LED Driver
800HTH260CVG-xC-yyy

V0.7

2026/4/9

Powerland Signatures						
Prepared	Checked			Approved	Marketing	CPO
	Mechanical Engineer	Safety Engineer	R&D Manager			

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800HTH260CVG-xC 800W AC/DC Constant Current LED Driver with Optimized Multi-Channel Power Distribution

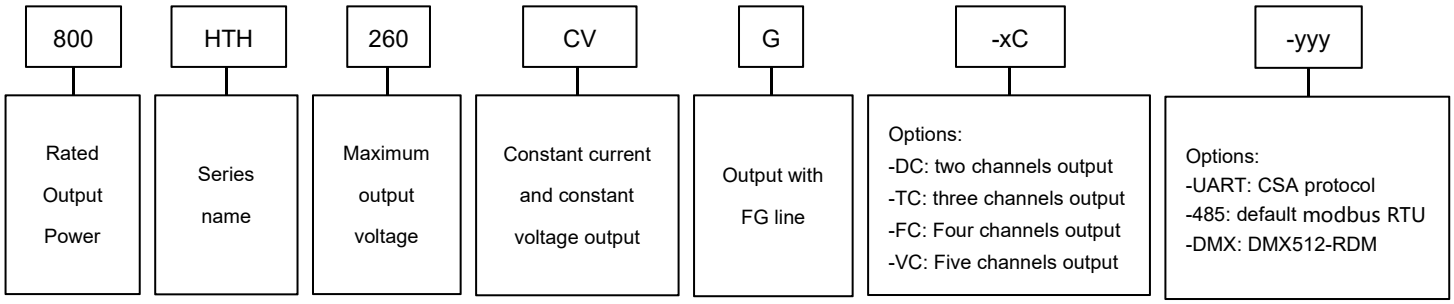
Features

- Multi-channel constant current output with a total output power of 800W
- High efficiency: 94% typical @400 VAC, full load
- Ultra low THD at light load
- Dimming port programming with driver power on
- Optional UART Based Communication Protocol or RS485 Protocol Digital Dimming or DMX Dimming
- DMX512-RDM Control up to 40 fps
- Optimized Multi-channel Power Distribution

Description

800W LED Drivers offers digital programmable drivers with wide-range adjustable output current, together with 12V/200mA auxiliary output for smart lighting.

Model Name Definition



Specifications

Part Number	Channels	PO_MAX (W)	IO_RANGE @ CC (A)	VO_RANGE (V)	Typical η (%) @ 400 VAC
800HTH260CVG-DC	1	800	1.54-3.85	200-260	94
	2	300	0.4-2	50-150	
800HTH260CVG-TC	1	800	1.54-3.85	200-260	94
	2, 3	300	0.4-2	50-150	
800HTH260CVG-FC	1	800	1.54-3.85	200-260	94
	2, 3, 4	300	0.4-2	50-150	
800HTH260CVG-VC	1	800	1.54-3.85	200-260	94
	2, 3, 4	300	0.4-2	50-150	
	5	100	0.2-0.75	50-150	

Note:The total power of all channels shall not exceed 800 W,refer to Operation Range Curve and Operation principle of multi-channel optimized power distribution for the details.

These protocols of different communication interfaces can be obtained from sales.

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1.Input Specifications

	Parameter	Min.	Typ.	Max.	Unit	Notes
V_{IN_AC}	Rated Input AC Voltage	208	-	480	VAC	The upper limit voltage of CE certification:400 VAC
V_{IN_RANGE}	Input AC Voltage Range	187	-	528	VAC	
F_{LINE}	Input Frequency	47	-	63	Hz	
I_{LKG}	Leakage Current	-	-	0.75	mA	At 480 VAC/ 60 Hz input , grounding effectively
I_{IN_AC}	Input AC Current	-	-	2	A	Measured at 25°C, full load and 480 VAC input.
		-	-	3.4	A	Measured at 25°C, full load and 277 VAC input.
I_{PK_INRUSH}	Inrush Peak Current	-	-	35	A	At 480 VAC input, 25°C cold start. See Inrush Current Waveform for the details.
PF	Power Factor	0.9	-	-		At 208-480 VAC, full load, 25°C and 50 Hz
THD	Total Harmonic	-	-	20	%	
η	Efficiency	92	94	-	%	Measured at 400 VAC input、100% load and steady-state temperature in 25°C ambient

