

60W 24v PWM Output LED Power Supply

IZV024-060M-9767C-SAL

Product Overview

IZV024-060M-9767C-SAL is a 60W IP67 constant-voltage output LED power supply. Differentiating from general DC output power supplies, IZV024-060M-9767C-SAL transmits PWM style output, adapting to directly driving all kinds of LED strips, meaning you can add varying lengths of flexible LED strips, and the power supply will automatically adjust to the load. This series is also designed with a 3 in 1 dimming function (0-10Vdc or PWM signal or resistance) that simplifies the brightness adjustment for system designers so as to achieve light reduction and energy conservation.



Applications:

- ILS Flexible LED Strips
- LED Strip Lighting
- Indoor LED Lighting
- LED Decorative Lighting
- LED Architecture Lighting

Technical Features:

- Universal AC input/Full range (up to 305VAC)
- Built-in active PFC (Power Factor Correction) function
- Constant voltage PWM style output
- Built-in 3 in 1 dimming function (0-10Vdc or PWM signal or resistance)
- Dimming range : 0-100%
- High efficiency up to 90%
- Protections: Short circuit/Over load/Over voltage/Over temperature
- Class 2 power unit
- Suitable for dry/damp/wet locations
- No load power consumption<0.5W

Product Options

ILS PART NUMBER	Output Voltage	Output Current	Power	Operating Temperature	Dimensions
IZV024-060M-9767C-SAL	24V	1.67 A	60W	-40°C to +70°C	L150xW53xH35mm

Specification

Output

- DC VOLTAGE 24V
- RATED CURRENT 2.5A
- RATED POWER 60W
- DIMMING RANGE 0 ~ 100%
- PWM FREQUENCY (Typ.) 300Hz
- VOLTAGE TOLERANCE ±3.0%
- SETUP, RISE TIME Note.2 500ms, 80ms at 95% load 115VAC / 230VAC
- HOLD UP TIME (Typ.) 16ms/230VAC 16ms/115VAC at full load

Input

- VOLTAGE RANGE 90 ~ 305VAC 127 ~ 431VDC
- FREQUENCY RANGE 47 ~ 63Hz
- POWER FACTOR (Typ.) PF>0.97/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load (Please refer to "Power Factor Characteristic" curve)
- TOTAL HARMONIC DISTORTION THD< 20% when output loading ≥60% at 115VAC/230VAC input and output loading ≥75% at 277VAC input
- EFFICIENCY (Typ.) 89%
- AC CURRENT (Typ.) 0.8A / 115VAC 0.4A / 230VAC 0.32A / 277VAC
- INRUSH CURRENT(Typ.) COLD START 50A(twidth=270 s measured at 50% Ipeak) at 230VAC
- MAX. NO. of PSUs on 16A CIRCUIT BREAKER 9 units (circuit breaker of type B) / 16 units (circuit breaker of type C) at 230VAC
- LEAKAGE CURRENT <0.25mA / 277VAC

Protection

- SHORT CIRCUIT Hiccup mode, recovers automatically after fault condition is removed
- OVER LOAD 108 ~ 120% rated output power. Protection type : Hiccup mode, recovers automatically after fault condition is removed
- OVER VOLTAGE 28 ~ 34V Protection type : Shut down o/p voltage, re-power on to recover
- OVER TEMPERATURE Shut down o/p voltage, re-power on to recover

