

DALI-2 Dimmable LED Driver - Constant Voltage Output - KV-1G-D4IA Series 200W

KV-1G-D4IA Series 200W

Whole Family: KV-XX200-1G-D4IA-Z (XX=12/24/48VDC; Z=YT/Y/T) [30W 60W 80W 96W 100W 120W 150W 200W 300W 500W 600W]



ICES-005



Class P

TYPE HL

IP66
SELV

RoHS



Features

Output:	Constant Voltage
Range:	120-277VAC
PFC design:	Built-in active PFC function
Efficiency:	Up to 94%
Protections:	Short circuit / Over load / Over temperature
Heat dissipation:	Cooling by free air convection
Waterproof performance:	IP66.(EU) Full aluminum housing, for dry, damp and wet locations.(US)
Design features:	- The dimming curve is adjustable. Multiple frequency options. Comes with DALI bus power supply and auxiliary power supply. It has power status detection function (D4i function) and Lamp temperature detection. Driver parameters can be adjusted by APP. - Bus power specification: 18V, 50mA, capable of supporting approximately 25 units of our company's DALI power supplies (signal line current loss of our company's DALI power supply < 2mA) - Auxiliary power specification: 24V, 125mA, 3W
Dimming function and mode:	DALI-2 dimming (PWM Output)
Min load:	Min load is 10%
Dimming range:	0.1%-100%(244Hz) 0.2%-100%(800Hz) 0.3%-100%(4KHz) 0.8%-100%(20KHz)
Application:	Suitable for LED lighting and moving sign applications
Warranty:	5 years warranty
Other:	Flicker-free dimming

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Specification

Model		KV-12200-1G-D4IA-YT	KV-24200-1G-D4IA-YT	KV-48200-1G-D4IA-YT
Certificate		UL / FCC / ICES-005 / ENEC / CE / UKCA / Class P / TYPE HL / SELV / ROHS / REACH		
Output	DC Voltage	12V	24V	48V
	Fine-tune Voltage	12-13.5V	24-26V	48-50V
	Voltage Tolerance	±4%	±2%	±1%
	Voltage Regulation	<1%	<1%	<1%
	Rated current	16.67A	8.33A	4.17A
	Rated power	200W		
	Load Regulation	<2%	<1%	<1%
	Voltage Ripple	224mVp-p	164mVp-p	184mVp-p
	Overshoot/Undershoot	<2%	<2%	<12%
Input	Voltage Range	120-277VAC		
	Frequency Range	50 / 60Hz		
	Standby Power	<0.5W		
	Power Factor (Typ.) @ full load	>0.95		
	THD(Typ.) @ full load	<3%@120VAC	<3%@120VAC	<3%@120VAC
		<4%@230VAC	<4%@230VAC	<4%@230VAC
		<6%@277VAC	<6%@277VAC	<6%@277VAC
	Efficiency(Typ.) @ full load	>90.7%@120VAC	>91.9%@120VAC	>91.5%@120VAC
		>92.5%@230VAC	>93.6%@230VAC	>93.5%@230VAC
		>92.7%@277VAC	>94.0%@277VAC	>94.0%@277VAC
Protection	AC Current (Max.)	2.1A		
	Inrush Current (Typ.)	94A,184us@50%Ipeak 120VAC 114A,378us@50%Ipeak 230VAC 120A,456us@50%Ipeak 277VAC		
	Leakage current	<0.5mA		
	Short Circuit	Shut down o/p voltage, recovers automatically after fault condition is removed.		
Environment	Over Load	105%~110% Hiccup mode, recovers automatically after fault condition is removed.		
	Over temperature	Ambient temperature over 55°C±5°C to reduce output to 50%; The ambient temperature drops to 45°C ±5°Cand automatically recovers. Ambient temperature over 75°C±5°C to reduce output to 0%; The ambient temperature drops to 45°C ±5°Cand automatically recovers.		
	Working TEMP. (Ta)	-40~+50°C (see below derating curve)		
Safety & EMC	Case Temperature (Tc)	85°C		
	Working Humidity	20 - 95%RH non-condensing		
	Storage TEM, Humidity	-40 - +80°C, 10 - 95% RH non-condensing		
	TEMP coefficient	±0.03%/°C(0 - 50°C)		
	Vibration	10 ~ 500Hz, 5G 12 minutes/cycle, X Y Z axis 72 minutes each		
Safety standards	Safety standards	EN61347-1; EN61347-2-13		
		UL8750; CAN/CSA-C22.2 No.250.13		

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	Withstand voltage	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC (EU) I/P-O/P:1.88KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC (US)
	Isolation resistance	I/P-O/P: 100MΩ/ 500VDC/ 25°C/ 70% RH
	EMC Immunity	EN61547; EN61000-4-2,3,4,5,6,11 FCC/ICES do not request this test.
	EMC Emission	EN55015; EN61000-3-2,3 CFR47 FCC Part15 Subpart B:2020; ICES-005 Issue 5; ANSI C63.4a-2017
	Surge Immunity Test	AC Power Line:Differential Mode 4 kV, Common Mode 6 kV
Others	Net Weight	0.96KG
	Dimension	248*78*25.1mm(L*W*H)
	Packing	300*300*215mm 20pcs/CTN
Notes	1. Unless otherwise specified, all specifications are measured at 120V input, rated load, and 25°C ambient temperature. 2. Default states: Output voltage level is level 1. (see below NFC voltage regulation level table) The Internal DALI bus power of Driver is off. Output frequency is 4KHZ. The dimming curve is a logarithmic curve. 3. LED driver Meets the harmonic emissions requirements of ANSI C82.77-10.	