2.Output Specifications

	Parameter	Min.	Typ.	Max.	Unit	Notes
I_{O_ACCU}	Output Current Accuracy relative to Io set	-5	-	5	%	At 25°C and full load condition. Can contact sales ask for better current tolerance.
I_{O_RIPPLE}	Total Output Current Ripple (pk-pk) relative to Io max	-	-	10	%	At 25°C and full load condition, 8 kHz BW
$I_{O\_OVERSHOOT}$	Startup Overshoot Current relative to Io max	-	-	20	%	At 25°C and full load condition, 8 kHz BW
V_{O_OCV}	No Load Output Voltage	-	275	290	V	
V_{O_LINE}	Line Regulation	-	-	±5	%	Measured at 25°C and full load
V_{O_LOAD}	Load Regulation	-	-	±5	%	At 25°C condition
T_{ON_DELAY}	Turn-on Delay Time	-	0.8	1.5	s	Measured at 277 VAC input.
I_{O_TC}	Temperature Coefficient of Io set	-0.05	-	0.05	%/°C	Case temperature = 0°C ~Tc max
V_{O_AUX}	12V Auxiliary Output Voltage	11	12	15	V	
I_{O_AUX}	12V Auxiliary Output Current	0	-	200	mA	Return terminal is “Dim−“
T_{OTP}	Over Temperature Protection Threshold	90	-	100	°C	Output current will drop or shut down.
SCP	Short Circuit Protection Threshold					Auxiliary source: Hiccup mode, Auto recover

						Main output:Locked or auto recover
OCP	Over Current Protection Threshold					Locked or auto recover

3.General Specifications

	Parameter	Min.	Typ.	Max.	Unit	Notes
$P_{STANDBY}$	Standby power	-	-	2	W	Measured at 277 VAC/60 Hz ; Dimming off
T_{MTBF}	Mean Time Between Failure	234,000	-	-	Hours	Measured at 277 VAC input, 80% load and 25°C ambient temperature (MIL-HDBK-217F)
$T_{LIFETIMELY}$	Lifetime	50,000	-	-	Hours	Measured at 480 VAC input, 100% load and 75°C case temperature; See lifetime vs. Tc curve for the details
T_C	Operating Case Temperature	-40	-	90	°C	Under harsh conditions，when tc>85°C, it may trigger automatic derating to around 80%.
T_A	Operating Ambient Temperature	-40	-	50	°C	
T_{STG}	Storage Temperature	-40	-	85	°C	Humidity: 5%RH to 95%RH
	IP Grade	IP65				
	Dimensions L × W × H	16.99×4.06×2.04			inch	
		431.6×103×51.8			mm	
	Net Weight	-	4.8	-	kg	

4.Dimming Specifications

4.1.DMX Dimming for the DMX model

Parameter	Min.	Typ.	Max.	Unit	Notes
DMX+ to DMX-	-5	-	7	V	
DMX+ to the case of the drive	22	-	-	MΩ	
DMX- to the case of the drive	22	-		MΩ	
Input Logic 0	-	-	-0.2	V	DMX+ to DMX-
Input Logic 1	0.2	-	-	V	DMX+ to DMX-
Communication Baud Rate	-	250	-	K bps	
Dimming Output Range relative to Io max	2	-	100	%	

4.2.RDM Protocol for the DMX model

The RDM protocol is a bidirectional communication protocol based on the standard DMX512 protocol, which allows users to Configure, monitor, and query remote devices. The RDM protocol adds control to the DMX signal by adding control Information packets are used to achieve communication with devices.

The following are the registers supported by the RDM Protocol:

No	Address	Param	Value	R/W
Network Management(default)				
1	0x0001	DISC_UNIQUE_BRANCH		
2	0x0002	DISC_MUTE		
3	0x0003	DISC_UN_MUTE		
RDM Information(default)				
1	0x0050	SUPPORTED_PARAMETERS		R
2	0x0051	PARAMETER_DESCRIPTION		R
3	0x0060	DEVICE_INFO		R
4	0x00C0	SOFTWARE_VERSION_LABEL		R
5	0x00F0	DMX_START_ADDRESS		R/W
6	0x1000	IDENTIFY_DEVICE		R/W
RDM Information				
1	0x0080	DEVICE_MODEL_DESCRIPTION		R
2	0x0081	MANUFACTURER_LABEL	POWERLAND	R
3	0x0082	DEVICE_LABEL		R/W
4	0x00E0	DMX_PERSONALITY		R/W
5	0x0120	SLOT_INFO		R
6	0x0121	SLOT_DESCRIPTION		R
7	0x0200	SENSOR_DEFINITION	Voltage,Current,Temp	R
8	0x0201	SENSOR_VALUE		R
9	0x0400	DEVICE_HOURS		R
10	0x0403	LAMP_STATE		R
11	0x0405	DEVICE_POWER_CYCLES		R

4.3.Other Protocol

Please contact us for UART and RS485 dimming protocol.

