

# PSU.0050.0



## ■ Features

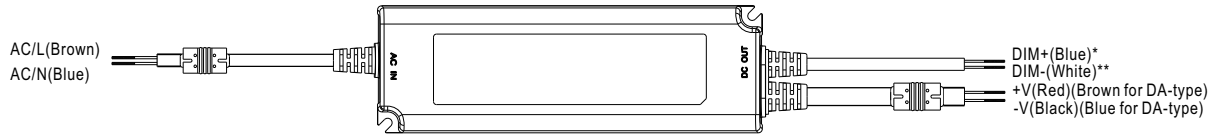
- Constant voltage PWM style output with frequency 1.47kHz
- Plastic housing with class II design
- Built-in active PFC function
- No load power consumption <0.5w / standby power consumption <0.5W(DA-type)
- Fully encapsulated with IP67 level
- Function options: 3 in 1 dimming (dim-to-off); DALI
- Minimum dimming level 0.2% for DA type
- Typical lifetime>50000 hours and 5 years warranty

## TECHNICALS FEATURES:

<b>Output Voltage</b>	24 Vdc
<b>Rated Output Current</b>	5 A
<b>Rated Output Power</b>	120 W
<b>Input Voltage Range</b>	90 ~ 305 VAC ; 127 ~ 431 VDC
<b>Frequency Range</b>	47 ~ 63 Hz
<b>Power Factor (Typ.)</b>	PF>0.97/115VAC, PF>0.96/230VAC, PF>0.94/277VAC @ full load
<b>Total Harmonic Distortion</b>	THD< 20% (@ load >60% / 115VAC,230VAC; @ load >75% / 277VAC)
<b>Efficiency (Typ.)</b>	90%
<b>AC Current (Typ.)</b>	1.3A / 115VAC 0.65A / 230VAC 0.55A / 277VAC
<b>Inrush Current (Typ.)</b>	COLD START 60A(t =520µs measured at 50% Ipeak) at 230VAC ; Per NEMA 410
<b>MAX. No. of PSUs on 16A CIRCUIT BREAKER</b>	4 units (circuit breaker of type B) / 7 units (circuit breaker of type C) at 230VAC
<b>LEAKAGE CURRENT</b>	<0.25mA / 277VAC
<b>OVER VOLTAGE PROTECTION</b>	28 ~ 34V Shut down o/p voltage, re-power on to recovery
<b>OVER TEMPERATURE PROTECTION</b>	Shut down o/p voltage, re-power on to recovery
<b>WORKING TEMP.</b>	Tcase=-40 ~ +90°C
<b>MAX. CASE TEMP.</b>	Tcase=+90°C
<b>WORKING HUMIDITY</b>	20 ~ 95% RH non-condensing
<b>STORAGE TEMP., HUMIDITY</b>	-40 ~ +80 , 10 ~ 95% RH
<b>SAFETY STANDARDS</b>	UL8750(type"HL"), CSA C22.2 No. 250.13-12; ENECEN61347-1, EN61347-2-13, EN62384 independent, IP67, BIS IS15885, EAC TP TC 004, GB19510.1, GB19510.14 approved; design refer to EN60335-1
<b>EMC EMISSION</b>	Compliance to EN55015, EN61000-3-2 Class C (@ load >60%); EN61000-3-3; GB17743 and GB17625.1, EAC TP TC 020
<b>EMC IMMUNITY</b>	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, light industry level (surge immunity Line-Line 2KV) , EAC TP TC 020

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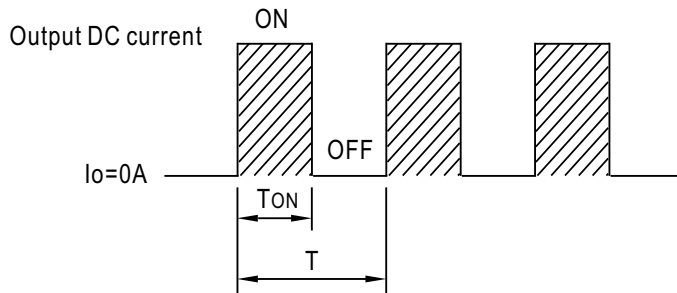
## DIMMING OPERATION



\* DIM+ for Blank-Type  
DA+ for DA-type  
\*\* DIM- for Blank-Type  
DA- for DA-type

### ※ Dimming principle for PWM style output

- Dimming is achieved by varying the duty cycle of the output current.



