MEAN WELL

Your Reliable Power Partner

LOP-300 series

Power Supply

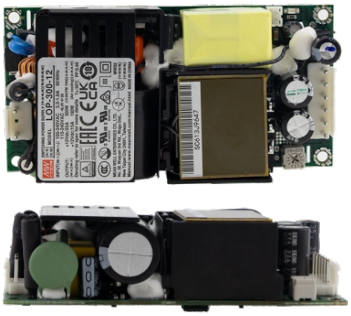
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300W 4"×2" Low Profile Open Frame Power Supply LOP-300 series



User's Manual
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UL62368-1
ANSI/AAMI ES60601-1
BS EN/EN62368-1
BS EN/EN60335-1
BS EN/EN61558-1/-2-16
BS EN/EN60601-1
IEC62368-1
IEC60335-1
IEC61558-1/-2-16
IEC60601-1
AS/NZS 61558-1/-2-16
GB4943.1
TPTC004

ECO, Automate, Industrial, Security, Network, Telecom, Household, Medical, 2xMOPP, BF rated

Features

- MEAN WELL Patent Number: ZL 202223277512.1
- 4"×2" compact size with low profile (25.4mm)
- 80~264Vac input with PFC, No load power consumption<0.5W
- Global certificates in multi-fields (ITE 62368-1, Medical 60601-1, Household 60335-1, Industrial 61558-1/-2-16)
- 150%peak load @ 3s
- 180W convection, 300W with FAN 10.98CFM forced-cooled
- Suitable for Class Ⅰ or Class Ⅱ installations
- Over voltage category Ⅲ (OVC Ⅲ)
- -40 ~ +80℃ wide range operation temperature
- High efficiency up to 94%
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Extremely low leakage current, 2 x MOPP, suitable for BF medical applications
- Operating altitude up to 5000 meters
- Built-in 12V/0.5A for external FAN
- 3 years warranty

Applications

- Industrial automation machinery/ control system
- Security system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus
- Network equipment
- Telecom devices
- Power sourcing equipment of PoE
- Home automation
- Medical devices

GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

The LOP-300 is a 300W highly reliable, energy-efficient, low-profile open frame type power supply. With a high power density of 37.5W/in^3 within the standard size of 4" x 2", it features a universal input voltage range of 80~264VAC, making it suitable for global applications. The series offers a comprehensive selection of standard voltages, including 12V/15V/18V/24V/27V/30V/36V/48V/54V, and comes in a complete range of models.

The main features of the LOP-300 include: low standby power (<0.5W), high efficiency (up to 94%), capable of providing 180W under natural air cooling and 300W with an additional fan. It has a 150% @ 3 seconds peakload capacity, a wide operating temperature range of -40 to +80°C, compliance with OVCIII, suitable for Class I (with FG) or Class II (without FG) systems. The product has obtained multiple safety certifications, including 62368-1/60601-1/61558-1/60335-1, and is designed to meet 2xMOPP and extremely low touch leakage current <70 μA, making it suitable for BF class medical devices. With high product safety and excellent EMC performance, it is versatile and applicable in various fields such as ITE, medical, industrial control, home automation and more. It is a cost-effective slim open frame type power supply.

Model Encoding

LOP - 300 - 12

- 12 → Output voltage (12V/15V/18V/24V/27V/30V/36V/48V/54V)
- 300 → Rated wattage
- LOP → Series name

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300W 4"×2" Low Profile Open Frame Power Supply LOP-300 series