5.Isolation

Isolation	AC Input	DC Output	Dimming (SELV)	Housing
AC Input	/	Double isolation	Double isolation	Basic
DC Output	Double isolation	/	Basic	Basic
Dimming	Double isolation	Basic	/	Basic
Housing	Basic	Basic	Basic	/

6.Safety & EMC Compliance

Safety Category	Standard
Dielectric Strength(Hi-pot)	Primary to Output: 3600 VAC 10mA max.
	Primary to Dimming: 3600 VAC 10mA max.
	Primary to Earth: 1960 VAC 10mA max.
	Output to Earth: 1560 VAC 10mA max.
	Dimming to Output: 1560 VAC 10mA max.
Insulation Resistance	50Mohm min.@ primary to secondary add 500Vdc test voltage

Grounded Resistance	0.1Ω max. @ 25A, 1 minute
EMI Standards	Notes
EN55015	ANSI C63.4:2009 Class B
	This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired Operation.
EMS Standards	Notes
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge, criteria A
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS, criteria A
EN 61000-4-4	Electrical Fast Transient / Burst-EFT: level 3, criteria B
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 4 kV, line to earth 6 kV, criteria B
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS, criteria A
EN 61000-4-8	Power Frequency Magnetic Field Test, criteria A
EN 61000-4-11	Voltage Dips, criteria B
EN IEC 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

