

Open Frame ("O" Type)



Size: 5in x 3in x 1.16~1.24in (127mm x 76.2mm x 29.5~31.5mm)

U-Chassis ("U" Type)



Size: 5in x 3~3.23in x 1.5in (127mm x 76.2~82.2mm x 38.1mm)

Enclosed ("C" Type)

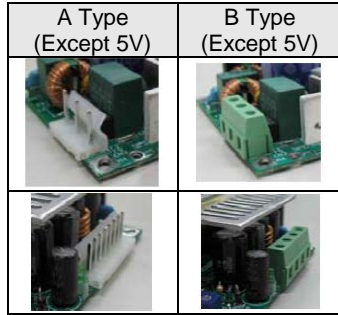


DIN Rail Kit ("DN" Type)



OPTIONS

- Case Type
 - Open Frame
 - U-Chassis
 - Enclosed
- I/O Connectors



FEATURES

- Single Outputs
- RoHS Compliant
- Low Ripple & Noise
- Universal Input of 90~264VAC (120~375VDC)
- High Efficiency Up to 93%
- Ultra-Compact Size
- Over Power, Over Voltage, and Short Circuit Protection
- PFC Function
- Open Frame, U-Chassis, or Enclosed Case Available
- DIN Rail Kit Available for Enclosed Case
- Optional I/O Connectors Available (Type A or Type B)
- 120 Watts with Convection Cooling (100 Watts for Open Frame, 5V Output Models)
- 150 Watts with 30CFM Fan for 5V Output Models
- 180 Watts with 18CFM Fan for 12-48V Output Models
- CE Approval for All Models, UL60950-1 and CB Approvals for All Models Except 5V & 15V Outputs

DESCRIPTION

The PSAQF120 series of AC/DC switching power supplies offers up to 180W of output power with 18CFM fan for 12-48V output models, 150W of output power with 30CFM fan for 5V models, and up to 120W with free air convection. All models have a single output and a universal input. Some features include 4000VAC I/O isolation, PFC function, and efficiency up to 93%. Each supply is also RoHS compliant and has CE safety approval and all models except 5V and 15V models have UL60950-1 and CB approvals. All models are protected against short circuit, over power, and over voltage conditions. Models are available in open frame (Type O), U-Chassis (Type U), enclosed case (Type C), and DIN rail (-DN suffix for Enclosed Type) designs with two types of I/O connectors available. Please contact factory for order details.

MODEL SELECTION TABLE

Open Frame Models

Model Number	Input Voltage Range	Output Voltage	Output Voltage Range	Output Current		Ripple & Noise ⁽²⁾	Output Power		Maximum Capacitive Load	Efficiency
				Convection	Fan ⁽¹⁾		Convection	Fan ⁽¹⁾		
PSAQF1200-5S	90~264VAC (120~370VDC)	5VDC	4.7-5.3VDC	20A	30A	100mV	100W	150W	100,000µF	87%
PSAQF1200-12S		12VDC	11.4-13.2VDC	10A	15A	50mV	120W	180W	40,000µF	90%
PSAQF1200-15S		15VDC	13.5-16VDC	8A	12A	50mV	120W	180W	35,000µF	90%
PSAQF1200-24S		24VDC	22.8-26.4VDC	5A	7.5A	100mV	120W	180W	20,000µF	93%
PSAQF1200-48S		48VDC	45.6-52VDC	2.5A	3.75A	200mV	120W	180W	1,200µF	93%

MODEL SELECTION TABLE

U-Chassis Models

Model Number	Input Voltage Range	Output Voltage	Output Voltage Range	Output Current		Ripple & Noise ⁽²⁾	Output Power		Maximum Capacitive Load	Efficiency
				Convection	Fan ⁽¹⁾		Convection	Fan ⁽¹⁾		
PSAQF120U-5S	90~264VAC (120~370VDC)	5VDC	4.7-5.3VDC	24A	30A	100mV	120W	150W	100,000µF	87%
PSAQF120U-12S		12VDC	11.4-13.2VDC	10A	15A	50mV	120W	180W	40,000µF	90%
PSAQF120U-15S		15VDC	13.5-16VDC	8A	12A	50mV	120W	180W	35,000µF	90%
PSAQF120U-24S		24VDC	22.8-26.4VDC	5A	7.5A	100mV	120W	180W	20,000µF	93%
PSAQF120U-48S		48VDC	45.6-52VDC	2.5A	3.75A	200mV	120W	180W	1,200µF	93%

MODEL SELECTION TABLE

Enclosed Models

Model Number ⁽³⁾	Input Voltage Range	Output Voltage	Output Voltage Range	Output Current		Ripple & Noise ⁽²⁾	Output Power		Maximum Capacitive Load	Efficiency
				Convection	Fan ⁽¹⁾		Convection	Fan ⁽¹⁾		
PSAQF120C-5S	90~264VAC (120~370VDC)	5VDC	4.7-5.3VDC	24A	30A	100mV	120W	150W	100,000µF	87%
PSAQF120C-12S		12VDC	11.4-13.2VDC	10A	15A	50mV	120W	180W	40,000µF	90%
PSAQF120C-15S		15VDC	13.5-16VDC	8A	12A	50mV	120W	180W	35,000µF	90%
PSAQF120C-24S		24VDC	22.8-26.4VDC	5A	7.5A	100mV	120W	180W	20,000µF	93%
PSAQF120C-48S		48VDC	45.6-52VDC	2.5A	3.75A	200mV	120W	180W	1,200µF	93%

SPECIFICATIONS

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.

SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
INPUT SPECIFICATIONS						
Input Voltage Range	Standard	AC Input	90		264	VAC
		DC Input	120		370	VDC
	With Derating	AC Input	80		274	VAC
		DC Input	110		390	VDC
Input Frequency			47		63	Hz
Input Current	@115VAC, Full Load				2.0	A
	@230VAC, Full Load				1.0	
Inrush Current (<2ms)	@115VAC				30	A
	@230VAC				60	
Leakage Current					0.5	mA
Power Factor	@115VAC, Full Load		0.99			
	@230VAC, Full Load		0.95			
OUTPUT SPECIFICATIONS						
Output Voltage				See Table		
Voltage Accuracy				±2		%
Line Regulation				±1		%
Load Regulation				±1		%
Voltage Adjustment Range				See Table		
Output Power				See Table		
Output Current				See Table		
Minimum Load	5V Models		5			%
	Other Models		1			
Maximum Capacitive Load				See Table		
Ripple & Noise ⁽²⁾				See Table		
Hold-Up Time ⁽⁴⁾			15			mS
Temperature Coefficient	0~50°C			±0.03		%/°C
PROTECTION						
Short Circuit Protection				Automatic Recovery		
Over Power Protection				Automatic Recovery		
Over Voltage Protection	Automatic Recovery		125			%Vout
ENVIRONMENTAL SPECIFICATIONS						
Operating Temperature	With Derating		-25		70	°C
Storage Temperature			-25		85	°C
Humidity				95		%RH
Vibration	10~500Hz, 2G 10min/1cycle, 60min. each along X, Y, Z axes					
Cooling	5V Models			Free Convection		
	Other Models			30CFM Fan 18CFM Fan		
MTBF	@25°C, MIL-HDBK-217F		120,000			Hours
GENERAL SPECIFICATIONS						
Efficiency				See Table		
Isolation Voltage	Input-Output			4000VAC or 5656VDC		
	Input-FG			2000VAC		
	Output-FG			500VAC		
PHYSICAL SPECIFICATIONS						
Weight	Open Frame ("O" Type)	5V Models	12.35oz (350g)			
		Others	9.88oz (280g)			
	U-Chassis ("U" Type)		13.47oz (382g)			
	Enclosed ("C" Type)		14.11oz (400g)			
Dimensions (L x W x H)	Open Frame ("O" Type)	5V Models	5in x 3in x 1.24in (127mm x 76.2mm x 31.5mm)			
		Others	5in x 3in x 1.16in (127mm x 76.2mm x 29.5mm)			
	U-Chassis ("U" Type), Enclosed ("C" Type), DIN Rail ("DN" Type)	5V Models	5in x 3in x 1.5in (127mm x 76.2mm x 38.1mm)			
		Others	5in x 3.23in x 1.5in (127mm x 82.2mm x 38.1mm)			
SAFETY CHARACTERISTICS						
Safety Approvals			All Models: CE			
			All Models Except 5V & 15V: UL60950-1, CB			
EMI	Conducted and Radiated Emission		EN61000-6-3, EN55022 Class B			
EMS	Noise Immunity		EN 55024			

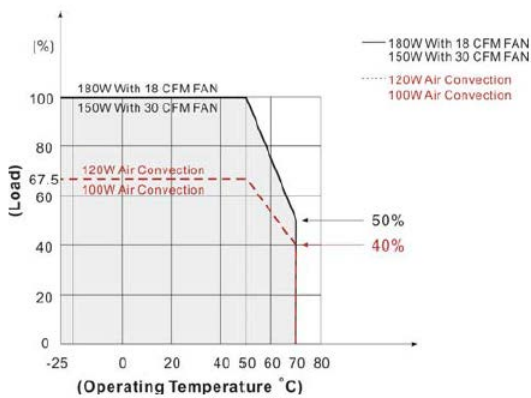
NOTES

1. 30CFM Fan for 5V models, 18CFM fan for other models.
2. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
3. To indicate DIN rail kit for Enclosed case, add DN to end of product model number. Ex: PSAQF120U-5SDN
4. Hold up time is measured at 90% Vout
5. It is strongly recommended to conduct test with DC voltage. If customer wishes to test with AC voltage, disconnect all Y-capacitors within supply.