DALI-2 Dimmable LED Driver - Constant Voltage Output - KV-1G-D4IA Series 200W
MCB recommendation

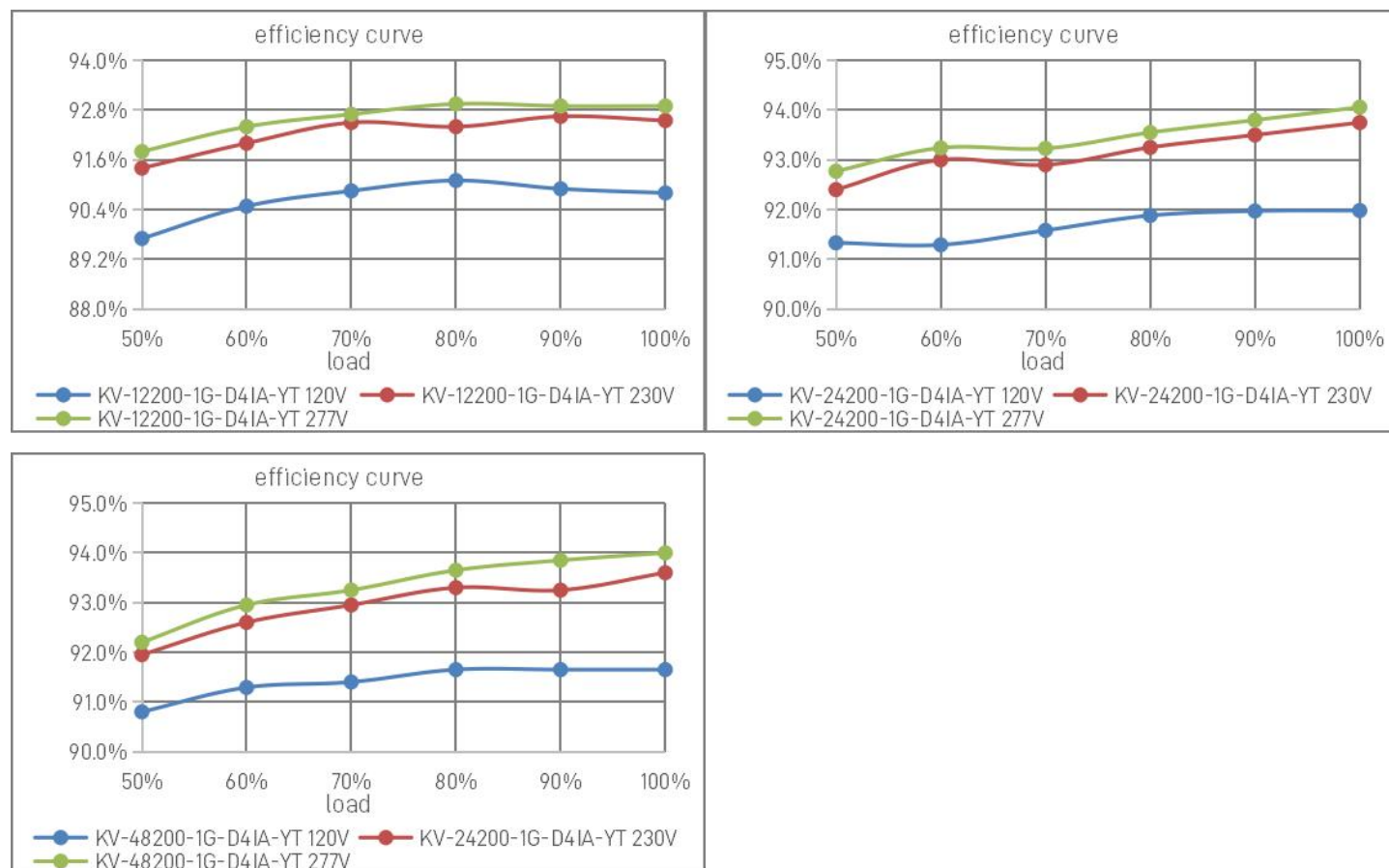
When the input voltage is 120Vac,the number of LED Driver matched by circuit breakers is as follows:		
MCB Type	Level	The number of LED Driver
C type(breaking capacity:6KA)	10A	3
	13A	4
	16A	5
	20A	6
	25A	8
When the input voltage is 230Vac,the number of LED Driver matched by circuit breakers is as follows:		
MCB Type	Level	The number of LED Driver
C type(breaking capacity:6KA)	10A	6
	13A	8
	16A	10
	20A	12
	25A	16
When the input voltage is 277Vac,the number of LED Driver matched by circuit breakers is as follows:		
MCB Type	Level	The number of LED Driver
C type(breaking capacity:6KA)	10A	7
	13A	9
	16A	12
	20A	15
	25A	19

Note:

1. The above quantities of the led drivers connected on the Type C is recommended base on the maximum ambient temperature is 50 °C.
2. The breaker should be selected according to the input rated voltage, input rated current, ambient temperature, and trip characteristic curve.