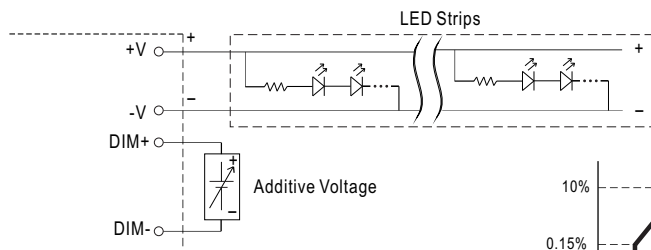
$$\text{Duty cycle(\%)} = \frac{T_{ON}}{T} \times 100\%$$

Output PWM frequency : 1.47KHz fixed (Typ.)

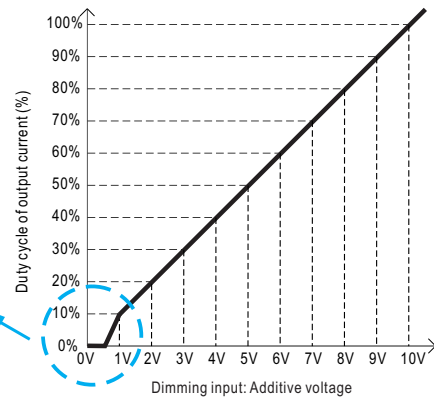
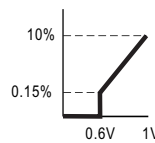
### ※ 3 in 1 dimming function (for Blank-Type)

- Apply one of the three methodologies between DIM+ and DIM-: 0 ~ 10VDC, or 10V PWM signal or resistance.
- Dimming source current from power supply: 100μA (typ.)

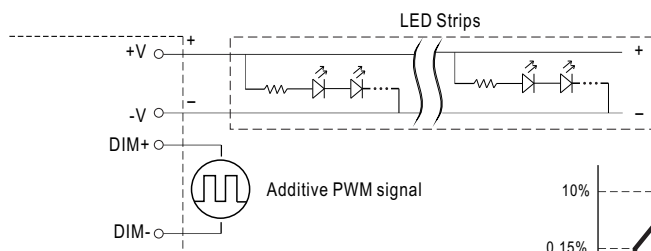
#### © Applying additive 0 ~ 10VDC



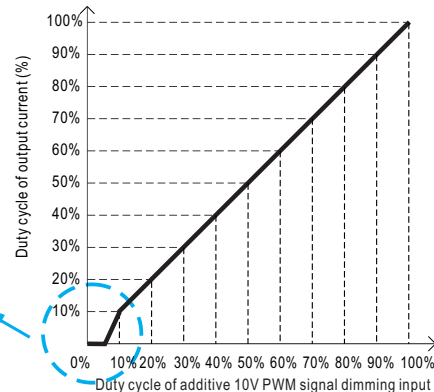
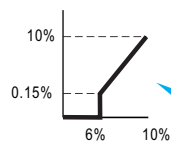
"DO NOT connect "DIM- to -V"



#### © Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):

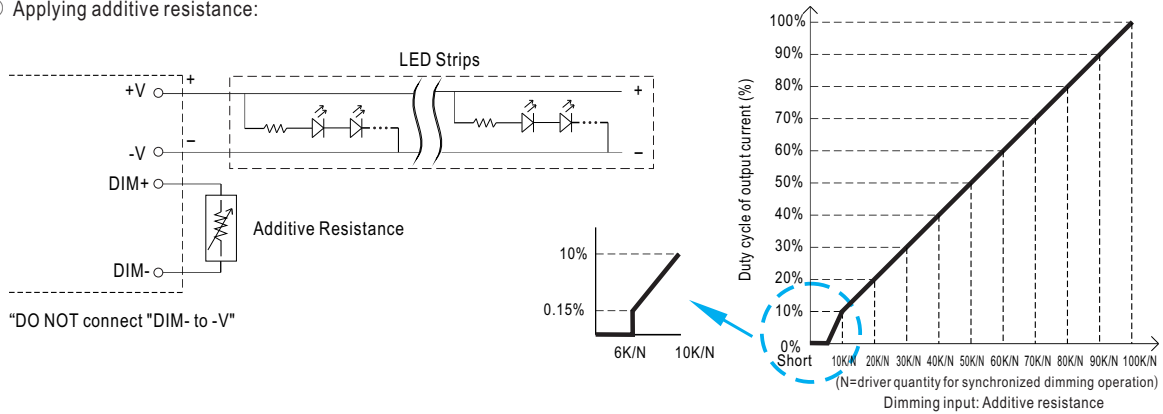


"DO NOT connect "DIM- to -V"



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© Applying additive resistance:



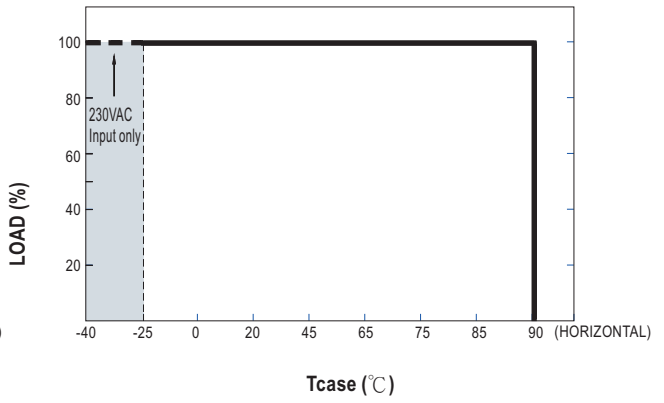
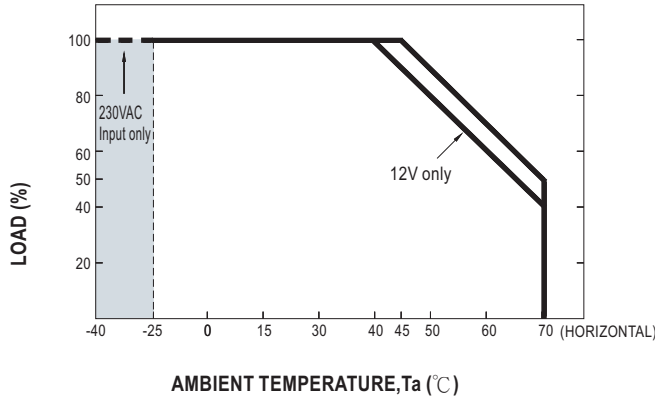
- Note : 1. Min. duty cycle of output current is about 0.15%, and the dimming input is about 6K $\Omega$  or 0.6VDC, or 10V PWM signal with 6% duty cycle.  
 2. The duty cycle of output current could drop down to 0% when dimming input is less than 6K $\Omega$  or less than 0.6VDC, or 10V PWM signal with duty cycle less than 6%.

※ DALI Interface (primary side; for DA-Type)

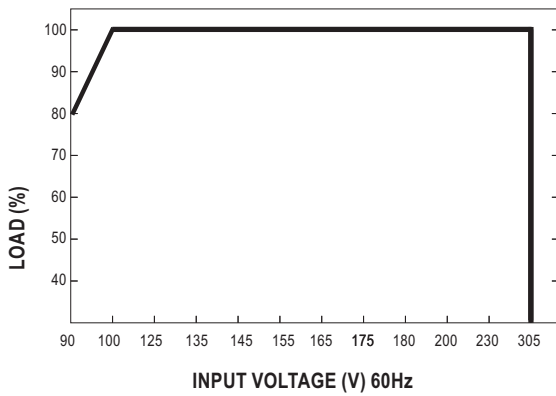
- Apply DALI signal between DA+ and DA-.
- DALI protocol comprises 16 groups and 64 addresses.
- First step is fixed at 6% of output

