



## Features

- Wide input range 180 ~ 528VAC
- Built-in active PFC function
- No load power consumption <0.5W at remote OFF
- High efficiency up to 96%
- -40°C ~ +70°C wide operating range
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Fanless design, cooling by free air convection
- IP67 / IP65 design for indoor or outdoor installations
- Withstand 5G vibration test
- LED indicator for power on (A-Type)
- Suitable for dry / damp / wet location
- 5 years warranty (Note.10)

## Applications

- LED street lighting
- LED high-bay lighting
- Parking space lighting
- LED searchlight
- LED fishing lamp

## Description

HVG-600 series is a high performance AC-to-DC LED power supply up to 600W, accepting the wide input range 180~528VAC.

## Model Encoding

HVG - 600 - 12 A

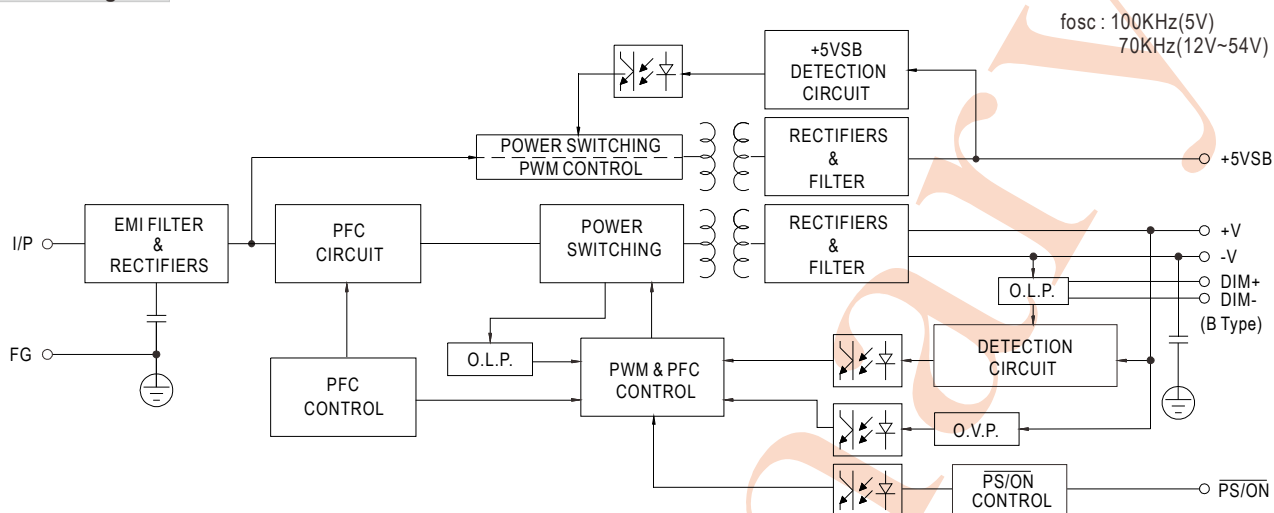
Function mode option  
Output voltage  
Output wattage  
Series name

A : IP65, Vo and Io level can be adjusted through internal potentiometer.  
B : IP67, Io adjustable with 0~10Vdc, PWM signal or resistance.

