

LED Driver

-EUCO Arena Sport Series

EUCO Arena Sport

Highlights & Features

- Dimmable built-in constant current 3-channel LED Driver with DALI-2 and DMX/RDM control interface
- Each channel independently programmable with output channels max output power of 500W (1500W total output power)
- Adjustable output current between 500mA to 1400 mA for each channel via I-programming tool (DALI Interface)
- Very low pk-pk current ripple to 1% for stadium lighting
- Dimming range 0.1% to 100 %
- Max remote distance 200 meters



Safety Standards



Model Number: EUCO-□□□140G□A
Unit Weight: 5.6kg/5.1kg
Dimensions (L x W x H): 500x152x77 mm

General Description

Delta EUCO series with DALI 2 & RDM/DMX control function are constant current output LED drivers. Compatible with wide input voltage range 220~400Vac for diverse applications from any system manufacturer in EU market's indoor and outdoor application. With IP66 ingress protection and wide operating temperature -40°C to +50°C characteristics, the driver can fulfill any harsh condition. The extremely low output current ripple makes the driver a typical application for outdoor stadium lighting.

Model Information

Model Number	Input Voltage Range	Rated Output Power	Output Current Channel	Control Interface
EUCO-1K5140GLA	220/400Vac Typical	1500W	3	DALI 2
EUCO-1K0140GLA		1000W	2	
EUCO-1K5140GDA	198~440Vac Range	1500W	3	RDM/DMX
EUCO-1K0140GDA		1000W	2	

Model Numbering

EU	C	O	□□□	□□□	□	□
Europe	Constant Current	Outdoor	Output power 1K5:1500W 1K0:1000W	Output Current 140:1400mA	Function L: DALI 2 D: RDM/DMX	Variable A - Standard

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Specifications

Model Number	EUCO-1K5140GLA	EUCO-1K0140GLA	EUCO-1K5140GDA	EUCO-1K0140GDA
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Input Ratings / Characteristics

Normal Input Voltage	220/400Vac				
Input Voltage Range	198-440Vac				
Normal Input Frequency	50/60 Hz				
Input Frequency Range	47-63 Hz				
Normal Input Current	220Vac	7.2A	4.8A	7.2A	4.8A
	400Vac	4.1A	2.7A	4.1A	2.7A
Efficiency ¹ Typical	220Vac	95.2%			
	400Vac	96%			
No Load Power Consumption	<2W at 220Vac, <3.5W at 400Vac				
Inrush Current (Apk / 50%-us)	<=25 A, pulse width<8mS @400Vac				
Power Factor	> 0.95 @ 198-440Vac, full load				
Total Harmonic Distortion	<20% @ 198-440Vac, full load				
Leakage Current	< 1mA @400Vac				

1. 100% Load (Typical) and tested after 30 minutes warm up.

Output Ratings / Characteristics

Nominal Output Current	1400mA			
Output Current Programmable Range	500-1400mA, ref. "Operation Curve"			
Typical Output Voltage	360Vdc			
Output Voltage Range	260-500Vdc			
Max. No Load Output Voltage	600Vdc			
Max Output Power Range	500W per channel, 1.5kW total	500W per channel, 1.0kW total	500W per channel, 1.5kW total	500W per channel, 1.0kW total
Output Current Tolerance	±3%			
Line Regulation	±1%			
Load Regulation	±3%			
Output Current Ripple	1% (TPY) , <2% (ripple = (pk-pk)/avg)			
Max Output Remote Distance	200m, ensure a total voltage drop on the cable of each channel within 5V			
Turn on Delay Time	< 1s			
Rise Time	< 2s			

