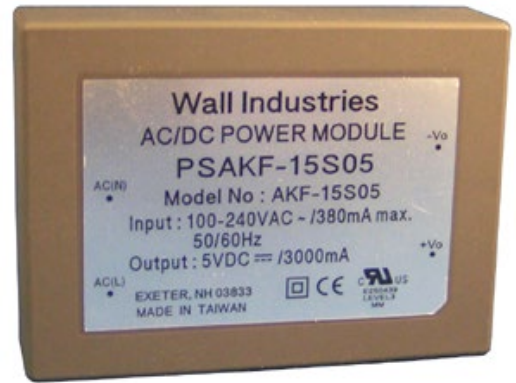


FEATURES

- I/O Isolation 3000VAC
- MTBF > 280,000 Hours
- High Efficiency up to 79%
- Encapsulated PCB Mount
- EMC Complies with EN61000
- IEC61140 Safety Class II Approved
- Single, Dual, and Triple Output Models
- 85~265VAC, 47~440Hz Universal Input Range
- Chassis Mount and DIN Rail Versions Available
- IEC / EN / UL 60950-1 Safety Standards Approved
- Operating Temperature 71°C (Refer to Derating Curve)
- EMI Complies with EN55022, Class B and FCC part 15, level B



DESCRIPTION

The PSAKF series of encapsulated PCB mount AC/DC power supplies offers 15 Watts of output power. This series has single, dual, and triple outputs with a universal input range of 85 ~265VAC. Other features include continuous short circuit protection, over voltage protection, and output current limiting. These units are also EMC EN61000-4(-2,-3,-4) and EMI EN55022 level B approved. The compliance to these EMI specifications minimizes system design time, cost, and eliminates the need for external filter components. The PSAKF series has IEC/EN/UL 60950-1 safety approvals, which qualifies this product for worldwide markets. This series has a wide variety of applications including both commercial and industrial with a MTBF of 280,000 hours. Chassis mount and Din rail versions are also available.

SAFETY SPECIFICATIONS			
SAFETY			
Safety Approvals	IEC/ EN / UL 60950-1 ⁽⁷⁾		
Conducted EMI	EN55022 Class B		
Conducted EMC	Standard	Specification Requirement	Performance Criteria
	EN61000-4-2	Air ±8KV Cont. ±4KV	B
	EN61000-4-3	80 ~ 1000MHz 10V/m 80% AM 1KHz modulation	A
	EN61000-4-4	AC port ±2KV DC, SL, TL±2KV Not less than 1 min.	B
	EN61000-4-5	1.2/50µs (8/20µs) AC dif. ±1KV DC ±0.5KV	B
	EN61000-4-6	0.15 ~ 80MHz 10Vrms (functional earth ports included) 80% AM 1KHz modulation	B
	EN61000-4-11	30% 10ms 60% 100ms 95% 5000ms	B C C