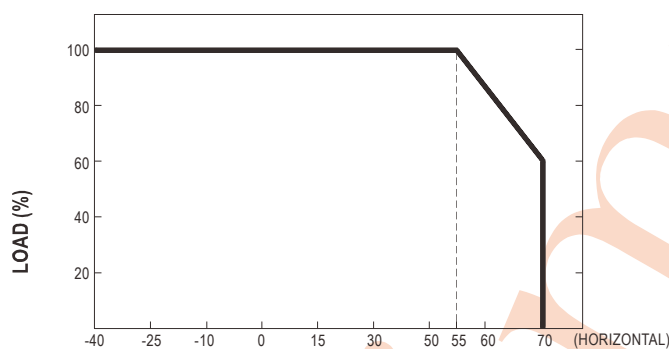
# SPECIFICATION

MODEL		HVG-600-12	HVG-600-15	HVG-600-20	HVG-600-24	HVG-600-30	HVG-600-36	HVG-600-42	HVG-600-48	HVG-600-54
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V
	CONSTANT CURRENT REGION Note.4	6 ~ 12V	7.5 ~ 15V	10 ~ 20V	12 ~ 24V	15 ~ 30V	18 ~ 36V	21 ~ 42V	24 ~ 48V	27 ~ 54V
	RATED CURRENT	40A	36A	28A	25A	20A	16.7A	14.3A	12.5A	11.2A
	RATED POWER	480W	540W	560W	600W	600W	601.2W	600.6W	600W	604.8W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	250mVp-p	250mVp-p	250mVp-p	350mVp-p
	VOLTAGE ADJ. RANGE Note.6	10.2 ~ 12.6V	12.7 ~ 15.8V	17 ~ 21V	20.4 ~ 25.2V	25.5 ~ 31.5V	30.6 ~ 37.8V	35.7 ~ 44.1V	40.8 ~ 50.4V	45.9 ~ 56.7V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer A type only								
		20 ~ 40A	18 ~ 36A	14 ~ 28A	12.5 ~ 25A	10 ~ 20A	8.3 ~ 16.7A	7.1 ~ 14.3A	6.2 ~ 12.5A	5.6 ~ 11.2A
	VOLTAGE TOLERANCE Note.3	±3.0%	±2.0%	±1.5%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.0%	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.8	A type : 500ms, 80ms / 230VAC 400ms, 80ms / 347VAC / 480VAC at full load B type : 500ms, 80ms / 230VAC 500ms, 80ms / 347VAC / 480VAC at 95% load								
	HOLD UP TIME (Typ.)	13ms at full load 480VAC / 347VAC								
INPUT	VOLTAGE RANGE Note.5	180 ~ 528VAC 254 ~ 747VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	POWER FACTOR (Typ.)	PF ≥ 0.98/230VAC, PF ≥ 0.97/277VAC, PF ≥ 0.97/347VAC, PF ≥ 0.93/480VAC at full load (Please refer to "Power Factor Characteristic" curve)								
	TOTAL HARMONIC DISTORTION	Total harmonic distortion will be lower than 20% when output loading is 60% or higher at 230VAC / 277VAC / 347VAC Total harmonic distortion will be lower than 20% when output loading is 75% or higher at 480VAC								
	EFFICIENCY (Typ.)	92%	93.5%	94.5%	95%	95%	95.5%	96%	96%	96%
	AC CURRENT (Typ.)	2.2A / 347VAC 1.7A / 480VAC								
	INRUSH CURRENT (Typ.)	COLD START 70A (t <sub>width</sub> =1000μs measured at 50% I <sub>peak</sub> ) at 347VAC								
	LEAKAGE CURRENT	<0.75mA / 480VAC								
PROTECTION	OVER CURRENT Note.4	95 ~ 108% Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	13 ~ 16V	16.5 ~ 20.5V	22 ~ 26V	26 ~ 30V	32.5 ~ 36.5V	39.5 ~ 43.5V	46 ~ 50V	52.5 ~ 56.5V	59 ~ 63V
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover								
FUNCTION	REMOTE ON/OFF CONTROL	Power on : "Hi" >2 ~ 5V or Open circuit Power off : "Low" <0 ~ 0.5V or Short circuit								
	5V STANDBY	5V <sub>SB</sub> : 5V@0.5A; tolerance ±5%, ripple : 100mVp-p(max.)								
ENVIRONMENT	WORKING TEMP.	-40 ~ +70°C (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 60°C)								
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS Note.7	UL8750, CSA C22.2 No. 250.13-12, ENEC EN61347-1, EN61347-2-13 independent, EN62384, IP65 or IP67 approved								
	WITHSTAND VOLTAGE	I/P-O/P: 3.75KVAC I/P-FG: 2KVAC O/P-FG: 1.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC / 25°C / 70% RH								
	EMC EMISSION	Compliance to EN55015, EN55022(CISPR22) Class B, EN61000-3-2 Class C (≥50% load) ; EN61000-3-3								
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN61547, EN55024, light industry level (surge 4KV), criteria A								
OTHERS	MTBF	K hrs min. MIL-HDBK-217F (25°C)								
	DIMENSION	290*144*48.5mm (L*W*H)								
	PACKING	Kg								
NOTE		<ol style="list-style-type: none"> <li>All parameters NOT specially mentioned are measured at 347VAC input, rated load and 25°C of ambient temperature.</li> <li>Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF &amp; 47uF parallel capacitor.</li> <li>Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>Constant current operation region is within 50%~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.</li> <li>Derating may be needed under low input voltages. Please check the static characteristics for more details.</li> <li>A type only.</li> <li>Safety and EMC design refer to EN60598-1, subject CNS15233, GB7000.1, FCC part18.</li> <li>Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.</li> <li>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.</li> <li>Refer to warranty statement</li> </ol>								