SPECIFICATION		LOP-300-12	LOP-300-15	LOP-300-18	LOP-300-24	LOP-300-27	LOP-300-30	LOP-300-36	LOP-300-48	LOP-300-54
OUT PUT										
DC VOLTAGE		12V	15V	18V	24V	27V	30V	36V	48V	54V
CURRENT	Peak(3sec.)	37.5A	30A	25A	18.8A	16.7A	15A	12.5A	9.4A	8.3A
	10.98CFM	25A	20A	16.7A	12.5A	11.1A	10A	8.3A	6.3A	5.6A
	Convection	15A	12A	10A	7.5A	6.7A	6A	5A	3.8A	3.4A
RATED POWER	Peak(3sec.)	450W	450W	450W	450W	450W	450W	450W	450W	450W
	10.98CFM	300W	300W	300.6W	300W	299.7W	300W	299.8W	302.4W	302.4W
	Convection	180W	180W	180W	180W	180.9W	180W	180W	182.4W	183.6W
RIPPLE & NOISE (max.) Note.2		120mVp-p	150mVp-p	180mVp-p	200mVp-p	200mVp-p	250mVp-p	250mVp-p	250mVp-p	250mVp-p
VOLTAGE ADJ. RANGE (MAIN OUTPUT)		11.4~12.6V	14.3~15.8V	17.1~18.9V	22.8~25.2V	25.6 ~ 28.4V	28.5 ~31.5V	34.2 ~37.8V	45.6 ~50.4V	52 ~58V
VOLTAGE TOLERANCE Note.3		±3.0%	±3.0%	±3.0%	±2.0%	±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		±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
SETUP, RISE TIME		1000ms, 30ms/230Vac 1500ms, 30ms/115Vac at full load								
HOLD UP TIME (Typ.)		16ms@180W load , 8ms@300W load								
INPUT										
VOLTAGE RANGE Note.4		80 ~ 264Vac 113 ~ 370Vdc								
FREQUENCY RANGE		47 ~ 63Hz								
POWER FACTOR		PF>0.95/230Vac PF>0.98/115Vac at full load								
EFFICIENCY (Typ.)		92.5%	93%	93.5%	93%	93%	93%	94%	94%	94%
AC CURRENT (Typ.)		3.5A/115Vac 1.8A/230Vac								
INRUSH CURRENT (Typ.)		COLD START 40A/115Vac 80A/230Vac								
LEAKAGE CURRENT		Class Ⅰ: Earth leakage current < 500 μA(rms) @ 264Vac , touch current < 70 μA(rms) @ 264Vac ClassⅡ: Touch current < 100 μA(rms) @ 264Vac								
PROTECTION										
OVERLOAD		105 ~ 180% rated output power, Protection type : Hiccup after 3 sec, recovers automatically(3 sec) after fault condition is removed								
OVER VOLTAGE		13.2 ~ 15.6V	16.5 ~ 19.5V	19.8 ~ 23.4V	26.4 ~ 31.2V	29.7 ~ 35.1V	33 ~ 39V	39.6 ~ 46.8V	52.8 ~ 62.4V	59.4 ~ 67.5V
		Protection type : Shut down o/p voltage, re-power on to recover								
OVER TEMPERATURE		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down or re-power on to recover								
FUNCTION										
EXTERNAL FAN SUPPLY		12V@0.5A for driving a fan (10.98CFM) / 12V@0.1A without fan cooling ; Tolerance -20% ~ +15% at main output 20% rated current								
ENVIRONMENT										
WORKING TEMP.		-40 ~ +80℃ (Refer to "Derating Curve")								
WORKING HUMIDITY		20 ~ 90% RH non-condensing								
STORAGE TEMP., HUMIDITY		-40 ~ +85℃, 10 ~ 95% RH non-condensing								
TEMP. COEFFICIENT		±0.03%/℃ (0 ~ 50℃)								
VIBRATION		10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes								