SPECIFICATIONS: PSAKF Series						
All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted. We reserve the right to change specifications based on technological advances.						
SPECIFICATIONS	TEST CONDITIONS		Min	Typ	Max	Unit
INPUT (V_{in})						
Operating Voltage Range			85		265	VAC
Input Frequency			47		440	Hz
Inrush Current	cold start at 25°C	115VAC			15	A
		230VAC			30	A
Built-in Input Fuse			2A / 250VAC			
External Input Fuse (Recommended)			1.5A Slow – Blow Type			
OUTPUT (V_o)						
Output Voltage			See Table			
Output Voltage Accuracy				±1.0	±2.0	%
Load Regulation	I _o = min. to max.	Single Output Models		±0.5	±1.0	%
		Dual & Triple Output Models		±2.5		%
Line Regulation	V _{in} = min. to max.			±0.5	±1.0	%
Cross Regulation (Dual & Triple Outputs)	Measured output I _o = 20% to 100% of rated load. Other Outputs are set at 50% of rated load.	Vo1		±1.0		%
		Vo2		±2.5		%
		Vo3		±2.5		%
Output Power					15	W
Output Current			See Table			
Ripple & Noise	20MHz bandwidth	5.0 VDC Output		1.5	1.8	% V _{p-p}
		Other Outputs		0.8	1.0	% V _{p-p}
Overshoot					5.0	%
Hold-up Time	115VAC, 60Hz			20		ms
PROTECTION						
Over Voltage Protection	Zener diode clamp			120		% of V _o
Current Limitation	85VAC, Hiccup technique, automatic recovery		105			%
Short Circuit Protection			Hiccup mode, indefinite (auto-recovery)			
GENERAL						
Efficiency			See Table			
Switching Frequency				100		KHz
Isolation Voltage	Input to output, 60 seconds		3000			VAC
Isolation Test Voltage	Input to output, flash tested for 1 second		4700			VDC
Isolation Resistance	Test Voltage = 500VDC		100			MΩ
ENVIRONMENTAL						
Operating Temperature	Ambient		-25		+71	°C
Storage Temperature			-40		+85	°C
Humidity					95	%
Cooling			free air convection			
Temperature Coefficient	All Outputs			±0.01	±0.02	%/°C
MTBF	MIL-HDBK-217F @ 25°C, Ground Benign		280,000 hours			
PHYSICAL						
Weight (L x W x H)	PCB Mounting (standard)		Approximately 4.02oz (114g)			
	Chassis Mounting ("CM" suffix)		Approximately 5.71oz (162g)			
	DIN Rail ("DN" suffix)		Approximately 7.62oz (216g)			
Dimensions	PCB Mounting (standard)		2.91" x 2.13" x 0.76" (74.0 x 54.0 x 19.3 mm)			
	Chassis Mounting ("CM" suffix)		3.81" x 2.13" x 0.92" (96.7 x 54.0 x 23.3 mm)			
	DIN Rail ("DN" suffix)		3.81" x 2.13" x 1.35" (96.7 x 54.0 x 34.3 mm)			
Flammability			UL94V-0			
Case Material			Plastic resin and Fiberglass			

MODEL SELECTION GUIDES

SINGLE OUTPUT MODELS

Model Number	Output Voltage	Output Current		Input Current (115VAC, 60Hz)		Output Power	Efficiency (Typ)	Capacitive Load (max)
		Min	Max	Nom	Max			
PSAKF-15S05	5 VDC	300mA	3000mA	30mA	290mA	15W	75%	3900µF
PSAKF-15S12	12 VDC	125mA	1250mA	30mA	275mA	15W	79%	2200µF
PSAKF-15S15	15 VDC	100mA	1000mA	30mA	275mA	15W	79%	2200µF
PSAKF-15S24	24 VDC	63mA	625mA	30mA	275mA	15W	79%	2200µF
PSAKF-15S48	48 VDC	30mA	310mA	30mA	273mA	14.88W	79%	1000µF

DUAL OUTPUT MODELS

Model Number	Output Voltage	Output Current		Input Current (115VAC, 60Hz)		Output Power	Efficiency (max)	Capacitive Load (max)	
		Min	Max	Nom	Max				
PSAKF-15D12	Output 1	+12VDC	63mA	625mA	30mA	275mA	15W	79%	1500µF
	Output 2	-12VDC	63mA	625mA					1500µF
PSAKF-15D15	Output 1	+15 VDC	50mA	500mA	30mA	275mA	15W	79%	1500µF
	Output 2	-15 VDC	50mA	500mA					1500µF
PSAKF-15D512	Output 1	5 VDC	150mA	1500mA	30mA	302mA	15W	72%	2000µF
	Output 2	*12 VDC	63mA	625mA					1500µF

TRIPLE OUTPUT MODELS

Model Number	Output Voltage	Output Current		Input Current (115VAC, 60Hz)		Output Power	Efficiency (max)	Capacitive Load (max)	
		Min	Max	Nom	Max				
PSAKF-15T512	Output 1	5 VDC	200mA	2000mA	30mA	290mA	14.8W	74%	2200µF
	Output 2	*12 VDC	20mA	200mA					1500µF
	Output 3	*-12 VDC	-20mA	-200mA					1500µF
PSAKF-15T515	Output 1	5 VDC	200mA	2000mA	30mA	284mA	14.5W	74%	2200µF
	Output 2	*15 VDC	15mA	150mA					1500µF
	Output 3	*-15 VDC	-15mA	-150mA					1500µF

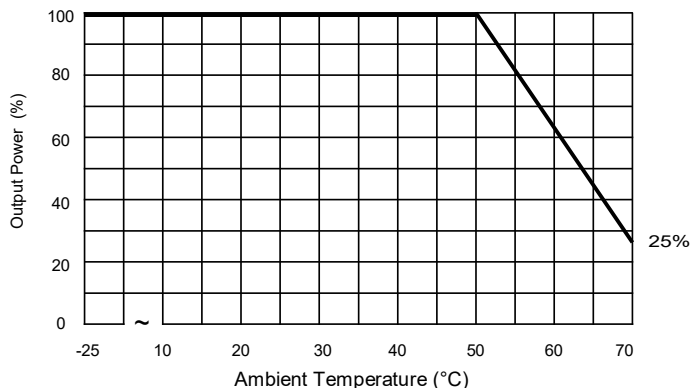
* Output voltage accuracy 4% max.