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## OUTPUT LOAD vs TEMPERATURE



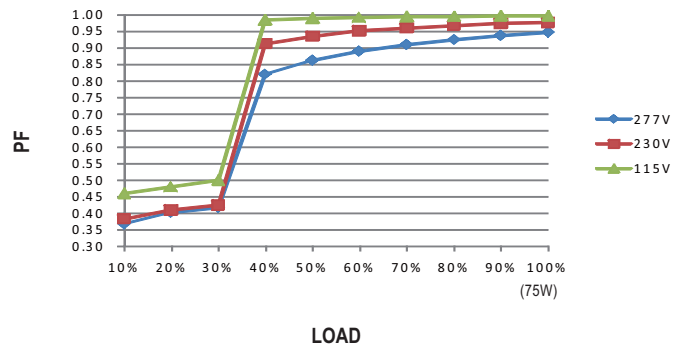
## STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

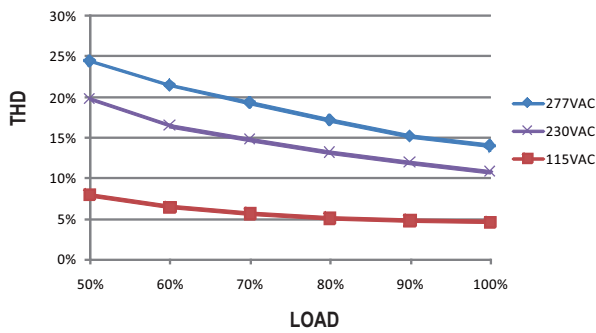
## POWER FACTOR (PF) CHARACTERISTIC

※ Tcase at 80°C



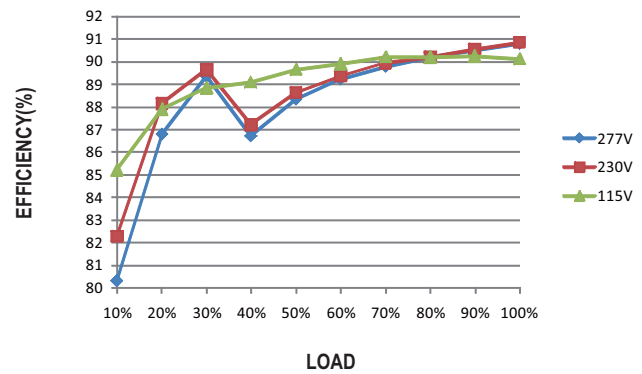
## TOTAL HARMONIC DISTORTION (THD)

