#### 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.

**SLAVE**

**SURE?**  
Menu - NO  
Enter - YES

MENU ENTER DOWN UP

**SLAVE**

**SLAVE MODE**

MENU ENTER DOWN UP

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.



## Menu Up-Down 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 preprogrammed 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



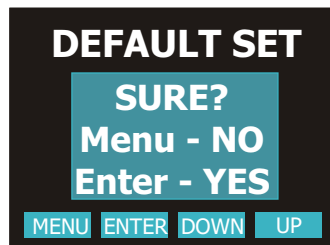
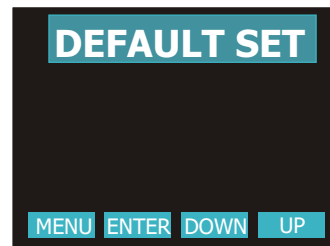
DIMMER  
Default = 255



## DEFAULT SET



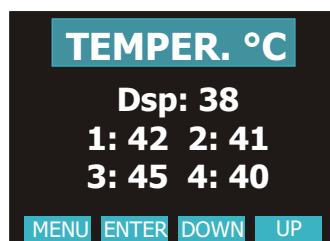
**DEFAULT SETTINGS**  
To restore default settings



## TEMPER. °C



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





  **TIME**



#### LIFE TIME

This menu show the total UNIT life time and the RGBA life time.  
(Amber time is disabled)

**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 - 00 min**  
MENU ENTER DOWN UP

  **SYSTEM**

#### FAN MAX SPEED

This menu' allow to select the internal fans speed.

**SYTEM**  
**FAN MAX SPEED**  
**100%**  
MENU ENTER DOWN UP

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

  **SOFTWARE**

#### SOFTWARE

Display software and LEDs circuit board software.

**SOFTWARE**  
**Z40-DISPLAY**  
**Id 0D0F055A**  
**v1.04 Jul 12 2011**  
MENU ENTER DOWN UP

DISPLAY SOFTWARE

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

LEDs DRIVER SOFTWARE





**DMX PROTOCOL**

Z40 LED controller can be used in 4 DMX modes: 36 ch, 20 ch, 9 ch and 5 DMX channels

**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	<b>1</b>	Parameter: <b>SHUTTER</b>
-------------	----------	---------------------------

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
<b>0-9</b>	<b>5</b>				<b>Black-out</b>
<b>10-19</b>	<b>14</b>				<b>Open</b>
<b>20-29</b>	<b>24</b>				<b>Black-out</b>
<b>30-119</b>					<b>Strobe at variable speed from slow to fast (3700ms-30ms)</b>
<b>120-149</b>					<b>Pulse open at variable speed from slow to fast (43s-120ms)</b>
<b>150-179</b>					<b>Pulse close at variable speed from slow to fast (43s-120ms)</b>
<b>180-204</b>	<b>192</b>				<b>Random Strobe (Master and RGB active)</b>
<b>205-229</b>	<b>218</b>				<b>Random Strobe (Full)</b>
<b>230-255</b>	<b>240</b>				<b>Open</b>

DMX CHANNEL	<b>2</b>	Parameter: <b>DIMMER</b>
-------------	----------	--------------------------

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
<b>0-255</b>					<b>Proportional dimmer</b>

DMX CHANNEL	<b>3</b>	Parameter: <b>RED</b>
-------------	----------	-----------------------

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
<b>0-255</b>					<b>Proportional colour</b>



DMX CHANNEL	<b>4</b>	Parameter: <b>GREEN</b>
-------------	----------	-------------------------

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
<b>0-255</b>					<b>Proportional colour</b>

DMX CHANNEL	<b>5</b>	Parameter: <b>BLUE</b>
-------------	----------	------------------------

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
<b>0-255</b>					<b>Proportional colour</b>

DMX CHANNEL	<b>6</b>	Parameter: <b>WHITE (Pre-programmed White at diff. color temperature)</b>
-------------	----------	---

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
<b>0-55</b>	<b>23</b>				<b>No Function</b>
<b>56-105</b>	<b>80</b>				<b>Full (Red-Green-Blue at Full)</b>
<b>106-155</b>	<b>130</b>				<b>White DTS</b>