NOTES

1. Ripple & Noise measurement bandwidth is 0~20 MHz.
2. These power modules require a minimum output loading to maintain specified regulation.
3. Operation under no-load conditions will not damage these devices; however they may not meet all listed specifications.
4. Other input and output voltage may be available, please contact factory.
5. To order the chassis mount version please add the suffix "CM" to the model number (Ex: PSAKF-30S05CM).
6. To order the DIN Rail version please add the suffix "DN" to the model number (Ex: PSAKF-30S05DN).
7. This product is Listed to applicable standards and requirements by UL.

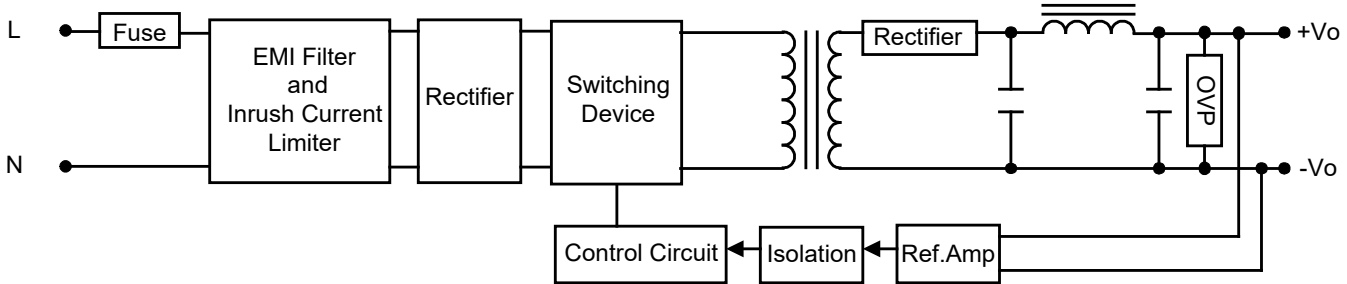
*Due to advances in technology, specifications subject to change without notice.