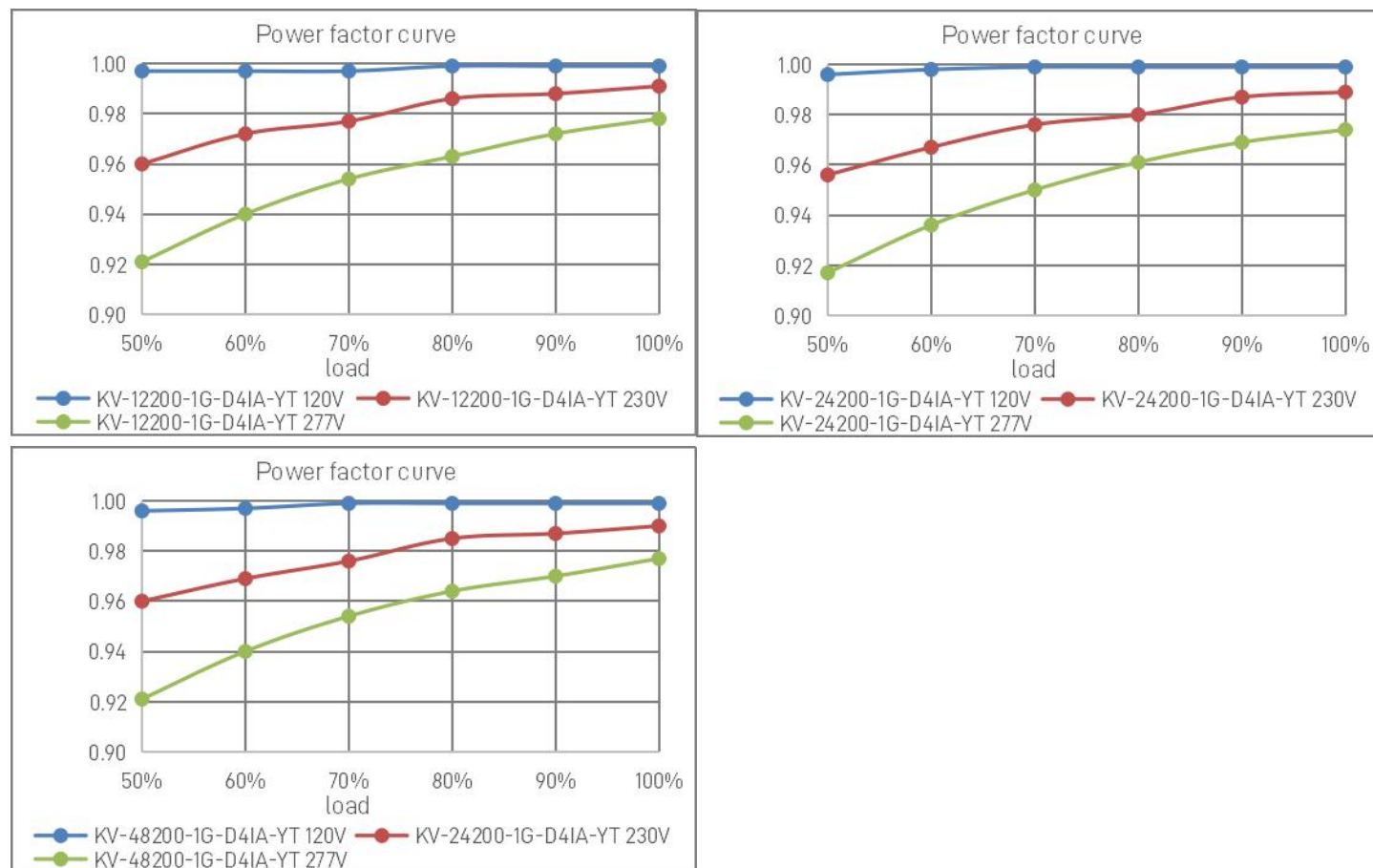
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Efficiency Curve (efficiency vs output load)



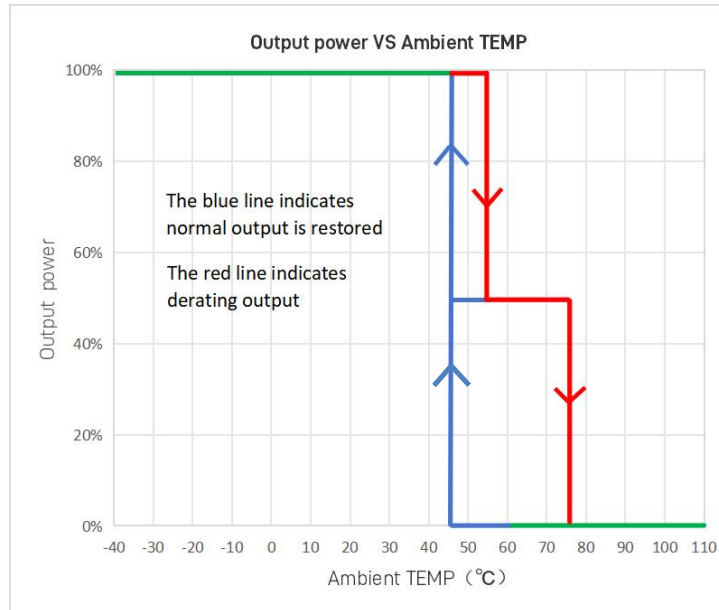
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Power Factor Curve (power factor vs output load)



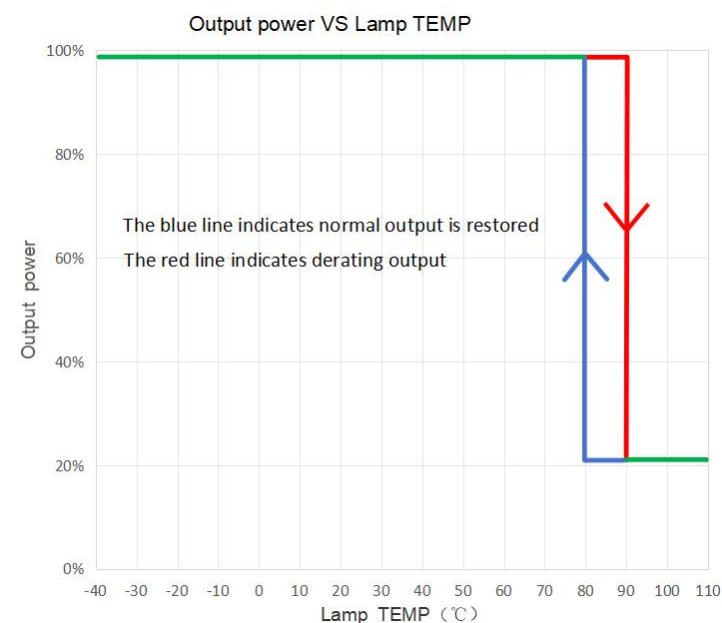
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Derating Curve (Output power VS Ambient TEMP)



1. To extend their life, please refer to the Derating Curve and derate according to the temperature.
2. The output current of the LED driver should be selected according to the rated current of the lamp and the ambient temperature. Normally, we recommend the power supply to reserve a certain amount of load to extend LED driver's life .