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

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

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

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

DMX CHANNEL	<b>7</b>	Parameter: <b>CTC (Color temperature correction)</b>
-------------	----------	--

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
-----------------	---------------------	----------------------	------	--------	----------

**IF CHANNEL 6 (White) = WHITE CTC (Dmx range value 206 - 255)**

<b>0-255</b>	<b>256 color temp. Correction Macros: 0 = 2000°K / 128 = 5500°K / 255 = 7200°K</b>				
--------------	--	--	--	--	--

**IF CHANNEL 6 (White) = NO FUNCTION (Dmx range value 0 - 43)**

<b>0-255</b>	<b>No Function</b>				
--------------	--------------------	--	--	--	--



DMX CHANNEL	8	Parameter: <b>COLOUR MACROS</b>
-------------	---	---------------------------------

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: <b>COLOUR MACROS</b>
-------------	---	---------------------------------

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: <b>COLOUR MACROS</b>
-------------	---	---------------------------------

IF:   **DMX SET**   **MACRO**  **EXT** 

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

DMX CHANNEL	9	Parameter: <b>FUNCTIONS (Recall, Create and Store the Custom white)</b>
-------------	---	---

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-79		<b>Custom White Recall (Enable CH 6 for Custom white Recall)</b>			
80-160		<b>Custom White Create (Enable CH 6 for Custom white Creation)</b>			
161-255		<b>Custom White Store (Store the Custom White created )</b>			



## **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	<b>1</b>	Parameter: <b>SHUTTER</b>
-------------	----------	---------------------------

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
<b>0-9</b>	<b>5</b>				<b>Black-out</b>
<b>10-19</b>	<b>14</b>				<b>Open</b>
<b>20-29</b>	<b>24</b>				<b>Black-out</b>
<b>30-119</b>					<b>Strobe at variable speed from slow to fast (3700ms-30ms)</b>
<b>120-149</b>					<b>Pulse open at variable speed from slow to fast (43s-120ms)</b>
<b>150-179</b>					<b>Pulse close at variable speed from slow to fast (43s-120ms)</b>
<b>180-204</b>	<b>192</b>				<b>Random Strobe (Master and RGB active)</b>
<b>205-229</b>	<b>218</b>				<b>Random Strobe (Full)</b>
<b>230-255</b>	<b>240</b>				<b>Open</b>

DMX CHANNEL	<b>2</b>	Parameter: <b>DIMMER</b>
-------------	----------	--------------------------

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
<b>0-255</b>					<b>Proportional dimmer</b>

DMX CHANNEL	<b>3</b>	Parameter: <b>RED</b>
-------------	----------	-----------------------

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
<b>0-255</b>					<b>Proportional colour</b>

DMX CHANNEL	<b>4</b>	Parameter: <b>GREEN</b>
-------------	----------	-------------------------

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
<b>0-255</b>					<b>Proportional colour</b>

DMX CHANNEL	<b>5</b>	Parameter: <b>BLUE</b>
-------------	----------	------------------------

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
<b>0-255</b>					<b>Proportional colour</b>