DERATING CURVE

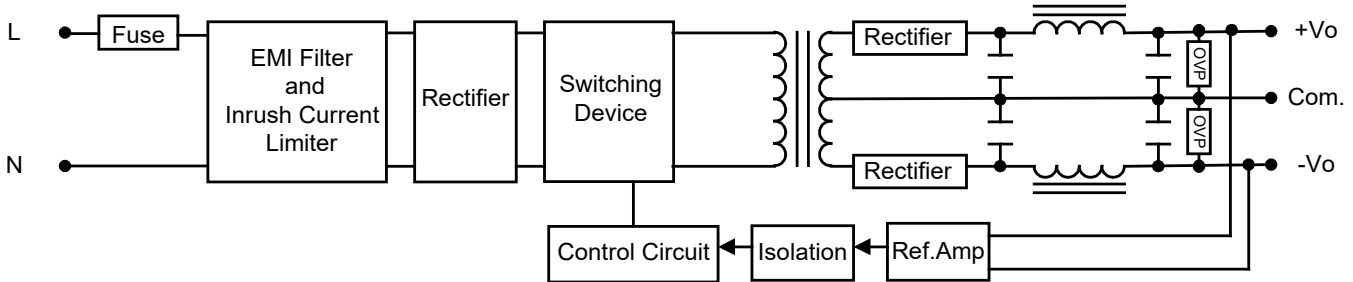


BLOCK DIAGRAMS

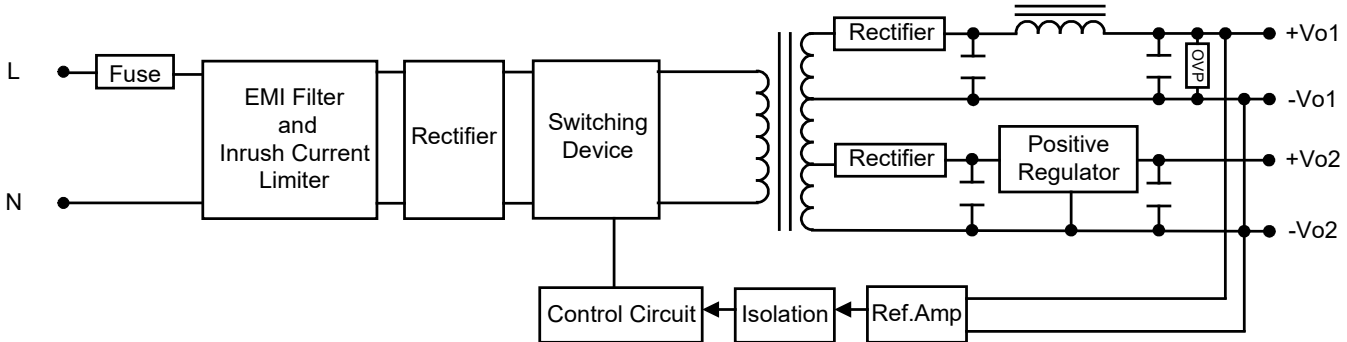
Single Output



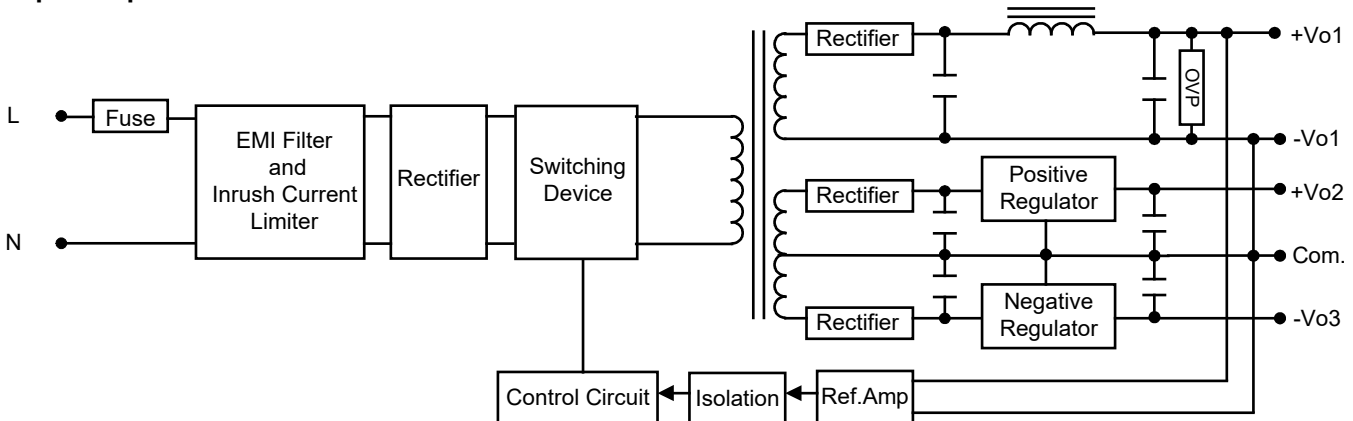
