DIP Package

Size: 2.12 x 1.13 x 0.93in (53.80 x 28.8 x 23.5mm)

Chassis Mount

Size: 3 x 1.24 x 1.27in (76 x 31.5 x 32.3mm)

DIN-Rail Mount

Size: 3 x 1.24 x 1.45in (76 x 31.5 x 36.9mm)

OPTIONS

- Mounting Type
  -DIP Package
  -Chassis Mount
  -DIN Rail Mount

FEATURES

- Wide Input Voltage Range of 85~264VAC (100~370VDC)
- Regulated Output
- Low Standby Power Consumption
- Low Ripple & Noise
- High Efficiency
- High Reliability
- Short Circuit, Over Current, and Over Voltage Protection
- High Isolation Voltage up to 4KVAC
- Plastic Case
- RoHS Compliant
- 3 Year Warranty
- IEC62368, UL62368, & EN62368 Approvals

DESCRIPTION

The PSLEA20 series of AC/DC converters offers up to 20 watts of output power in a DIP, Chassis Mount, or DIN Rail mount package. This series consists of single output models with a wide input voltage range of 85~264VAC (100~370VDC). Features of this series include high reliability, high efficiency, high isolation voltage, as well as low standby power consumption and low ripple and noise. This series also has short circuit, over current, and over voltage protection, it is RoHS compliant, and has IEC62368, UL62368, & EN62368 approvals.

MODEL SELECTION TABLE

Single Output Models

Model Number[1]	Input Voltage Range	Output Voltage	Output Current	Maximum Capacitive Load	Efficiency	Output Power
PSLEA20-03Sx	85~264VAC (100~370VDC)	3.3VDC	3600mA	10000µF	74%	11.8W
PSLEA20-05Sx		5VDC	3600mA	6600µF	78%	18W
PSLEA20-09Sx		9VDC	2200mA	4400µF	79%	20W
PSLEA20-12Sx		12VDC	1660mA	3000µF	82%	20W
PSLEA20-15Sx		15VDC	1330mA	2000µF	83%	20W
PSLEA20-24Sx		24VDC	833mA	800µF	83%	20W

SPECIFICATIONS

All specifications are based on 25°C, Humidity <75%, Nominal Input Voltage, and Rated Output Load unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS			Min	Typ	Max	Unit
INPUT SPECIFICATIONS							
Input Voltage Range	AC Input			85		264	VAC
	DC Input			100		370	VDC
Input Frequency				47		63	Hz
Input Current	115VAC				0.37	0.44	A
	230VAC				0.24	0.26	
Inrush Current	115VAC				12		A
	230VAC				36		
Recommended External Input Fuse				3.15A/250V, slow fusing, necessary			
Hot Plug				Unavailable			
OUTPUT SPECIFICATIONS							
Output Voltage				See Table			
Voltage Accuracy	0%-100%	3.3V Output			±3		%
		Other Models			±2		
Line Regulation	Full Load				±0.5		%
Load Regulation	0%-100% Load				±1		%
Output Power				See Table			
Output Current				See Table			
Minimum Load	Single Output Models			0			%
Maximum Capacitive Load				See Table			
Ripple & Noise[2]	20MHz bandwidth (peak-peak value)				50	120	mV
Hold-Up Time	115VAC			5	10		ms
	230VAC			44	55		
Temperature Coefficient	Primary Output				±0.02		%/°C
PROTECTION							
Short Circuit Protection				Hiccups, Continuous, Self-Recovery			
Over Current Protection	Self-Recovery				≥110		%Io
Over Voltage Protection	3.3V/5V Output				≤7.5		V
	9V Output				≤15		
	12V/15V Output				≤20		
	24V Output				≤30		
ENVIRONMENTAL SPECIFICATIONS							
Operating Temperature				-40		+70	°C
Storage Temperature				-40		+85	°C
Storage Humidity						95	%RH
Welding Temperature	Wave-Soldering			260±5°C; time: 5-10s			
	Manual-Welding			360±10°C; time: 3-5s			
Power Derating	-40°C to 0°C			1.67			%/°C
	+40 to +70°C	3.3V/5V		2.66			
		Others		2.33			
	85-130VAC	5V	-25°C to +70°C	0.66			%/VAC
			-40°C to -25°C	1.33			
	85-100VAC	Others	-25°C to 70°C	2.0			
			-40°C to -25°C	4.0			
	240-264VAC			0.83			
MTBF	MIL-HDBK-217F@25°C			300,000			Hours
GENERAL SPECIFICATIONS							
Typ. Efficiency	230VAC			See Table			
Switching Frequency					100		kHz
Isolation Voltage	Input to Output, Test time: 1min (leakage current <5mA)			4000			VAC
PHYSICAL SPECIFICATIONS							
Weight	DIP			2.12oz (60g) Typ.			
	Chassis Mount			2.82oz (80g) Typ.			
	DIN-Rail Mount			3.53oz (100g) Typ.			
Dimensions (L x W x H)	DIP			2.12 x 1.13 x 0.93in (53.8 x 28.8 x 23.5mm)			
	Chassis Mount			3 x 1.24 x 1.27in (76 x 31.5 x 32.3mm)			
	DIN-Rail Mount			3 x 1.24 x 1.45in (76 x 31.5 x 36.9mm)			
Case Material				Black Flame-Retardant & Heat-Resistant Plastic (UL94V-0)			
Cooling Method				Free Air Convection			