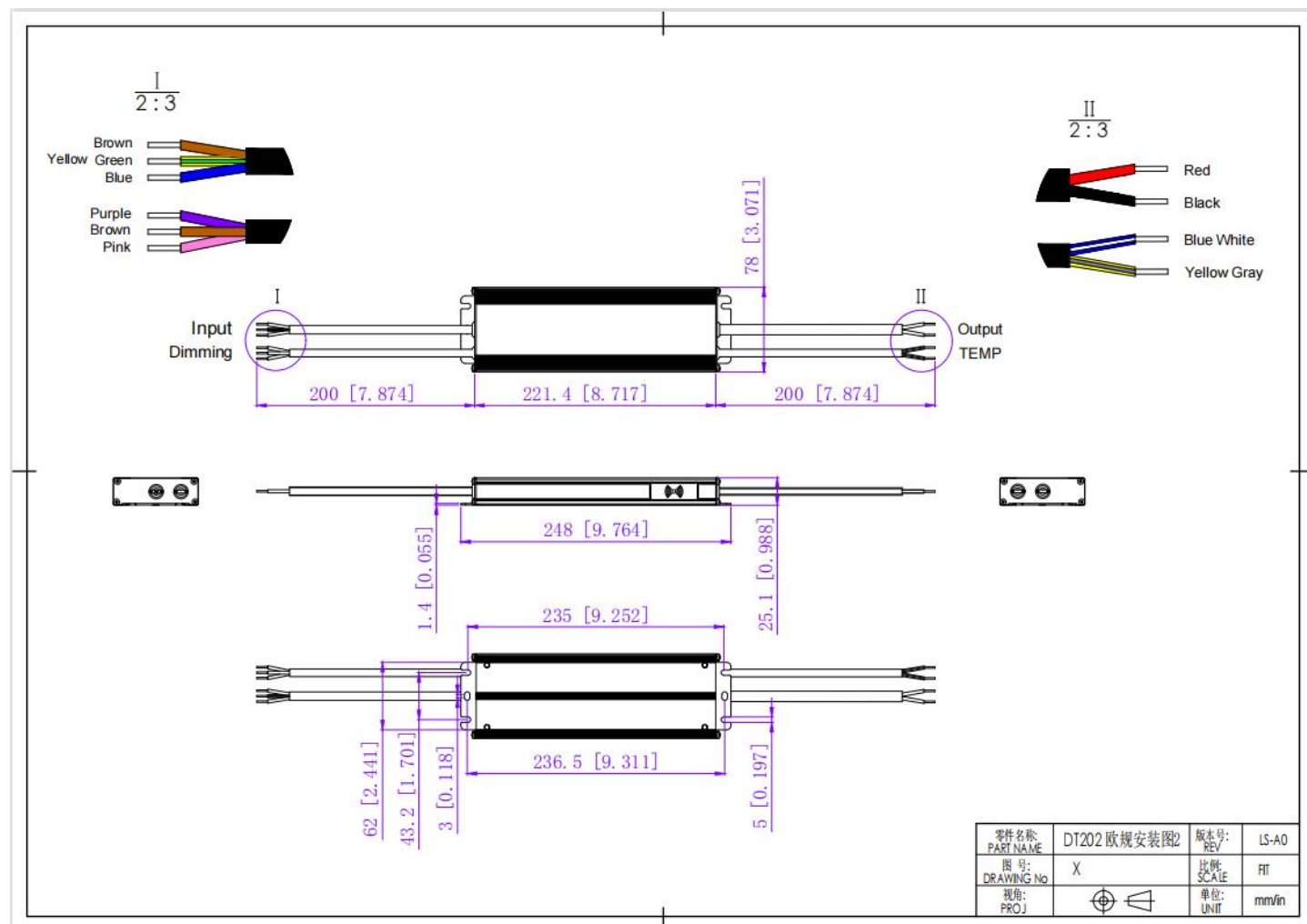
Temperature derating curve of lamp (Output power VS Lamp TEMP)



1. This figure shows the protection curve when the recommended model of the lamp temperature sensor is NCP18XH103J03RB(muRata) and the external temperature protection parameters on the APP are factory default.
2. If the models of thermistors are is not NCP18XH103J03RB(muRata) , Please check the relevant parameters of lamp temperature protection on the APP.
3. If the lamp temperature sensor is not connected, please keep the parameters of the lamp temperature protection section on the APP as default and keep cables away from live bodies.

DALI-2 Dimmable LED Driver - Constant Voltage Output - KV-1G-D4IA Series 200W

Mechanical Specification(For European Market)