Dimming Control

Control Interface	DALI 2	RDM/DMX
Dimming Range	0.1%-100%	

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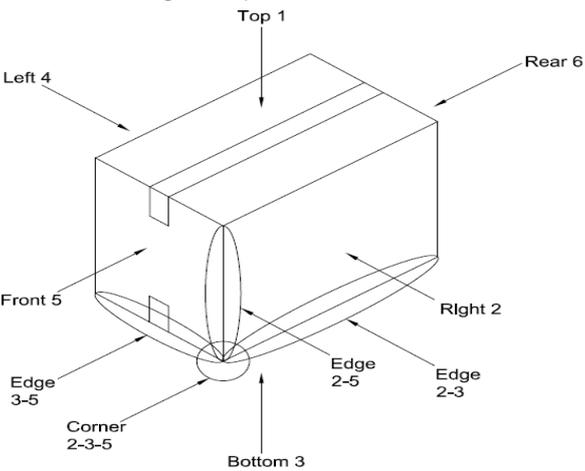
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Model Number	EUCO-1K5140GLA	EUCO-1K0140GLA	EUCO-1K5140GDA	EUCO-1K0140GDA
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Mechanical

Casing		Aluminum case, Color : Dark Gray		
Dimensions (L x W x D)		500x152x77 mm	500x152x77 mm	500x152x77 mm
Unit Weight		5.6 kg	5.1 kg	5.1 kg
Cooling System		Natural Convection		
INPUT	Wago 264-103	With the sign of L, N, PE		
OUTPUT	Wago 264-111	With the sign of PE, NTC, V3+ V3-, V2+, V2-, V1+, V1-		
DIMMING		With the sign of COM,DA+,DA-		

Environment

Ambient Temperature	Operating	-40 ~+50°C
	Storage	-40°C to +85°C
Maximum Case Temperature		+85°C
Lifetime Case Temperature		+80°C
Relative Humidity	Operating	10 to 100% RH (Non-Condensing)
	Storage	10 to 100% RH (Non-Condensing)
Audible Noise (30cm distance)		Sound Pressure Level (SPL) < 24dBA
Ingress Protection classification		IP66
Impact Protection classification		IK08
Drop Test (Non-Operating)	<p>According to ASTM D-775, 40cm height, drop to concrete floor as below drawing, total 10 times.</p> 	
Vibration (Non-Operating)		IEC 60068-2-6, Random: 5 Hz to 10 Hz (1G); 30 min per axis for all X, Y, Z direction
Packing		1pcs per carton

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Protections

Over Voltage	Output voltage limited, <600Vdc
Over Load	Output power limited, <520W
Short Circuit	Auto-Recovery or latch when the fault is removed
Driver Over Temperature	Output shut off, auto-recovery when the fault is removed
Lamp Over Temperature	Output power derating, auto-recovery when the fault is removed, ref. "Over Temperature Protection of Lamp Derating Curve"
Suitable for Luminaires Class	Class I. Insulation Class according to IEC60598

Reliability Data

Lifetime	50,000 hours applicable for 220Vac to 400Vac(50/60Hz) @100% of load, @ ta 45°C
MTBF	1120 khrs at ta=+45°C Telcordia SR-332

Safety

Electrical Safety	-IEC/EN 61347-2-13 electronic control gear for LED Modules, independent type. -IEC/EN62384 DC or AC supplied electronic control gear for LED modules. -CE Declaration of Conformity. -UL/CCC Compliant only.
Material and Parts	RoHS 2.0 Directive (EU) 2015/863
Isolation	Class I , Input and/or Output to Case, Dimming interface to case , 2.2kVac

Electro-Magnetic Compatibility (EMC)

