POLYTRON DEVICES

DATA SHEET

AC/DC ITE SWITCHING POWER SUPPLY

UNIVERSAL INPUT — 1300 WATT

P81/1300E SERIES

FEATURES

- Universal Input 90-264Vac
- 1300 Watt with 40CFM Forced Air
- 800W with Conduction Cooling
- 650W with Natural Convection
- High Efficiency up to 93%
- Operating Altitude 5000M
- Over-Voltage Category OVC III
- Standby 5V@1A with Fan, @0.4A without Fan
- Active PFC Function
- I/O Isolation 4250VAC
- 3-Year Product Warranty

SELECTION GUIDE (SINGLE OUTPUT) All specifications are typical at nominal input, full load and 25°C, unless otherwise noted.

Max Output Wattage with 40CFM Fan[6] W	Max Output Wattage with Conduction Cooling[4,6] W	Max Output Wattage with Natural Convection[6] W	Current (with 40CFM Fan) A, Max.	Current (Conduction Cooling) A, Max.	Current (Natural Convection) A, Max.	Model Number
1000 (115 VAC) / 1100 (230 VAC)	650 (115 VAC) / 700 (230 VAC)	500 W (115 VAC) / 550 W (230 VAC)	83.4 (at 115 VAC) 91.6 (at 230 VAC)	54.1 (at 115 VAC) 54.1 (at 230 VAC)	27.1 (at 115 VAC) 27.1(at 230 VAC)	P81/1300E-12S
1300	700 (115 VAC) / 800 (230 VAC)	500 (115 VAC) / 650 (230 VAC)	54.1 (at 115 VAC) 58.3 (at 230 VAC)	29.1 (at 115 VAC) 33.3 (at 230 VAC)	14.5 (at 115 VAC) 16.6 (at 230 VAC)	P81/1300E-24S
1300	700 (115 VAC) / 800 (230 VAC)	500 (115 VAC) / 650 (230 VAC)	41.6 (at 115 VAC) 45.8 (at 230 VAC)	20.8 (at 115 VAC) 27.1 (at 230 VAC)	10.4 (at 115 VAC) 13.5 (at 230 VAC)	P81/1300E-48S

Input Specifications

Voltage, VAC [6]	90-264 VAC or 127-370 VDC	
Frequency, Hz	47-63	
Current , A	<14 Max. (115 VAC) / <7 Max. (230 VAC)	Full Load
Inrush Current, A	<70 Max.(115VAC) / <105 Max.(230VAC)	<2ms, Clod Start
Leakage Current , mA	< 1.5 / 264 VAC	Touch Current
Power Factor	PF>0.9 at Full Load	At 230 VAC

P81/1300E SERIES

Output Specifications

Voltage, V	12	P81/1300E-12S
	24	P81/1300E-24S
	48	P81/1300E-48S
Voltage Adj Range (VDC), %	±5 Output Voltage	
Voltage Accuracy, %	±2	
Line Regulation (100-264 VAC), %	±1	
Load Regulation (10-100%) (typ.), %	±1	
Minimum Load, %	0	
Maximum Capacitive Load, µF	7000	P81/1300E-12S
	3500	P81/1300E-24S
	1750	P81/1300E-48S
Ripple & Noise (typ.), mV [1]	160	P81/1300E-12S
	1% Vout	P81/1300E-24S
	1% Vout	P81/1300E-48S
Efficiency (at 230VAC), %	90.5	P81/1300E-12S
	92.5	P81/1300E-24S
	93	P81/1300E-48S
Hold-up Time (at 115 VAC), ms [2]	3 Min.	

General Specifications

Over Power Protection	Auto recovery
Over Voltage Protection	Auto recovery
Over Temperature Protection	Auto recovery
Short Circuit Protection	Protection level 1 (nominal): Continuous, Auto recovery
	Protection level 2 (instantaneous high current): Latch
Input-Output, VAC [3]	4250 or 6000 VDC
Input-PE, VAC [3]	2850 or 4000 VDC
Output-PE, VAC [3]	1500 or 2121 VDC

Environmental Specifications

Operation Tempature, °C [6,7]	-30... +70 (With derating)
Storage temperature, °C	-30... +85
Temperature Coefficient, °C	±0.03% (0~50°C)
	±0.06% (Other)
Altitude During Operation, m	OVC II=5000m OVC III = 2000m
Humidity, RH	95%
MTBF	>100,000 h @ 25°C (MIL-HDBK-217F)
Vibration	IEC60068-2-6 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes)
Shock	IEC60068-2-27