SPECIFICATIONS

All specifications are based on 25°C, Humidity <75%, Nominal Input Voltage, and Rated Output Load unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION		TEST CONDITIONS		Min	Typ	Max	Unit
SAFETY CHARACTERISTICS							
Safety Standards		IEC62368, EN62368, UL62368(5)					
Safety-Regulated Certification		IEC62368, EN62368, UL62368(5)					
Safety Class		Class II					
EMI		CE	CISPR/EN55032				Class B
		RE	CISPR/EN55032				Class B
EMS	ESD	IEC/EN61000-4-2	Contact±6kV/Air±8kV				Perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m				Perf. Criteria A
	EFT	IEC/EN61000-4-4	±4kV				Perf. Criteria B
	Surge	IEC/EN61000-4-5	Line to Line ±2kV				Perf. Criteria B
			Line to Line ±4kV/line to ground ±6kV(3)				Perf. Criteria B
	CS	IEC/EN61000-4-6	10Vr.m.s				Perf. Criteria A
	Voltage Dips, Short Interruptions and Voltage Variations Immunity	IEC/EN61000-4-11	0%, 70%				Perf. Criteria B

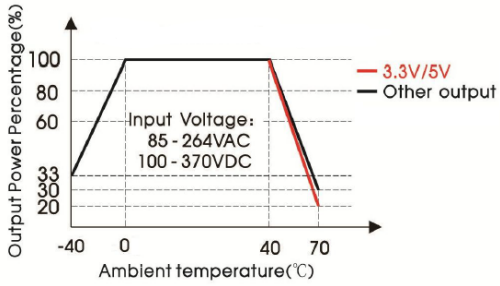
NOTES

1. "X" in model number indicates package mount type. "X" can be "A1" for DIP, "A2" for Chassis Mount, or "A4" for DIN Rail Mount.
2. Ripple and noise are measured by "parallel cable" method.
3. See EMC solution-recommended circuit for recommended circuit.
4. Customization available.
5. This product is Listed to applicable standards and requirements by UL.

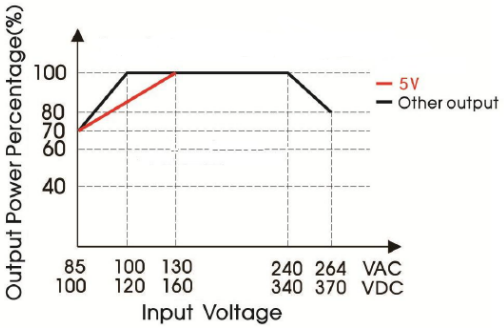
**Due to advances in technology, specifications subject to change without notice.*

DERATING CURVES

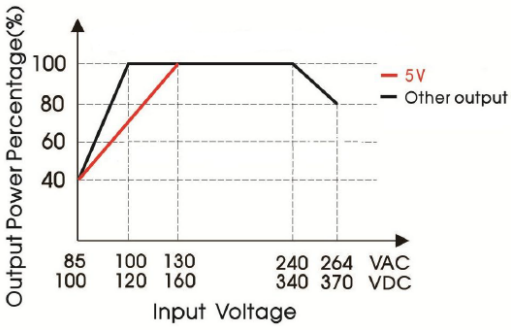
Temperature Derating Curve



Input Voltage Derating Curve (-25°C to +70°C)