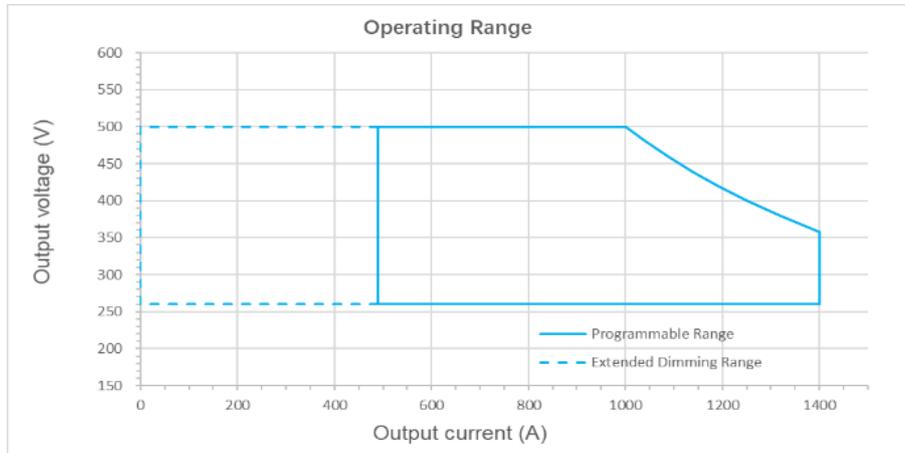
EMC-Emission Characteristics		
Radiated Emission	EN55015	Test at 230Vac/400Vac
Conducted Emission	EN55015	Test at 230Vac/400Vac
Harmonic Current Emission	EN61000-3-2	
Voltage Fluctuation & Flicker	EN61000-3-3	
EMC-Immunity Characteristics		
Electrostatic Discharge(ESD)	EN 61000-4-2	
Radio Frequency Electromagnetic Fields	EN 61000-4-3	
Electrical Fast Transient (EFT)	EN 61000-4-4	
Surge	EN 61000-4-5	- Common Mode: 10kV ¹ (Line to Earth, Neutral to Earth) - Differential Mode: 10kV ¹ (Line to Neutral)
Conducted Disturbance	EN61000-4-6	
Voltage Dip & Interruptions	EN 61000-4-11	

Note : 1.Level B within three times

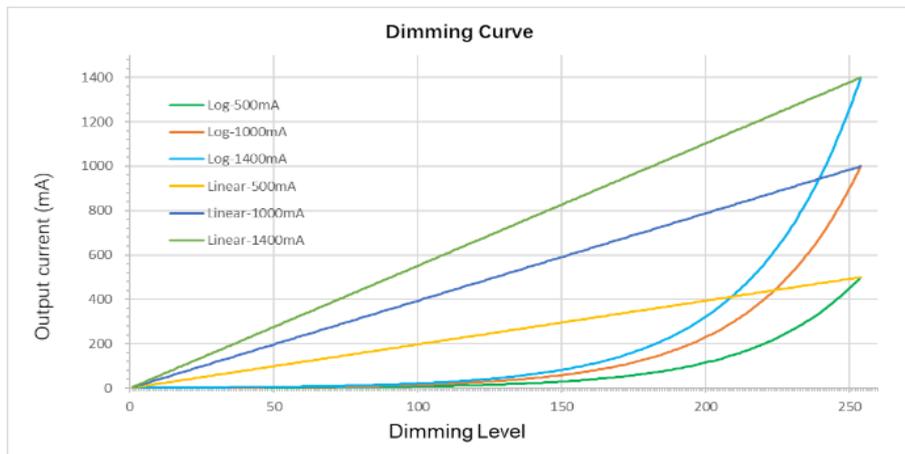
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Operating Range Curve

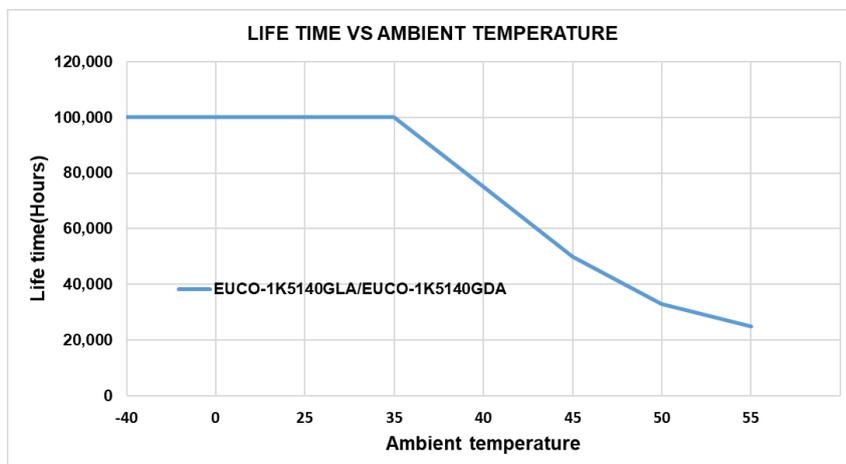


Dimming Range Curve



Note: EUCO series can program the output current through computer, more details refer to User Manual.

