



# Data Sheet

## PFC FlatPAC™

### 575 W Power Factor Corrected AC-DC Power Supply



#### Features

- Inputs: 85 – 264 Vac universal
- Meets FCC Part 15, EN55022, Class A conducted emissions
- 75-85% efficiency
- cTÜVvs, CE marked
- Remote sense and current limit
- 8-60 mS ride-through time
- OVP and thermal shutdown
- Up to 575 W output

Actual size:  
9.25 x 4.9 x 1.37 in  
234,8 x 124,4 x 34,8 mm

#### Product Highlights

The PFC FlatPAC uses Vicor's field-proven VI-HAM and Maxi DC-DC converters to deliver up to 575 Watts of clean, reliable power. The PFC FlatPAC is a single-output power supply available with standard output voltages from 3.3 – 54 Vdc.

It operates from an input of 85 – 264 Vac, includes active power factor correction (0.99 power factor), and meets EN61000-3-2 harmonic current limits. Internal filtering provides compliance to EN55022-A conducted EMI. It is available in Vicor's low profile 1.37" (34,8 mm) FlatPAC chassis, in either finned or conduction-cooled (CC) versions.

#### PFC FlatPAC Selection Chart

**VI-CMU** [a] [ ] - [ ] - [ ] - [ ]

[a] E for RoHS compliant

#### [ ] Output Voltage

Y = 3.3 V	L = 28 V
0 = 5.0 V	J = 36 V
1 = 12 V	4 = 48 V
2 = 15 V	G = 54 V
3 = 24 V	

#### [ ] Output Power/Current Vout

V <sub>OUT</sub> ≤ 5 V Q = 80 A	V <sub>OUT</sub> ≥ 12 V M = 575 W
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#### [ ] Product Grade Temps. (°C)

E = 0 to +85 case
C = 0 to +85 case
I = -30 to +85 case

#### [ ] Options

CC = Conduction cooled
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# FLATPAC SPECIFICATIONS

(typical at = 25°C, 120/240 Vac line and 75% load, unless otherwise specified)

## ■ INPUT CHARACTERISTICS

Parameter	Min	Typ	Max	Unit	Note
AC line input					
Universal	85		264	Vac	
Line frequency		47 – 63		Hz	Unit will operate at 400 Hz but may not meet Power Factor or Total Harmonic Distortion specs. Efficiency may be reduced.
Inrush current					
230 Vac operation, full load			20	A	
Ride-through time (full load)					
85 – 264 Vac	8		60	ms	
Dielectric withstand					
Primary to chassis GND		2,121		Vdc	
Primary to secondary		4,242		Vdc	
Secondary to chassis GND		707		Vdc	
Power Factor	0.99				
Total Harmonic Distortion			7.5%		Sinusoidal, 115 Vac, full load
			8.5%		Sinusoidal, 230 Vac, full load

## ■ OUTPUT CHARACTERISTICS (see datasheet for V375 Maxi family for additional info)

	E-Grade			C-, I-Grade			Units	Note
	Min	Typ	Max	Min	Typ	Max		
Set point accuracy		1%	2%		0.5%	1%	V <sub>NOM</sub>	
Line regulation								
low line			0.5%		0.02%	0.2%	V <sub>NOM</sub>	85 – 264 Vac, 0 – 350 W
nominal to high line			0.5%		0.02%	0.2%	V <sub>NOM</sub>	115 – 264 Vac, 0 – 575 W
Load regulation								
low line			1%		0.2%	0.5%	V <sub>NOM</sub>	85 – 264 Vac, 0 – 350 W
nominal to high line			1%		0.2%	0.5%	V <sub>NOM</sub>	115 – 264 Vac, 0 – 575 W
Output temperature drift		0.02			0.01	0.02	%/°C	Over rated temperature
Long term drift		0.02			0.02		%/1 k hours	
Output ripple								
3.3 V			150		120	150	mVp-p	20 MHz bandwidth
5 V			5%		120	150	mVp-p	20 MHz bandwidth
12-54 V			3%		2%	3%	p-p	20 MHz bandwidth
Output voltage trimming	10%		110%	10%		110%		See vicorpower.com for trim calculator
Total remote sense compensation			0.5			0.5	Volts	0.25 V max. neg. leg
OVP set point		125%		115%	120%	125%	V <sub>NOM</sub>	Recycle power
Current limit	102%		135%	102%		135%	I <sub>NOM</sub>	Automatic restart
Short circuit current	70%		140%	70%		135%	I <sub>NOM</sub>	