© Polytron Devices, Inc., 3-24-2026

P81/1300E SERIES

Physical Specifications

Design meet safety standard	UL / IEC / EN 62368-1
Dimensions, in	7.8 x 4.49 x 1.62 (198.0 x 114.0 x 41.0 mm) Tolerance ±0.5mm
Weight, g	1350
Cooling Method	Natural Convection / Conduction Cooling / 40 CFM Fan

Function

5V Stand by	5VSB: 5V@1A with FAN, 5V@0.4A without FAN ; Tolerance ±10%
DC OK Signal (Power Good)	Turn ON: 3.7~5.7V ; Turn OFF: 0~1V
Remote Control	+RC / -RC: Power ON=open ; Power OFF=short

EMC Specifications

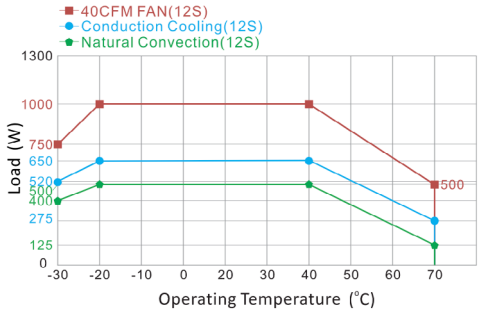
Specifications	Conditions		
EMI	Conducted [5]	EN55032	Class B
	Radiated [5]	EN55032	Class B
EMS	EN 55035	EN 55035	A
	ESD	IEC 61000-4-2 Air ± 15KV , Contact ± 8KV	A
	RS	IEC 61000-4-3 3V/m	A
	EFT/B	IEC 61000-4-4 ± 4KV	A
	Surge	IEC 61000-4-5 ± 4KV(L/N-PE)	A
	CS	IEC 61000-4-6 3Vrms	A
	PFMF	IEC 61000-4-8 1A/m	A
	Dips	IEC 61000-4-11 70% 500ms	B
	Interruptions	IEC 61000-4-11 <5% 5000ms	B

NOTE:

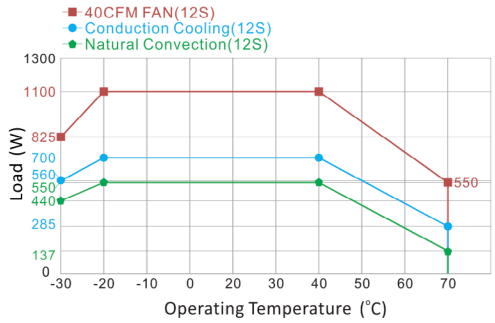
1. 1. Ripple & Noise are measured at 20MHz of bandwidth by using a 6" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.
2. Hold-up Time measured at 90% Vout.
3. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from Arch power supply.
4. The size of the suggested aluminum plate is shown as below. And for optimizing thermal performance, the aluminum plate must have an even and smooth surface (or coated with thermal grease), and ARF1300E series must be firmly mounted at the center of the aluminum plate (Size=650 x 650 x 3.0 mm)
5. For optimal EMI performance the power supply should be mounted to a grounded aluminium plate (650 x 650 x 3 mm) with electrical contact to the four PCB mounting holes. To comply with safety standards, this plate must be grounded.
6. Please check the derating curve for more details.
7. Due to varying customer application conditions, the product is tested for maximum operating temperature under full load only. For other regulatory requirements, please contact ARCH.
8. CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.

© Polytron Devices, Inc., 3-24-2026

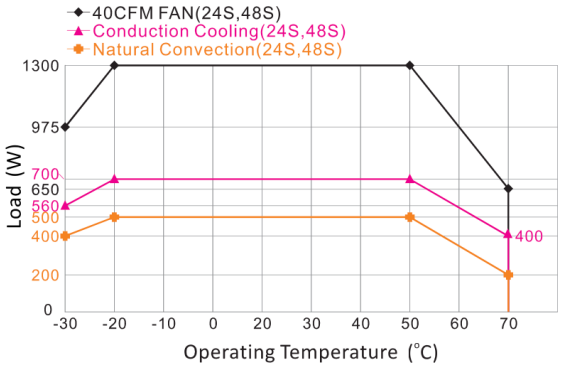
Derating



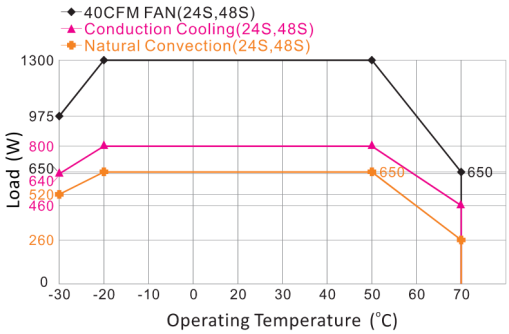
Derating Output Load versus Operating Temperature
P81/1300E-12S at 115-197Vin



