

Z1 OUTDOOR DMX-512 LED CONTROLLER



Code 03.LA.009.IP65

User's Manual Rel 1.1 **GB**

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



The Lighting Company

Made in Italy

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 Z1 OUTDOOR.
 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

DESCRIPTION:

Z1 OUTDOOR / DMX-512 LED controller is a unit dedicated to the following LED products by D.T.S.: MR16 RGB LED lamp; MR16 full color LED lamp; FOCUS LED projectors; HELIOS LED projectors; FOS led bar.
 4 channels output DMX-512 Power interface, able to drive RGB+AMBER LED units (Max 100W per output, 25W per channel: 25W red, 25W green, 25W blue, 25W amber).
 4 x 350mA electronically dimmable led control outputs.
 Main Input voltage range is 90V - 260V, 50 - 60 HZ
 It is possible to use this item through every DMX-512 mixer or by using the DTS InfraRed control

MAIN ELECTRICAL CHARACTERISTICS:

Input Voltage Range : V_{in} 90 - 260 Vac
Frequency : 50 - 60 HZ
Power Consumption Range : 8 - 100 W
Power Factor (Pf) : 0.95 electronic PFC controller
Efficiency : 90% typical

IP protection grade: IP 20

Output:

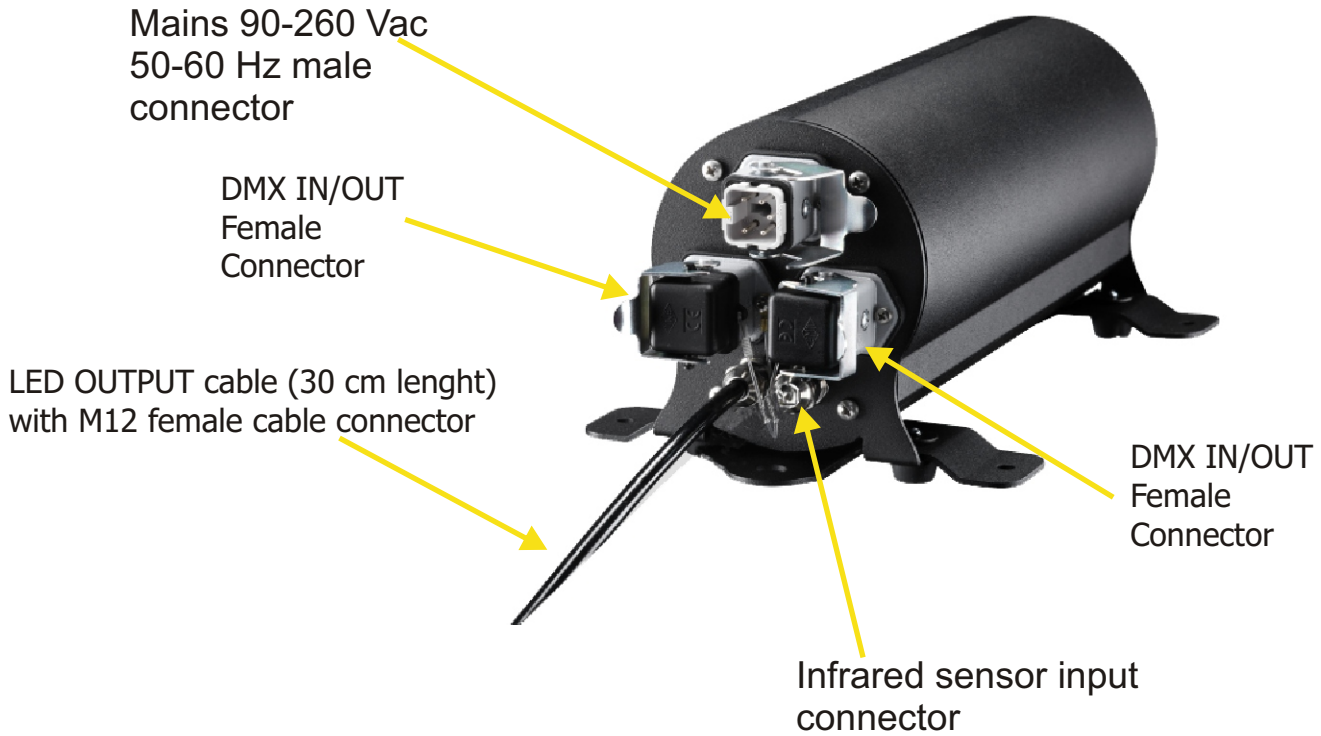
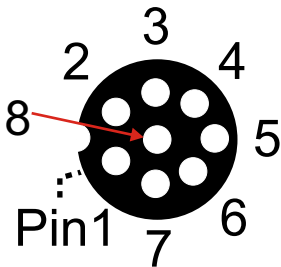
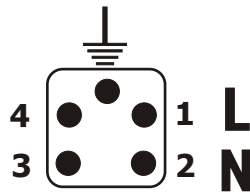
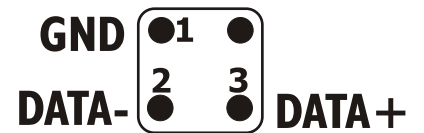
Power Output Range : 6 - 100W per output, 1,5 - 25W per channel
Output Current : 350 mA @ 100% per channel (500mA @ 100% per channel in BOOST Mode)
Output Voltage : V_{out} 48V
Max Load (output) : 15 x MR16 RGB LED lamp or 15 x FOCUS RGB LED projector or 5 x MR16 full color LED lamp or 5 x FOCUS full color LED projector or 1 x HELIOS full color LED projector or 1 x FOS RGBA led bar.
Min Load (output) : 1 x MR16 RGB LED lamp

Control Input:

Control Signal : DMX 512
Dimming System : Constant Current PWM
Address Range : DMX 512 channels addressable by display

APPLICATIONS:

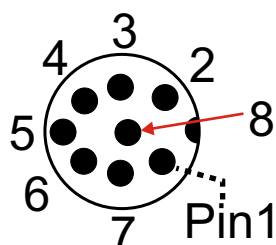
Cinemas - Restaurants and pubs - Discoteques - Architectural - Interior and Exterior.

INPUT/OUTPUT CONNECTIONS**M12 LED output
Female connector
on board Z1 OUTDOOR****MAINS
MALE CONNECTOR****DMX IN-OUT
FEMALE CONNECTOR****Display**

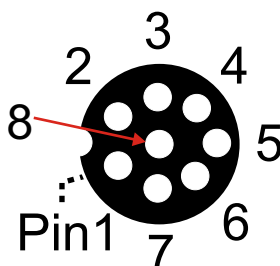
WIRING DIAGRAM

Z1 OUTDOOR is provided with an M12 male connector (30cm cable length).