### ■ Block Diagram



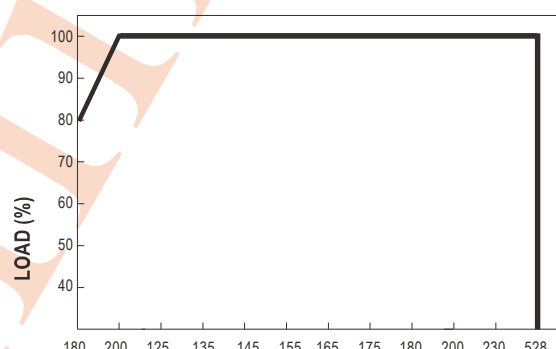
### Derating Curve



**AMBIENT TEMPERATURE (°C)**

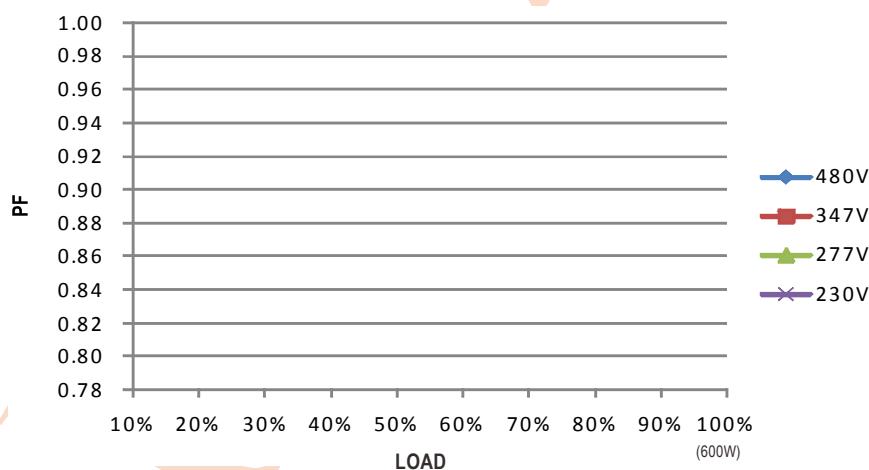
Note : At high ambient temperature  $T_a=70^{\circ}\text{C}$ , if HVG-600 operates in C.C mode, the maximal current must not be greater than 60% of the rated current.

## ■ Static Characteristics



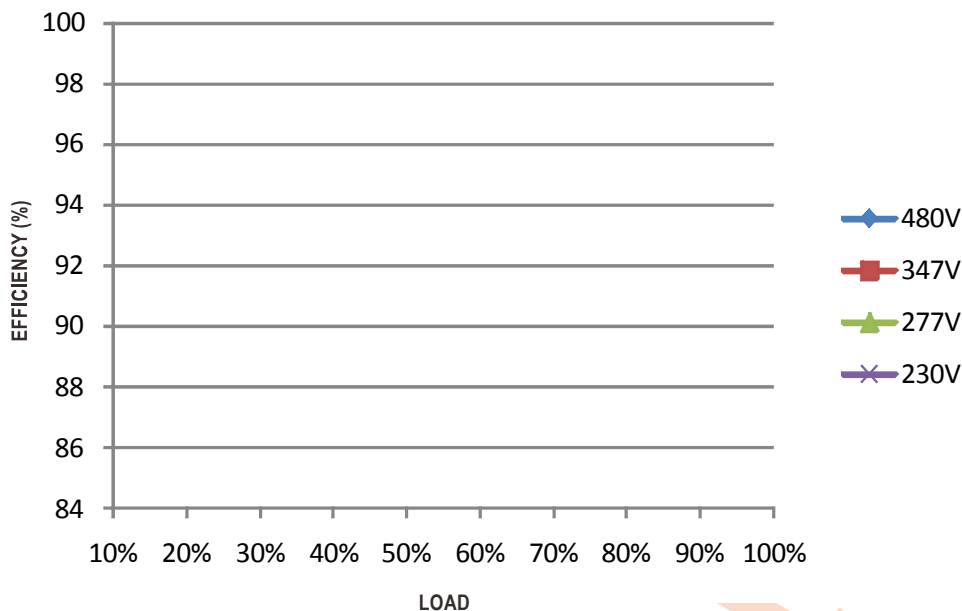
### ■ Power Factor Characteristic

## Constant Current Mode



## ■ EFFICIENCY vs LOAD (54V Model)

HVG-600 series possess superior working efficiency that up to 96% can be reached in field applications.