Environment

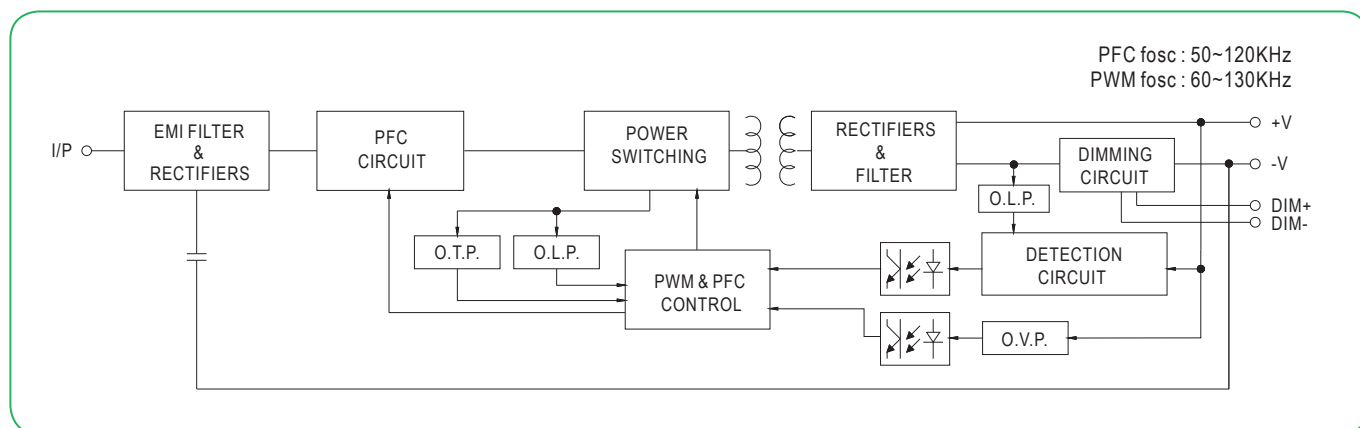
- WORKING TEMP. -40 ~ +70° (Refer to "Derating Curve")
- WORKING HUMIDITY 20 ~ 95% RH non-condensing
- STORAGE TEMP., HUMIDITY -40 ~ +80°, 10 ~ 95% RH
- TEMP. COEFFICIENT ±0.03%/°C(0 ~ 50°)
- VIBRATION 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes

Safety & EMS

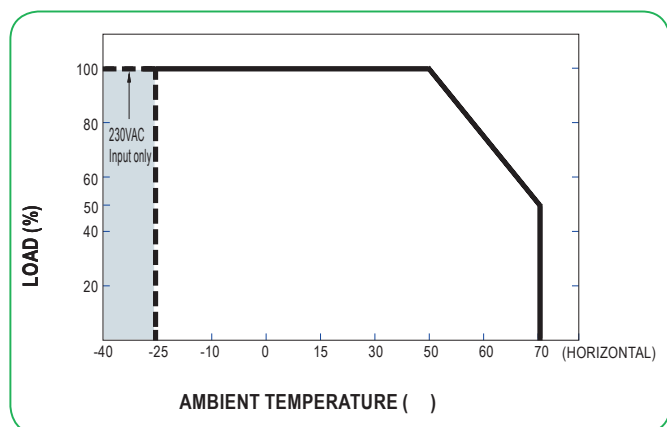
- SAFETY STANDARDS: UL8750, CSA C22.2 No. 250.13-12, ENEC EN61347-1, EN61347-2-13, EN62384 independent, IP67 approved; Design refer to EN60335-1
- WITHSTAND VOLTAGE: I/P-O/P:3.75KVAC
- ISOLATION RESISTANCE: I/P-O/P:100M Ohms / 500VDC / 25 °C/ 70% RH
- EMC EMISSION: Compliance to EN55015, EN61000-3-2 Class C ($\geq 60\%$ load) ; EN61000-3-3
- EMC IMMUNITY: Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level(surge L-N:2KV), criteria A

1. All parameters NOT specifically mentioned are measured at 230VAC input, rated load and 25 °C of ambient temperature.
2. 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.