M12 LED input
Male cable connector
on board FOS UNITS



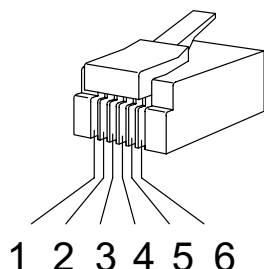
M12 LED output
Female connector
on board Z1 OUTDOOR



M12 LEDs
CONNECTOR PINOUT

- 1-RED + (FC / RGBA / WHITE)
- 2-RED - (FC / RGBA / WHITE)
- 3-GREEN + (FC / RGBA / WHITE)
- 4-GREEN - (FC / RGBA / WHITE)
- 5-BLUE + (FC / RGBA / WHITE)
- 6-BLUE - (FC / RGBA / WHITE)
- 7-AMBER -** (RGBA / WHITE)
- 8-AMBER +** (RGBA / WHITE)

RJ12 LED input
Male cable connector
on board FOCUS /
HELIOS UNITS



RJ12 LEDs
CONNECTOR PINOUT

- 1-RED + (FC / RGB / WHITE)
- 2-RED - (FC / RGB / WHITE)
- 3-GREEN + (FC / RGB / WHITE)
- 4-GREEN - (FC / RGB / WHITE)
- 5-BLUE + (FC / RGB / WHITE)
- 6-BLUE - (FC / RGB / WHITE)
- 7-NOT USED**
- 8-NOT USED**

For application where IP65 rating is not necessary, Z1 OUTDOOR cabling connection can be done with a standard UTP TIA/EIA 568-B2 category 5E cable. The maximum distance between power supply and the unit should not exceed 100 meters.

For IP65 rating application, D.T.S. recommended the use of a IP65/68 cable as the 10XAWG26 multipolar black outdoor cable (IP68) (D.T.S. Code: 0509C061). The maximum distance between power supply and the last unit on the line should not exceed 100 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.

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

In this way, all the projectors are cascade connected.



P.S:

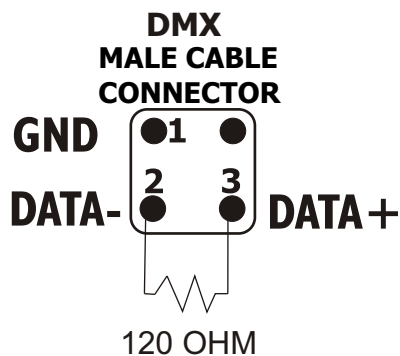
If the display showing the DMX address flashes, then one of the following errors has occurred:

- 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 DMX cable connector with a 120 ohm resistor Between pin 2 and 3.

The DMX terminator must be plugged into the DMX out panel connector of the last unit connected to the DMX line.



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

DMX ADDRESS

Z1 OUTDOOR can be set at 3 (RGB) or 4 (RGBA) leds channels output (please refer to page 14 for details). Z1 RGB can be used in five different modes: 6 DMX channels, 9 DMX channels (default), 1 DMX channel, RGB mode (3 channels) or CUSTOM DMX mode.

Z1 RGBA can be used in five different modes: 6 DMX channels, 10 DMX channels (default), 1 DMX channel, RGBA mode (4 channels) or CUSTOM DMX mode.

If you want to use the Z1 RGB in 6 channels mode, select the 6 CH mode from the MODE menu and set the following addresses on the mixer: **(To be used only with DTS Wall mounted DMX controller 0514L007)**

Projector 1	A001	If you want to select the next projector, just add "8" <u>DTS Wall mounted DMX controller 0514L007 assign 8 DMX channels per unit also if some channels are not used</u>
Projector 2	A009	
Projector 3	A017	
.....	A....	
projector 6	A041	

If you want to use the Z1 RGB in 9 channels mode, select the 9 CH mode from the MODE menu and set the following addresses on the mixer:

Projector 1	A001	If you want to select the next projector, just add "9"
Projector 2	A010	
Projector 3	A019	
.....	A....	
projector 6	A046	

If you want to use the Z1 RGB in CUSTOM DMX channels mode, select the CUSTOM mode from the MODE menu and set the parameters for Shutter, Dimmer, Red, Green, Blue, Ctc, Macro and Function to the desired DMX channels and confirm the settings with DONE

If you want to use the Z1 RGBA in 10 channels mode, select the 10 CH mode from the MODE menu and set the following addresses on the mixer:

Projector 1	A001	If you want to select the next projector, just add "10"
Projector 2	A011	
Projector 3	A021	
.....	A....	
projector 6	A051	

If you want to use the Z1 RGBA in CUSTOM DMX channels mode, select the CUSTOM mode from the MODE menu and set the parameters for Shutter, Dimmer, Red, Green, Blue, Amber, Ctc, Macro and Function to the desired DMX channels and confirm the settings with DONE

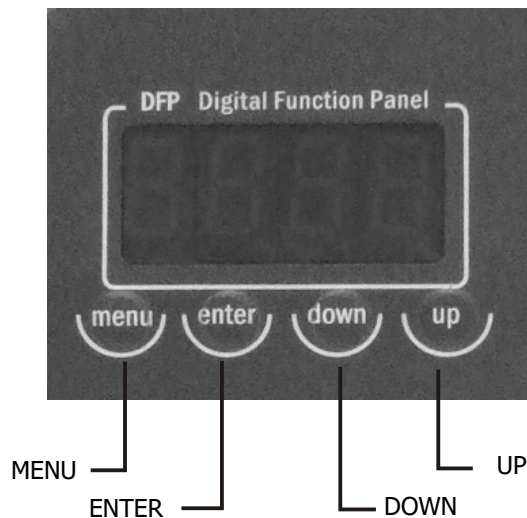
Selecting the DMX address

- 1) Press the UP-DOWN key until you reach the required DMX address. The numbers on the display will start to flash (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

Z1 OUTDOOR RGB



DISPLAY FUNCTIONS

The Z1 OUTDOOR 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 D.T.S. setting can vary the functions of the unit so that it does not respond to the DMX 512 signal 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.

Z1 OUTDOOR RGB (3 leds channels output) Software version 2.70

 MENU  Up-Down	 ENTER  Up-Down	 ENTER  Up-Down	 ENTER
ADD 1	DISP	POS 1	AA
REVERSE DISPLAY Reverses display's reading depending on the mounting position (On the ground or suspended).			Floor position
	 Up-Down		 ENTER
			Suspension position
DISPLAY STAND BY To turn off the display (after 5 seconds) Or leave it always on.			
			 ENTER
			off
			Display OFF
			 ENTER
			on
			Display always ON
 MENU  Up-Down	 ENTER  Up-Down	 ENTER  Up-Down	 ENTER
node		9CH	9 CHANNELS
DMX MODE To select DMX mode : 9 ch (default) - 6 ch - RGB (3ch) - 1 ch - AUX - CUSTOM	 Up-Down	6CH	6 CHANNELS
	 Up-Down	1CH	1 CHANNEL
AUX mode let you activate an external ON -OFF control on IR connector.	 Up-Down	rgb	RGB (3 CHANNELS)
CUSTOM DMX mode let you set the parameters for Shutter, Dimmer, Red, Green, Blue, Ctc, Macro and Function to the desired DMX channels.	 Up-Down	AUX	AUX MODE
	 Up-Down	CUST	
			 ENTER
			External ON - OFF control on IR connector
			 ENTER
			SEL
			Custom mode enabled
			 ENTER
			Shou
			Show Custom settings
			 ENTER
			Set
			Setting the parameters on Custom Mode
 MENU  Up-Down	 ENTER  Up-Down	 ENTER  Up-Down	 ENTER
bst		On	Boost mode activated
BOOST DRIVING This menu allow to increase the LED's current from 350mA to 500 mA	 Up-Down	OFF	Boost mode deactivated
			 ENTER
			Whit BOOST active,the LED's current is setted to 500mA (30%more gain). Default = Disable