Note1:This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

7.Performance Curve

7.1.Inrush Current Curve

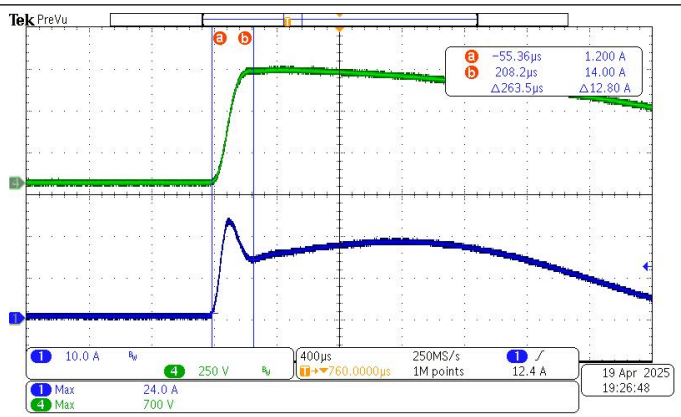


Figure 1.Inrush Current @ full load and cold start

Vin(VAC)	F_{LINE} (Hz)	I_{PK_INRUSH} (A)	$T_{DURATION}$(µs)
480	60	24	263.5

7.2.Derating Curve

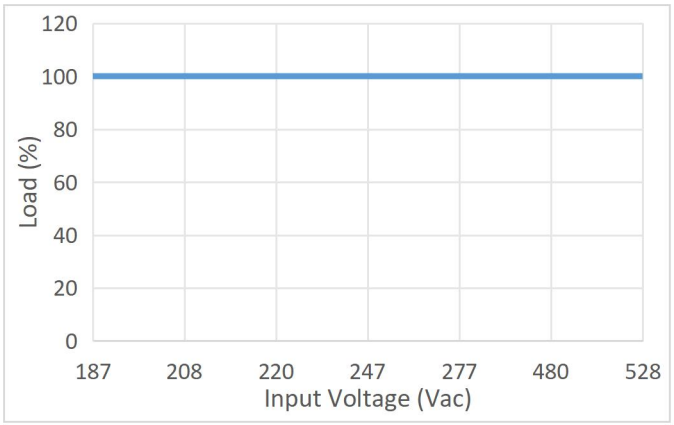


Figure 2.Input Voltage Derating Curve

7.3.Lifetime Curve

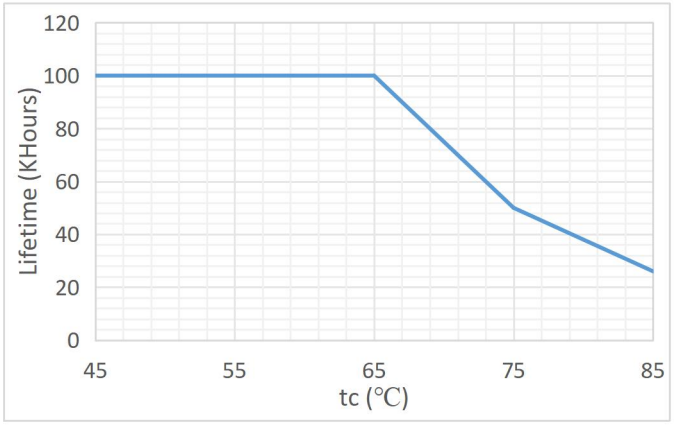


Figure 3.Life vs Case Temperature

7.4.Operation Range Curve

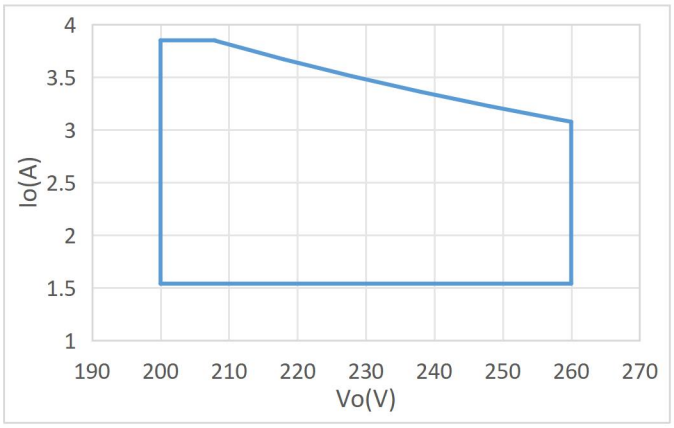


Figure 4.I/V Operating Area for CH1

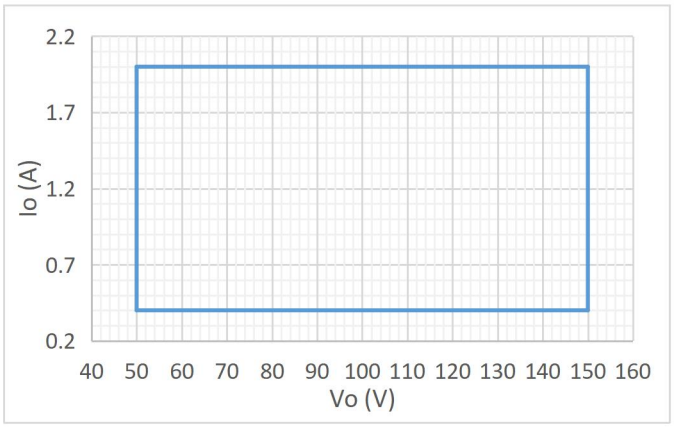


Figure 5.I/V Operating Area for CH2,CH3,CH4

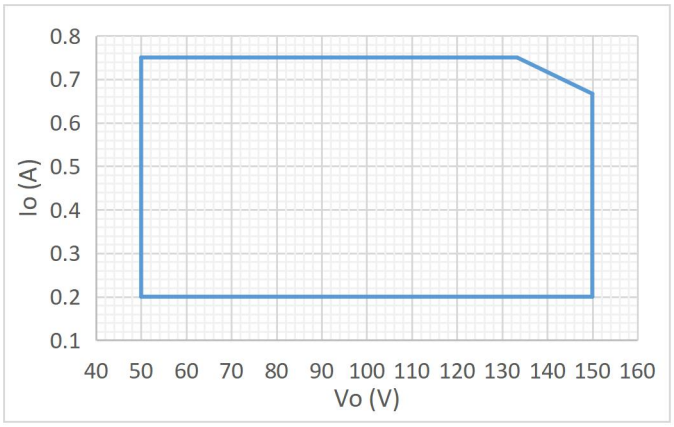


Figure 6.I/V Operating Area for CH5

7.5.General Performance Curve

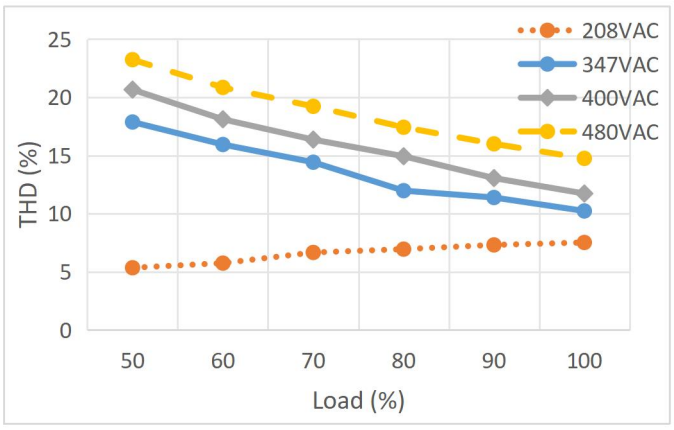


Figure 7.Total Harmonics vs Different Loads

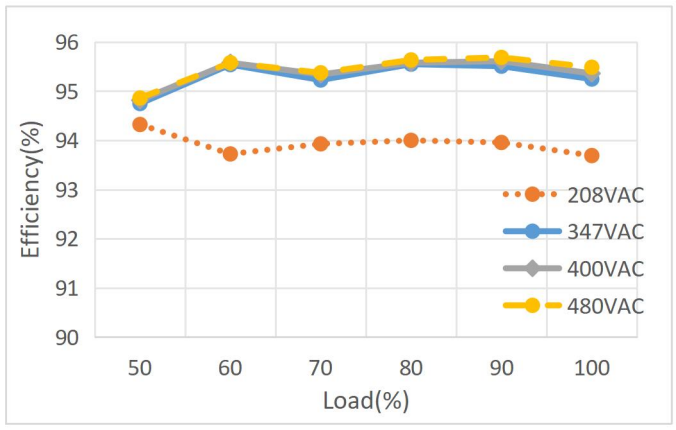