## FLATPAC SPECIFICATIONS

(typical at = 25°C, 120/240 Vac line and 75% load, unless otherwise specified)

### ■ THERMAL CHARACTERISTICS

	E-Grade			C-, I-Grade			Units	Note
	Min	Typ	Max	Min	Typ	Max		
Efficiency	70 – 80%			75 – 85%				
Shut down temp. – case	90	95	105	90	95	105	°C	Cool and recycle power to restart
Operating temp. – case			85			85	°C	See Thermal Curves

### ■ MECHANICAL SPECIFICATIONS

Parameter	Min	Typ	Max	Unit	Note
Weight		44.8 (1304)			Ounces (Grams)

### ■ SAFETY AGENCY APPROVALS

cTÜVus	UL 60950-1, CSA 60950-1, EN60950-1, IEC 60950-1
CE	Low voltage directive 73/23/EEC

### ■ ENVIRONMENTAL CHARACTERISTICS/PRODUCT GRADE DESIGNATORS

Parameter	Min	Typ	Max	Unit	Note
Storage temperature		-20 to +100		°C	C-Grade and E-Grade
		-55 to +100		°C	I-Grade
Operating temperature (case)		0 to +85		°C	C-Grade and E-Grade
		-30 to +85		°C	I-Grade

### ■ EMI / EMC CHARACTERISTICS (Performed on selected samples representative of the PFC FlatPAC product family.)

Parameter	Min	Typ	Max	Unit	Note
Conducted emissions					EN 55022:1998, CISPR 22, Class A
Radiated emissions					EN 55022:1998, CISPR22, Class B
Harmonic current emissions					EN 61000-3-2:2000
Voltage fluctuations and flicker					EN 61000-3-3:1995
Electrostatic discharge					EN 61000-4-2, level 4, 8 kv contact, 15 kv air discharge
RF radiated immunity, E-field					EN 61000-4-3, 80 MHz to 2.0 GHz, 10 v/m
Electrical fast transients/burst					EN 61000-4-4, Level 3; 500 v, 1 kv and 2 kv
Power line surge immunity					EN 61000-4-5, Level 3; 500 v, 1 kv, 1.5 kv and 2 kv
RF conducted immunity					EN 61000-4-6, Level 3; 150 kHz to 80 MHz, 10 vrms
Power frequency H-field Immunity					EN 61000-4-8, Level 4; 30 A/m, continuous field
Voltage dips and interrupts					EN61000-4-11