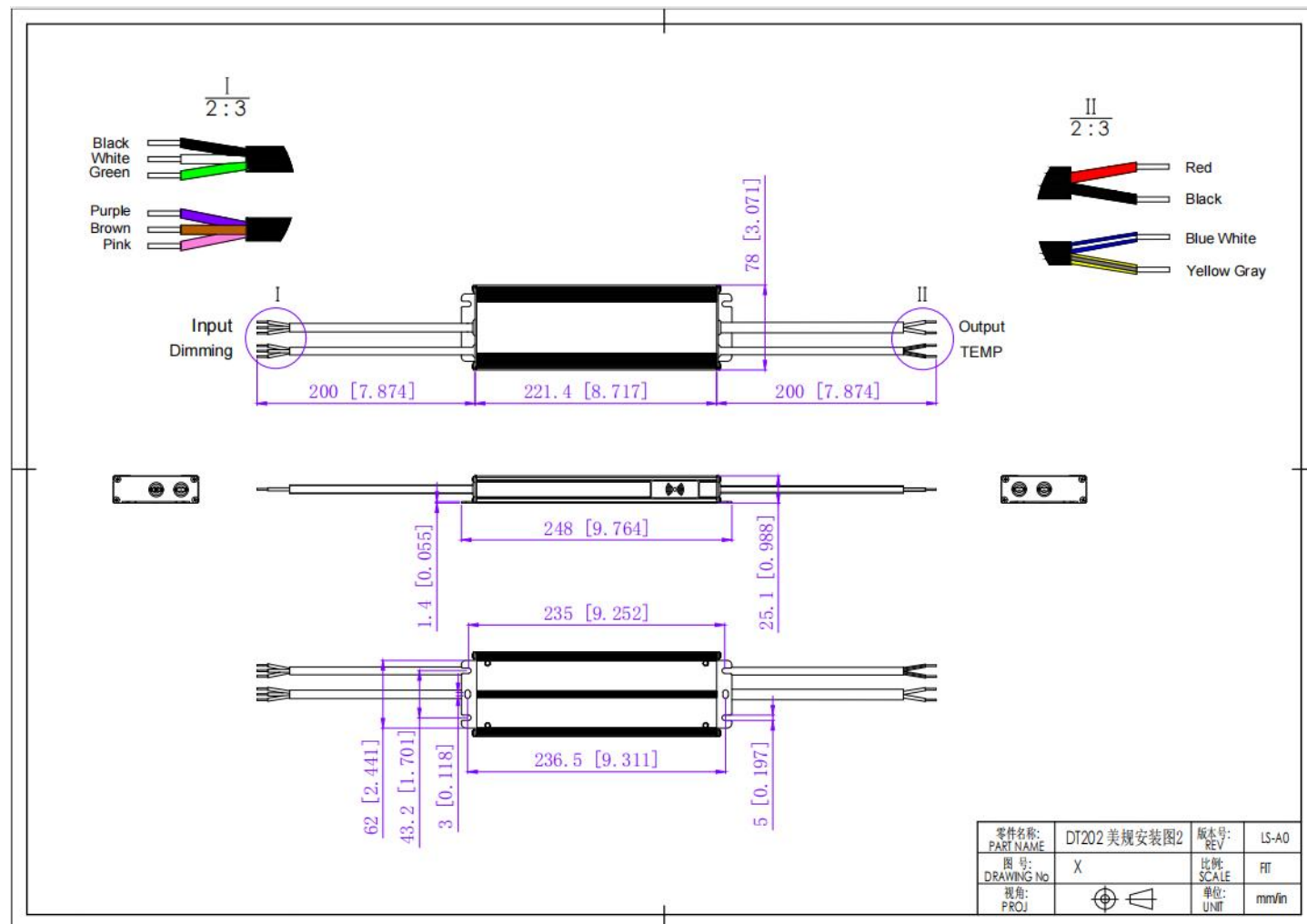


European wire gauge	
DT202	
Input wire	Brown(L) Blue(N) Yellow Green(G) (3*1.0mm ²)
Output wire	12V: Red(V+) Black(V-) (2*2.08mm ²) 24V: Red(V+) Black(V-) (2*1.31mm ²) 48V: Red(V+) Black(V-) (2*0.824mm ²)
Dimming wire	Purple(DA+) Pink(DA-/AUX 24V-) Brown(AUX 24V+) (3*0.824mm ²)
External temperature wire	Yellow Gray(TEMP+) Blue White(TEMP-) (2*0.824mm ²)

Please make sure you connect these correctly otherwise your product will not function correctly and could be damaged.

DALI-2 Dimmable LED Driver - Constant Voltage Output - KV-1G-D4IA Series 200W

Mechanical Specification(For North American Market)

