

Terminal Block Type (Standard)



Size: 4.67 x 2.05 x 1.14 inches  
(118.5 x 52.1 x 29.0 mm)

Molex Series 8673 Type ("A" Suffix)



Size: 4.27 x 2.05 x 1.14 inches  
(108.5 x 52.1 x 29.0 mm)

## FEATURES

- RoHS Compliant
- Isolation Class I
- High Efficiency up to 91.5%
- 4.0" x 2.0" Open Frame Package
- < 0.5W No Load Input Power
- Single Outputs
- 12V (Aux) / 0.3A
- Meets EN55022 Class B
- Universal Input Range: 90~264VAC (120~370VDC)
- Active PFC Function, PF > 0.95 at 230VAC
- 160 Watts Output Power with 25CFM Fan
- 100 Watts Output Power with Free Air Convection
- -25°C~+70°C Operating Temperature Range
- Short Circuit, Over Power, Over Voltage, and Over Temperature Protection
- CE, UL60950-1 Safety Approvals

## DESCRIPTION

The PSAQF160 series of AC/DC switching power supplies provides 100 Watts of output power with free air convection and 160 watts with 25CFM fan in an ultra compact 4.0" x 2.0" open frame package. This series consists of 12V, 15V, 24V, and 48VDC single output models with a universal input voltage range of 90-264VAC (120~370VDC). Some features include up to 91.5% high efficiency, < 0.5W no load input power, and power factor > 0.95 at 230VAC. This series is also protected against short circuit, over power, over voltage, and over temperature conditions. The PSAQF160 series is RoHS compliant and meets EN55022 Class B requirements.