LED



rEd



nI n

Default = 0



LED

RGB Min/Max, Smooth and Compression level values settings

RGB MINIMUM VALUES

This menu allow to select the minimum levels for Red, Green and blue

Up-Down



GrEE



nI n

Default = 0



RGB MAXIMUM VALUES

This menu allow to select the maximum levels for Red, Green and blue

Up-Down



bLUE



nI n

Default = 0



nA n

Default = 255



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 RGB and Dimmer channels reaction to DMX or Program variation.
Off=25 ms delay (Fast response)
20=250 ms delay (Slow response)

Up-Down



S nT H



2

Range = Off-20
Default = 2



Off = 25 ms
Instant response to DMX variation

20 = 250 ms
Smooth response to DMX variation

COMPRESSION

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



CoMP



LI nE

Linear = Linear current output



qUAD

Quadratic =
Linear light output



AUtO



SUrE



ChPr



SPEE



00 10



AUTOMATIC MODE

Automatic demo game without DMX controller

ChPr

Chase with 16 steps previously created in REC MODE
Speed and Wait time selectable by user

CUPr

RGB values selectable by user

Rainbow (rAI n)

Rainbow colours effect.
Speed time selectable by user

CU01-CU16

Color Macros as on DMX channel 8 (Macro)

vAIt

00 10

CUPr



rEd



120



GrEE

255

bLUE

104

rAI n



SPEE



00 10



CU01



Up-Down



ENTER



CU02

CU03

CU.....

CU 16



AUTO



SURE



UHO 1



AUTOMATIC MODE

Automatic demo game without DMX controller

WHITE MACROS

16 macros for White color from 2000 to 7200 ° K

DIMMER

Dimmer level selectable by user as on DMX channel 2 (Dimmer)
Dimmer level is active for all the programs and macros

SHUTTER

Shutter level selectable by user as on DMX channel 1 (Shutter)
Shutter level is active only for CU01/CU16 and Wh01/Wh16 macros

ESC

Esc from Automatic Mode Menu

UHO 2

UHO 3

UHO 4

UHO 5

UH.....

UH 16

di nn



255



SHUT



255



ESC



REC



9CH



r001

REC MODE

In DMX Recorder Mode, it is possible to create and store the scenes of the ChPr by using an external DMX controller.

The unit must be set to 9 channels MODE

no01

no02

no.....

no 16

DMX Recorder Mode

For the programming of ChPr by using a DMX controller, besides the 9 channels necessary to control the unit a further 3 DMX channels are needed.

So that in RECORDER mode (via DMX) the unit will need 12 channels to be correctly programmed.

The three new DMX channels are:

DMX channel 10 = SCENES channel

From 0-10 = no function (r001)

From 11-255 are displayed the programmable scenes (max 16 scenes from M001 to M0016)

DMX channel 11 = EDIT channel:

-From 0-19 = no function

-From 20-234 the unit runs the configuration given by the received input DMX values.

With the channel SCENES it is possible to pass from one step to the next while with REC it is possible to record the selected scene.

-From 235-255 the unit runs the configuration given by the received input DMX values closing the sequence as last scene.

With the channel REC it is possible to record the selected scene as last scene.

DMX channel 12 = RECORDING channel

Records the set scene with a variation between 0 to 255 (the display flashes indicating that the scene has been recorded). It is advised that you keep the REC channel set to 0 and to run through the 255 only once you have decided to save the scene. If ChPr is not closed, by indicating the last scene (Edit channel between 235-255), in playback mode all 16 scenes will be played through even if not programmed



SLAU



SUR-E



SLU



ESC

SLAVE MODE

Slave mode for ChPr program.

All slave units will be synchronised with master unit, running their own Chpr program.



Ir



On



OFF

INFRARED MODE

Infrared remote control.

By activating Ir MODE, it will be possible to navigate through the unit functions by using the D.T.S. infrared remote control.

D.T.S. Code :0514L008

NOTE:

External infrared remote sensor needed.

D.T.S. Code :03.LA.016



ENER



SEL



On



OFF

EMERGENCY

Emergency operating mode.

By setting Emergency mode, it will be possible to select one of the 16 preprogrammed WHITE cues that will then run if DMX signal is missing or not available. Useful for Emergency EXIT illumination on public areas.

Default = OFF

White



Default = White 1

dinn



Default = 255



DFSE



SUR-E

**DEFAULT**

To restore default settings



LINE



red

**LIFE TIME**

This menu shows the total UNIT life time and the RGB life time

GREEN

BLUE

Unit



TEST



TEST MODE

RGB colours test with rainbow



SOFT



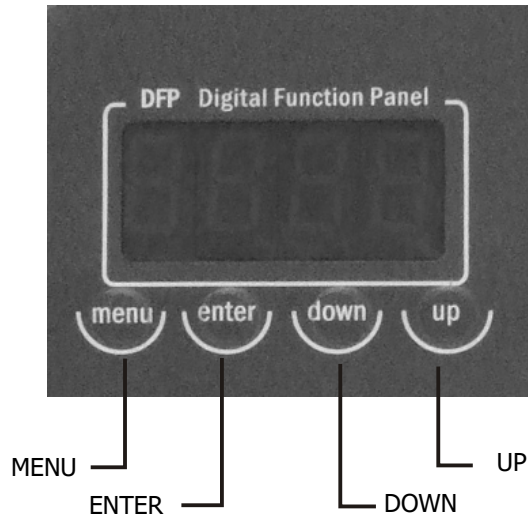
r270

SOFTWARE

Software version

DISPLAY FUNCTIONS

Z1 OUTDOOR RGBA



DISPLAY FUNCTIONS

The Z1 OUTDOOR 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 D.T.S. setting can vary the functions of the unit so that it does not respond to the DMX 512 signal 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.

Z1 RGBA (4 leds channels output) Software version 2.70

 MENU  Up-Down	 ENTER  Up-Down	 ENTER  Up-Down	 ENTER
ADD 1	DISP	POS 1	AA
REVERSE DISPLAY Reverses display's reading depending on the mounting position (On the ground or suspended).			Floor position
	 Up-Down		 ENTER
			Suspension position
	 Up-Down		 ENTER
DISPLAY STAND BY To turn off the display (after 5 seconds) Or leave it always on.			Display OFF
			 ENTER
			Display always ON
			 ENTER
 MENU  Up-Down	 ENTER  Up-Down		 ENTER
DMX MODE To select DMX mode : 10 ch (default) - 6 ch - RGBA - 1 ch - AUX - CUSTOM		10CH	10 CHANNELS
	 Up-Down		 ENTER
	 Up-Down		 ENTER
AUX mode let you activate an external ON -OFF control on IR connector.		6CH	6 CHANNELS
	 Up-Down		 ENTER
CUSTOM DMX mode let you set the parameters for Shutter, Dimmer, Red, Green, Blue, Amber, Ctc, Macro and Function to the desired DMX channels.		1CH	1 CHANNEL
	 Up-Down		 ENTER
	 Up-Down		 ENTER
		RGBA	RGBA (4 CHANNELS)
	 Up-Down		 ENTER
	 Up-Down		 ENTER
		AUX	AUX MODE
	 Up-Down		 ENTER
		CUST	External ON - OFF control on IR connector
	 Up-Down		 ENTER
			Custom mode enabled
			 ENTER
			Show Custom settings
			 ENTER
			Setting the parameters on Custom Mode
			 ENTER
 MENU  Up-Down	 ENTER  Up-Down		 ENTER
BOOST DRIVING This menu allow to increase the LED's current from 350mA to 500 mA		On	Boost mode activated
	 Up-Down		 ENTER
		OFF	Boost mode deactivated
	 Up-Down		 ENTER
			Whit BOOST active,the LED's current is setted to 500mA (30%more gain). Default = Disable



LED



rEd



nI n

Default = 0



LED

RGBA Min/Max, Smooth and Compression level values settings

Up-Down



GrEE



nAK

Default = 255



RGBA MINIMUM VALUES

This menu allow to select the minimum levels for Red, Green, Blue and Amber

Up-Down



bLUE



nAK

Default = 255



RGBA MAXIMUM VALUES

This menu allow to select the maximum levels for Red, Green, Blue and Amber



Ambr



nI n

Default = 0



nAK

Default = 255



nI n

Default = 0



nAK

Default = 255



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

Up-Down



SMth



4

Range = Off - 20
Default = 4



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.