Tcase at 80°C



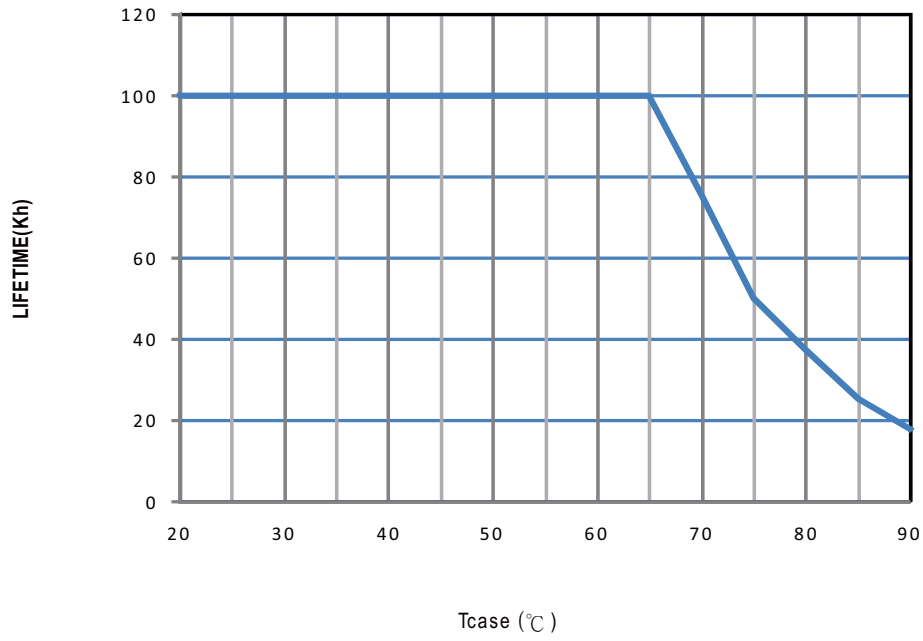
## EFFICIENCY vs LOAD

Tcase at 80°C



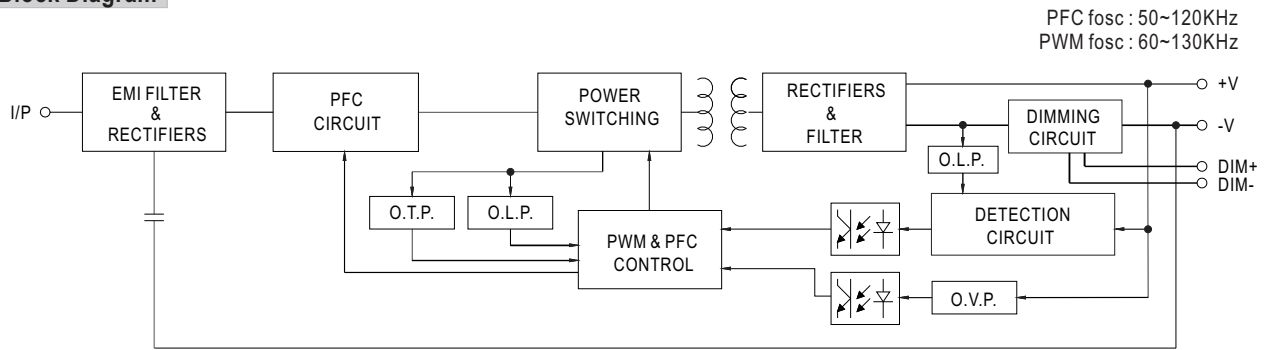
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■ LIFE TIME



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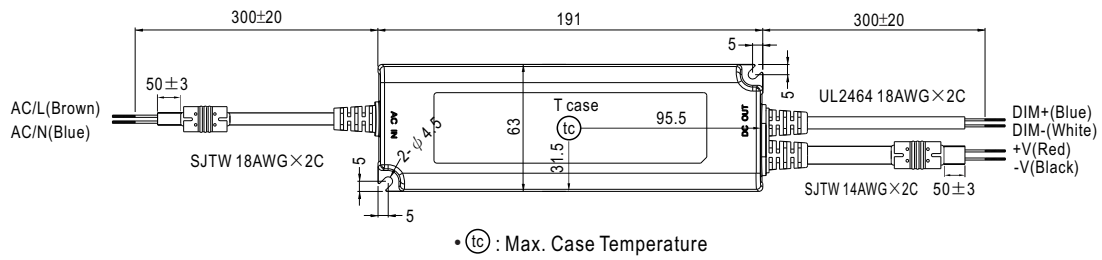
## Block Diagram