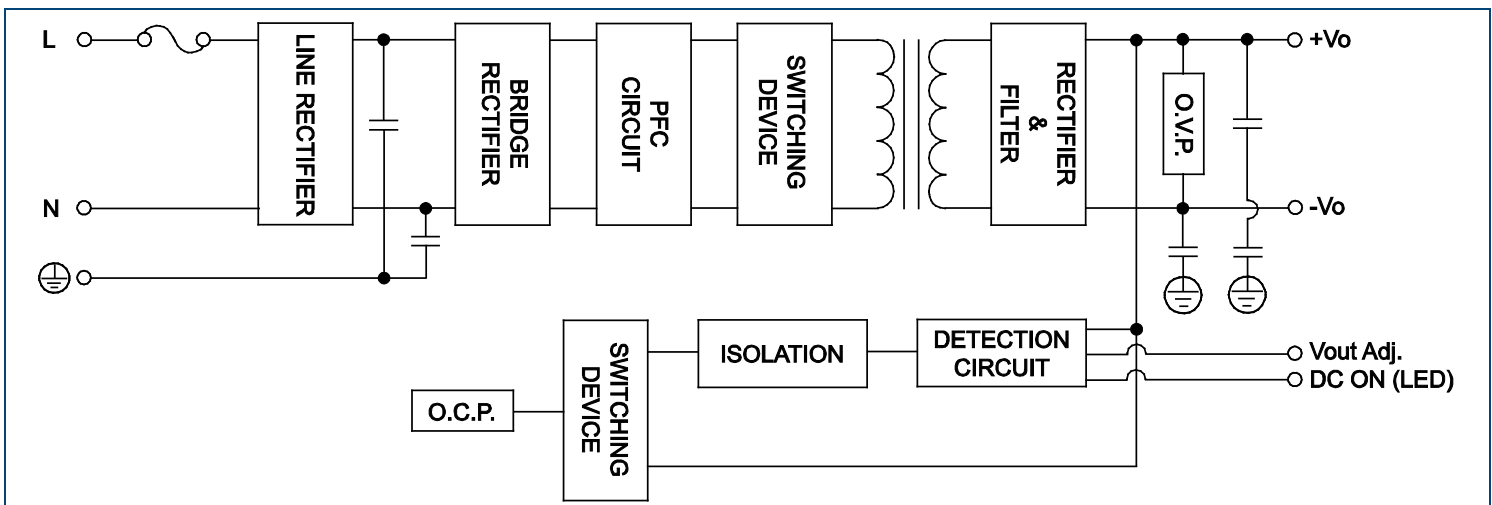
## MODEL SELECTION TABLE

Model Number <sup>(1)</sup>	Input Voltage	Output Voltage	Output Current		Output Power <sup>(3)</sup>		Ripple & Noise <sup>(2)</sup>	Maximum Capacitive Load	Efficiency
			Convection	25CFM Fan	Convection	25CFM Fan			
PSAQF160-12S (A)	90~264 VAC (120~370 VDC)	12 VDC	8.4A	13.3A	100W	160W	130mVp-p	3000µF	90%
PSAQF160-15S (A)		15 VDC	6.7A	10.6A	100W	160W	150mVp-p	2000µF	90%
PSAQF160-24S (A)		24 VDC	4.2A	6.6A	100W	160W	240mVp-p	360µF	90%
PSAQF160-48S (A)		48 VDC	2.1A	3.33A	100W	160W	480mVp-p	180µF	91.5%

## NOTES

1. Terminal block I/O connectors are standard; for Molex series 8673 I/O connectors please add the suffix "A" to the model number (Ex: PSAQF160-12SA).
2. Ripple & Noise are measured at 20MHz bandwidth and with 0.1µF and 47µF capacitors in parallel across the output.
3. Output Power: 100W max. with convection cooling and 160W max. with 25CFM forced air cooling.