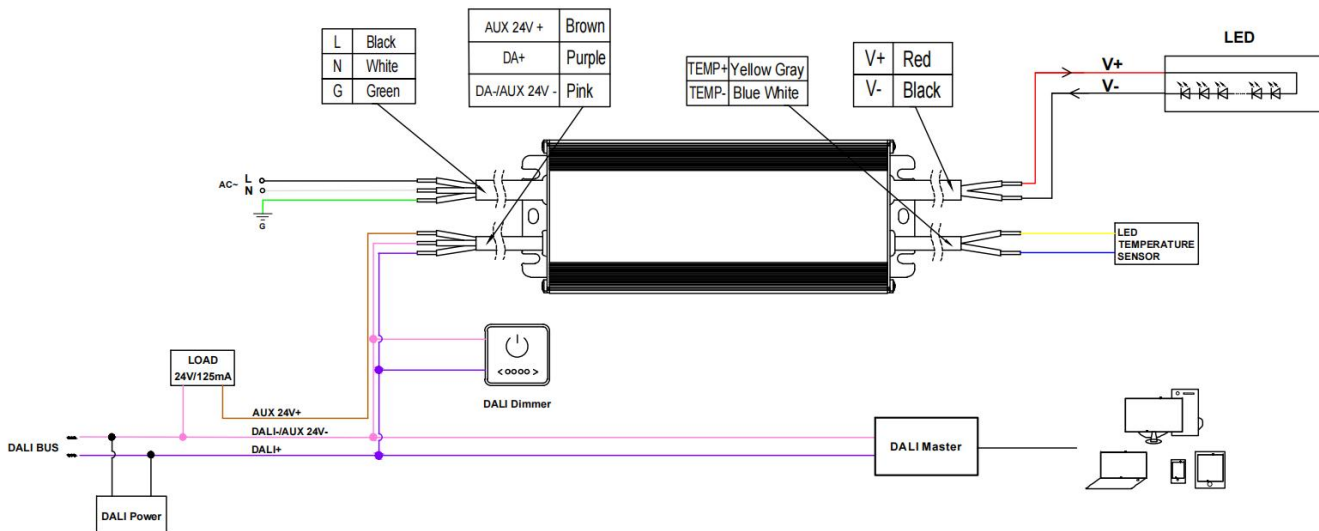
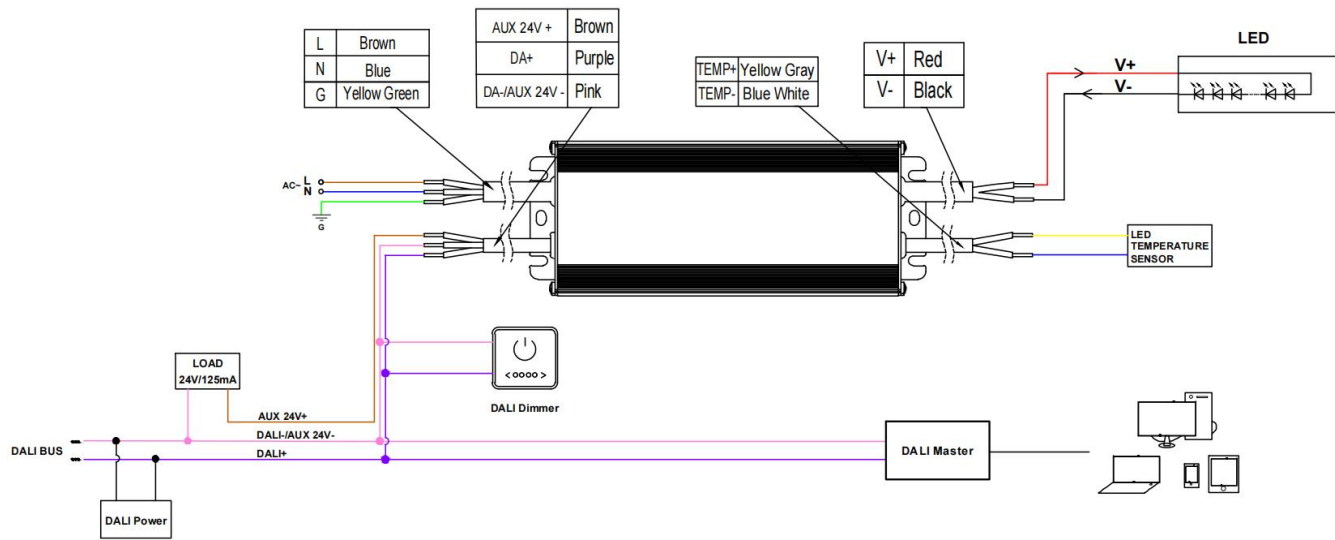


American wire gauge	
DT202	
Input wire	Black(L) White(N) Green(G) (3*18AWG)
Output wire	12V: Red(V+) Black(V-) (2*14AWG) 24V: Red(V+) Black(V-) (2*16AWG) 48V: Red(V+) Black(V-) (2*18AWG)
Dimming wire	Purple(DA+) Pink(DA-/AUX 24V-) Brown(AUX 24V+) (3*18AWG)
External temperature wire	Yellow gray(TEMP+) Blue white(TEMP-) (2*18AWG)

Please make sure you connect these correctly otherwise your product will not function correctly and could be damaged.

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Dimming Operation and Connecting Diagram



Note:

1. When Turn on the internal DALI bus power. No need external bus power supply.
2. The model name KV-XX200-1G-D4IA means that there is no auxiliary power supply and lamp temperature detection, so there is no corresponding wiring for the LED driver.
3. The model name KV-XX200-1G-D4IA-Y means that there is an auxiliary power supply but no lamp temperature detection, so the LED driver has no lamp temperature detection wiring.
4. The model name KV-XX200-1G-D4IA-T means that there is no auxiliary power supply but there is a lamp temperature detection, so the LED driver has no auxiliary power wiring.
5. The model name KV-XX200-1G-D4IA-YT means that there is an auxiliary power supply and lamp temperature detection.

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NFC Function



ProNFC APP



NFC Handheld devices



iOS Download

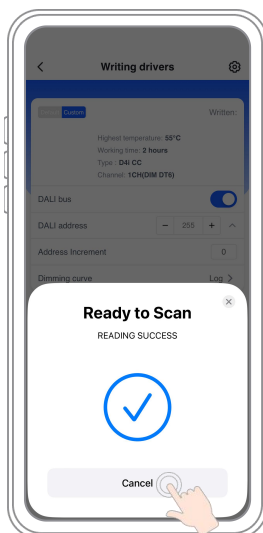
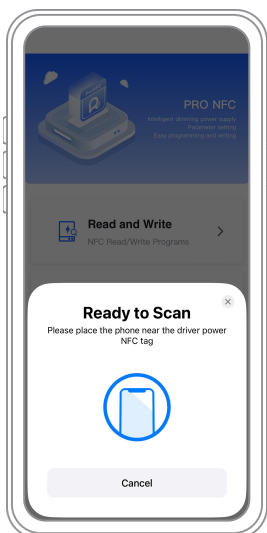
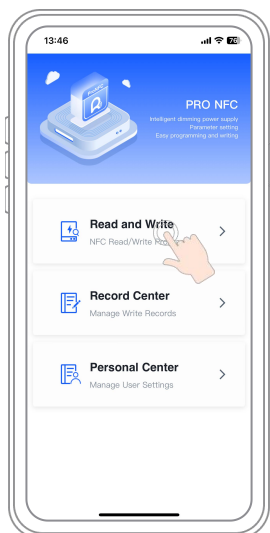


Android Download

Open the ProNFC APP. Click on the "Read and Write".

Use the phone's NFC sensing area close to the driver's NFC marking area.

Wait for the successful reading.