Figure 8.Efficiency vs Different Loads

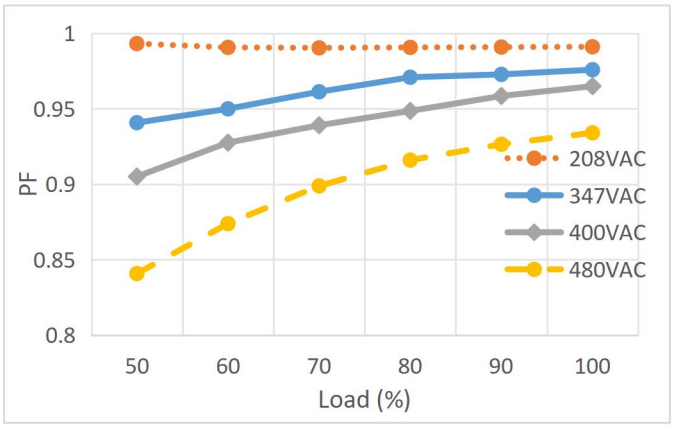


Figure 9.Power Factor vs Different Loads

8.Application Information

8.1.Operation principle of multi-channel optimized power distribution

The following figure shows the block diagram of the automatic power distribution feature of the multi-channel AC/DC LED driver. Taking a 5-channel driver as an example, there are four buck converters taking the output of the main converter as the input. Therefore, Vo2, Vo3 , Vo4 and Vo5 are lower than Vo1. The maximum actual power of the driver, Pmax, is configured via

Pmax_Config as a percentage of the LED driver's maximum rated power,the default value of Pmax is 800W. The available maximum power can be shared among all channels or delivered to Channel 1 only when all other channels are turned off. This automatic power distribution feature optimizes overall hardware utilization.