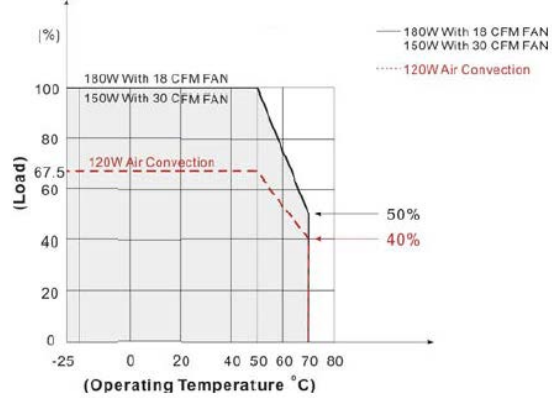
**Due to advances in technology, specifications subject to change without notice.*

DERATING CURVES

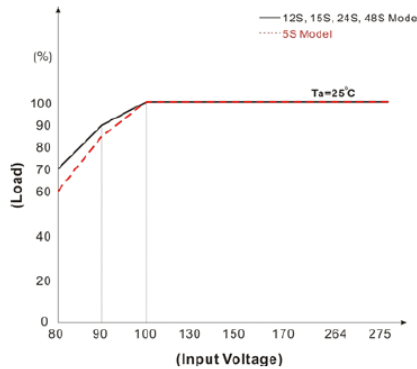
Power Derating Curve for Open Frame Models