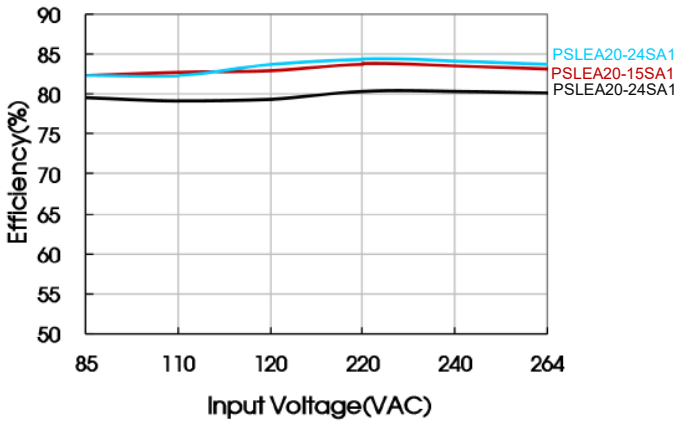
Input Voltage Derating Curve (-40°C to -25°C)



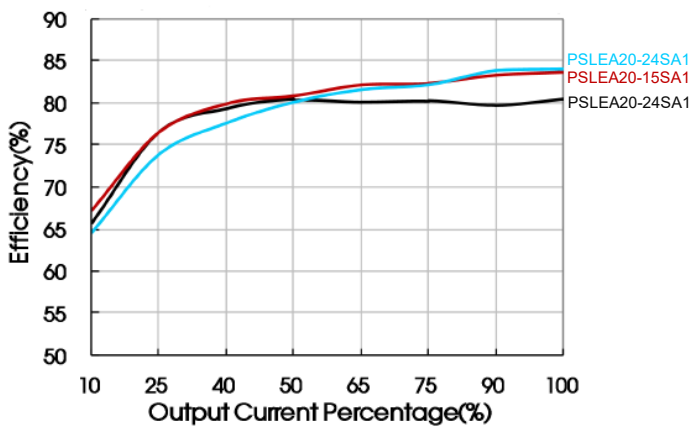
Note:
1. Input voltage should be derated based on temperature derating when it is 85-100VAC/240-264VAC/100-140VDC/340-370VDC (PSLEA20-05Sx: 85-130VAC/240-264VAC/100-160VDC/340-370VDC)
2. This product is suitable for use in natural air cooling environments. If in a closed environment, please contact factory.

EFFICIENCY GRAPHS

Efficiency vs. Input Voltage (Full Load)

