



MEAN WELL PLC-60-12 60W Single Output LED Power Supply Owner's Manual

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MEAN WELL PLC-60-12 60W Single Output LED Power Supply



Product Information

The PLC-60 series is a 60W Single Output LED Power Supply. It is a constant voltage power supply with various models available, including PLC-60-12, PLC-60-15, PLC-60-20, PLC-60-24, PLC-60-27, PLC-60-36, and PLC-60-48. Each model has a different DC voltage output and rated current. The power supply has a voltage adjustment range of 11.5V to 13V (for PLC-60-12), 14.5V to 16.2V (for PLC-60-15), and 19.5V to 22V (for PLC-60-20). The current adjustment range is 3.75A to 5.15A (for PLC-60-12), 3A to 4.12A (for PLC-60-15), and 2.25A to 3.09A (for PLC-60-20). The power supply operates with an input voltage range of 90V to 264V AC or 127V to 370V DC and has a frequency range of 47Hz to 63Hz. It has a high efficiency of up to 89% and a power factor greater than 0.9 at full load.

Product Usage Instructions

1. Choose the appropriate model of the PLC-60 series power supply based on your required DC voltage and current.
2. Ensure that the input voltage is within the specified range of 90V to 264V AC or 127V to 370V DC.
3. Connect the input power source to the power supply using suitable electrical cables.
4. Connect the output load (LED lights or other devices) to the power supply using suitable electrical cables.
5. Adjust the voltage and current output using the provided adjustment ranges, if necessary.
6. Ensure that the total load connected to the power supply does not exceed the rated power of 60W.
7. Monitor the power supply for any abnormal ripple, noise, or distortion in the output. If such issues occur, check the connected load and adjust the voltage/current accordingly.
8. For circuit breaker protection, ensure that the maximum number of power supplies connected to a 16A circuit breaker does not exceed 32 units (type B or type C circuit breaker).
9. Refer to the user's manual for additional information and safety precautions.

Features

- Universal AC input / Full range
- High efficiency up to 89%
- Adjustable output voltage and current level
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- Fully isolated plastic case with terminal block style of 1/O
- Built-in active PFC function, comply with BS EN/EN61000-3-2 class C ($\geq 75\%$ load)
- Class 2 power unit
- Pass LPS
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications (Note.2)
- Compliance to worldwide safety regulations for lighting
- 2 years warranty



SPECIFICATION

MODEL		PLC-60-12	PLC-60-15	PLC-60-20	PLC-60-24	PLC-60-27	PLC-60-36	PLC-60-48
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	27V	36V	48V
	CONSTANT CURRENT REGION Note.6	8.4 ~ 12V	10.5 ~15V	14 ~ 20V	16.8 ~24V	18.9 ~27V	25.2 ~ 36V	33.6 ~ 48V
	RATED CURRENT	5A	4A	3A	2.5A	2.3A	1.7A	1.3A
	CURRENT RANGE	0 ~ 5A	0 ~ 4A	0 ~ 3A	0 ~ 2.5A	0 ~ 2.3A	0 ~ 1.7A	0 ~ 1.3A
	RATED POWER	60W	60W	60W	60W	62.1W	61.2W	62.4W
	RIPPLE & NOISE (max.) Note.2	2Vp-p	2.4Vp-p	1.8Vp-p	2.4Vp-p	2.7Vp-p	3.6Vp-p	4.6Vp-p
	VOLTAGE ADJ. RANGE Note.5	11.5 ~ 13V	14.5 ~ 16.2V	19.5 ~ 22V	24 ~ 26V	25 ~ 30V	32.5 ~ 39V	43.6 ~ 51.8V
	CURRENT ADJ. RANGE Note.5	3.75 ~ 5.15A	3 ~ 4.12A	2.25 ~ 3.09A	1.875 ~ 2.575A	1.725 ~ 2.369A	1.275 ~ 1.751A	0.975 ~ 1.339A
	VOLTAGE TOLERANCE Note.3	±10%						
	LINE REGULATION	±3.0%						
	LOAD REGULATION	±5.0%						
	SETUP TIME	500ms / 230VAC 3000ms / 115VAC at full load						
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 127 ~ 370VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR (Typ.)	PF>0.92/115VAC, PF>0.9/230VAC at full load (Please refer to “Power Factor Characteristic” curve)						
	TOTAL HARMONIC DISTORTION	THD< 20% when output loading≥75% at 115VAC/230VAC input						
	EFFICIENCY (Typ.)	86%	86%	87.5%	87%	88%	89%	89%
	AC CURRENT (Typ.)	0.8A/115VAC 0.4A/230VAC						
	INRUSH CURRENT (Typ.)	COLD START 35A(twidth=35μs measured at 50% Ipeak) at 230VAC						
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	32 units (circuit breaker of type B) / 32 units (circuit breaker of type C) at 230VAC						