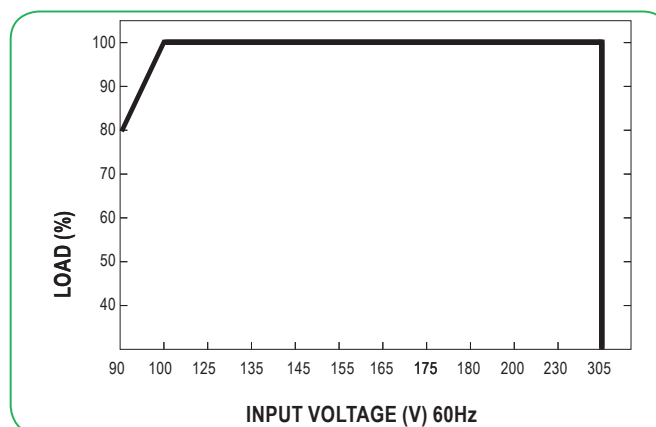
Block Diagram



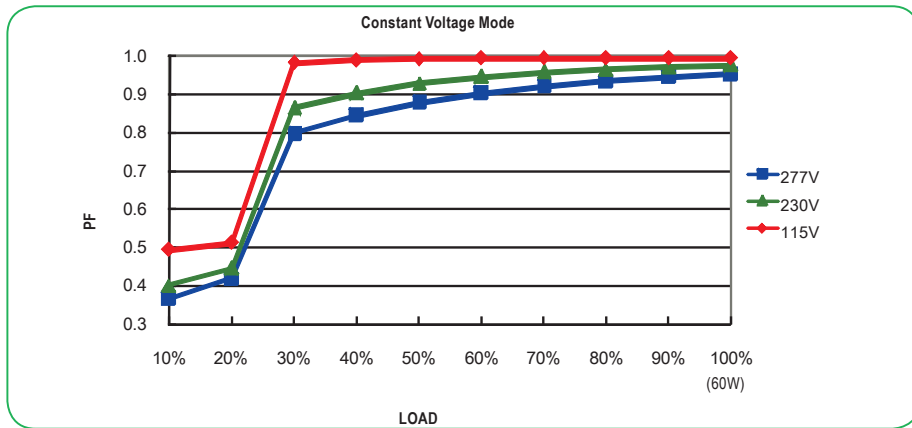
Derating Curve



Static Characteristics



Power Factor Characteristics

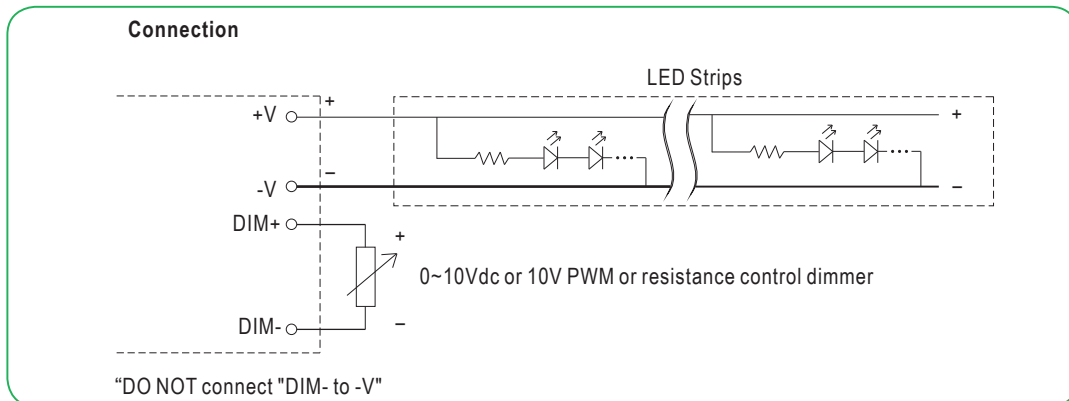


DIMMING OPERATION

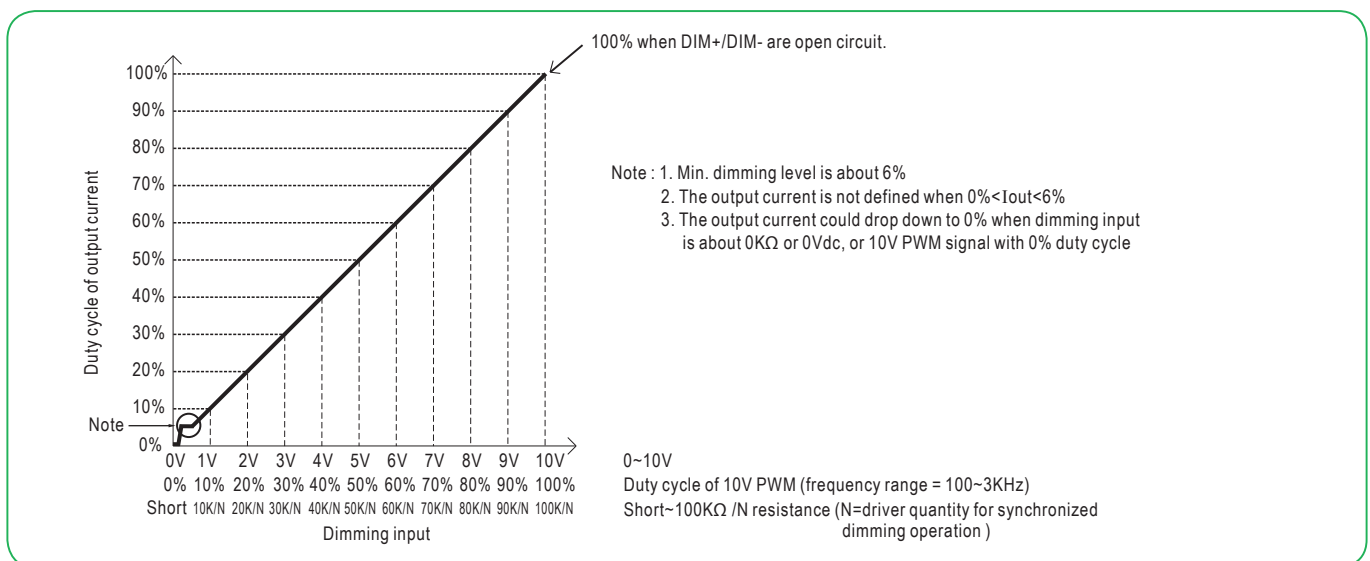
The PWM style output is a simple switching of supply ON/OFF at a rate so fast that the human eye cannot see LED flickering.

Duty cycle describes the proportion of time when output voltage is on relative to the entire period of time. It is expressed in percentage, 100% being fully on (maximal brightness) and a low duty cycle corresponding to lower brightness.

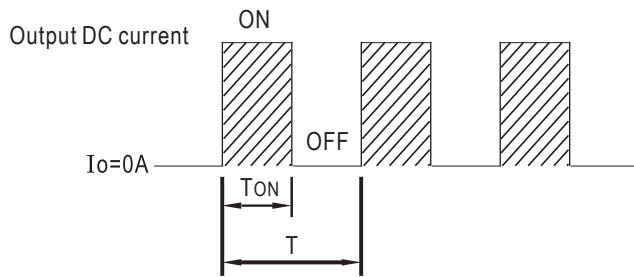