## BLOCK DIAGRAM

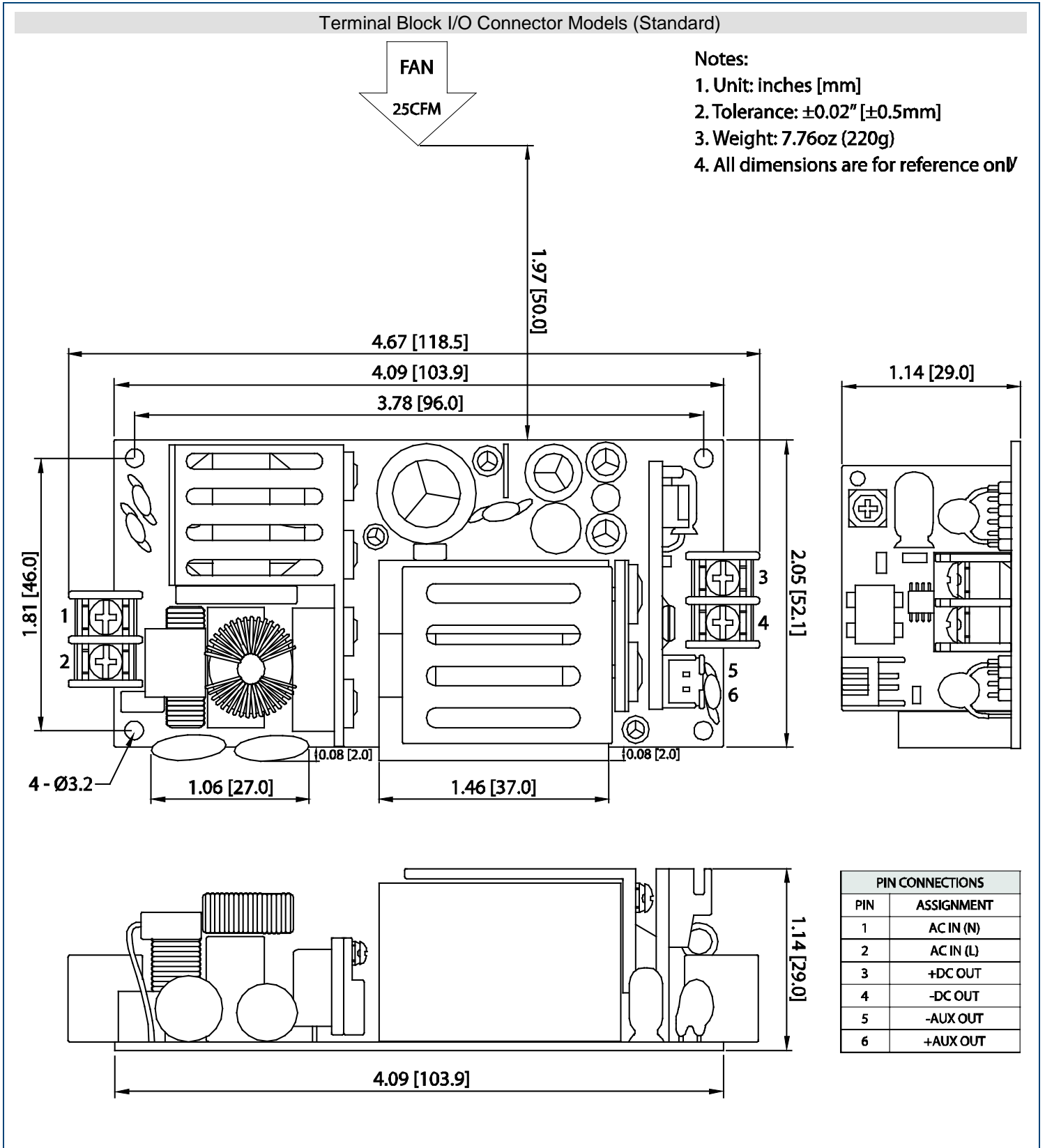


**SPECIFICATIONS: PSAQF160 SERIES**

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.