Off = 25 ms delay (Fast response)

20 = 250 ms delay (Slow response)

Off = 25 ms

Istant response to DMX variation

20 = 250 ms

Smooth response to DMX variation

COMPRESSION

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



CoMP



LI nE

Linear = Linear
courrent output



QUAD

Quadratic =
Linear light
output



SYNC

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



54nc



610

Range = 610 Hz -10 KHz
Default = 610 Hz



AUTO



SURE



ChPr



SPEED



00 10



AUTOMATIC MODE

Automatic demo game without DMX controller

ChPr

Chase with 16 steps previously created in REC MODE
Speed and Wait time selectable by user

CUPr

RGB values selectable by user

Rainbow (rAI n)

Rainbow colours effect.
Speed time selectable by user

CU01-CU16

Color Macros as on DMX channel 8 (Macro)

WAIT

00 10

CUPr



rEd



120



GrEE

255

bLUE

104

rAI n



SPEED



00 10



CU01



Up-Down



ENTER



CU02

CU 16



AUTO



SURE



UHO 1



AUTOMATIC MODE

Automatic demo game without DMX controller

WHITE MACROS

16 macros for White color from 2000 to 7200 ° K

DIMMER

Dimmer level selectable by user as on DMX channel 2 (Dimmer)
Dimmer level is active for all the programs and macros

SHUTTER

Shutter level selectable by user as on DMX channel 1 (Shutter)
Shutter level is active only for CU01/CU16 and Wh01/Wh16 macros

ESC

Esc from Automatic Mode Menu

UHO 2

UHO 3

UHO 4

UHO 5

UH.....

UH 16

di nn



255



SHUT



255



ESC



REC



10CH



r001

REC MODE

In DMX Recorder Mode, it is possible to create and store the scenes of the ChPr by using an external DMX controller.
The unit must be set to 10 channels MODE

n001

n002

no.....

no 16

DMX Recorder Mode

For the programming of ChPr by using a DMX controller, besides the 10 channels necessary to control the unit a further 3 DMX channels are needed.

So that in RECORDER mode (via DMX) the unit will need 13 channels to be correctly programmed.

The three new DMX channels are:

DMX channel 11 = SCENES channel

From 0-10 = no function (r001)

From 11-255 are displayed the programmable scenes (max 16 scenes from M001 to M0016)

DMX channel 12 = EDIT channel:

-From 0-19 = no function

-From 20-234 the unit runs the configuration given by the received input DMX values.

With the channel SCENES it is possible to pass from one step to the next while with REC it is possible to record the selected scene.

-From 235-255 the unit runs the configuration given by the received input DMX values closing the sequence as last scene.

With the channel REC it is possible to record the selected scene as last scene.

DMX channel 13 = RECORDING channel

Records the set scene with a variation between 0 to 255 (the display flashes indicating that the scene has been recorded). It is advised that you keep the REC channel set to 0 and to run through the 255 only once you have decided to save the scene. If ChPr is not closed, by indicating the last scene (Edit channel between 235-255), in playback mode all 16 scenes will be played through even if not programmed



SLAV



SURE



SLU



ESC

SLAVE MODE

Slave mode for ChPr program.

All slave units will be
synchronised with master unit,
running their own Chpr program.



Ir



On



OFF

INFRARED MODE

Infrared remote control.

By activating Ir MODE, it will be
possible to navigate through the
unit functions by using the D.T.S.
infrared remote control.

D.T.S. Code :0514L008

NOTE:

External infrared remote sensor
needed.

D.T.S. Code :03.LA.016



ENER



SEL



On



OFF

Default = OFF

EMERGENCY

Emergency operating mode.

By setting Emergency mode, it
will be possible to select one of
the 16 preprogrammed WHITE
cues that will then run if DMX
signal is missing or not available.
Useful for Emergency EXIT
illumination on public areas.

White



Default = White 1

dinn



Default = 255



DFSE



SURE

**DEFAULT**

To restore default settings



LINE



red

**LIFE TIME**

This menu shows the total UNIT life time
and the RGBA life time

GREEN

BLUE

ANBr

Unit



TEST



TEST MODE

RGBA colours test with rainbow



SOFT



r270

SOFTWARE

Software version

HIDDEN MENU

For technical personnel only

To operate this menu:

-Connect the unit to the main

-While reset is running, press the MENU and ENTER keys at the same time.

RESN

Reset EEPROM (Reset all settings)

ATTENTION: by pressing this key you must repeat all previous calibrations

UPLd

UPLOAD

This menu allow to upgrade the unit's software by computer

dULd

DOWNLOAD

This menu allow to save unit's programs into computer

CHAn

CHANNELS

This menu allow to set 3 channels or 4 channels LEDs output mode

3 LEDs channels output mode = Z1 OUTDOOR RGB

4 LEDs channels output mode = Z1 OUTDOOR RGBA

NP0t

MAXIMUM LEDs OUTPUT POWER

This menu allow to set the maximum power available on LEDs (1-100 %)

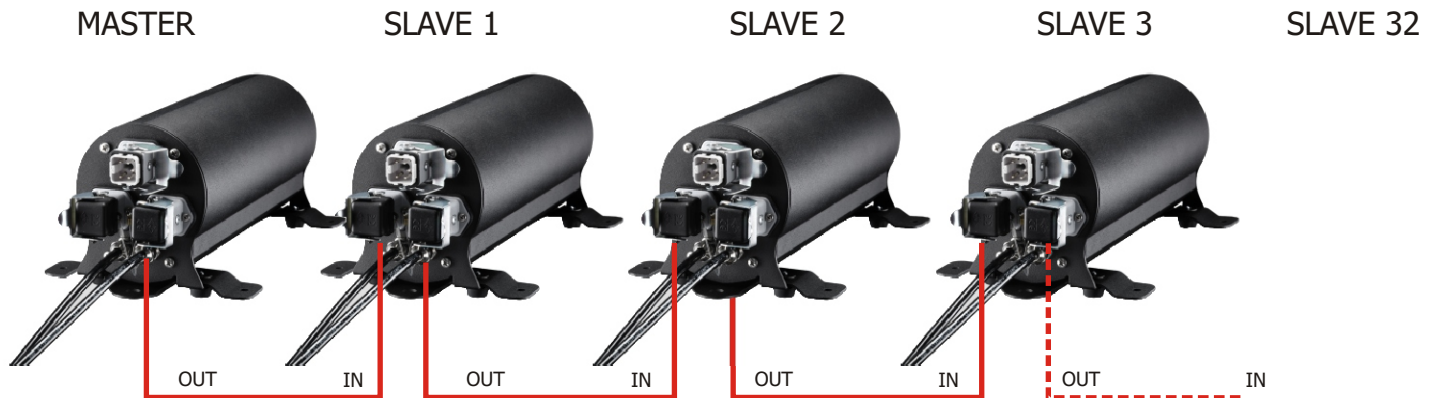
ESC

EXIT

Exit from hidden menu.