Power Derating Curve for U-Chassis & Enclosed Models

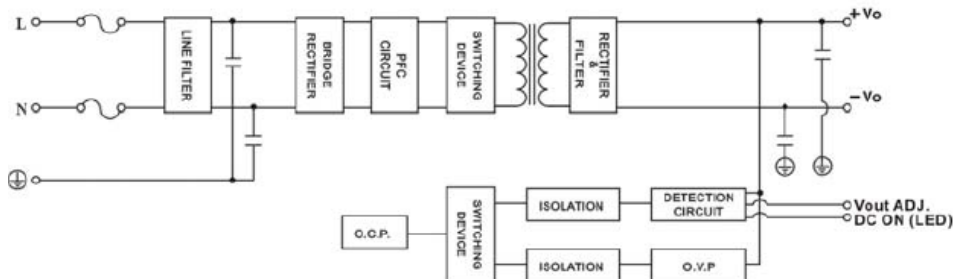


Input Voltage vs. Load



BLOCK DIAGRAM

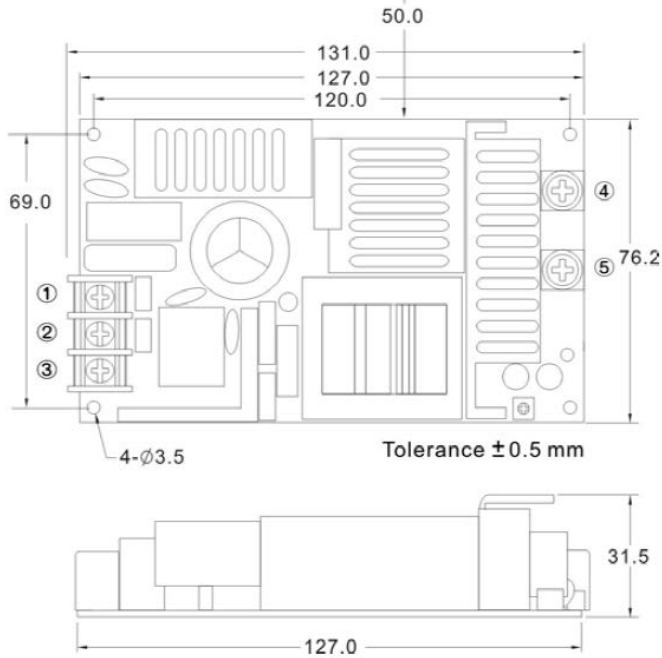
Single Output



MECHANICAL DRAWINGS

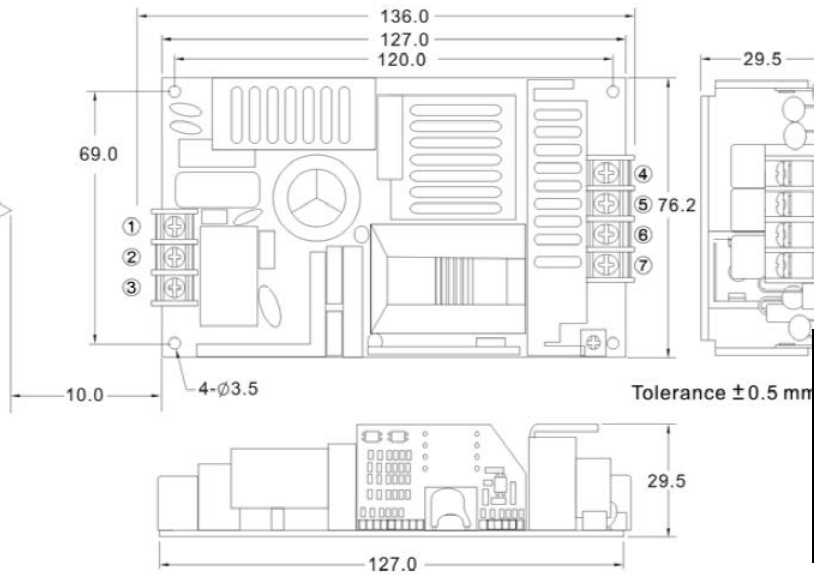
Open Frame Models

5V Model



Pin#	Single Output
1	AC IN (L)
2	AC IN (N)
3	FG
4	+DC OUT
5	-DC OUT

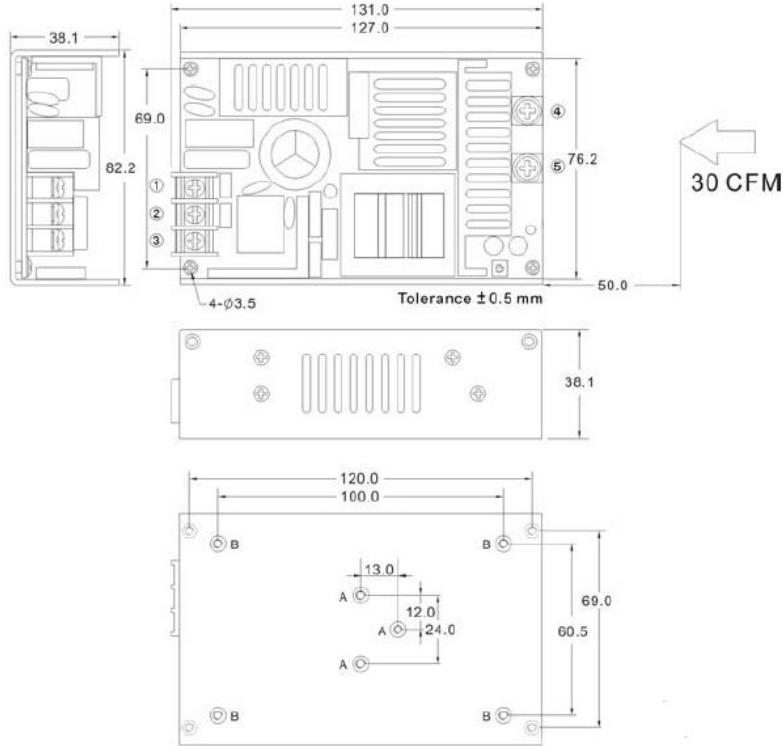
12V, 15V, 24V, and 48V Models



Pin#	Single Output
1	AC IN (L)
2	AC IN (N)
3	FG
4	+DC OUT
5	+DC OUT
6	-DC OUT
7	-DC OUT

U-Chassis Models

5V Models



Pin#	Single Output
1	AC IN (L)
2	AC IN (N)
3	FG
4	+DC OUT
5	-DC OUT

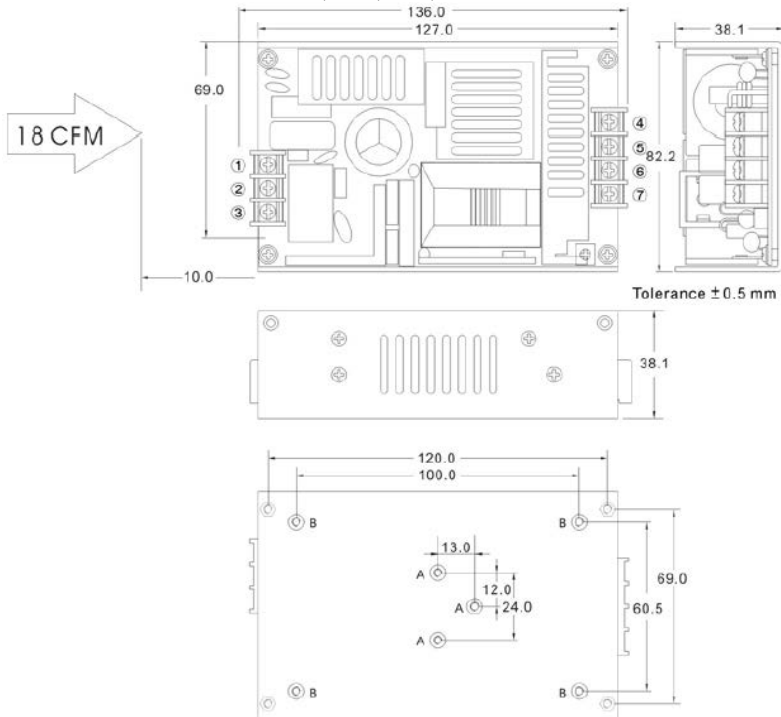
Notes:

A= For fixtures to Din Rail Clip only
 B=For fixtures to pcb/chassis only
 A=B=M3x0.5P

Assembly Instructions:

*U Case T=2.0mm
 Customer is advised to screw into the threads no more than 2.0mm

12V, 15V, 24V, 48V Models



Pin#	Single Output
1	AC IN (L)
2	AC IN (N)
3	FG
4	+DC OUT
5	+DC OUT
6	-DC OUT
7	-DC OUT

Notes:

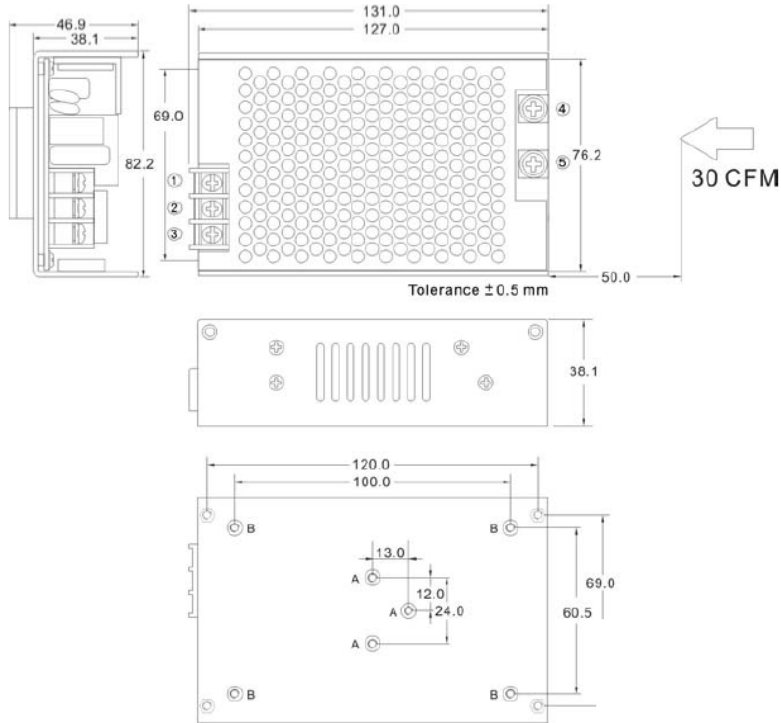
A=For fixture to din rail clip only
 B=For fixture to pcb/chassis only
 A=B=M3x0.5P

Assembly Instructions:

*U Case T=2.0mm
 Customer is advised to screw into the threads no more than 2.0mm

Enclosed Models

5V Models



Pin#	Single Output
1	AC IN (L)
2	AC IN (N)
3	FG
4	+DC OUT
5	-DC OUT

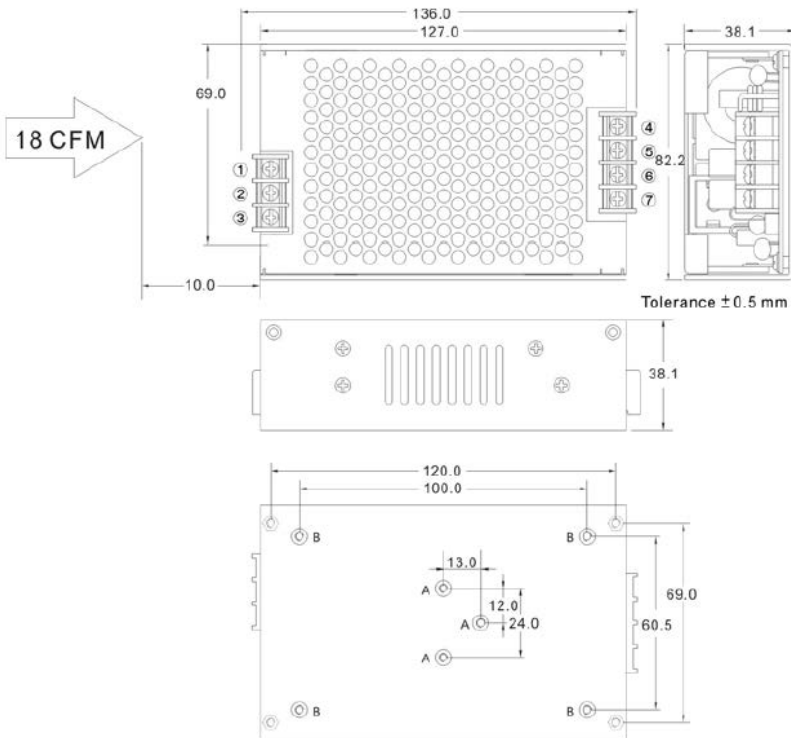
Notes:

A=For fixture to din rail clip only
 B=For fixture to pcb/chassis only
 A=B=M3x0.5P

Assembly Instructions:

*U Case T=2.0mm
 Customer is advised to screw into the threads no more than 2.0mm

12V, 15V, 24V, 48V Models



Pin#	Single Output
1	AC IN (L)
2	AC IN (N)
3	FG
4	+DC OUT
5	+DC OUT
6	-DC OUT
7	-DC OUT