Dual Output 1



Dual Output 2



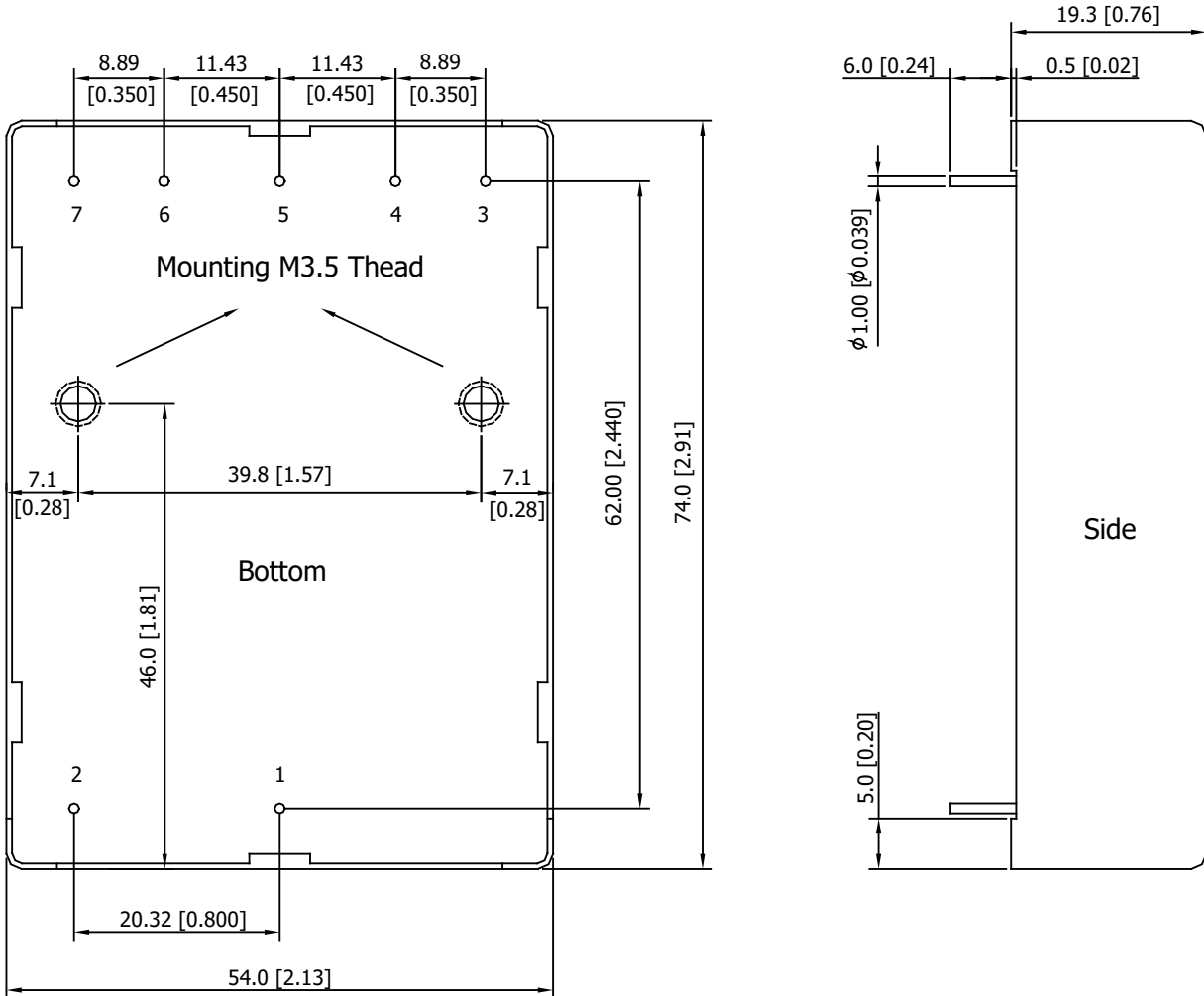
Triple Output



MECHANICAL DRAWING

PCB Mounting (Standard)

Unit: mm [inches]