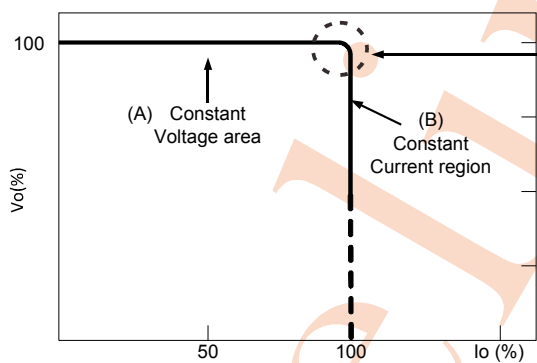


## ■ DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".

A typical LED power supply may either work in "constant voltage mode (C.V) or constant current mode (C.C)" to drive the LEDs.

Mean Well's LED power supply with C.V+ C.C characteristic can be operated at both C.V mode (with LED driver, at area (A) and C.C mode (direct drive, at area (B)).

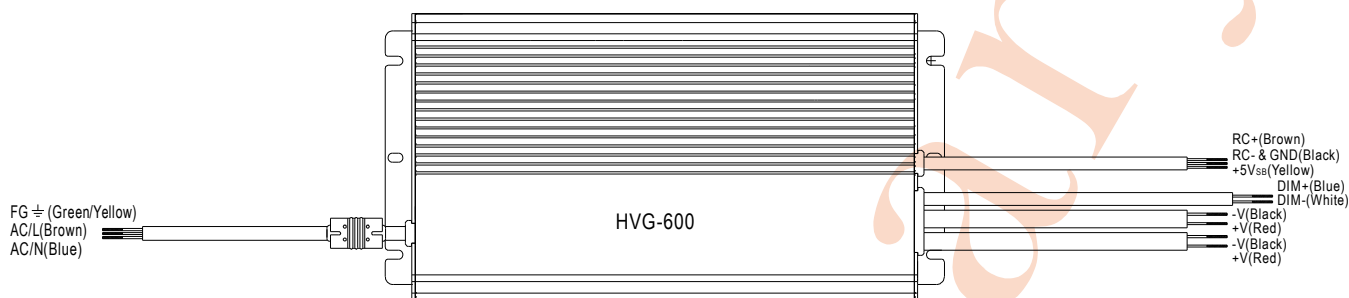


Typical LED power supply I-V curve

In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.

Should there be any compatibility issues, please contact MEAN WELL.

### ■ DIMMING OPERATION (for B Type only)



※ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 0 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.

※ Please DO NOT connect "DIM-" to "-V".

※ Reference resistance value for output current adjustment (Typical)

Resistance value	Single driver	Short	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
	Multiple drivers (N=driver quantity for synchronized dimming operation)	Short	10KΩ/N	20KΩ/N	30KΩ/N	40KΩ/N	50KΩ/N	60KΩ/N	70KΩ/N	80KΩ/N	90KΩ/N	100KΩ/N	----
Percentage of rated current		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

※ 0 ~ 10V dimming function for output current adjustment (Typical)

Dimming value	0V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

※ 10V PWM signal for output current adjustment (Typical): Frequency range :100Hz ~ 3KHz