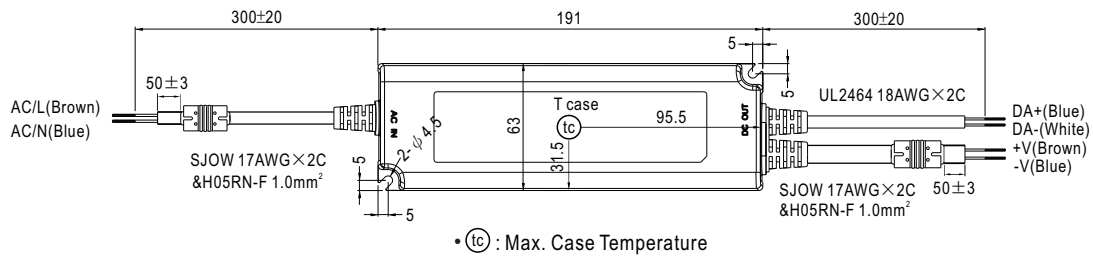
## Mechanical Specification

Unit:mm

### ※ Blank-Type

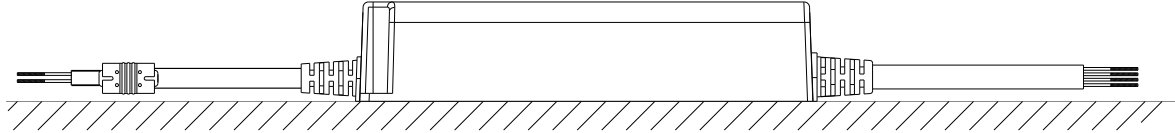


### ※ DA-Type



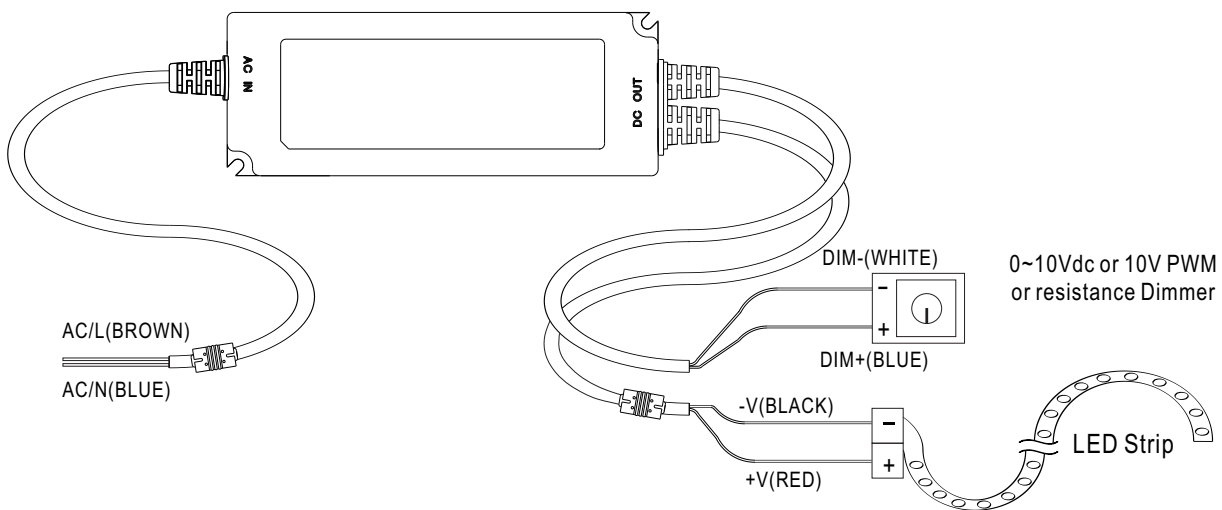
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## ■ Recommend Mounting Direction



## ■ Installation Manual

### ◎ Connection for Blank-type



### ◎ Cautions

- Before commencing any installation or maintenance work, please disconnect the power supply from the utility. Ensure that it cannot be re-connected inadvertently!
- Keep proper ventilation around the unit and do not stack any object on it. Also a 10-15 cm clearance must be kept when the adjacent device is a heat source.
- Mounting orientations other than standard orientation or operate under high ambient temperature may increase the internal component temperature and will require a de-rating in output current.
- Current rating of an approved primary /secondary cable should be greater than or equal to that of the unit. Please refer to its specification.
- For LED drivers with waterproof connectors, verify that the linkage between the unit and the lighting fixture is tight so that water cannot intrude into the system.
- For dimmable LED drivers, make sure that your dimming controller is capable of driving these units. PWM series require 0.15mA each unit.
- Tc max. is identified on the product label. Please make sure that temperature of Tc point will not exceed limit.
- DO NOT connect "DIM- to -V".
- Suitable for indoor use or outdoor use without direct sunlight exposure. Please avoid immerse in the water over 30 minutes.
- The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.