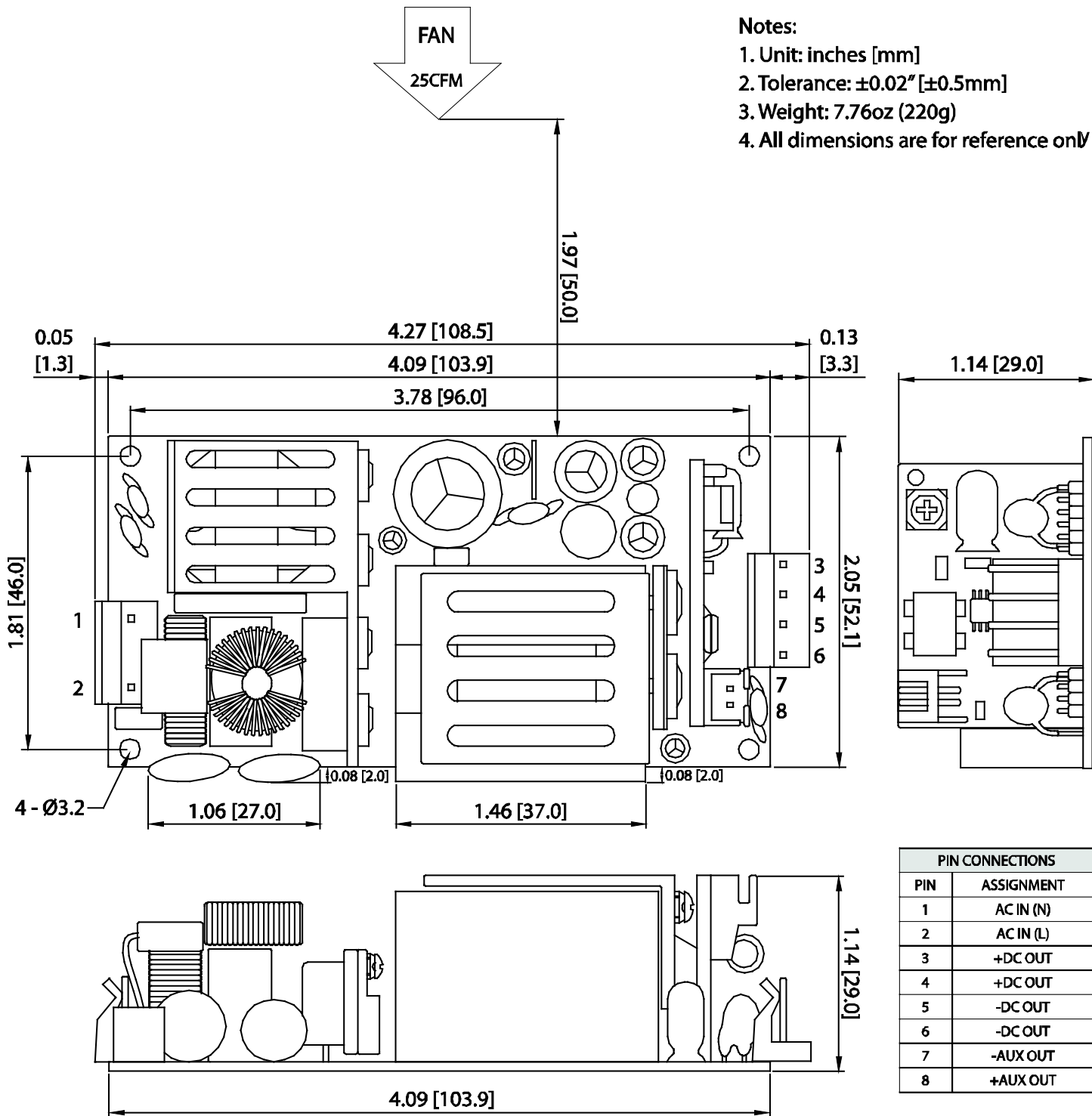
SPECIFICATION	TEST CONDITIONS	Min	Typ	Max	Unit
<b>INPUT SPECIFICATIONS</b>					
Input Voltage	AC input voltage range	90		264	VAC
	DC input voltage range	120		370	VDC
Input Frequency		47		63	Hz
Input Current	At 115 VAC and full load			2.0	A
	At 230 VAC and full load			1.0	
Inrush Current (< 2ms)	At 115 VAC and full load			35	A
	At 230 VAC and full load			70	
Power Factor	At 115VAC and full load	0.98			
	At 230 VAC and full load	0.95			
<b>OUTPUT SPECIFICATIONS</b>					
Output Voltage		See Table			
Voltage Adjustment Range		-4		+4	VDC
Voltage Accuracy		-2		+2	%
Output Current	With convection cooling	See Table			
	With 25CFM fan	See Table			
Line Regulation	110~240VAC	-1		+1	%
Load Regulation	Min load to max load	-1		+1	%
Output Power	With convection cooling			100	W
	With 25CFM fan			160	
Ripple & Noise		See Table			
Maximum Capacitive Load		See Table			
Hold-up Time	At 115VAC and 90% Vout	10			ms
Temperature Coefficient	0~70°C	-0.03		+0.03	%°C
	-25~0°C	-0.06		+0.06	
<b>PROTECTION</b>					
Short Circuit Protection		Automatic Recovery, Hiccup mode			
Over Voltage Protection		Zener diode clamp			