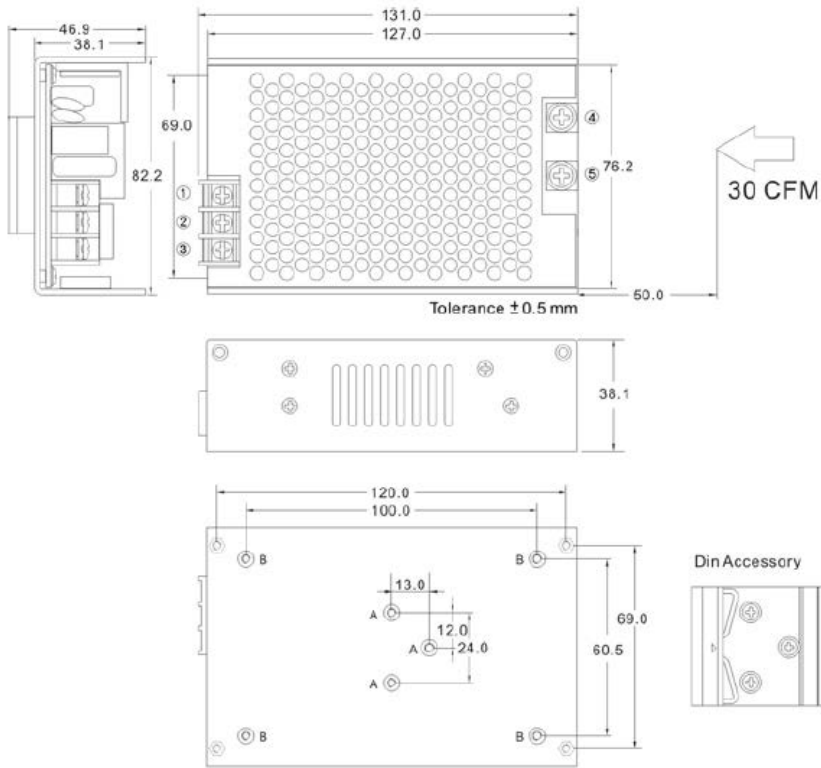
Notes:

A=For fixture to din rail clip only
 B=For fixture to pcb/chassis only
 A=B=M3x0.5P

Assembly Instructions:

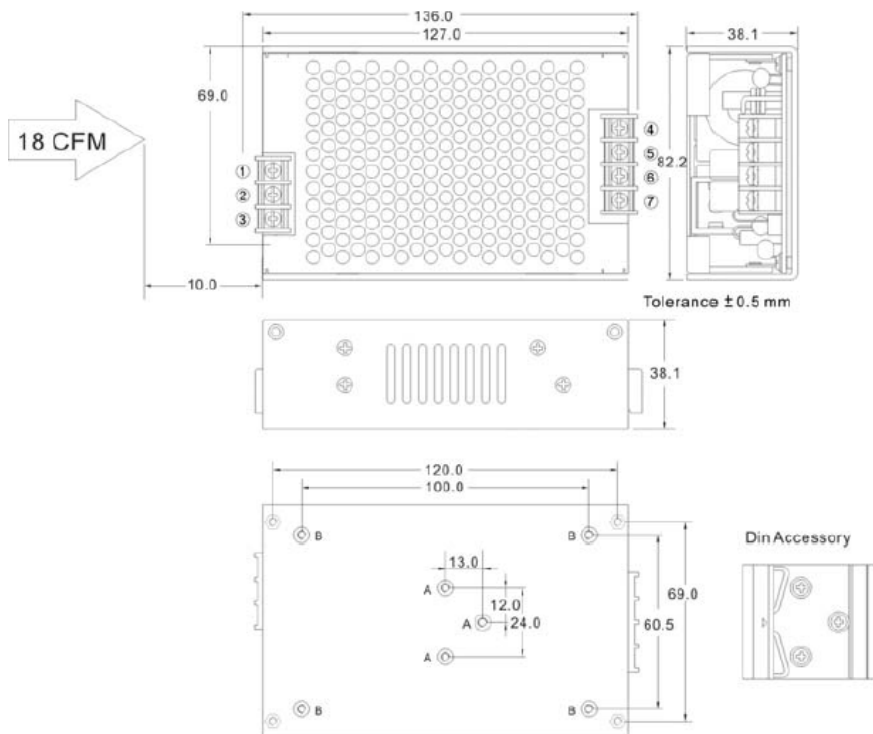
*U Case T=2.0mm
 Customer is advised to screw into the threads no more than 2.0mm

DIN Rail Kit for 5V Models (-DN Suffix)



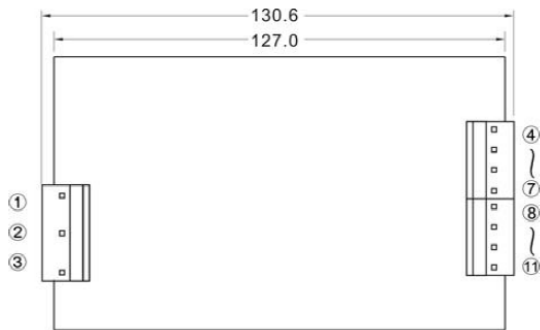
Pin#	5V Models	Others
1	AC IN (L)	AC IN (L)
2	AC IN (N)	AC IN (N)
3	FG	FG
4	+DC OUT	+DC OUT
5	-DC OUT	+DC OUT
6	-	-DC OUT
7	-	-DC OUT

Din Rail Kit for 12V, 15V, 24V, 48V (-DN Suffix)



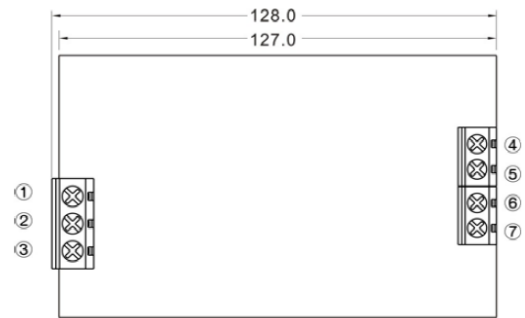
I/O CONNECTORS

A Type (Except 5V Models)