AUTOMATIC OPERATION (AUTO):

Z1 OUTDOOR can work in automatic mode without a DMX controller. First of all connect the projectors with a DMX cable (picture below). A maximum quantity of 32 slave units can be connected to the same Master unit.



To activate Auto mode on the first unit, use the menu to run through the different modes until AUTO appears on the display, and press enter.

Now it is possible to choose between the different pre-programmed games (CUPr-RAIn-CU01/CU16-Wh01/Wh16) or ChPr which is user programmable through REC mode. To confirm game activation press ENTER on the selected GAME.

CUPr-RAIn-CU01/CU16-Wh01/Wh16

The first unit that will work as a Master should be placed in Automatic mode (AUTO), the other units have to be placed in 9 channels DMX mode (MODE 9CH) for Z1 RGB or in 10 channels DMX mode (MODE 10 CH) for Z1 RGBA and the DMX address should be set at A001. For RaIn (rainbow) game it is possible to select the speed for the colour changing (SPEE).

DIMMER function (in AUTOMATIC MODE) is active for all the programs.

SHUTTER function (in AUTOMATIC MODE) is active only for CU01/CU16 and Wh01/Wh16 macros.

ChPr MASTER/SLAVE

The first unit that will function as a Master must be set to Automatic mode (AUTO), the other units must be set to Slave mode (SLAV), selectable through the menu. In this way all the Slave units will be synchronised with the master and running their own ChPr game.

On the master unit it is possible to vary the Speed time (SPEE) for the colour changing and the Wait time (UAIt) between the steps.

Speed time and Wait time on the Master, have priority on the slave units.

NB: It is possible to run GA.Pr on the other units even though these do not have GA.Pr programmed.

You can do this by setting the units to 9 ch DMX MODE for Z1 RGB or 10 channels DMX mode for Z1 RGBA and selecting DMX address A001.

Rec mode

It is possible to program your own game on the Z1 unit that will then run it in AUTO mode (ChPr).

Each unit can have its own programmed game.

In REC mode the unit must be set to 9 channels mode for Z1 RGB and 10 channels mode for Z1 RGBA. To program the ChPr by using a DMX controller, you need 3 more channels in addition to the 9/10 channels necessary to control the unit.

So that in RECORDER mode (via DMX) the unit will need 12/13 DMX channels to be correctly programmed.

The three new DMX channels are:

Z1 IN RGB MODE (3 CHANNELS LED OUTPUT)

DMX channel 10 = SCENES channel

From 0-10 = no function (r001)

From 11-255 are displayed the programmable scenes (max 16 scenes from M001 to M0016)

DMX channel 11 = EDIT channel:

-From 0-19 = no function

-From 20-234 the unit runs the configuration given by the received input DMX values.

With the channel SCENES it is possible to pass from one step to the next while with REC it is possible to record the selected scene.

-From 235-255 the unit runs the configuration given by the received input DMX values closing the sequence as last scene.

With the channel REC it is possible to record the selected scene as last scene.

DMX channel 12 = RECORDING channel

Records the set scene with a variation between 0 to 255 (the display flashes indicating that the scene has been recorded). It is advised that you keep the REC channel set to 0 and to run through the 255 only once you have decided to save the scene. If ChPr is not closed, by indicating the last scene (Edit channel between 235-255), in playback mode all 16 scenes will be played through even if not programmed

Z1 IN RGBA MODE (4 CHANNELS LED OUTPUT)

DMX channel 11 = SCENES channel

From 0-10 = no function (r001)

From 11-255 are displayed the programmable scenes (max 16 scenes from M001 to M0016)

DMX channel 12 = EDIT channel:

-From 0-19 = no function

-From 20-234 the unit runs the configuration given by the received input DMX values.

With the channel SCENES it is possible to pass from one step to the next while with REC it is possible to record the selected scene.

-From 235-255 the unit runs the configuration given by the received input DMX values closing the sequence as last scene.

With the channel REC it is possible to record the selected scene as last scene.

DMX channel 13 = RECORDING channel

Records the set scene with a variation between 0 to 255 (the display flashes indicating that the scene has been recorded). It is advised that you keep the REC channel set to 0 and to run through the 255 only once you have decided to save the scene. If ChPr is not closed, by indicating the last scene (Edit channel between 235-255), in playback mode all 16 scenes will be played through even if not programmed.

INFRARED REMOTE CONTROL

By activating Ir MODE on Z1 Menu it will be possible to navigate through the unit functions by using the D.T.S. infrared remote control (D.T.S. Code :0514L008).

Please note that external infrared remote sensor is also needed. (D.T.S. Code :03.LA.016)

Infrared remote control functions:

ON/OFF and MUTE buttons

In Automatic mode let you stop the games running.

Master and slaves will go in Stand-by mode

1-9 buttons

In Automatic mode let you select the colour macros 1/9

1-/. Button

In Automatic mode let you select the colour macros 10-16

VOL +/-

In Automatic mode let you select the desired value for DIMMER

PROG +/-

In Automatic mode let you scroll between the selectable games

RED/GREEN/YELLOW/BLUE buttons

Direct access to Automatic mode for Red/Green/Blue/Yellow colour macros.

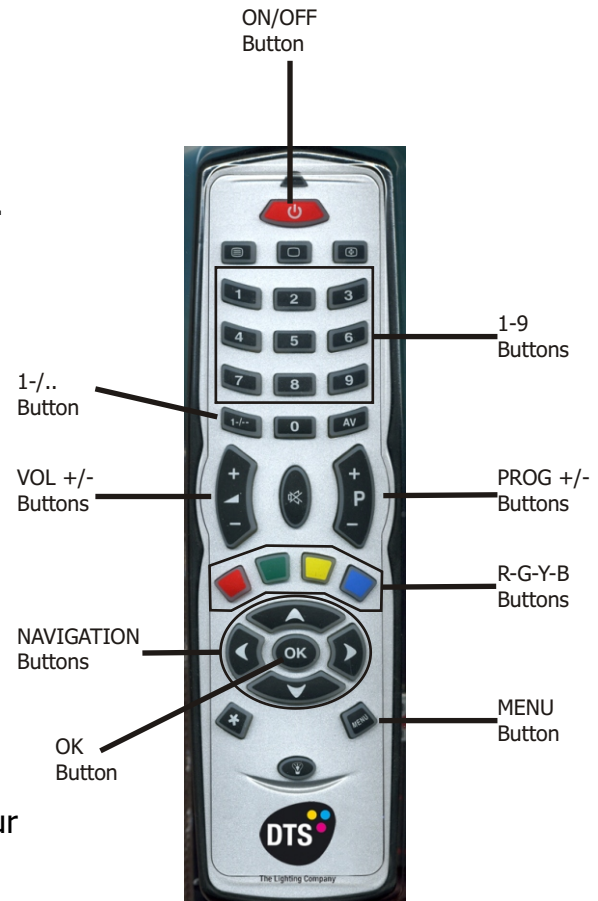
Red=CU01 / Green=CU07 / Yellow=CU04 / Blue=CU13

Navigation buttons

Same as UP/DOWN on unit display

OK button

Same as ENTER on unit display

MENU button

DMX PROTOCOL**Z1 OUTDOOR RGB (3 CHANNELS LED)****9 CHANNELS MODE (Default)**

- 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
-------------	----------	---------------------------