Over Power Protection		Automatic Recovery, Hiccup mode			
Over Temperature Protection		Automatic Recovery			
<b>GENERAL SPECIFICATIONS</b>					
Efficiency	At 230 VAC and full load	See Table			
Isolation Voltage	Input to Output	4242			VDC
	Input to Output	3000			VAC
	Input to FG	1500			
	Output to FG	500			
Leakage Current				0.5	mA
<b>ENVIRONMENTAL SPECIFICATIONS</b>					
Operating Temperature	With derating (see derating curve)	-25		+70	°C
Storage Temperature		-25		+85	°C
Humidity				95	% RH
Cooling		Free air convection			
Vibration	10~500Hz, 10 min/1cycle for 60 min. each test along the X, Y, Z axis		2		G
MTBF	25°C (MIL-HDBK-217F, Notice 1)	250,000			hours
<b>PHYSICAL SPECIFICATIONS</b>					
Weight		7.76oz (220g)			
Dimensions (L x W x H)	Terminal Block models (Standard)	4.67 x 2.05 x 1.14 in (118.5 x 52.1 x 29.0 mm)			
	Molex 8673 Models (Suffix "A")	4.27 x 2.05 x 1.14 in (108.5 x 52.1 x 29.0 mm)			
<b>SAFETY &amp; EMC</b>					
Safety Approvals		CE, UL60950-1			
EMI (Conducted & Radiated Emissions)	Conductive plane to be connected to safety earth	EN 55022 Class B			
EMS (Noise Immunity)		EN55024			