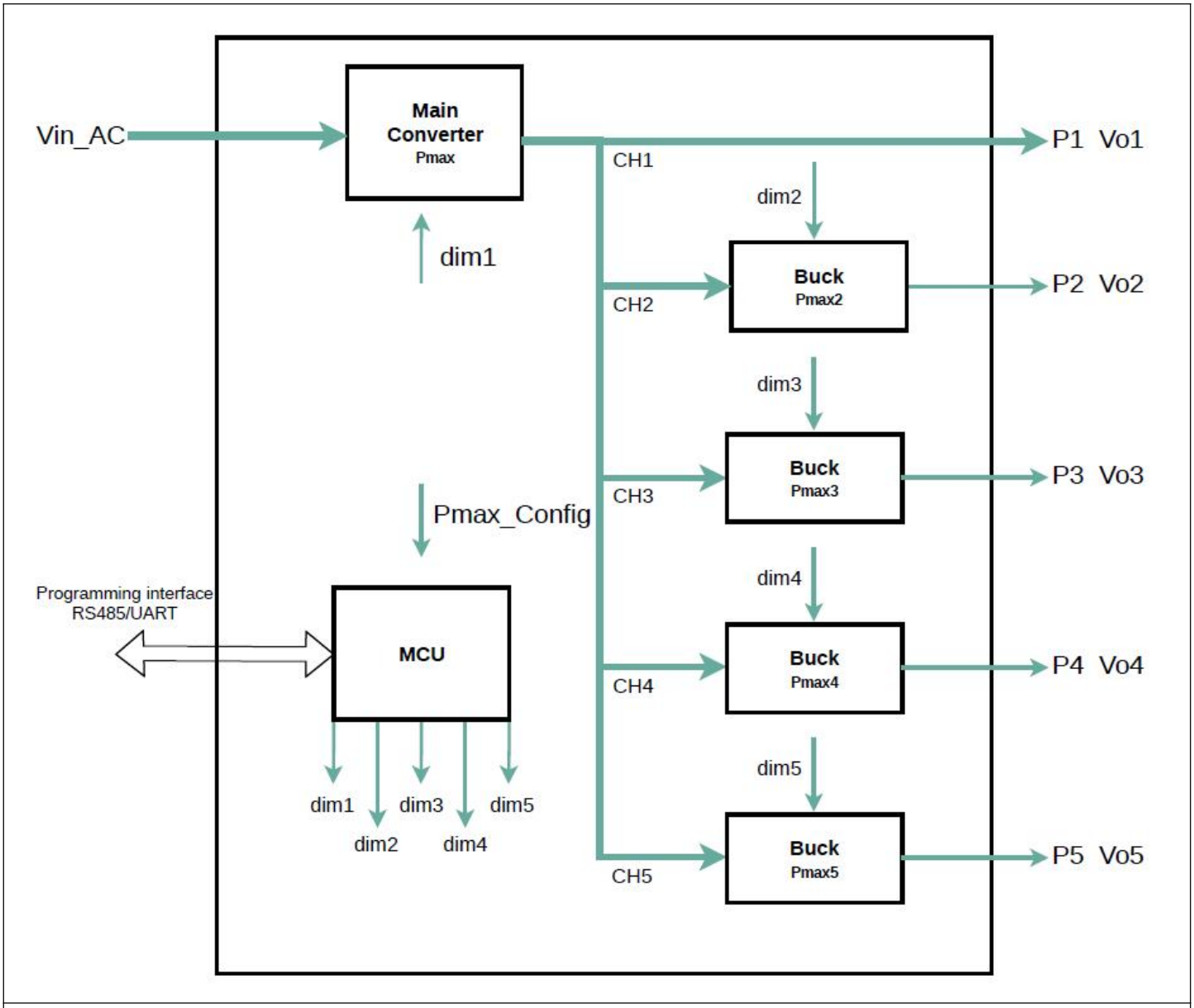


Figure 10.The Block Diagram of Automatic Power Distribution for a 5-channel LED Driver

The power delivered to Channel 1 is defined by the lower *P1* value of Equitation (1) and (2):

$$P1 = Pmax - (Pmax2 \cdot dim2 + Pmax3 \cdot dim3 + Pmax4 \cdot dim4 + Pmax5 \cdot dim5) \quad (1)$$

$$P1 = Pmax \cdot dim1 \quad (2)$$

Where the *Pmax* is the maximum actual power available shared by all channels; the *dim1, dim2, dim3, dim4, dim5* are the dimming factors, the percentage ratios of the desired output current over the configured output current for each of the respective converter. Equation (1) also shows that Channel 2, 3, 4 and 5 have higher priorities than Channel 1. After supplying *P2*, *P3*, *P4*, and *P5*, the remaining power will be delivered to Channel 1. When there is no power delivery for *P2*, *P3*, *P4* and *P5*, the maximum output power of *P1* can be as high as *Pmax*.

As we can find from the analysis, the converter achieves the controlled thermal and reliable operation by the active control of the maximum power delivered. The power sharing scheme optimize.