Life Time VS Ambient Temperature Curve



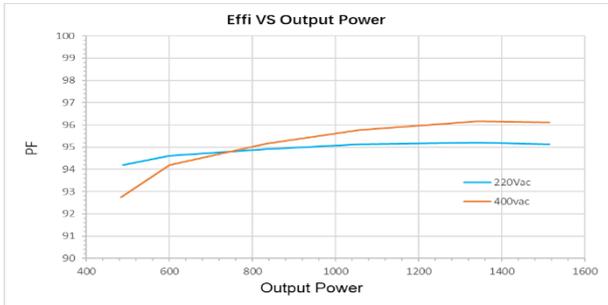
Note: Test at input voltage 220Vac, full Load.

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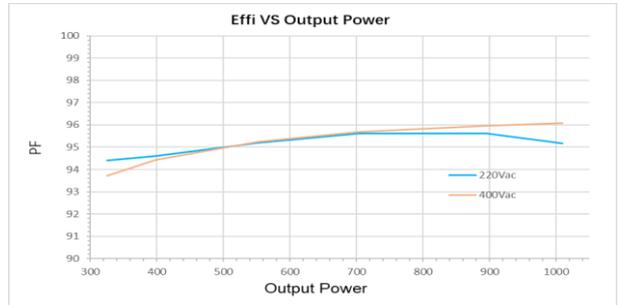
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EFFICIENCY versus OUTPUT POWER