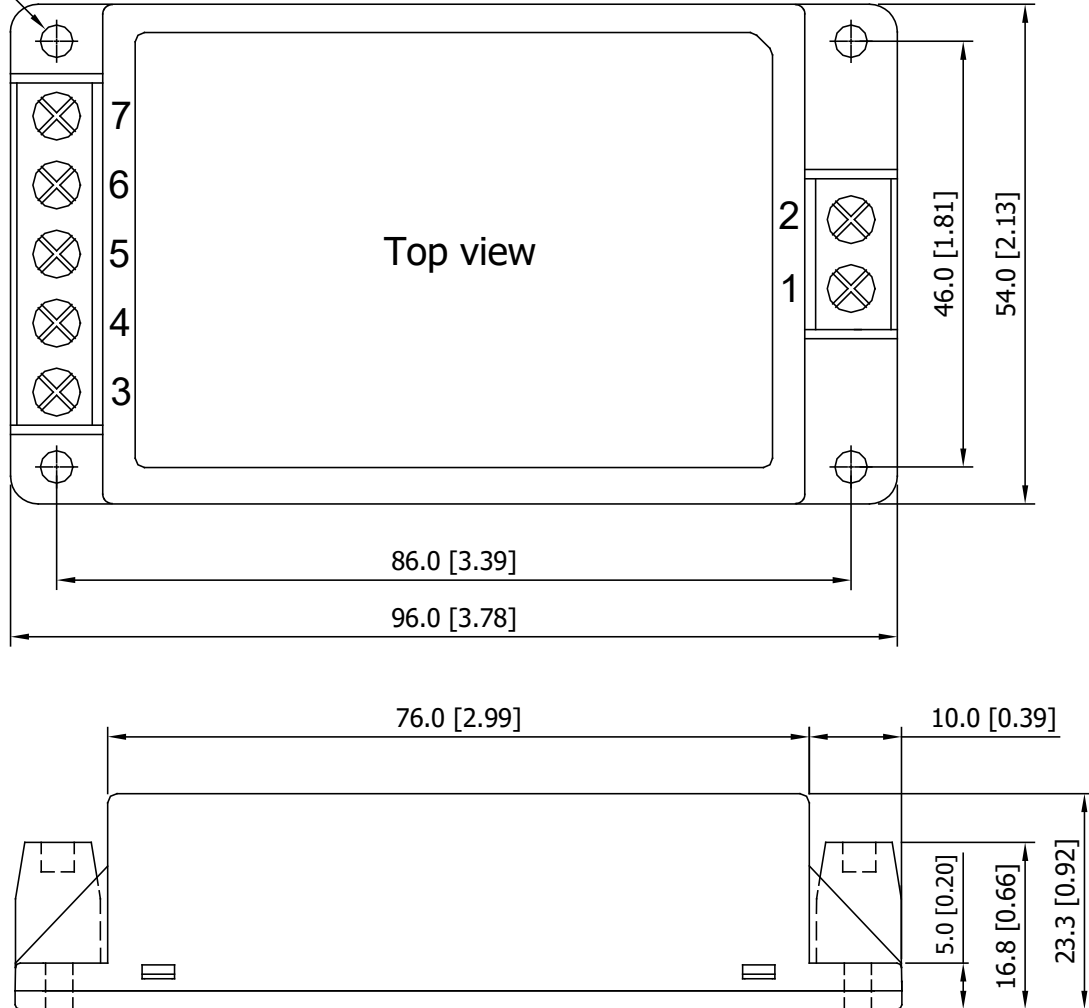
Tolerance	Millimeters	Inches
	X.X±0.5	X.XX±0.02
	X.XX±0.25	X.XXX±0.01
Pin	±0.1	±0.004

PIN CONNECTIONS				
Pin	Single Output	Dual Output 1	Dual Output 2	Triple Output
1	AC (N) - AC Neutral	AC (N) - AC Neutral	AC (N) - AC Neutral	AC (N) - AC Neutral
2	AC (L) - AC Line	AC (L) - AC Line	AC (L) - AC Line	AC (L) - AC Line
3	No Pin	No Pin	No Pin	+Vout3
4	-Vout	-Vout	-Vout2	Common
5	No Pin	Common	+Vout2	+Vout2
6	+Vout2	+Vout2	-Vout1	-Vout1
7	No Pin	No Pin	+Vout1	+Vout1

Chassis Mounting Option (Suffix "CM")

Unit: mm [inches]