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DALI address & DALI bus

1. **DALI address:** Click the "+" or "-" sign of DALI address in the main page to set the address, and click the value box in the middle to input the value 0~63; 255 (255 means delete address).(Figure 1)
2. **Address Increment:** There is an arrow symbol next to the DALI address, click on it to collapse or expand the address auto-increment setting below, input the value 0~10 to auto-increment the address after successful writing. 0 is to close the auto-increment.(Figure 1)
(Example: Address Increment is 1, DALI address is 2, then the address of the selected driver will be changed to 3 automatically after successful writing.)
3. **DALI bus:** Click on the DALI bus switch to enable or disable the DALI bus setting.
Click "Write All" to program and write the set parameters and take effect after the driver power supply is re-powered.(Figure 2)

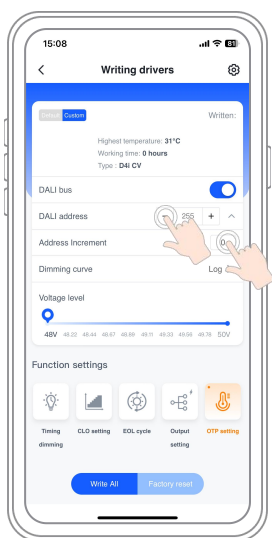


Figure 1

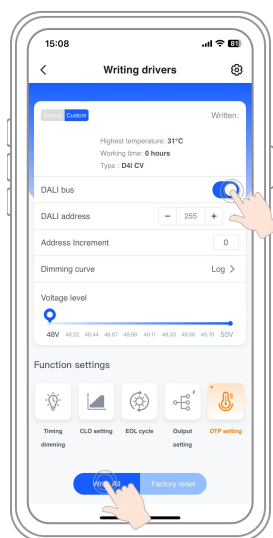
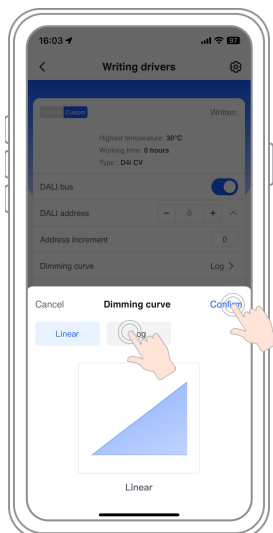
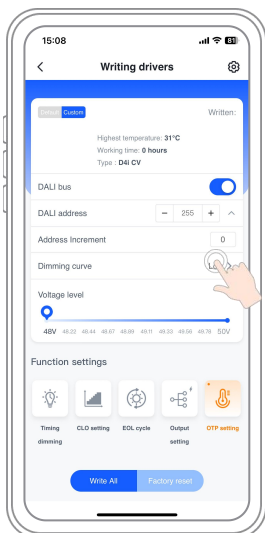


Figure 2

Dimming curve (Linear/Log curve)

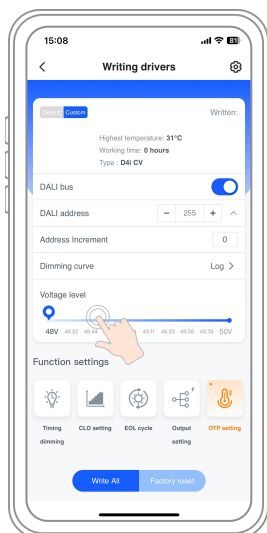
1. Click on the current dimming curve in the function homepage to activate the pop-up window to change the dimming curve parameters.
2. Select the dimming curve you want to set in the pop-up window page.
3. Click "Confirm" to save the current settings and close the pop-up page.



DALI-2 Dimmable LED Driver - Constant Voltage Output - KV-1G-D4IA Series 200W

Adjust output voltage slightly

The output voltage can be read and written by a mobile with ProNFC APP or NFC handheld device (NFC read & write device: NFC-RW) by close to the NFC signal area of the Dimmable LED driver.

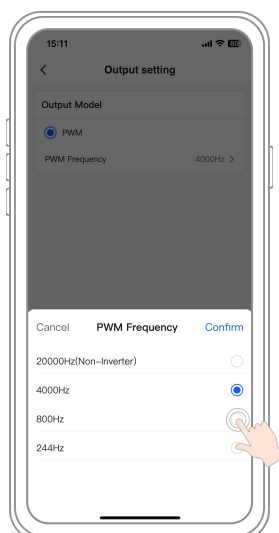
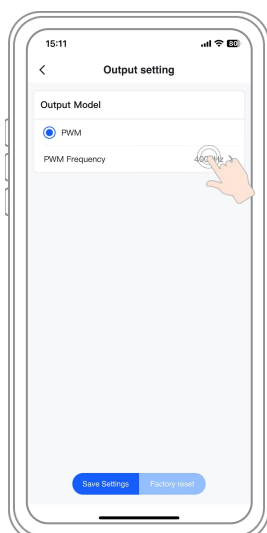
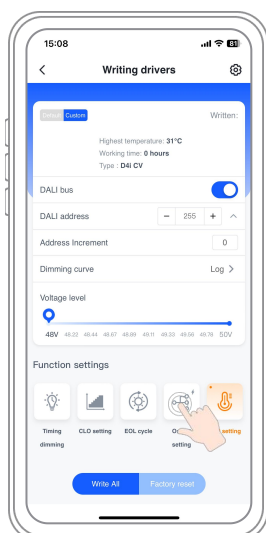


NFC voltage regulation level

	level 1	level 2	level 3	level 4	level 5	level 6	level 7	level 8	level 9	level 10
12V	12.0V	12.17V	12.33V	12.5V	12.67V	12.83V	13.0V	13.17V	13.33V	13.5V
24V	24.0V	24.22V	24.44V	24.67V	24.89V	25.11V	25.33V	25.56V	25.78V	26.0V
48V	48.0V	48.22V	48.44V	48.67V	48.89V	49.11V	49.33V	49.56V	49.78V	50.0V