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 (3400ms-20ms)
120-149					Pulse open at variable speed from slow to fast (43s-100ms)
150-179					Pulse close at variable speed from slow to fast (43s-100ms)
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 43 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 43 color temp. Correction Macros: 2000°K-7200°K)			

DMX CHANNEL	7	Parameter: CTC (Color 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) = WHITE CTC (Dmx range value 206 - 255)

0-255	43 color temp. Correction Macros: 0 = 2000°K / 128 = 5500°K / 255 = 7200°K				
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IF CHANNEL 6 (White) = NO FUNCTION (Dmx range value 0 - 43)

0-255	Smooth RGB linear Hue correction				
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DMX CHANNEL	8	Parameter: COLOUR MACROS
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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: 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)			

5 CHANNELS MODE

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

DMX CHANNEL	1	Parameter: SHUTTER
-------------	----------	---------------------------

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 (3400ms-20ms)			
120-149		Pulse open at variable speed from slow to fast (43s-100ms)			
150-179		Pulse close at variable speed from slow to fast (43s-100ms)			
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

6 CHANNELS MODE (For use with DTS Wall mounted DMX controller 0514L007)

- 1 GREEN**
- 2 RED**
- 3 BLUE**
- 4 DIMMER**
- 5 NOT USED**
- 6 SHUTTER**

DMX CHANNEL	1	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	2	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	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: DIMMER
-------------	----------	--------------------------

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

DMX CHANNEL	5	Parameter: NOT USED
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DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					No Function

DMX CHANNEL	6	Parameter: SHUTTER
-------------	----------	---------------------------

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 (3400ms-20ms)			
120-149		Pulse open at variable speed from slow to fast (43s-100ms)			
150-179		Pulse close at variable speed from slow to fast (43s-100ms)			
180-204	192		Random Strobe (Master and RGB active)		
205-229	218		Random Strobe (Full)		
230-255	240		Open		

DMX PROTOCOL**Z1 OUTDOOR RGBA (4 CHANNELS LED OUTPUT)****10 CHANNELS MODE (Default)**

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

DMX CHANNEL	1	Parameter: SHUTTER
-------------	----------	---------------------------

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 (3400ms-20ms)
120-149					Pulse open at variable speed from slow to fast (43s-100ms)
150-179					Pulse close at variable speed from slow to fast (43s-100ms)
180-204	192				Random Strobe (Master and RGBA 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: AMBER
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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)
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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 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 43 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 (RGB levels selectable by DMX)			
206-255	225	White CTC (Channel 8 CTC enabled 43 color temp. Correction Macros: 2000°K-7200°K)			

DMX CHANNEL	8	Parameter: CTC (Color 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 7 (White) = WHITE CTC (Dmx range value 206 - 255)

0-255	43 color temp. Correction Macros: 0 = 2000°K / 128 = 5500°K / 255 = 7200°K				
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IF CHANNEL 7 (White) = NO FUNCTION (Dmx range value 0 - 43)

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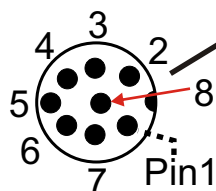
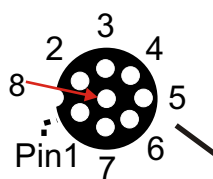
DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-14					No Function
15-29					Macro 1
30-44					Macro 2
45-59					Macro 3
60-74					Macro 4
75-89					Macro 5
90-104					Macro 6
105-119					Macro 7
120-134					Macro 8
135-149					Macro 9
150-164					Macro 10
165-179				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

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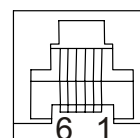
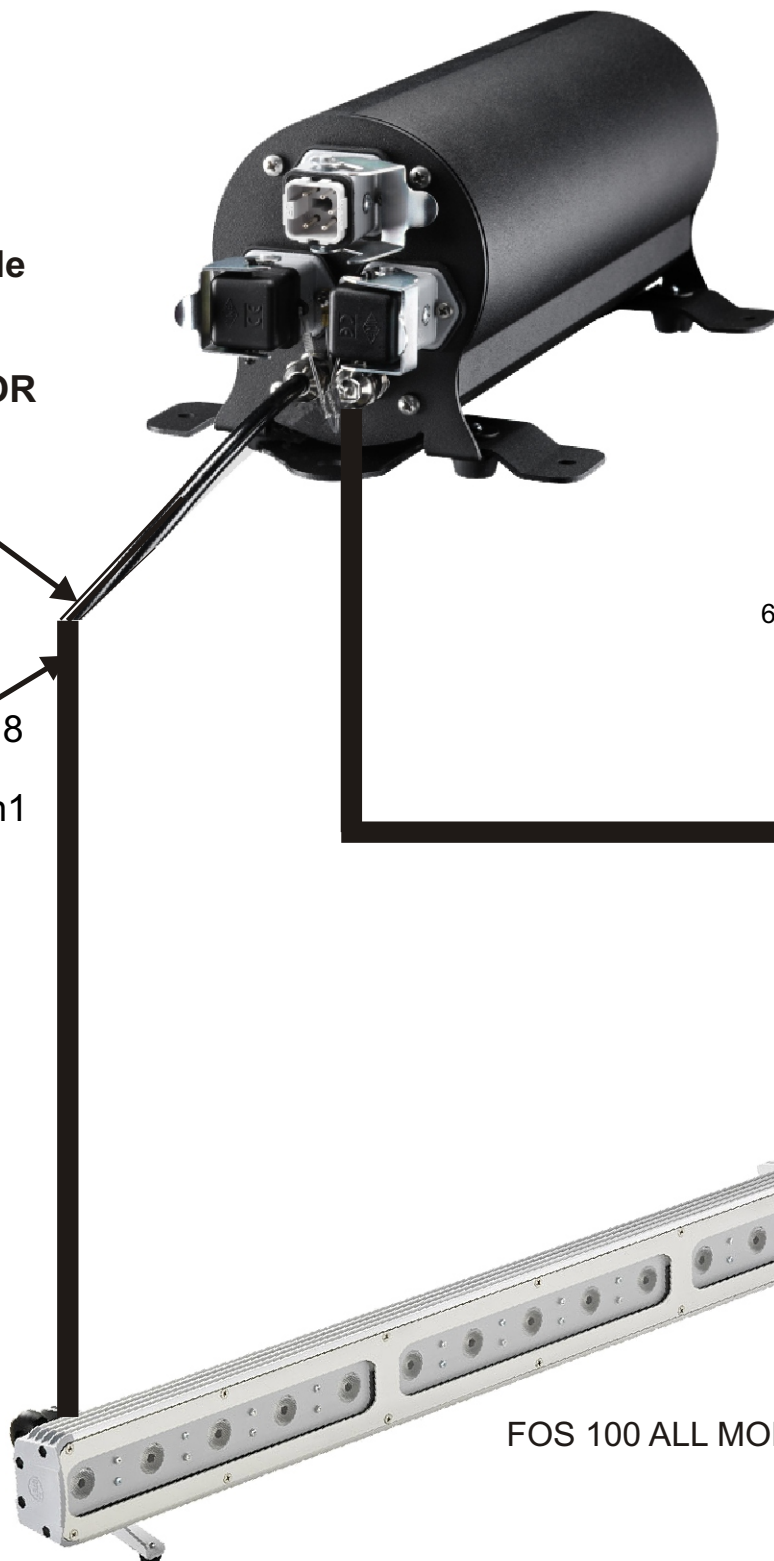
DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-79		Custom White Recall (Enable CH 7 for Custom white Recall)			
80-160		Custom White Create (Enable CH 7 for Custom white Creation)			
161-255		Custom White Store (Store the Custom White created)			