4 x Ø3.5

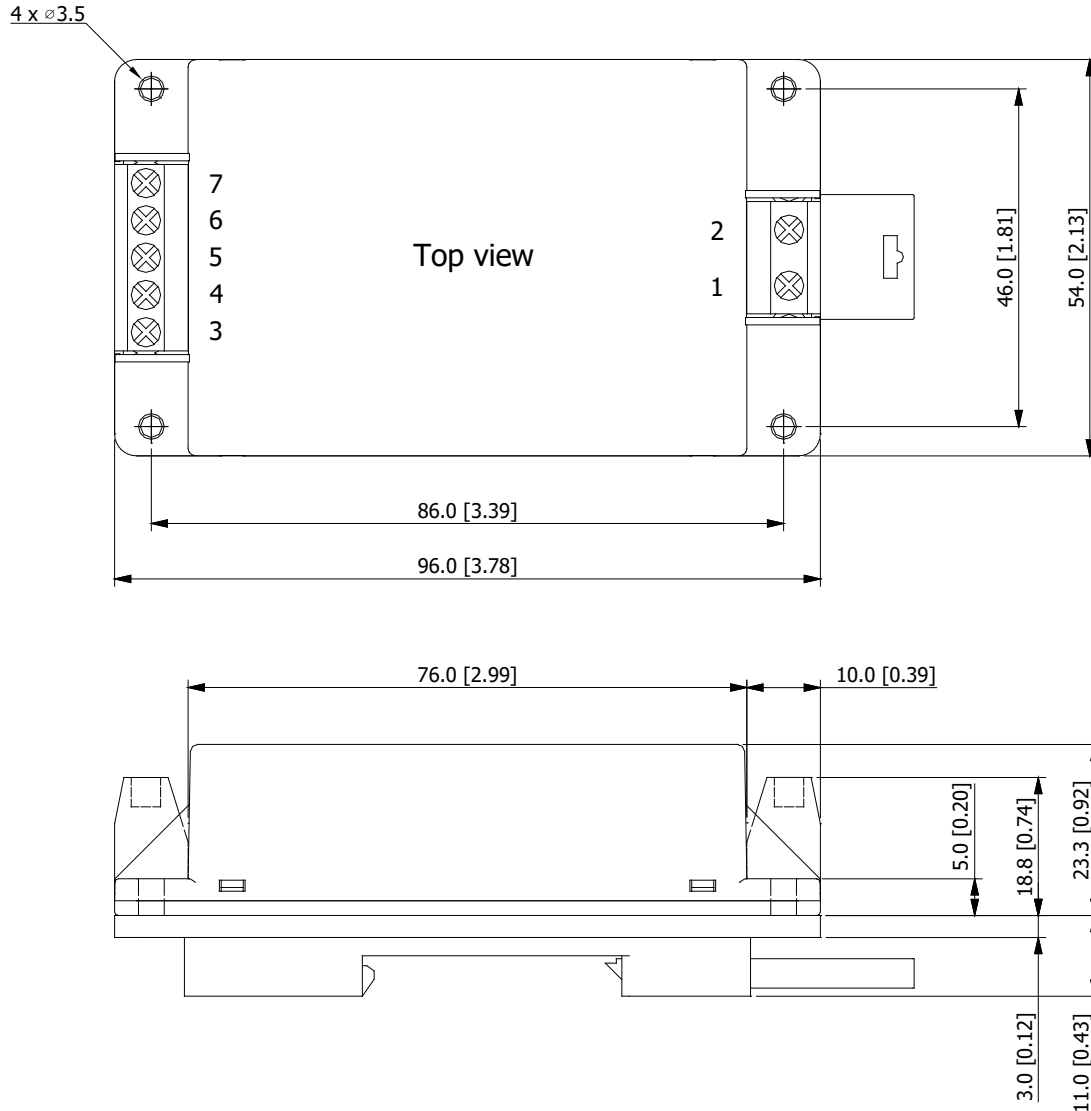


Tolerance	Millimeters	Inches
	X.X±0.5	X.XX±0.02
	X.XX±0.25	X.XXX±0.01
Pin	±0.1	±0.004

PIN CONNECTIONS				
Pin	Single Output	Dual Output 1	Dual Output 2	Triple Output
1	AC (N) - AC Neutral	AC (N) - AC Neutral	AC (N) - AC Neutral	AC (N) - AC Neutral
2	AC (L) - AC Line	AC (L) - AC Line	AC (L) - AC Line	AC (L) - AC Line
3	No Connection	No Connection	No Connection	-Vout3
4	-Vout	-Vout	-Vout2	Common
5	No Pin	Common	+Vout2	+Vout2
6	+Vout	+Vout	-Vout1	-Vout1
7	No Connection	No Connection	+Vout1	+Vout1

DIN Rail Option (Suffix "DN")

Unit: mm [inches]



Tolerance	Millimeters	Inches
	X.X±0.5	X.XX±0.02
	X.XX±0.25	X.XXX±0.01
Pin	±0.1	±0.004

PIN CONNECTIONS				
Pin	Single Output	Dual Output 1	Dual Output 2	Triple Output
1	AC (N) - AC Neutral	AC (N) - AC Neutral	AC (N) - AC Neutral	AC (N) - AC Neutral
2	AC (L) - AC Line	AC (L) - AC Line	AC (L) - AC Line	AC (L) - AC Line
3	No Connection	No Connection	No Connection	-Vout3
4	-Vout	-Vout	-Vout2	Common
5	No Pin	Common	+Vout2	+Vout2
6	+Vout	+Vout	-Vout1	-Vout1
7	No Connection	No Connection	+Vout1	+Vout1



Wall Industries, Inc.

Rev. F

PSAKF Series
Up to 15 Watts
Single, Dual, and Triple Output
AC/DC Switching Power Supply

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: 2015 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.

Contact **Wall Industries** for further information:

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