MECHANICAL DRAWING

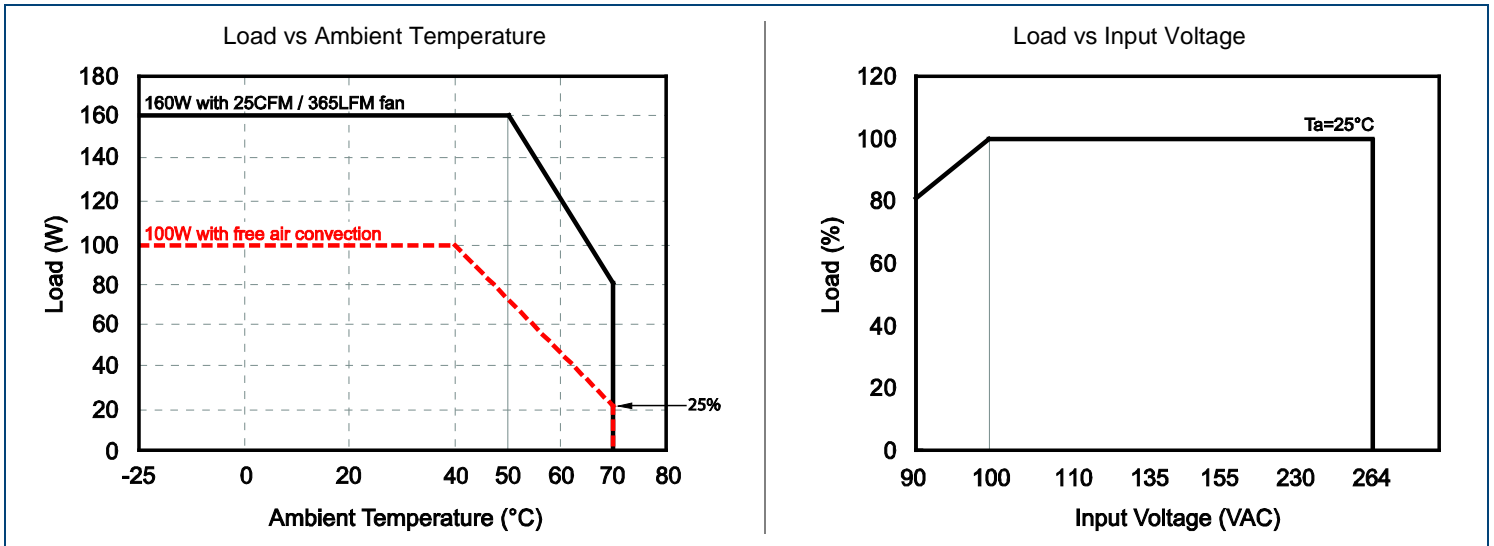


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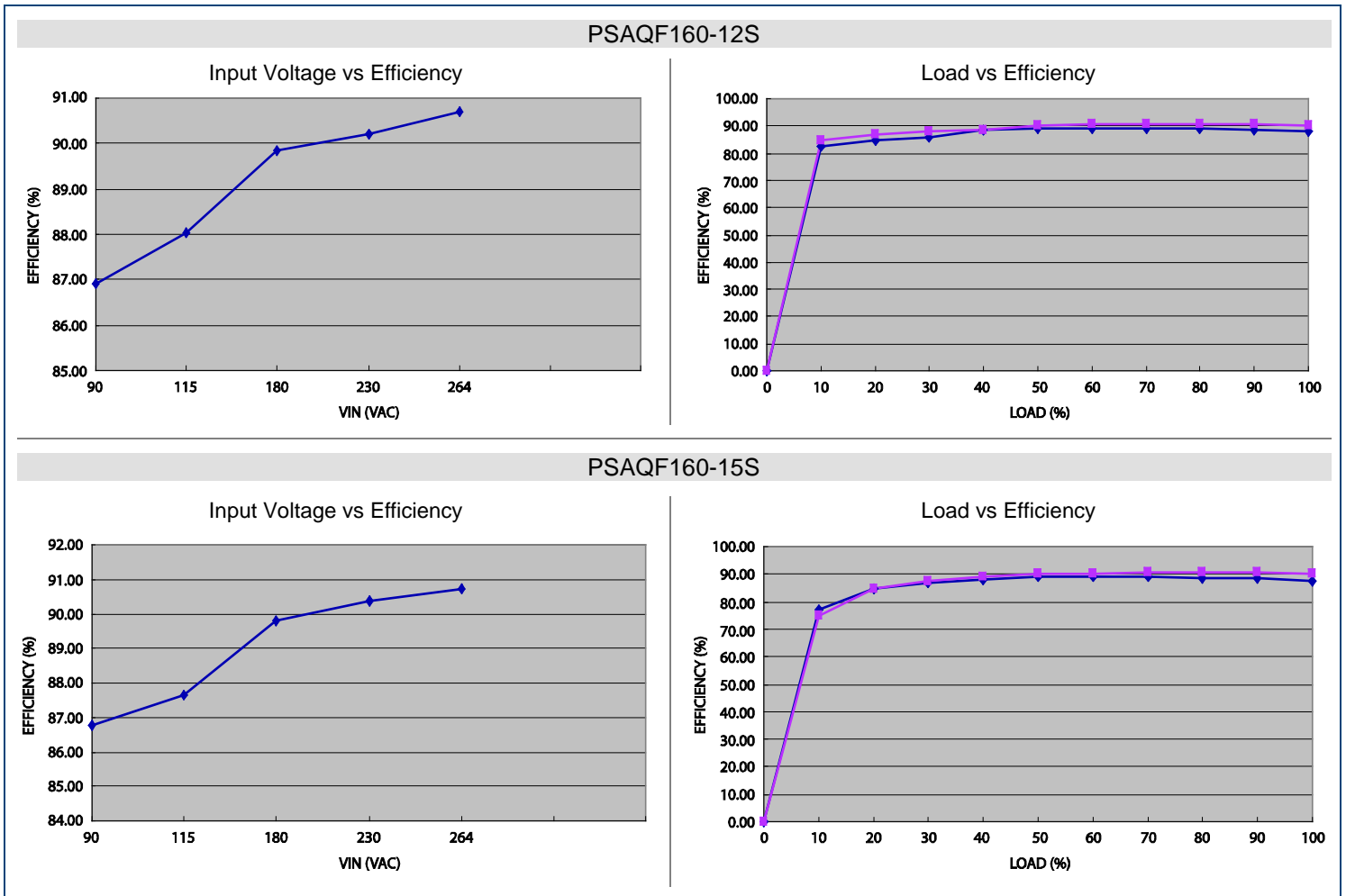
Molex Series 8673 I/O Connector Models ("A" Suffix)