- EUCO-1K5140GLA/GDA

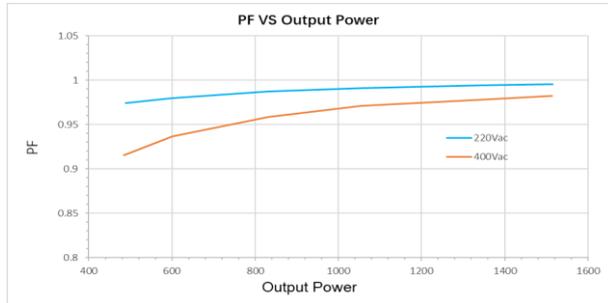


- EUCO-1K0140GLA/GDA

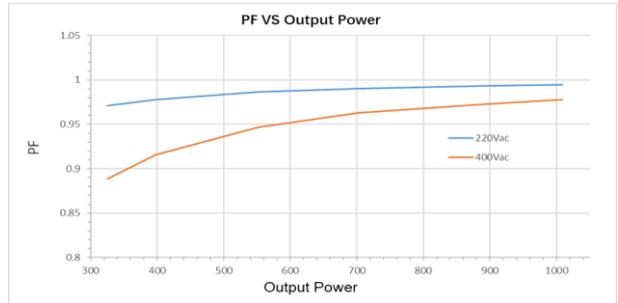


POWER FACTOR versus OUTPUT POWER

- EUCO-1K5140GLA/GDA

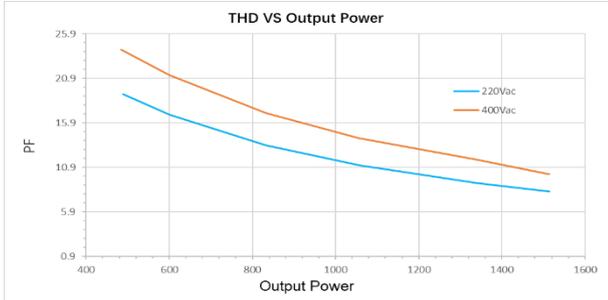


- EUCO-1K0140GLA/GDA

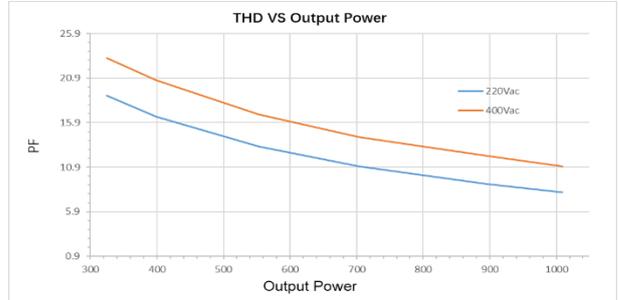


THD versus OUTPUT POWER

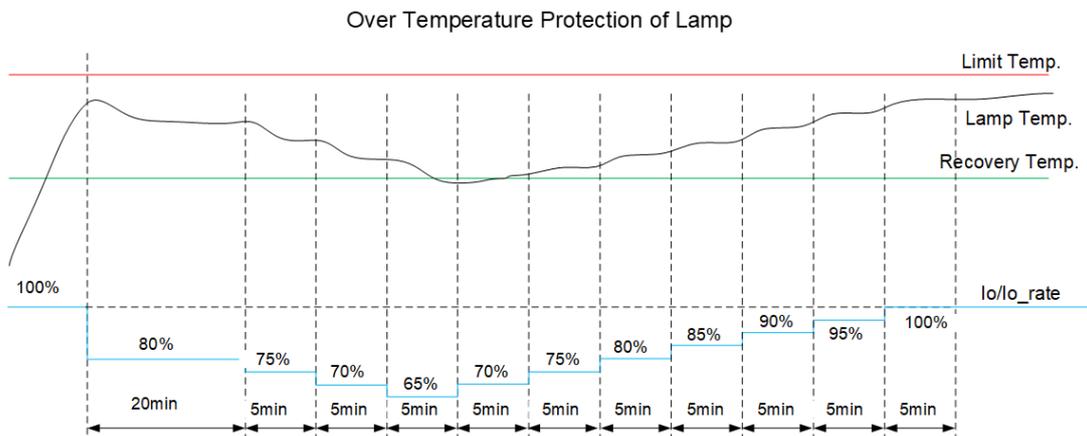
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- EUCO-1K0140GLA/GDA



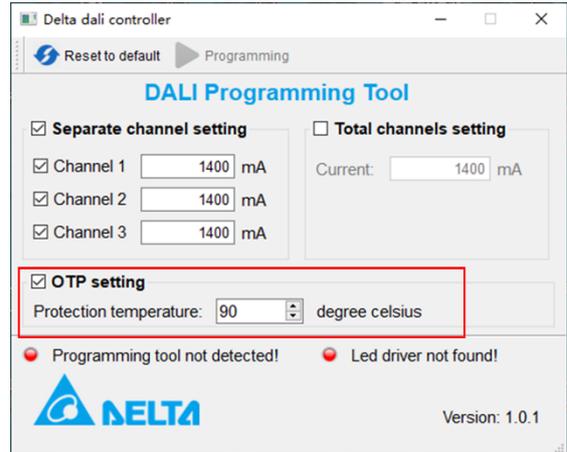
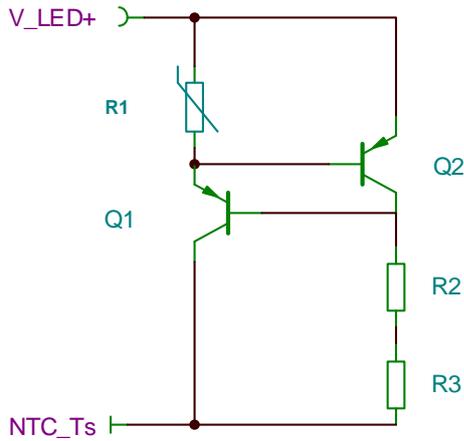
Output Power Derating Curve for Over Temperature Protection of Lamp



Note: This protection is an optional function, user can connect nothing to NTC connector in the junction box to ignore it. This protection requires the application of a special temperature detection circuit to realize the over-temperature of the lamp. The circuit is as follows.