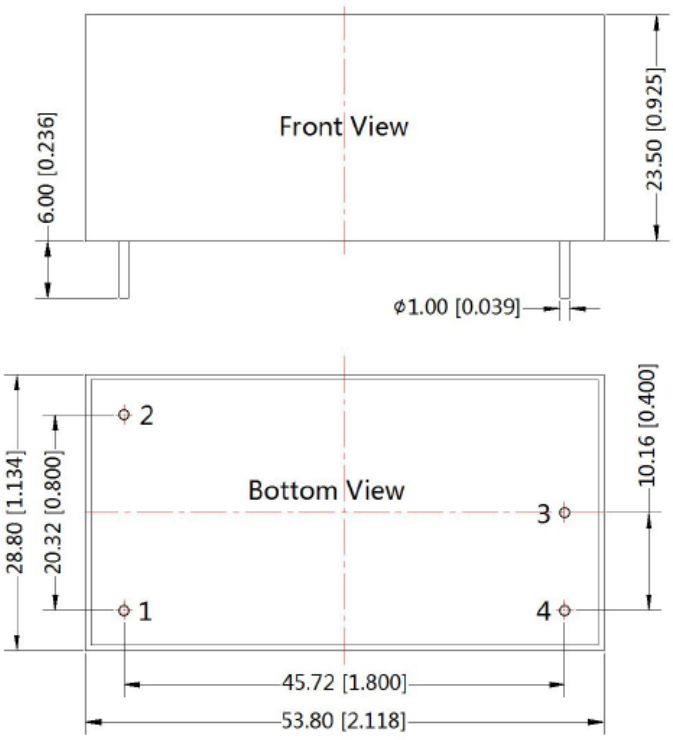


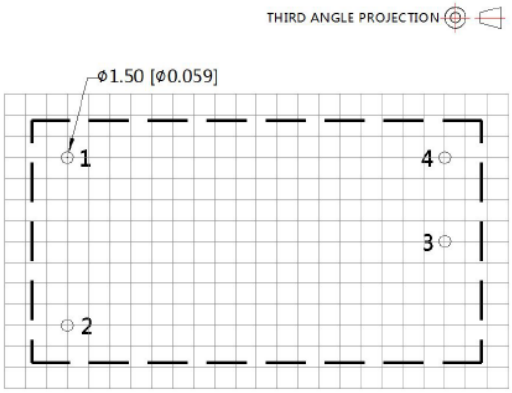
Efficiency vs. Output Load (Vin=230VAC)



MECHANICAL DRAWINGS

DIP ("A1" Suffix)





Note: Grid 2.54*2.54mm

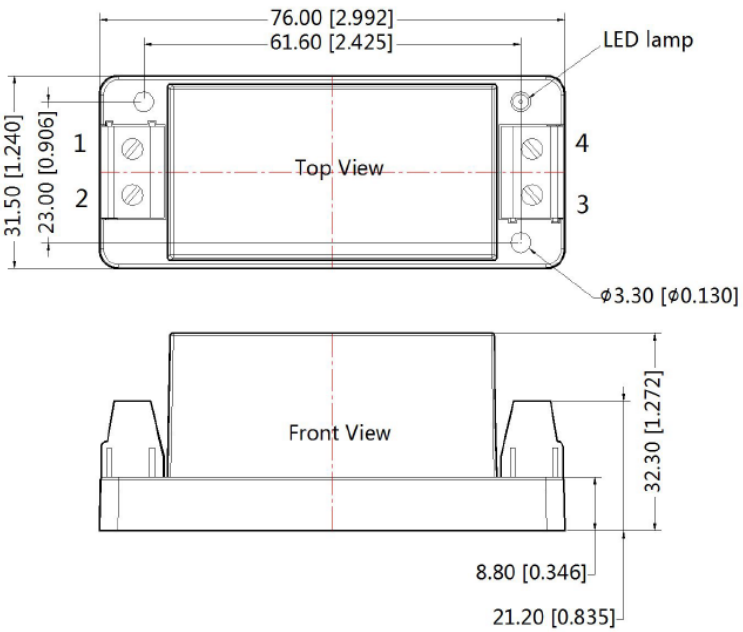
Pin-Out

Pin	Function
1	AC(N)
2	AC(L)
3	-Vo
4	+Vo

Note:
Unit: mm [inch]
Pin Diameter Tolerances: ±0.10 [±0.004]
General Tolerances: ±0.50 [±0.020]

Chassis Mount (“A2” Suffix)

THIRD ANGLE PROJECTION



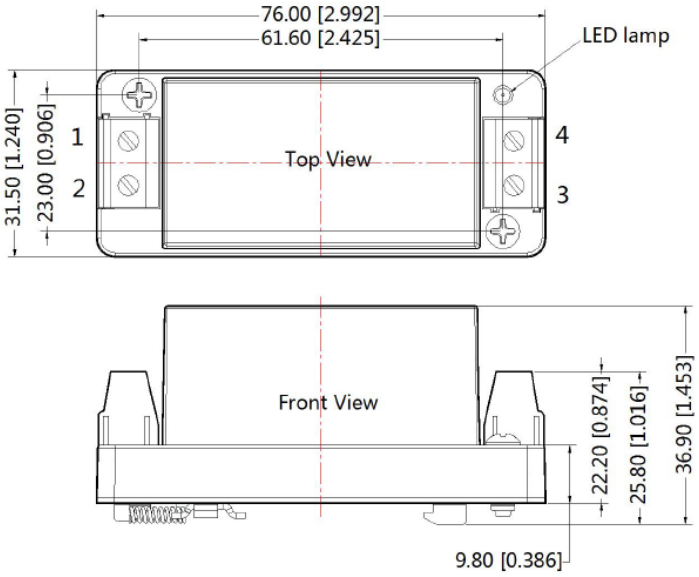
Pin-Out

Pin	Function
1	AC(N)
2	AC(L)
3	-Vo
4	+Vo

Note:
Unit: mm [inch]
Wire range: 24-12AWG
Tightening Torque: Max 0.4 N·m
General Tolerances: ±1.00[±0.040]