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SPECIFICATION	LOP-300-12	LOP-300-15	LOP-300-18	LOP-300-24	LOP-300-27	LOP-300-30	LOP-300-36	LOP-300-48	LOP-300-54
SAFETY & EMC Note.5									
SAFETY STANDARDS	CB IEC62368-1, IEC60335-1, IEC61558-1/-2-16, IEC60601-1; TUV BS EN/EN62368-1, BS EN/EN60335-1, BS EN/EN61558-1/-2-16, BS EN/EN60601-1(3.2 Version); UL UL62368-1, ANSI / AAMI ES60601-1(3.2 Version) ; CCC GB4943.1 ; RCM AS/NZS 61558-1/-2-16; EAC TPTC 004 approved.								
ISOLATION RESISTANCE	Primary-Secondary: 2xMOPP, Primary-Earth:1xMOPP, Secondary-Earth:1xMOPP								
OVER VOLTAGE CATEGORY	IEC/EN 61558-1/-2-16(OVC Ⅲ, altitude up to 2000M) IEC/EN/UL 62368-1 (OVC Ⅱ, altitude up to 5000M) IEC/EN 60335-1 (OVC Ⅱ, altitude up to 5000M) IEC/EN 60601-1 (OVC Ⅱ, altitude up to 4000M)								
PROTECTIVE EXTRA-LOW VOLTAGE	IEC/EN61558-2-16 (SELV, 12~48V) IEC/EN/UL 62368-1 (SELV / ES1, 12~48V)								
WITHSTAND VOLTAGE	I/P-O/P:4KVac 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℃/ 70% RH								
EMC EMISSION	**Parameter**	**Standard**	**Test Level / Note**						
	Conducted & Radiated	BS EN/EN55032(CISPR32) BS EN/EN55011(CISPR11)	Class Ⅰ : Class B , Class Ⅱ: Class A						
		BS EN/EN55014(CISPR32)	Class Ⅰ : Class B						
	Harmonic Current	BS EN/EN61000-3-2	Class A						
	Voltage Flicker	BS EN/EN61000-3-3	-------						
EMC IMMUNITY	BS EN/EN55035,BS EN/ EN61000-6-2								
	Parameter	**Standard**	**Test Level /Note**						
	ESD	BS EN/EN61000-4-2	Level 4, 15KV air ; Level 4, 8KV contact						
	Radiated Susceptibility	BS EN/EN61000-4-3	Level 3, 10V/m(80MHz~2.7GHz) Table 9, 9~28V/m(385MHz~5.78GHz)						
	EFT/Burest	BS EN/EN61000-4-4	Level 3, 2KV						
	Surge	BS EN/EN61000-4-5	Level 4, 4KV/Line-FG ; 2KV/Line-Line						
	Conducted	BS EN/EN61000-4-6	Level 3, 10V						
	Magnetic Field	BS EN/EN61000-4-8	Level 4, 30A/m						
	Voltage Dips and interruptions	BS EN/EN61000-4-11	＞95% dip 0. 5 periods, 100% dip 1 periods, 30% dip 25 periods, ＞95% interruptions 250 periods						
OTHERS									
MTBF	2805.6K hrs min. Telcordia SR-332 (Bellcore) ; 384.4K hrs min. MIL-HDBK-217F (25℃)								
DIMENSION	101.6*50.8* 25.4mm (L*W*H)								
PACKING	0.21Kg; 36pcs/10Kg/0.95CUFT								

NOTE

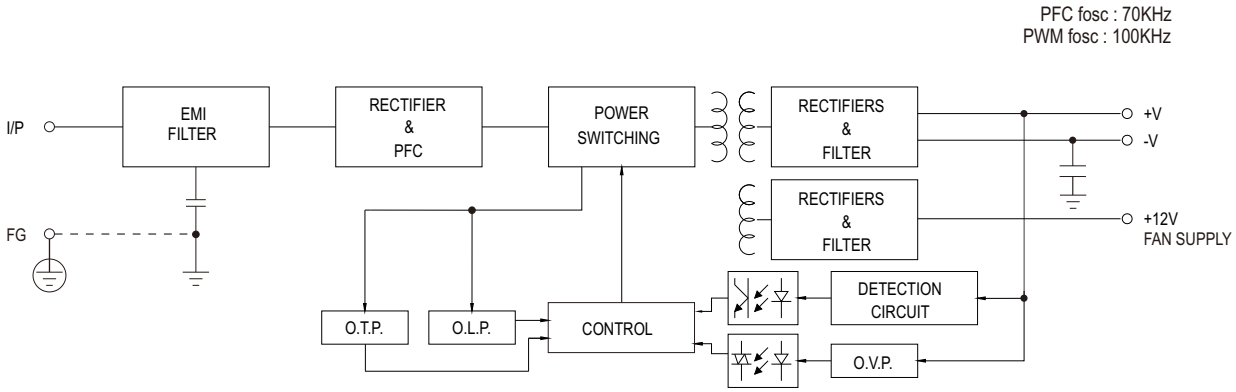
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μF & 47μF parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the derating curve for more details.
5. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)

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

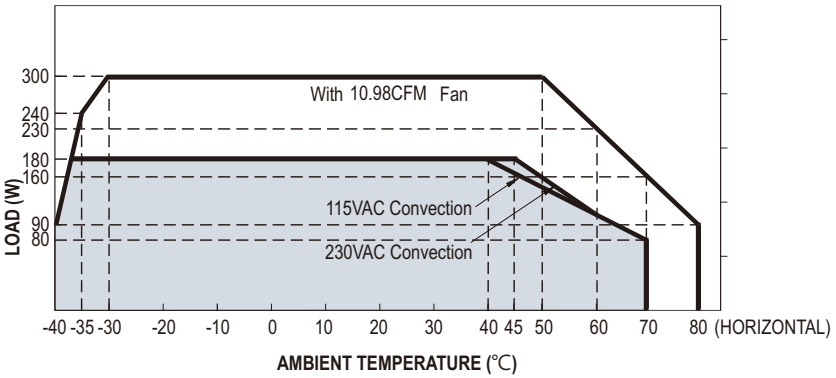
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■ Block Diagram