Built-in 3 in 1 dimming function. The duty of the PWM style output can be adjusted through output cable by connecting a 0~10Vdc or 10V PWM signal or resistance between DIM+ and DIM-.



Duty cycle of output current VS Dimming input



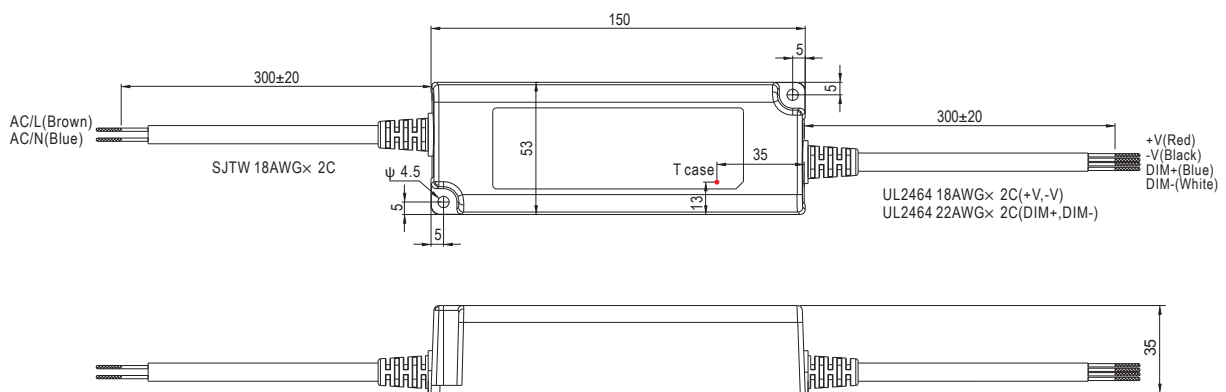
PWM Style Output



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

Output PWM frequency : 300Hz fixed (Typ.)

Technical Drawing



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 power supplies 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 power supplies, 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 immersing 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.

For further information please contact ILS

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.