Note: All temperature derating performed at 120 Vac input

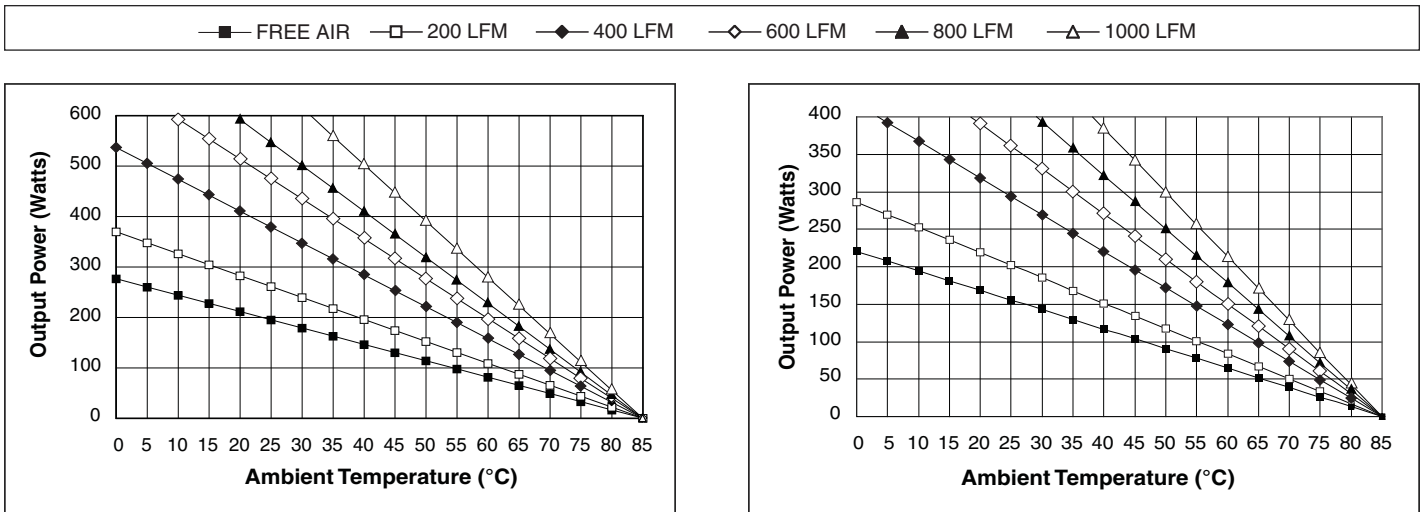


Figure 1 — Output power derating vs. temperature,  $V_{out} \geq 12 V$

Figure 2 — Output power derating vs. temperature,  $V_{out} = 5 V$

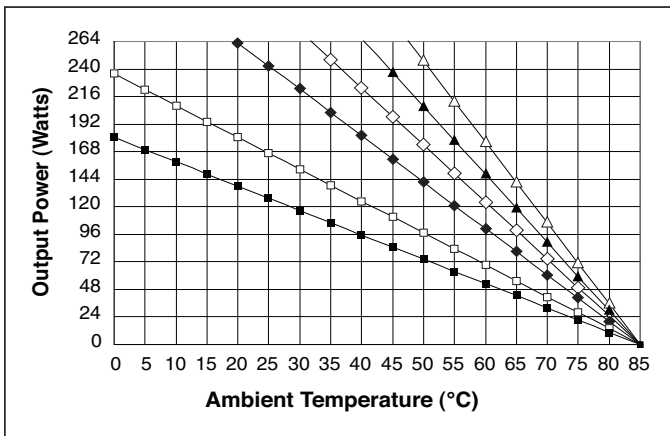


Figure 3 — Output power derating vs. temperature,  $V_{out} = 3.3 V$

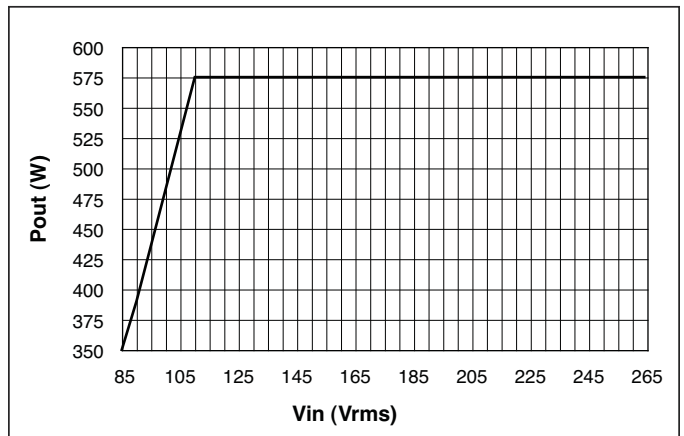