Pin#	Single
1	AC IN (L)
2	AC IN (N)
3	FG
4~7	+DC OUT
8~11	-DC OUT

B Type (Except 5V Models)



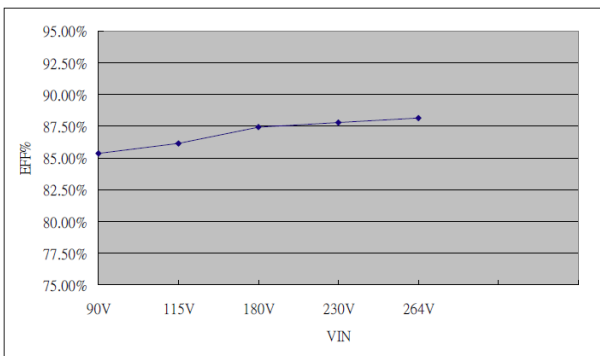
Pin#	Single
1	AC IN (L)
2	AC IN (N)
3	FG
4~5	+DC OUT
6~7	-DC OUT

EFFICIENCY VS LOAD

5V Models

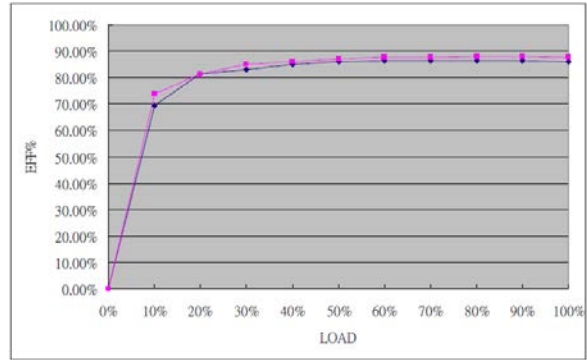
VIN vs. Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	85.37	86.17	87.46	87.76	88.14



Load vs. Efficiency

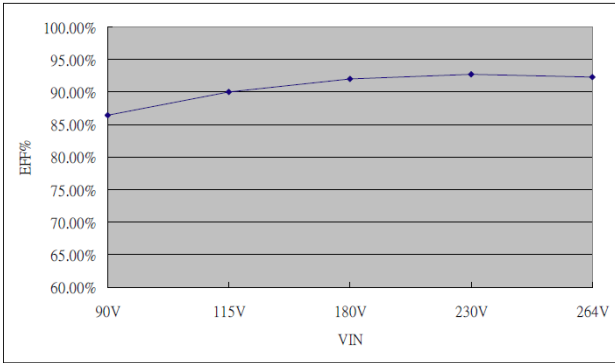
Load (%)	10	20	30	40	50
115V (%)	69.59	81.53	83.15	84.92	85.96
230V (%)	73.66	81.49	85.04	86.21	84.16
Load (%)	60	70	80	90	100
115V (%)	86.44	86.45	86.37	86.48	86.20
230V (%)	87.57	87.75	87.98	87.94	87.80



12V Models

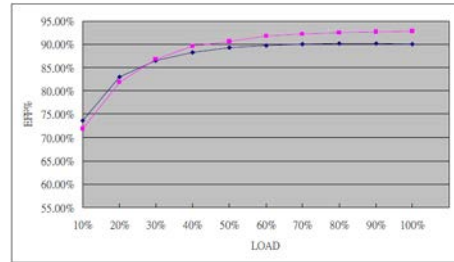
VIN vs. Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	86.45	89.96	92	92.77	82.3



Load vs. Efficiency

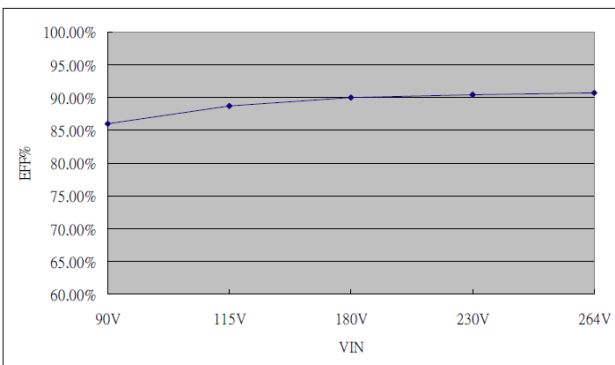
Load (%)	10	20	30	40	50
115V (%)	73.62	82.98	86.43	88.26	89.27
230V (%)	71.83	81.82	86.81	89.54	90.58
Load (%)	60	70	80	90	100
115V (%)	89.72	89.95	90.11	90.1	89.96
230V (%)	91.74	92.18	92.53	92.62	92.77



15V Models

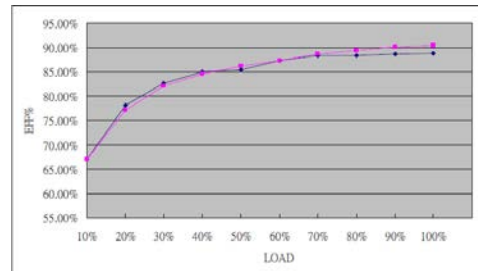
VIN vs. Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	86.03	88.78	90.06	90.45	90.75