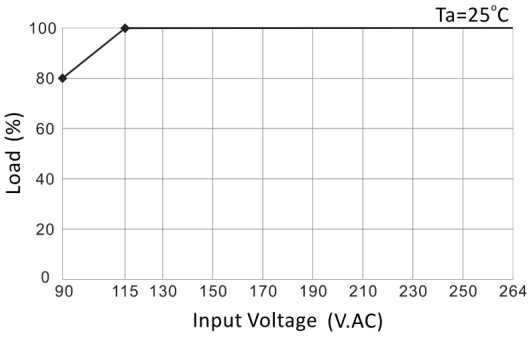
Derating Output Load versus Operating Temperature
P81/1300E-12S at 198-264Vin



Derating Output Load versus Operating Temperature
P81/1300E-24S at 115-197Vin



Derating Output Load versus Operating Temperature
P81/1300E-24S at 198-264Vin



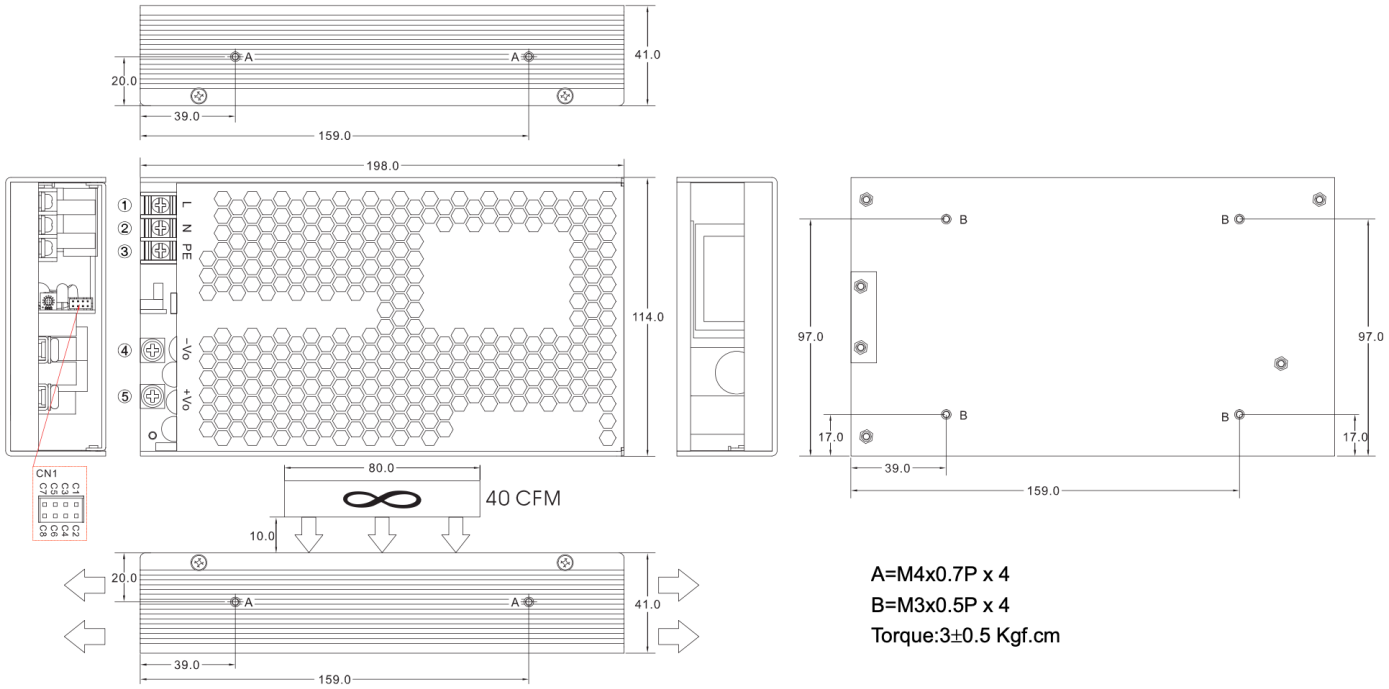
Derating Output Load versus Input Voltage