DIN-Rail Mount (“A4” Suffix)

THIRD ANGLE PROJECTION



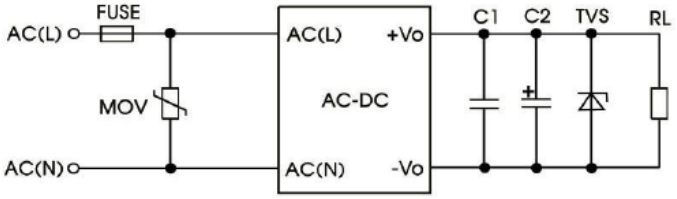
Pin-Out

Pin	Function
1	AC (N)
2	AC (L)
3	-Vo
4	+Vo

Note:
Unit: mm[inch]
Wire Range: 24-12AWG
Tightening Torque: Max 0.4 N·m
Mounting Rail: TS35, Rail Needs to Connect Safety Ground
General Tolerances: ±1.00 [±0.040]

DESIGN REFERENCE

1. Typical Application Circuit

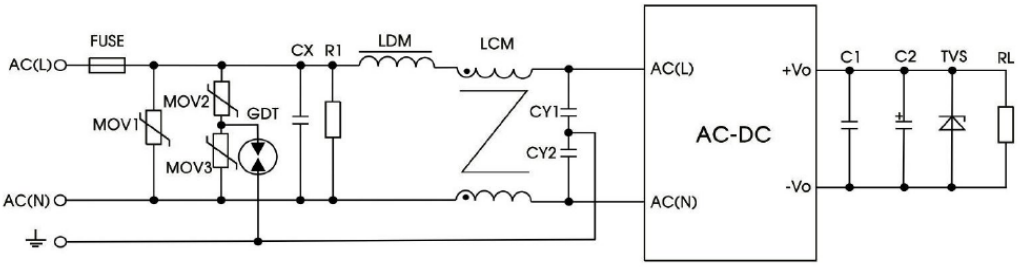


Model	FUSE	MOV	C1	C2	TVS
PSLEA20-03SA1	3.15A/250V, slow fusing, necessary	S20K300	1μF/50V	220μF/16V	SMBJ7.0A
PSLEA20-05SA1				220μF/16V	SMBJ7.0A
PSLEA20-09SA1				120μF/25V	SMBJ12A
PSLEA20-12SA1				120μF/25V	SMBJ20A
PSLEA20-15SA1				120μF/25V	SMBJ20A
PSLEA20-24SA1				68μF/35V	SMBJ30A

Note: 1. Output filtering capacitor C2 is electrolytic capacitor. It is recommended to apply electrolytic capacitor with high frequency and low resistance. For capacitance and current of capacitor, please refer to datasheet. Capacitance voltage reduced to at least 80%. C1 is ceramic capacitor, which is used to high-frequency noise. TVS is a recommended component to protect post-circuits if converter fails.
2. The product in the application must connect external electrolytic capacitors C2, to achieve lower ripple noise and better dynamic performance.
3. When the product's output terminal is connected to high frequency switch type load, electrolytic capacitor C2's selection is as following:

Model	C2
PSLEA20-03SA1	470μF/16V (Solid Capacitor)
PSLEA20-05SA1	470μF/16V (Solid Capacitor)
PSLEA20-09SA1	470μF/16V (Solid Capacitor)
PSLEA20-12SA1	390μF/25V
PSLEA20-15SA1	390μF/25V
PSLEA20-24SA1	220μF/35V

2. EMC Solution-Recommended Circuit



Output external circuit refer to the typical application circuit

Element Model	Recommended Value
MOV1	S20K300
MOV2	S10K300
MOV3	S10K300
CX	0.22μF/275VAC
CY1, CY2	1nF/400VAC
R1	1MΩ/2W
LDM	4.7uH
LCM	2mH
GDT	EM3600XS
FUSE	6.3A/250V, slow fusing, necessary

MODEL NUMBER SETUP

PSLEA	20	-	05	S	x
Series Name	Output Power		Output Voltage	Output Quantity	Mount Option
			03: 3.3VDC **05:** 5VDC **09:** 09VDC **12:** 12VDC **15:** 15VDC **24:** 24VDC	**S:** Single	**A1:** DIP **A2:** Chassis Mount **A4:** DIN Rail Mount

COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

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