Load vs. Efficiency

Load (%)	10	20	30	40	50
115V (%)	67.05	78.17	82.74	85.07	85.52
230V (%)	67.05	77.17	82.17	84.61	86.14
Load (%)	60	70	80	90	100
115V (%)	87.40	88.34	88.44	88.67	88.78
230V (%)	87.39	88.68	89.5	90.14	90.45

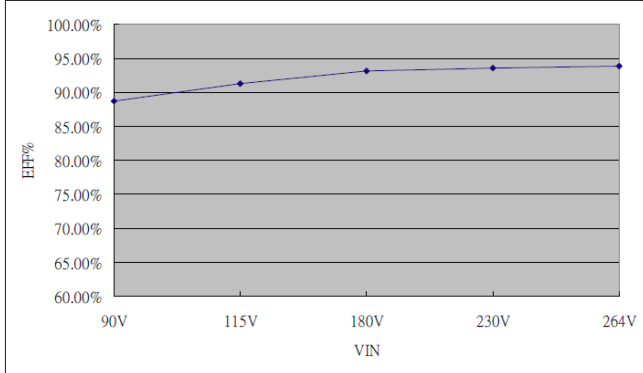


24V Models

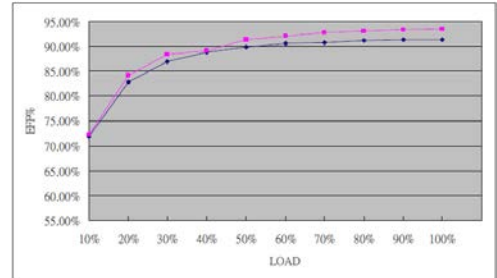
VIN vs. Efficiency

Load vs. Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	88.78	91.27	93.11	93.52	93.81



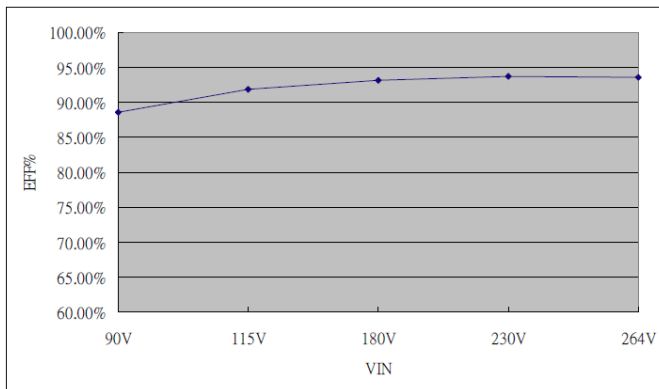
Load (%)	10	20	30	40	50
115V (%)	71.89	82.79	86.97	88.9	89.82
230V (%)	72.3	84.22	88.46	89.21	92.29
Load (%)	60	70	80	90	100
115V (%)	90.54	90.78	91.13	91.4	91.27
230V (%)	92.14	92.86	93.14	93.44	93.52



48V Models

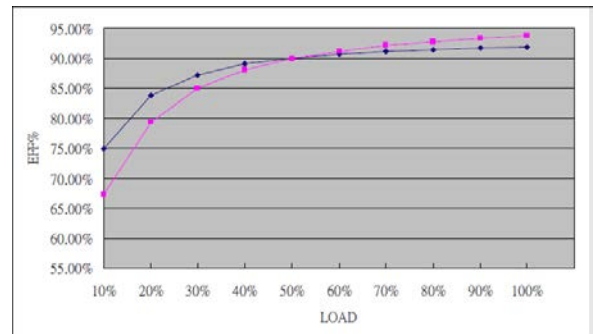
VIN vs. Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	88.56	91.86	93.20	93.76	93.61



Load Efficiency

Load (%)	10	20	30	40	50
115V (%)	74.99	83.9	87.25	89.17	90.01
230V (%)	67.31	79.29	84.97	88.18	89.99
Load (%)	60	70	80	90	100
115V (%)	90.69	91.18	91.46	91.84	91.86
230V (%)	91.24	92.15	92.84	93.36	93.76



MODEL NUMBER SETUP

PSAQF	120	O	-	12	S	-	DN	-	A
Series Name	Output Power	Case Type		Output Voltage	Output Quantity		DIN Option ⁽¹⁾		I/O Connector ⁽²⁾
		E: Enclosed O: Open Frame U: U-Chassis		5: 5VDC 12: 12VDC 15: 15VDC 24: 24VDC 48: 48VDC	S: Single		DN: DIN Rail		A: A Type B: B Type

Notes:

- (1) DIN Rail available only for enclosed case
- (2) Not available for 5V models

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 ISO9001-2008 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:

Phone: ☎ (603)778-2300
Toll Free: ☎ (888)597-9255
Fax: ☎ (603)778-9797
E-mail: sales@wallindustries.com
Web: www.wallindustries.com
Address: 37 Industrial Drive
Exeter, NH 03833