NOTE:

If input voltage is lower than 115VAC, please refer to the output derating V.S. input voltage curve for details

© Polytron Devices, Inc., 3-24-2026

Mechanical Dimensions



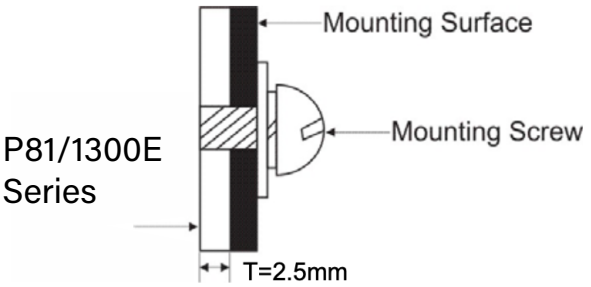
A=M4x0.7P x 4
B=M3x0.5P x 4
Torque:3±0.5 Kgf.cm

Brands		
PIN	Single	Terminal
1	AC IN (L)	DINKLE DT-49-B01W-03
2	AC IN (N)	
3,A,V	PE	
4	-DC OUT	M5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max.
5	+DC OUT	

Connector Pin (CN1)					
Brands		Cherng Weei		JST	
PIN	Single	Mating Housing	Terminal	Mating Housing	Terminal
C1	+S	PHD-H20- 2X4P	PHD-T20	PHDR- 08VS	SPHD-001T-P0.5
C2	-S				
C3	NC				
C4	-5V SB				
C5	GND / -RC				
C6	+RC				
C7	PG				
C8	+5v SB				

© Polytron Devices, Inc., 3-24-2026

Assembly Instructions

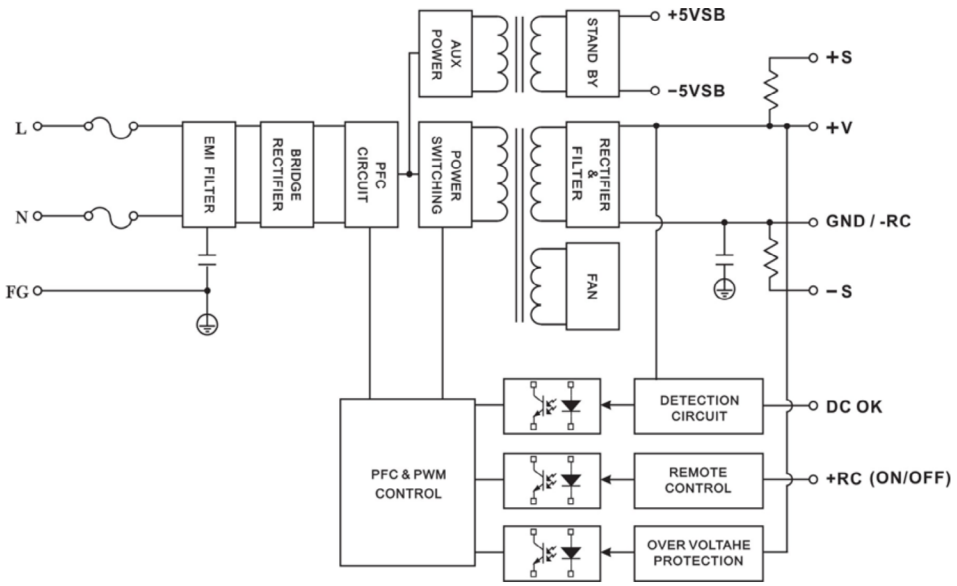


*U Case
T=2.5mm
Customer is advised to screw into the threads no more than 2.5mm

FUNCTION DESCRIPITON of CN1

PIN	Function	Description
C1	+S	Remote sensing (+)
C2	-S	Remote sensing (-)
C3	MC	
C4	-5V SB	This pin connects to the negative terminal(-V)
C5	GND / -RC	This pin connects to the negative terminal(-V). Return for DC-OK signal output.
C6	+RC	Turns the output on and off by electrical or dry contact between pin C5 (GND / -RC), Short: Power OFF, Open: Power ON.
C7	+PG	DC-OK Signal is a DC output. (DC-OK)
C8	+5V SB	Stand by voltage output ground 4.4~5.5V, referenced to pin C4 or C5(GND). The maximum load current is 1A.

FUNCTION DESCRIPITON of CN1



© Polytron Devices, Inc., 3-24-2026