8.2.Programming

- **Programmer:Supro3.0**
- **Software:Supro3.0**

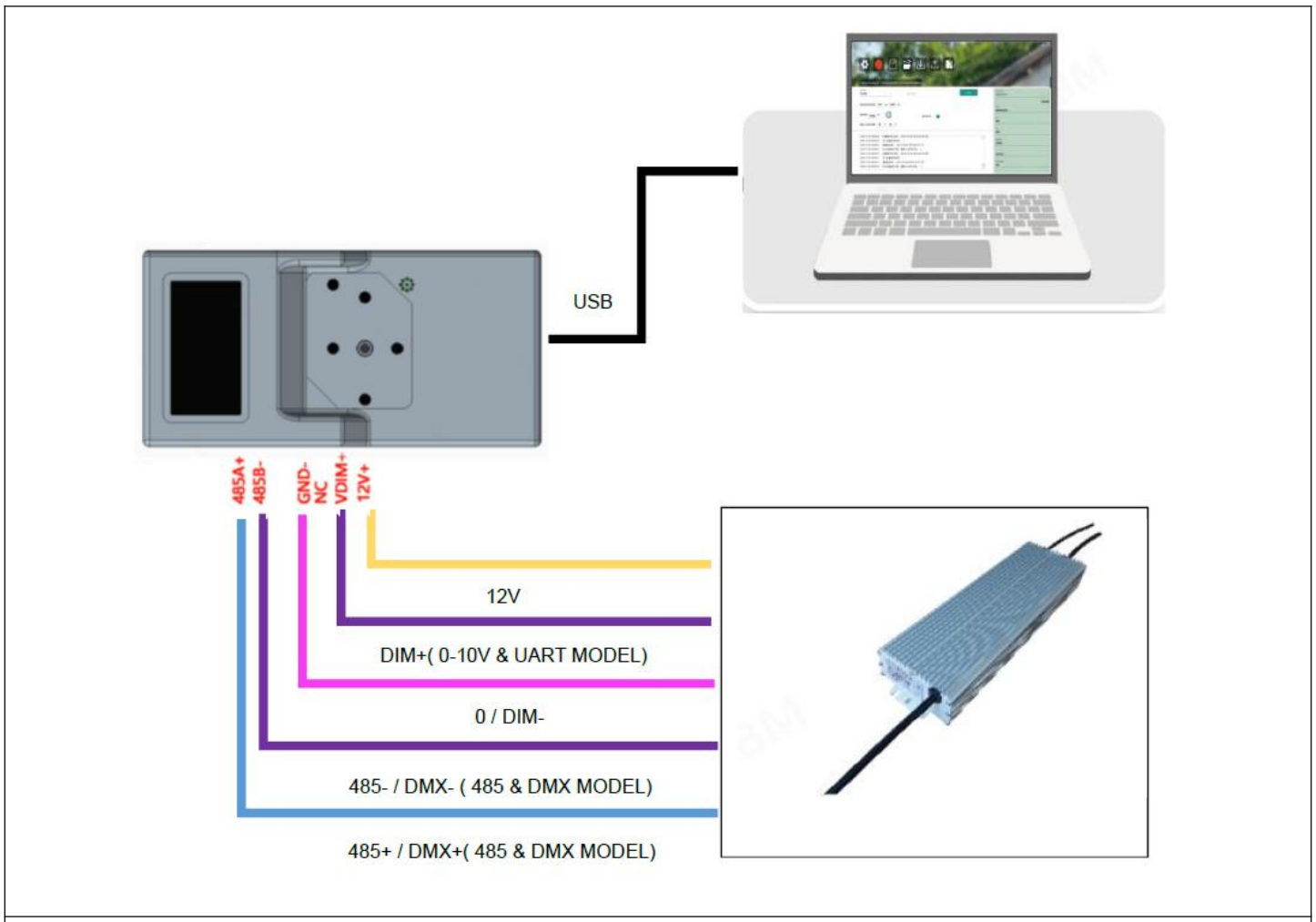


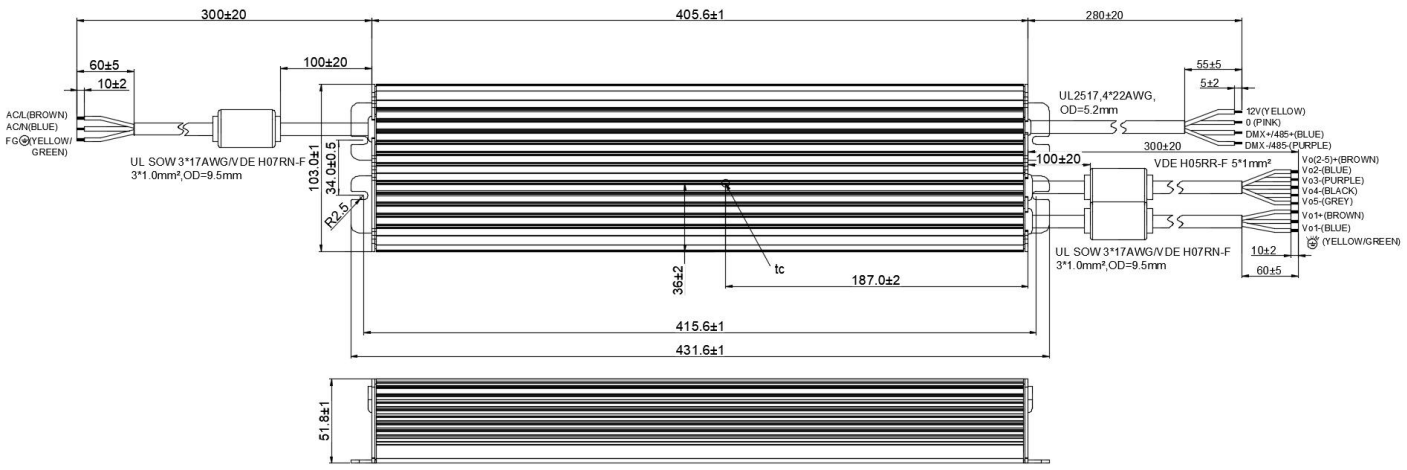
Figure 11. Programming Wiring

Note2:Please download related documents on the website or ask sales for help.

Website like:https://led.powerlandtech.com/product_new/Other.

9.Mechanical Specification

Take 800HTH260CVG-VC-485 as a example:



Unit:mm

Figure 12. Mechanical Drawing

Note3:This diagram uses a 5-output channel configuration as an example—each reduction in output channels decreases one wire core in the auxiliary output.

Model	Auxiliary source wire
-DC	VED H05RR-F 2 x 1mm^2, Vo2-(BLUE)/Vo2+(BROWN)
-TC	VED H05RR-F 3 x 1mm^2, Vo2-(BLUE)/Vo3-(PURPLE)/Vo(2-3)+(BROWN)
-FC	VED H05RR-F 4 x 1mm^2, Vo2-(BLUE)/Vo3-(PURPLE)/Vo4-(BLACK)/Vo(2-4)+(BROWN)
-VC	VED H05RR-F 5 x 1mm^2, Vo2-(BLUE)/Vo3-(PURPLE)/Vo4-(BLACK)/Vo5-(GREY)/Vo(2-5)+(BROWN)