Figure 4 — PFC FlatPAC Output Power Vs. Input Voltage

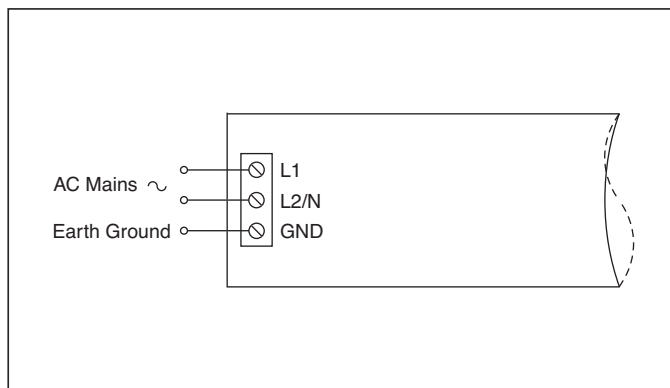


Figure 5 — AC input connections

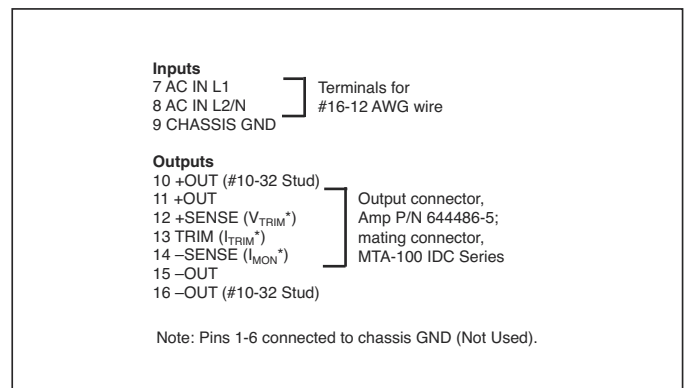


Figure 6 — Electrical connections

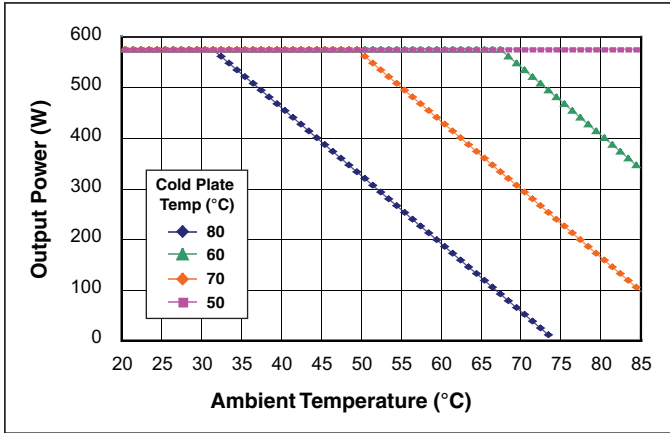


Figure 7 — Power de-rating conduction cooled option

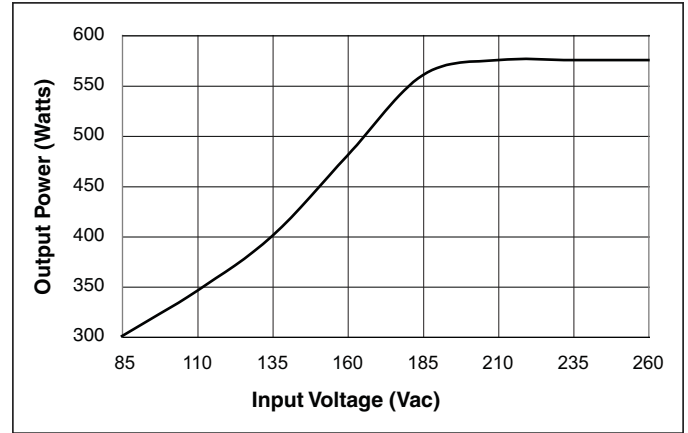
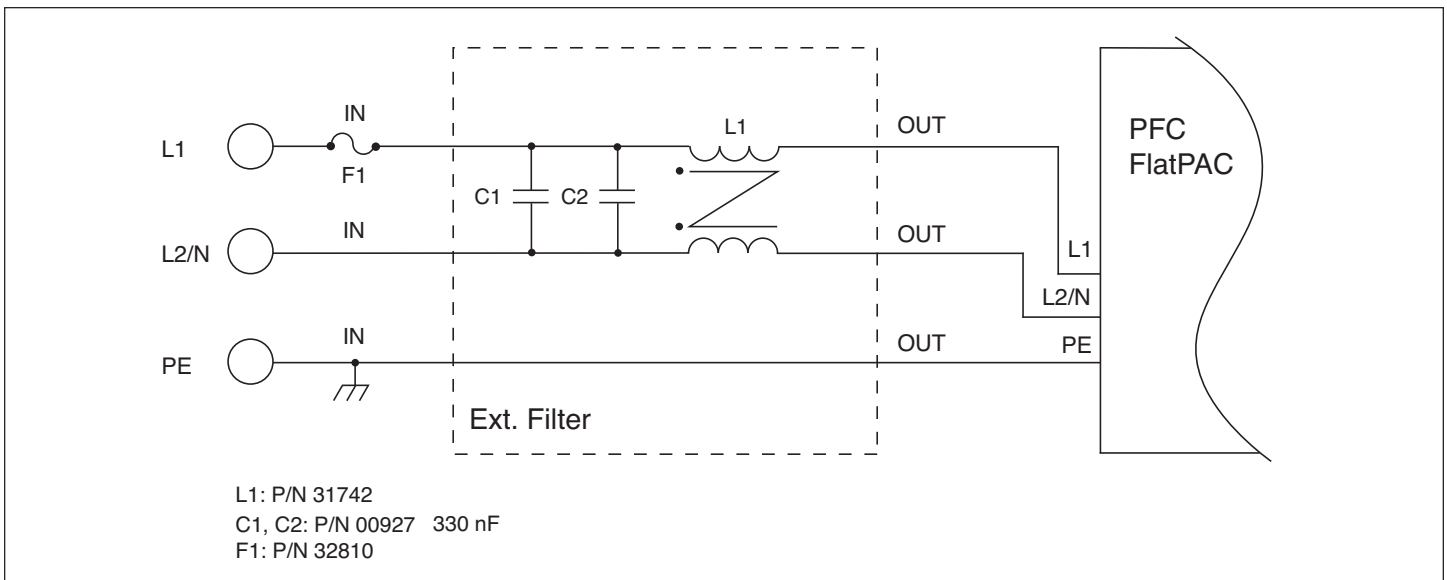