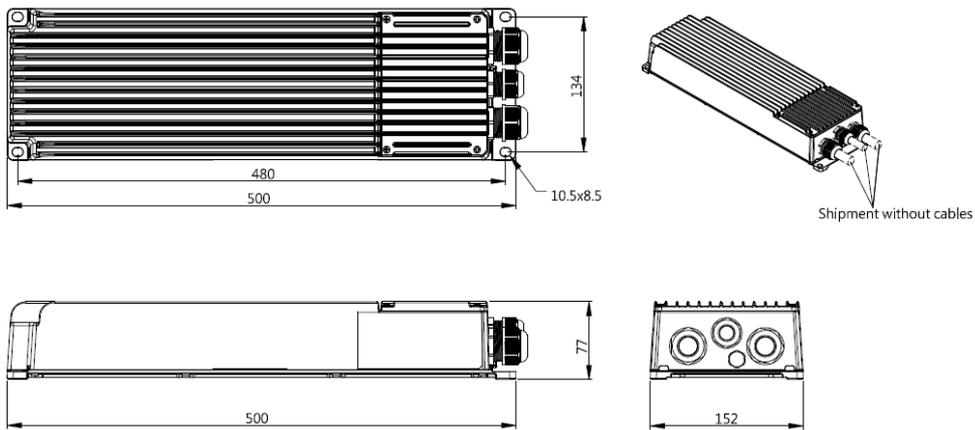
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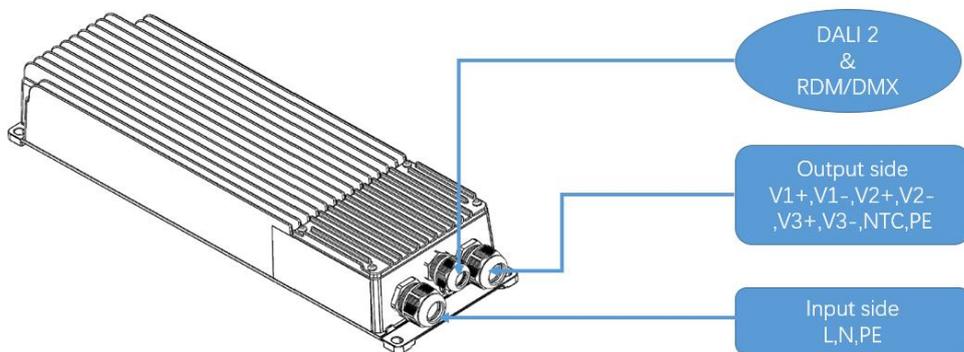
The trigger point of the lamp over temperature protection can be set easily. According to the actual conditions of the lamp, the user can set it between 90 °C and 120°C through the computer control interface and communication tools. More details refer to User Manual.