Model	Dimming wire
-UART	UL2517, 4 x 22AWG, OD=5.2mm, N/A(BLUE)/DIM+(PURPLE)/12V(YELLOW)/DIM-(PINK)
-485	UL2517, 4 x 22AWG, OD=5.2mm, 485+(BLUE)/485-(PURPLE)/12V(YELLOW)/0(PINK)
-DMX	UL2517, 4 x 22AWG, OD=5.2mm, DMX+(BLUE)/DMX-(PURPLE)/12V(YELLOW)/0(PINK)

10.Ordering information

Part Number	Rated Input AC Voltage (VAC)	Channels output	Output whether with FG line	Dimming
800HTH260CVG-DC-485	208-480	2	With	485
800HTH260CVG-DC-UART	208-480	2	With	UART
800HTH260CVG-DC-DMX	208-480	2	With	DMX
800HTH260CVG-TC-485	208-480	3	With	485
800HTH260CVG-TC-UART	208-480	3	With	UART
800HTH260CVG-TC-DMX	208-480	3	With	DMX

800HTH260CVG-FC-485	208-480	4	With	485
800HTH260CVG-FC-UART	208-480	4	With	UART
800HTH260CVG-FC-DMX	208-480	4	With	DMX
800HTH260CVG-VC-485	208-480	5	With	485
800HTH260CVG-VC-UART	208-480	5	With	UART
800HTH260CVG-VC-DMX	208-480	5	With	DMX

11.Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2025/4/23	V0.0			
2025/6/25	V0.1	Update Mechanical Specification		
		Delete -D0 model		
		No Load Output Voltage		Add max：290V
		24V Auxiliary Output Current(-DA Model)	Max：200mA	Max：125mA
		Update Input Voltage Derating Curve		
2025/10/16	V0.2	Update Input Voltage Derating Curve		
		Update Mechanical Specification		
2025/10/29	V0.3	Features		Add:DMX512-RDM Control up to 20 fps
2025/11/5	V0.4	Specifications		Add 800HTH400CVG-DC/TC/FC/VC
		Rated Input AC Voltage		Add Notes：The upper limit voltage of CE certification：400Vac
		Dielectric Strength(Hi-pot)	Primary to Secondary: 3920Vac 10mA max	Primary to Output: 3600Vac 10mA max (800HTH260CV) 3760Vac 10mA max (800HTH400CV) Primary to Dimming: 3600Vac 10mA max (800HTH260CV) 3760Vac 10mA max (800HTH400CV)
			Secondary to Earth: 1550Vac 10mA max	Secondary to Earth: 1550Vac 10mA max(800HTH260CV) 1880Vac 10mA max(800HTH400CV).
			Dimming to Output: 1550Vac 10mA max	Dimming to Output: 1550Vac 10mA max(800HTH260CV) 1880Vac 10mA max(800HTH400CV).
2025/11/19	V0.5	Add Net Weight		4.8kg
		IP Grade	IP65	IP66

		Absolute Maximum Voltage on the Vdim (+) Pin	Max：15V	Max：12V
		Add Inrush Peak Current	TBD(At 277Vac input)	35A(At 480Vac input, 25°C cold start. See Inrush Current Waveform for the details.)
2025/12/4		Leakage Current	At 480Vac / 60Hz input , grounding effectively	At 400Vac / 50Hz input , grounding effectively
		Line Regulation&Load Regulation	Max：±3%	Max：±5%
		Temperature Coefficient of Ioset	Max：±0.03%	Max：±0.05%
		Dielectric Strength(Hi-pot)	Secondary to Earth: 1550Vac 10mA max(800HTH260CV) 1880Vac 10mA max(800HTH400CV).	Output to Earth: 1550Vac 10mA max(800HTH260CV) 1880Vac 10mA max(800HTH400CV).
2026/1/8	V0.6	Model Name Definition &Output Specifications &Dimming Specifications&Mechanical Specification&Features		Delete：DA dimming
		Specifications &Output Specifications&Dielectric Strength(Hi-pot)		Delete：800HTH400CV
		Model Name Definition		Delete：Output without FG line
		Dimming Specifications		Delete：0-10V dimming
				Add：RDM Protocol Support List
		Add Isolation		
		Dielectric Strength(Hi-pot)	Output to Earth: 1550Vac 10mA max. Dimming to Output: 1550Vac 10mA max.	Output to Earth: 1560Vac 10mA max. Dimming to Output: 1560Vac 10mA max.
		Performance Curve		Add：I/V Operating Area（Only CH1） &I/V Operating Area（Only CH2/CH3/CH4） &I/V Operating Area（Only CH5）
		Add Programming wiring diagram		
		Add Ordering information		
		Add:Multi_channel operation principle		
		Modify:Features		
		Modify:Format		
		IP Grade	IP66	IP65
2026/4/9	V0.7	Modify:Features	Dimming port programming without	Dimming port programming with driver power on

			driver power on	
		EMS Standards	EN 61547	EN IEC 61547
		-UART model		Modify:Dimming wire