Z1 OUTDOOR - LED UNITS WIRING CONNECTIONS

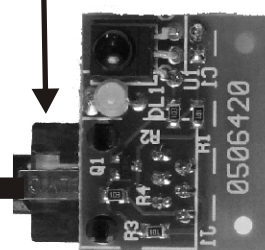
**M12 LED
Female cable
connector
on board:
Z1 OUTDOOR**



**M12 LED
Male cable
connector
on board:
FOS 100**



6-pin Female (RJ12)



**D.T.S. INFRARED
REMOTE SENSOR
CODE 03.LA.016**

FOS 100 ALL MODELS

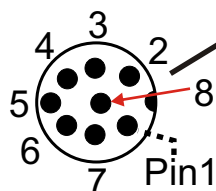
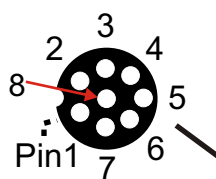
IMPORTANT:

The maximum number of FOS 100 Led projector connectable to the Z1 OUTDOOR Power supply is 1 pcs.

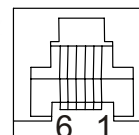
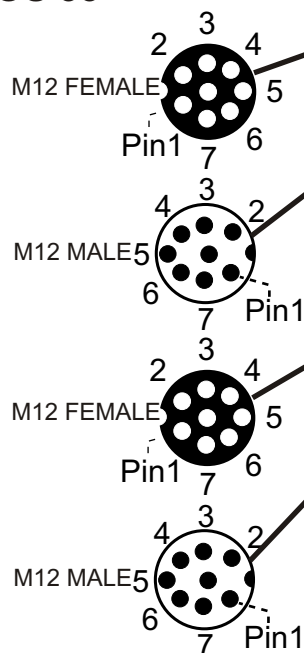
Never connect nor disconnect a new unit when the power supply is turned on.

Z1 OUTDOOR - LED UNITS WIRING CONNECTIONS

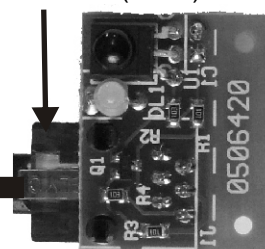
**M12 LED
Female cable
connector
on board:
Z1 OUTDOOR**



**M12 LED
Male cable
connector
on board:
FOS 33**



6-pin Female (RJ12)



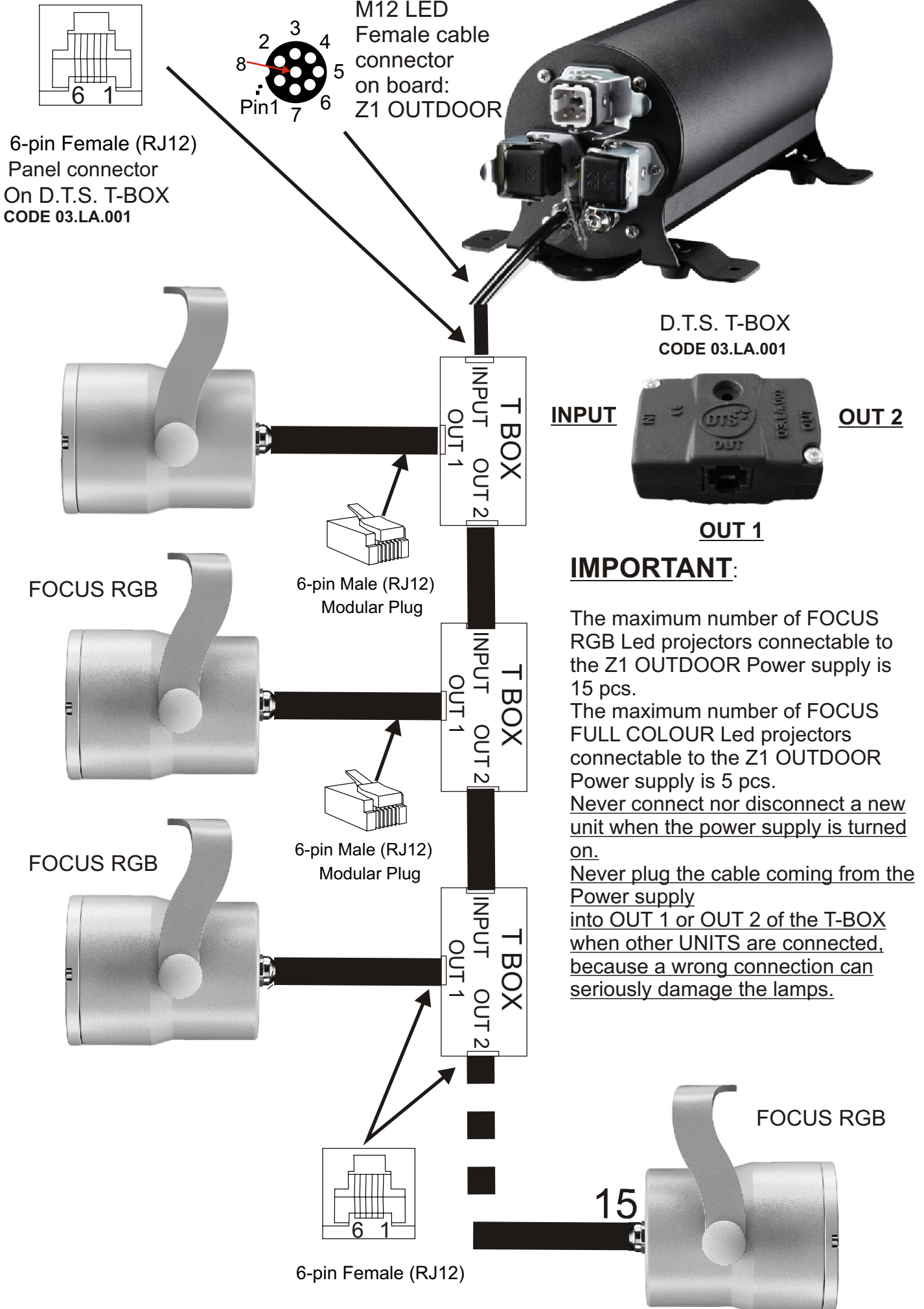
D.T.S. INFRARED
REMOTE SENSOR
CODE 03.LA.016