## **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**

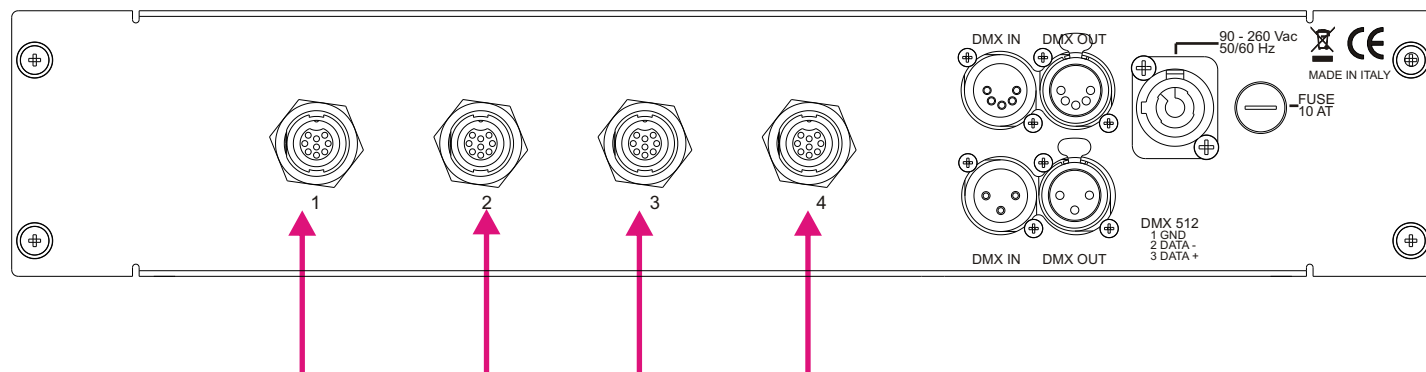
### **OUTPUT 3**

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

### **OUTPUT 4**

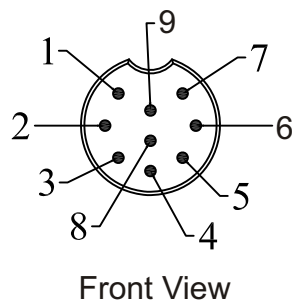
- 16 SHUTTER**
- 17 DIMMER**
- 18 RED**
- 19 GREEN**
- 20 BLUE**



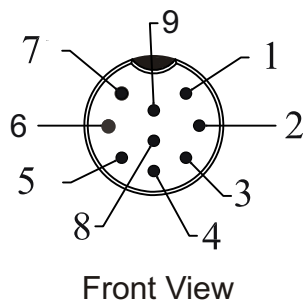
**WIRING DIAGRAMS**

4 x LEDs outputs  
M16 Female panel connector

M16 Female  
panel connector  
on board Z40



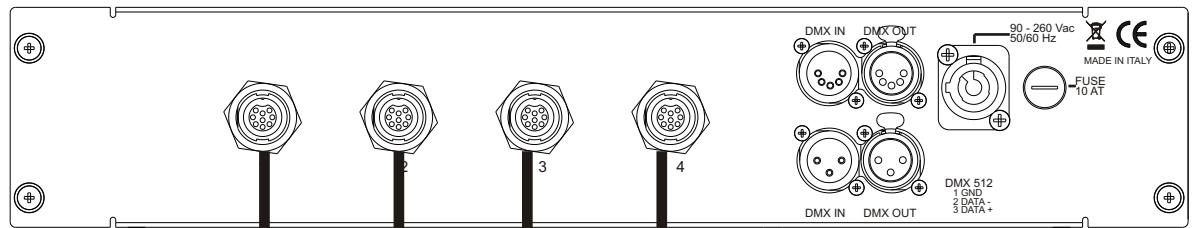
M16 Male  
cable connector  
on board Delta 8 B HEAD

**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 7: WHITE -
PIN 8 - GREY	PIN 8: NTC (THERMAL)
PIN 9 - WHITE	PIN 9: NTC (SENSOR)

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



**LED UNITS WIRING CONNECTION****Z40 LED CONTROLLER**

DELTA 8 B HEAD WHITE+AMBER



DELTA 8 B HEAD FULL COLOUR



DELTA 8 B HEAD RGB



DELTA 8 B HEAD RGB

**IMPORTANT:**

The maximum number of DELTA 8 B HEAD projector connectable to each Z40 LEDs output is 1 pc.  
**NEVER CONNECT NOR 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.



**NOTES**



**NOTES**



**NOTES**



The information contained in this publication has been carefully prepared and checked. However, no responsibility will be taken for any errors. All rights are reserved and this document cannot be copied, photocopied or reproduced, in part or completely, without prior written consent from D.T.S.

D.T.S. reserves the right to make any aesthetic, functional or design modifications to any of its products without prior notice. D.T.S. assumes no responsibility for the use or application of the products or circuits described herein.

MADE IN ITALY



**The Lighting Company**

**ISO 9001:2000**

D.T.S quality system

Is certified to the

ISO 9001:2000 standard

D.T.S. Products are designed  
And manufactured at the D.T.S  
Plants in Italy



05171186