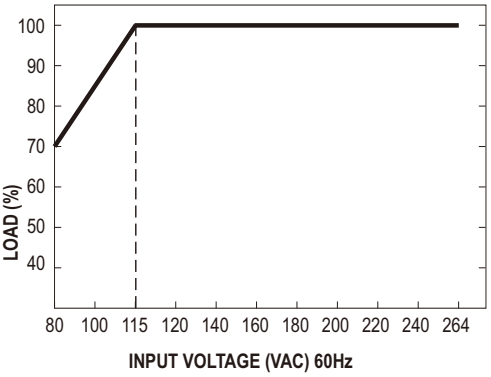


■ Derating Curve



Cooling	Max. Output Power
Free air convection	180W
Force-cooled with external Fan	300W

■ Output Derating VS Input Voltage

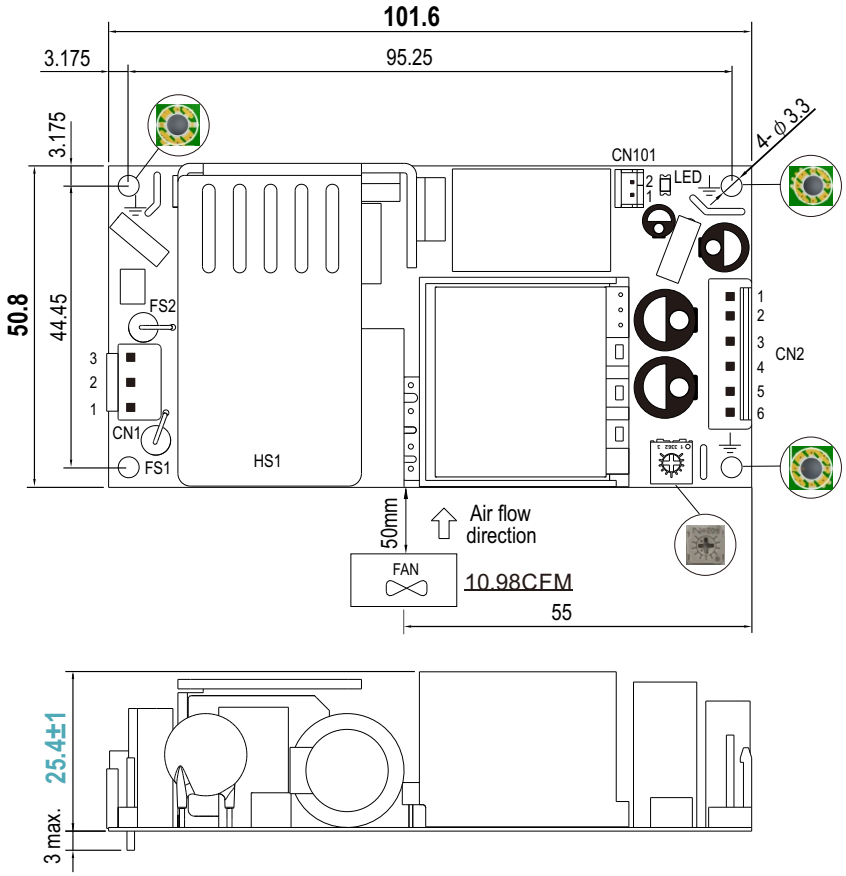


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■ Mechanical Specification

(Unit: mm , tolerance ± 1mm)



AC Input Connector (CN1) : JST B3P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	AC/L	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2	No Pin		
3	AC/N		

DC Output Connector (CN2) : JST B6P-VH or equivalent

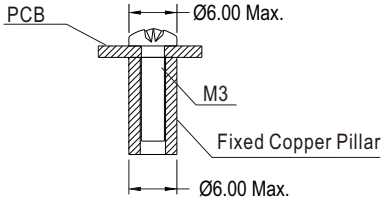
Pin No.	Assignment	Mating Housing	Terminal
1,2,3	+V	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
4,5,6	-V		

FAN Connector(CN101) : JSTB2B-PH-K-S or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	+12Vaux	JST PHR-2 or equivalent	JST SPH-002T-P0.5S or equivalent
2	DC COM		

Note:

1. Class Ⅰ System: Mounting holes marked with ⏚ have to be connected to safety earth.
2. Class Ⅱ System: Unnecessary to connect with safety earth.
3. Recommend Screw Size for installation:



■ Installation Manual

Please refer to : http://www.meanwell.com/manual.html