**DERATING**

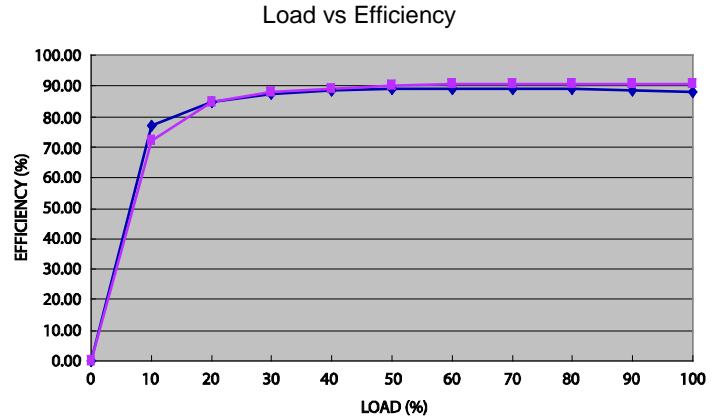
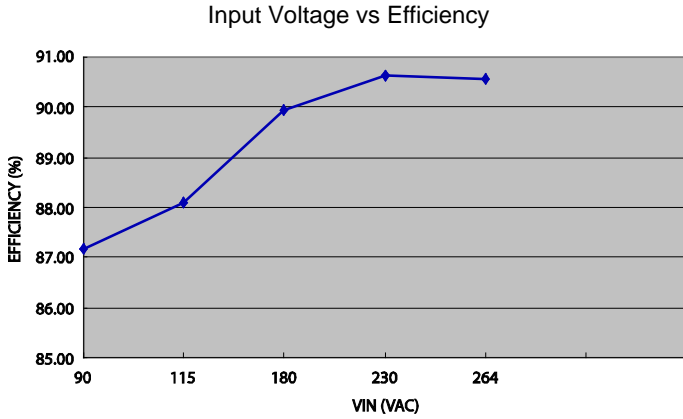


**EFFICIENCY VS LOAD CURVES**

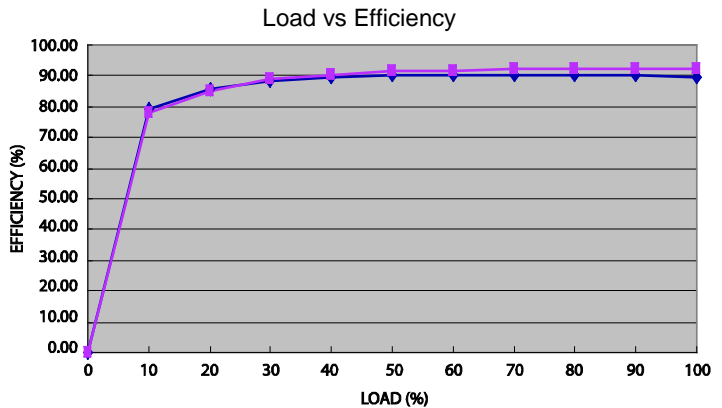
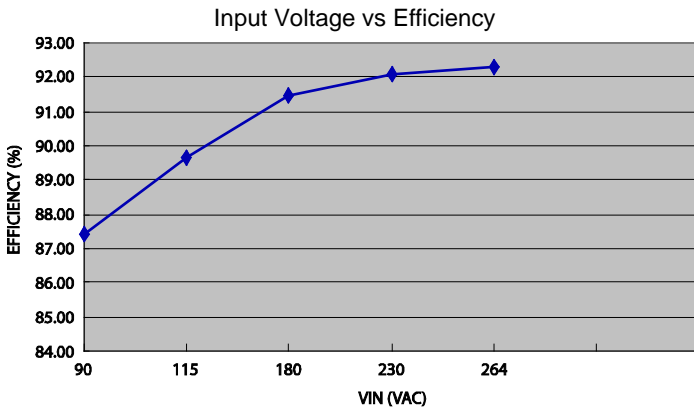


**EFFICIENCY VS LOAD CURVES**

**PSAQF160-24S**



**PSAQF160-48S**



**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](mailto:sales@wallindustries.com)  
 Web: [www.wallindustries.com](http://www.wallindustries.com)  
 Address: 37 Industrial Drive  
 Exeter, NH 03833