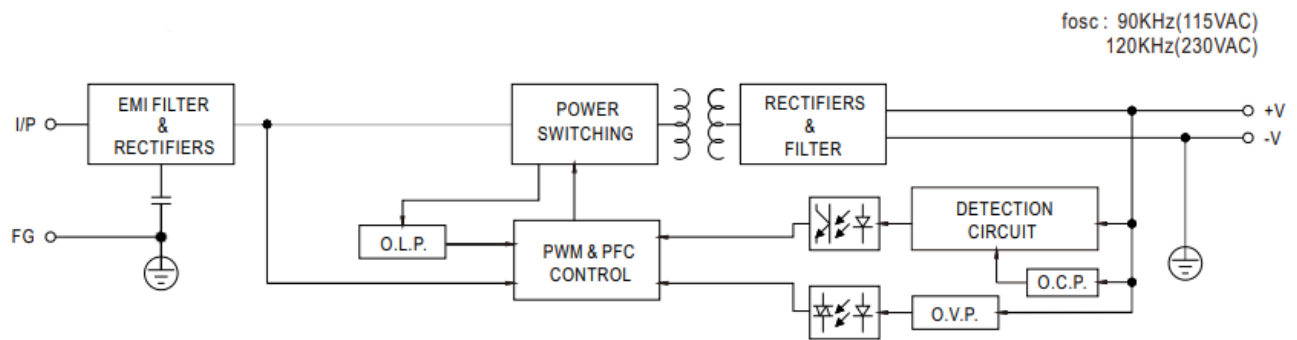
	LEAKAGE CURRENT	<0.75mA / 240VAC						
PROTECTION	OVER CURRENT	95 ~ 110%						
		Protection type : Constant current limiting, recovers automatically after fault condition is removed						
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed.						
	OVER VOLTAGE	13.8 ~ 16V	17.5 ~ 21V	23 ~ 26V	28 ~ 32V	31 ~ 35V	41 ~ 46V	54 ~ 60V
		Protection type : Shut down o/p voltage, re-power on to recover						
OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down							
ENVIRONMENT	WORKING TEMP.	-30 ~ +50°C (Refer to “Derating Curve”)						
	WORKING HUMIDITY	20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)						
	VIBRATION	10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes						
SAFETY & EMC	SAFETY STANDARDS	UL1310, TUV BS EN/EN61347-1, BS EN/EN61347-2-13, GB19510.14, GB19510.1, CAN/CSA C22.2 No. 223-M91(except for 48V), EAC TP TC 004 approved						
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH						
	EMC EMISSION	Compliance to BS EN/EN55015, GB17743, GB17625.1, BS EN/EN61000-3-2 Class C (≥75% load) ; BS EN/EN61000-3-3, EAC TP TC 020						
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55024,BS EN/EN61547, light industry level, criteria A,EAC TP TC 020						
OTHERS	MTBF	515Khrs min. MIL-HDBK-217F (25°C)						
	DIMENSION	181.5*62*35mm (L*W*H)						
	PACKING	0.41Kg; 30pcs/13.3Kg/0.67CUFT						

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µF & 47µF para
3. Tolerance: includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltage. Please check the static characteristics for more details.
5. Output voltage can be adjusted through the SVR1 on the PCB; limit of output constant current level can be adjusted through
6. Please refer to "DRIVING METHODS OF LED MODULE".
7. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC pre complete installation, the final equipment manufacturers must re-qualify MC Directive on the complete installation again.
8. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.
9. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED power supply can only be used behind a shield
10. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating

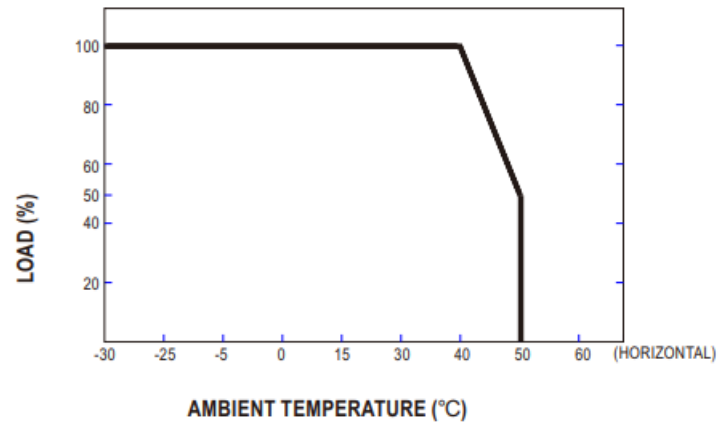
※ Product Liability Disclaimer: For detailed information, please refer to <https://www.meanwell.com/serviceDisclaimer.aspx>