Output Setting/PWM Frequency

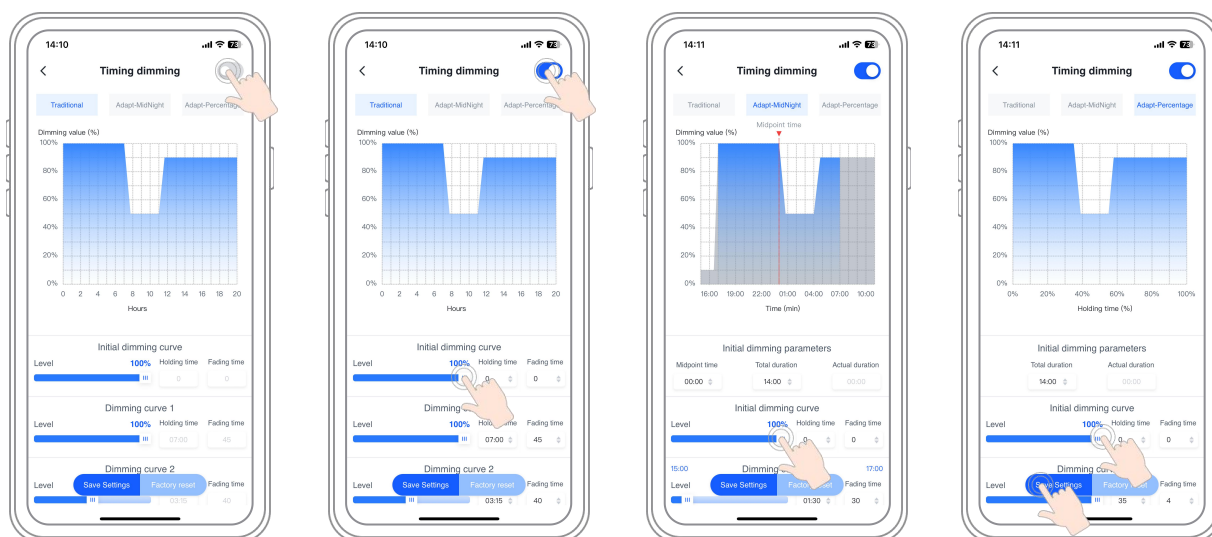
1. Click "Output setting" on the main page of the function to enter the Output setting.
2. Click on the "PWM Frequency", and select the corresponding PWM frequency according to the demand. Click "Confirm" to complete the setting.



DALI-2 Dimmable LED Driver - Constant Voltage Output - KV-1G-D4IA Series 200W

Timing dimming

Timing dimming control includes 3 kinds of modes, they are self adapting-midnight, self adapting percentage and traditional timer. Three modes can be set via NFC.

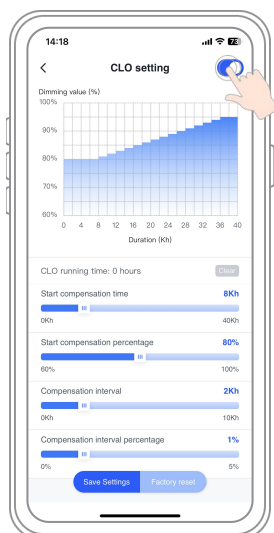


1. **Traditional Timer:** Follows the programmed timing curve after power on with no changes.
2. **Self Adapting-Midnight:** Set the midpoint time of the dimmer curve, the dimmer will automatically adjust the working curve according to the total working time of the past few days, if difference <30 minutes. (The midpoint is set at 0 point, the user can set the offset, can be positive and negative offset for 4 hours.)
3. **Self Adapting-Percentage:** Automatically adjust the working hours according to the last few days. (Increase or decrease according to the initialization time and effective working time.)

DALI-2 Dimmable LED Driver - Constant Voltage Output - KV-1G-D4IA Series 200W

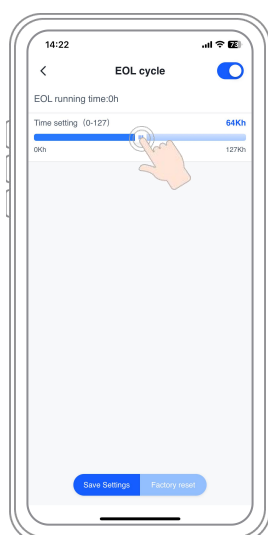
CLO setting (Constant Lumen Output setting)

This function is mainly used to maintain the constant brightness output of the LED. During the life cycle of LED, by gradually increasing the driving current of LED, to compensate for the light decay caused by the long operation of LED, thus ensuring the constant optical flux output of LED.



EOL cycle (End-Of-Life cycle)

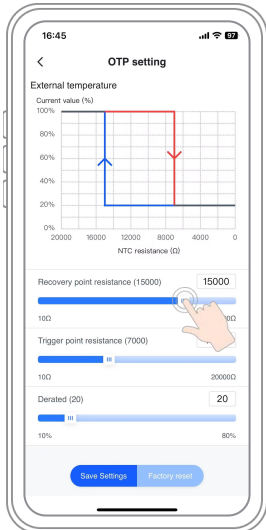
Once this function is started, the output current of the LED drive automatically decreases to 1% of the total current and lasts for 1 minute, reminding the user to replace the LED lamp and reaching the service life designed by the supplier.



DALI-2 Dimmable LED Driver - Constant Voltage Output - KV-1G-D4IA Series 200W

OTP setting (Over-Temperature Protection setting)

During use, if the power supply detects that the external temperature of the luminaire exceeds the preset threshold, it will automatically trigger the over-temperature protection and reduce the power supply current value to avoid the luminaire from overheating and causing damage.



Instructions

1. This driver should be installed by qualified and professional person.
2. Please make sure the driver is installed with adequate ventilation around it to allow for heat dissipation.
3. Ensure that wiring is correct before test in order to avoid light and power supply damage.
4. If driver Cannot work normally, don't maintain privately.

Have any questions, please contact Zhuhai Shengchang.

Please visit our website or contact us for more information! www.scpower.net.cn/en.