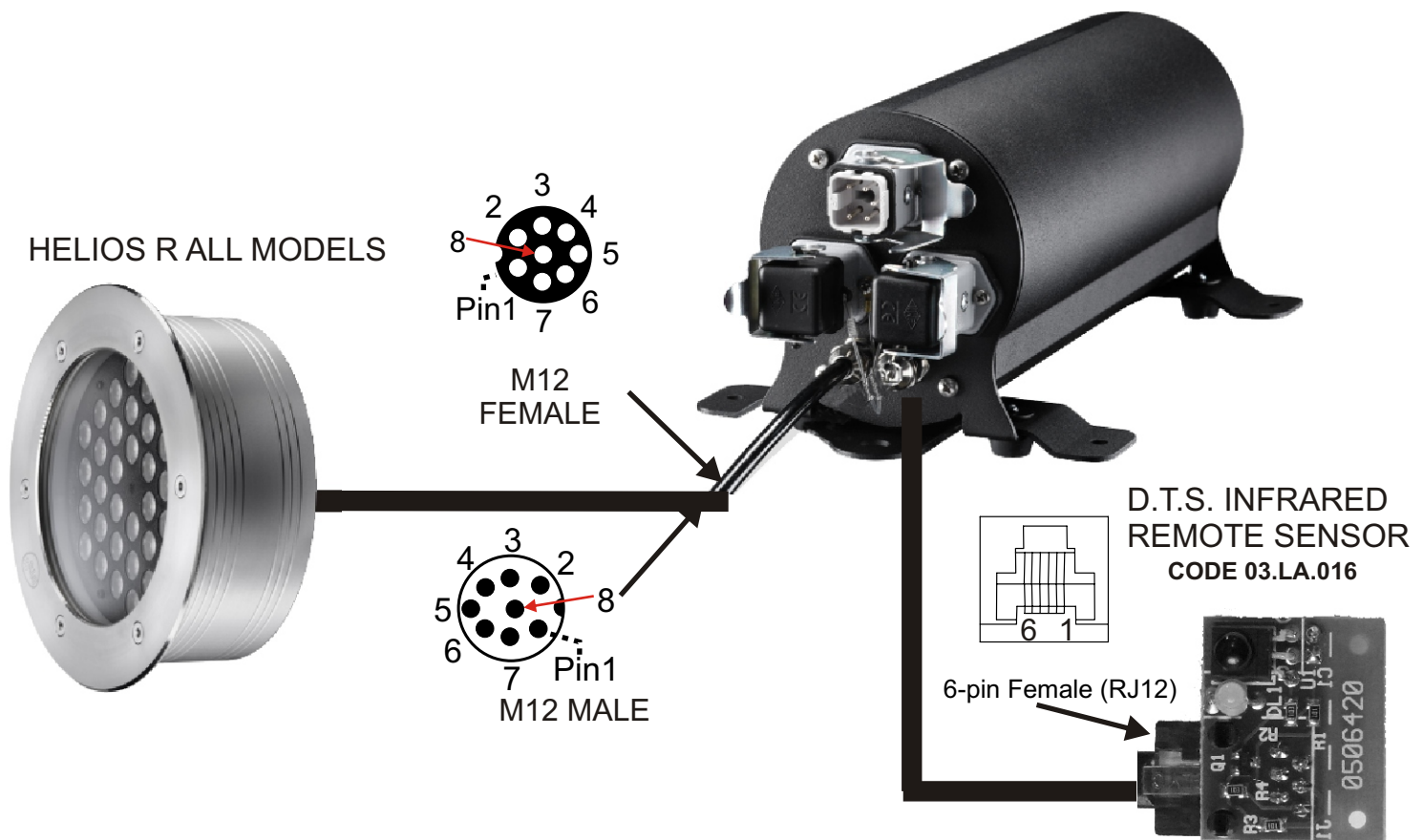
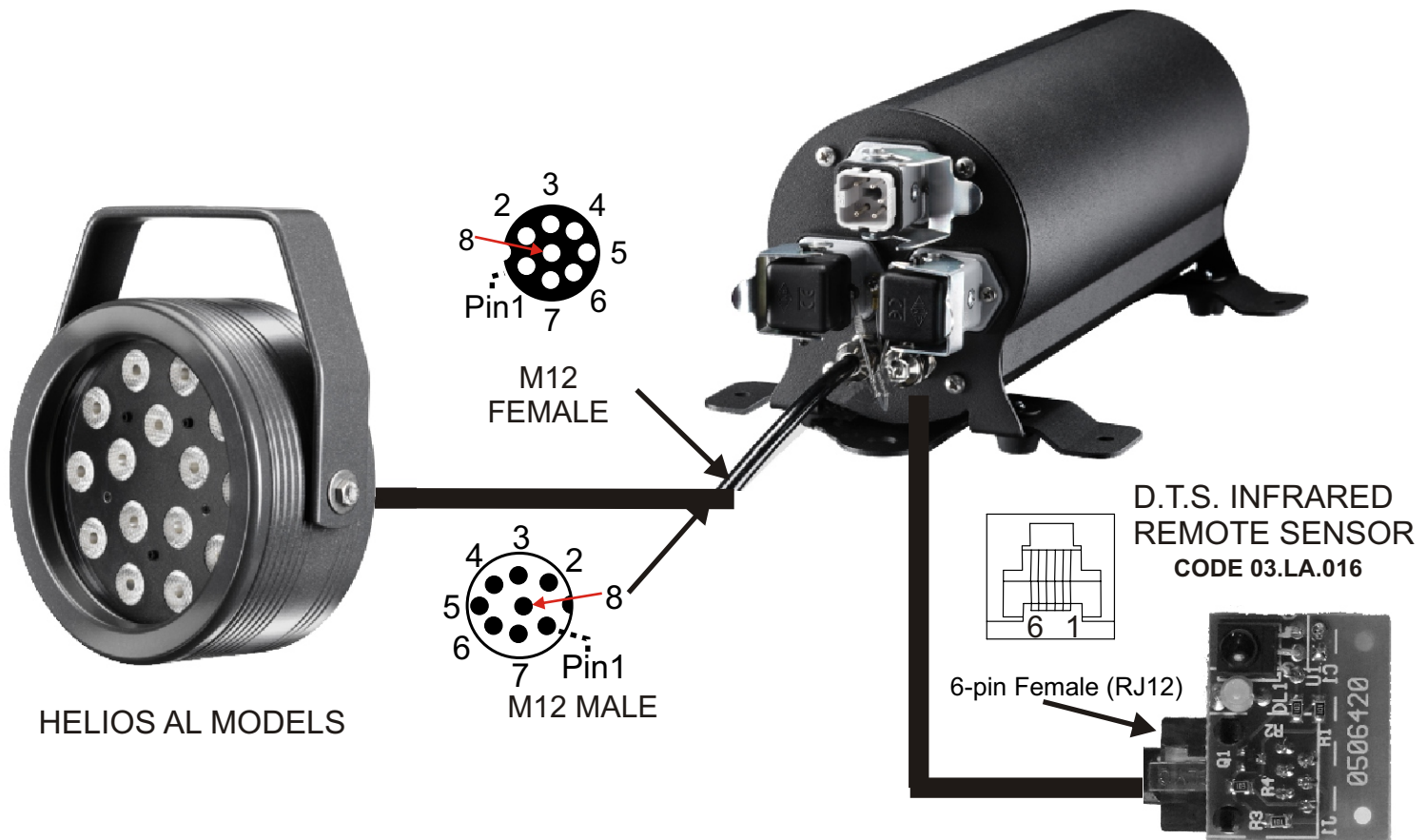
FOS 33 ALL MODELS

IMPORTANT:

The maximum number of FOS 33 Led projectors connectable to the Z1 OUTDOOR Power supply is 3 pcs.

Never connect nor disconnect a new unit when the power supply is turned on.

Z1 OUTDOOR - LED UNITS WIRING CONNECTIONS

Z1 OUTDOOR - LED UNITS WIRING CONNECTIONS**IMPORTANT:**

The maximum number of HELIOS Led projectors connectable to the Z1 OUTDOOR Power supply is 1 pcs.

Never connect nor disconnect a new unit when the power supply is turned on.

Notes

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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



05171103

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