File Name:PLC-60-SPEC 2021-12-24

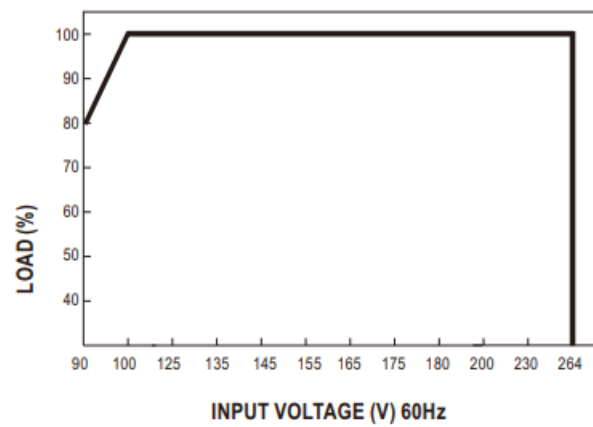
Block Diagram



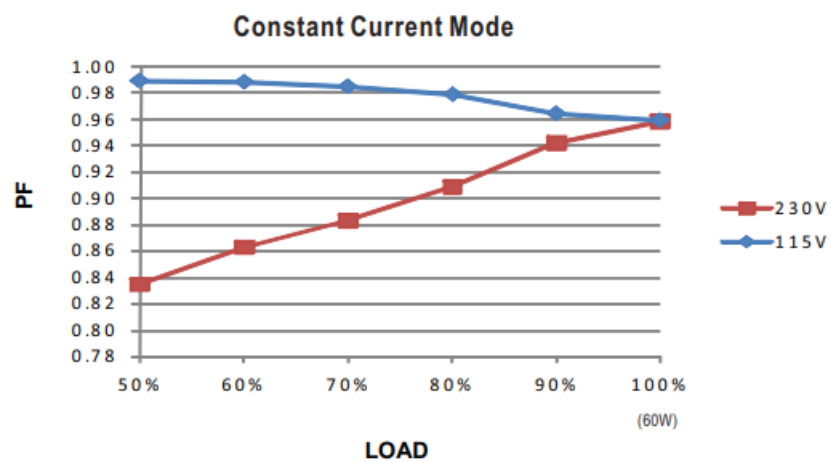
Derating Curve



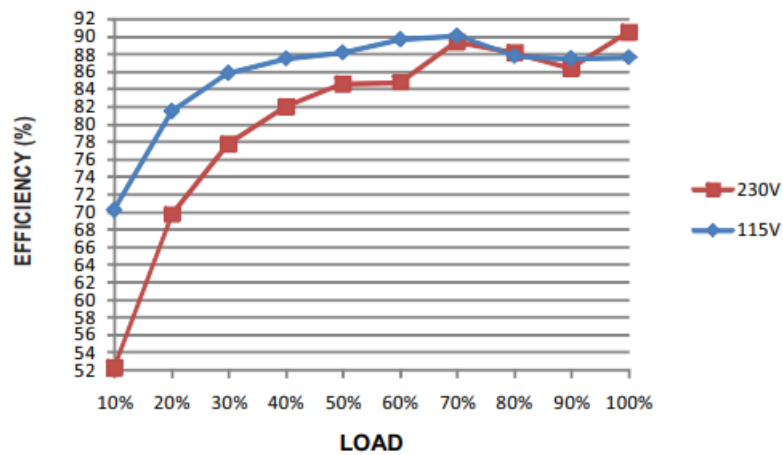
Static Characteristics



Power Factor Characteristic

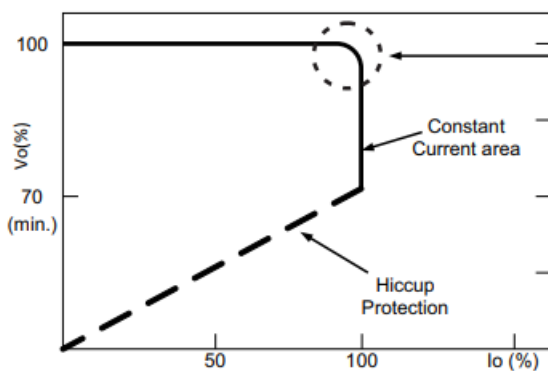


EFFICIENCY vs LOAD (48V Model)



DRIVING METHODS OF LED MODULE

This LED power supply is suggested to work in constant current mode area (CC) to drive the LEDs.




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.

Documents / Resources

	<p>MEAN WELL PLC-60-12 60W Single Output LED Power Supply [pdf] Owner's Manual PLC-60-12 60W Single Output LED Power Supply, PLC-60-12, 60W Single Output LED Power Supply, Single Output LED Power Supply, Output LED Power Supply, LED Power Supply, Power Supply</p>
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References

- [MEAN WELL Product Liability Disclaimer-MEAN WELL Switching Power Supply Manufacturer](#)