Dimensions



Unit: mm

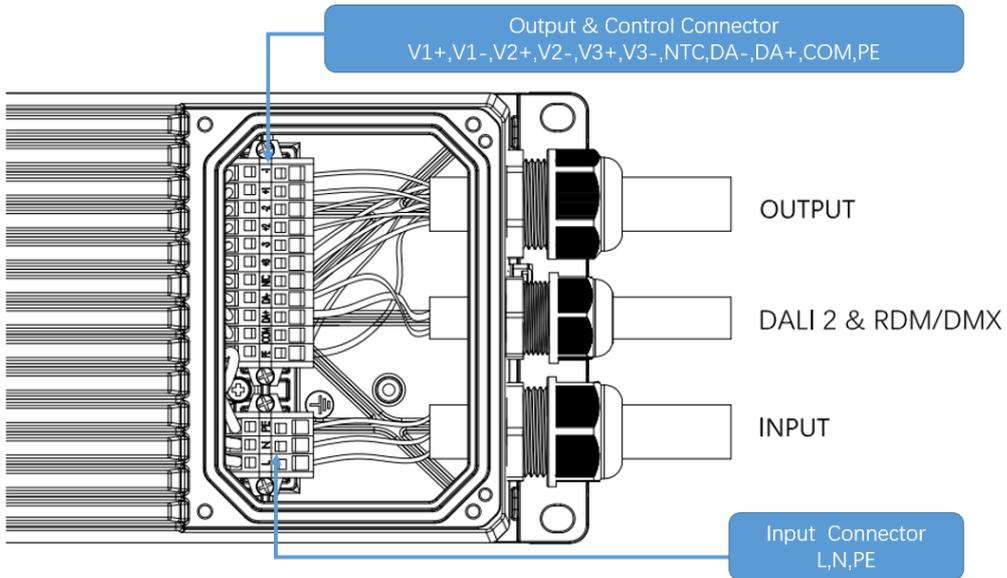
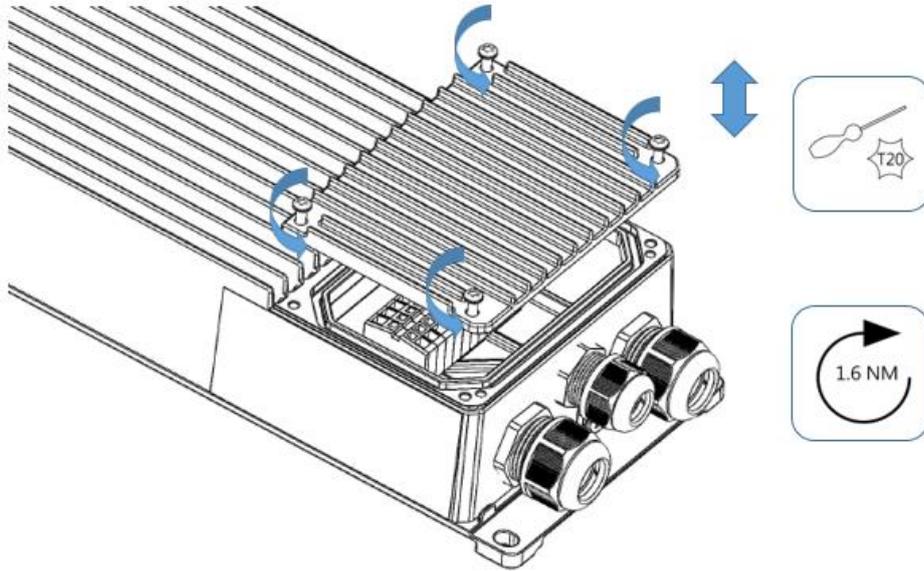
Electrical Connection



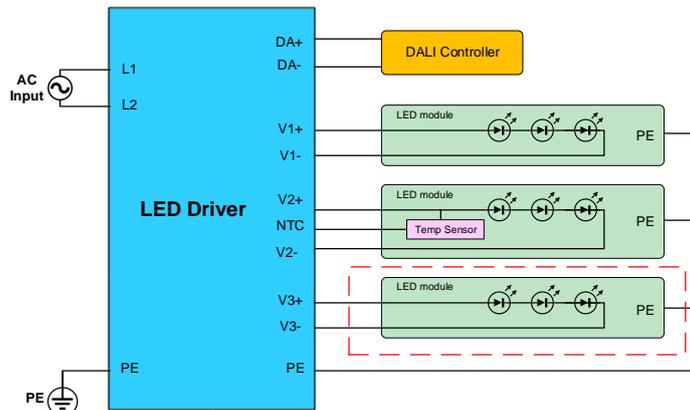
Connection	#	Input	Dimming	Output
L,N,PE	3	M25 Cable Gland	-	-
DALI	3	-	M20 Cable Gland	-
V1+,V1-,V2+,V2-,V3+,V3-,NTC,PE	8	-	-	M25 Cable Gland

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Application



Note: EUCO-1K0140GLA/GDA cancels Channel 3.

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Safety Instructions

- ALWAYS switch mains of input power OFF before connecting and disconnecting the input voltage to the device. If mains are not turned OFF, there is risk of explosion / severe damage.
- To guarantee sufficient convection cooling, keep a distance of 50mm above and lateral distance to nearby objects.
- The device is not recommended to be placed on low thermal conductive surfaces. For example, plastics.
- DO NOT insert any objects into the device.
- Note that the enclosure of the device can become very hot depending on the surrounding air temperature and output load connected to the device. Risk of burns!
- The current rating for the all wires, connected to the input and output wires of the device, must be rated higher than or equal to the input and output current of the power supply. Please refer to the product specifications.
- For device with dimming function, always ensure the dimming control is working properly.
- Please ensure the correct tools are used for all adjustments and installations of the device. If in doubt, please consult your local Delta support or contact us via info@DeltaPSU.com.

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Document Revision Record

Rev	Change Notice	Date
S00	Draft	2020/01/22