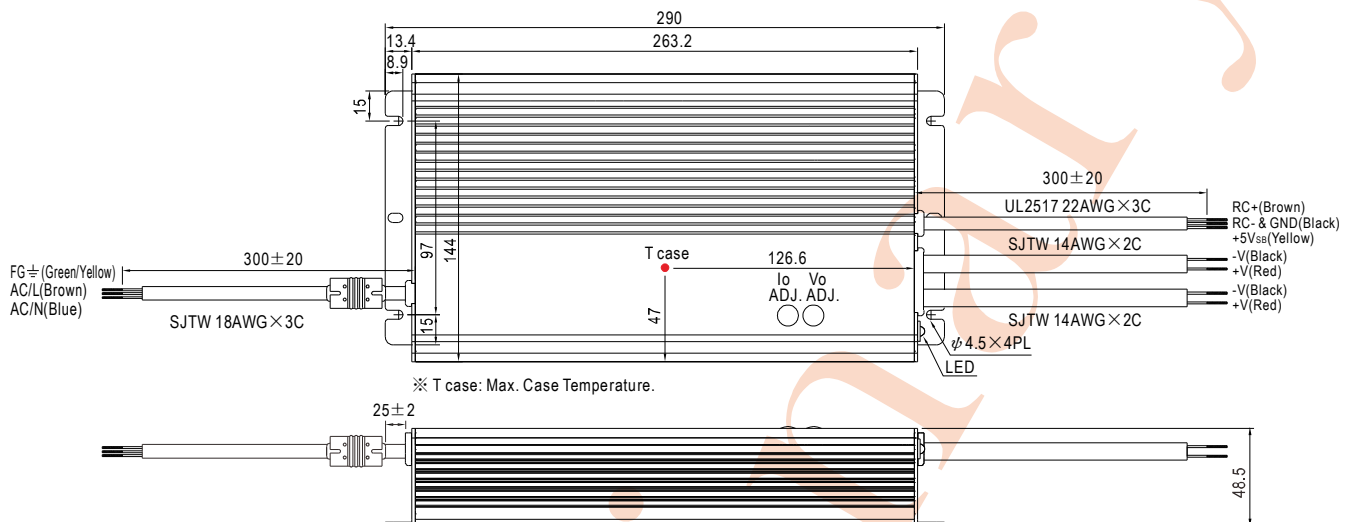
Duty value	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

※Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.

Case No. 228 Unit:mm

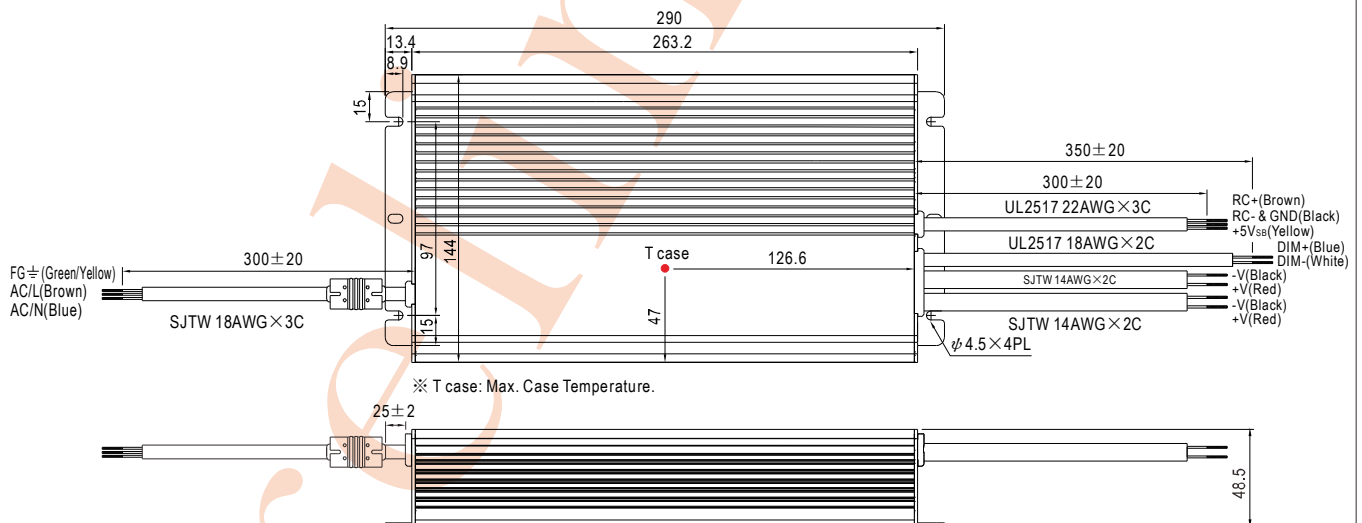
## Mechanical Specification

### A Type:(HVG-600- \_A)



※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.  
(Can access by removing the rubber stopper on the case.)

### B Type:(HVG-600- \_B)



## Installation Manual

Please refer to : <http://www.meanwell.com/webnet/search/InstallationSearch.html>