Figure 8 — Output power start-up de-rating @  $-30^{\circ}\text{C}$  (I-Grade only). 5 minute warm up required before full power (see Figure 4) is available.

Optional filter to meet EN55022 CLASS B compliance



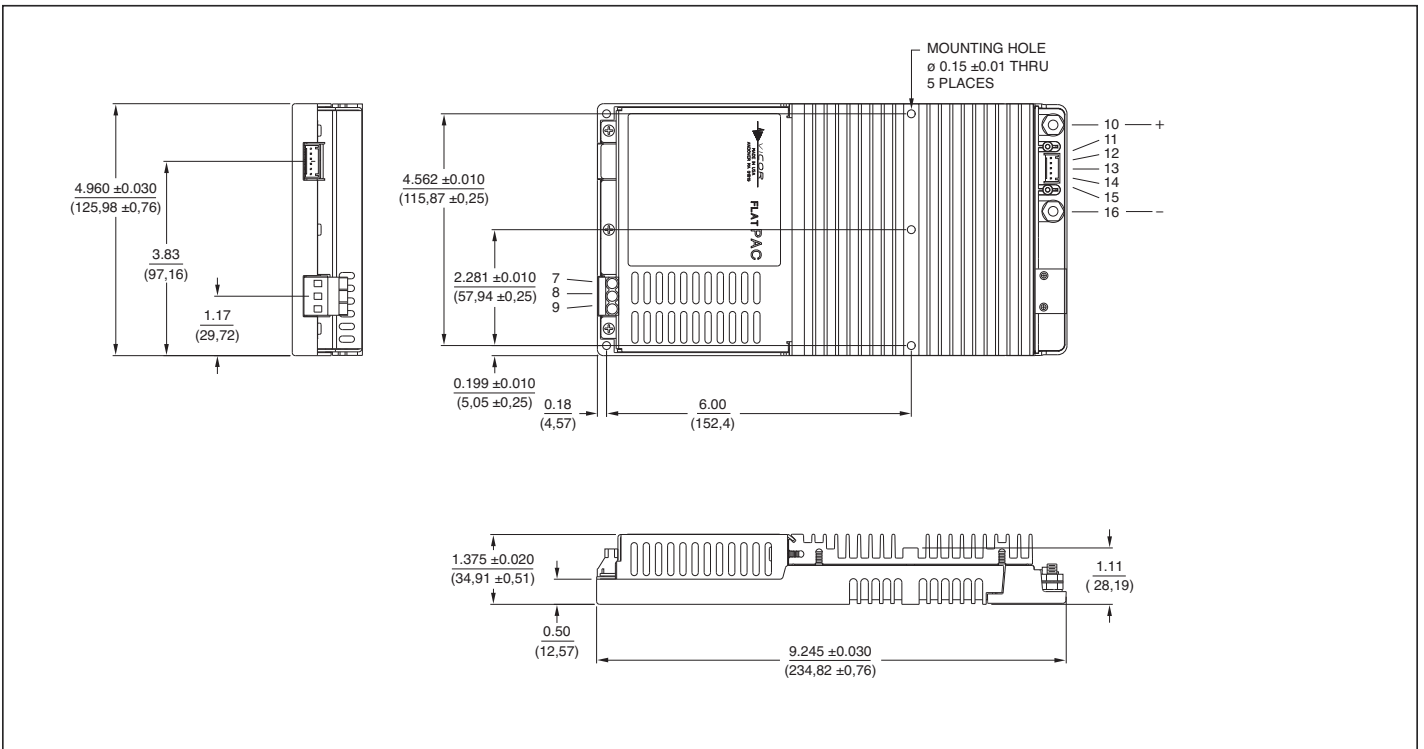


Figure 9a — Mechanical drawings; convection cooled.

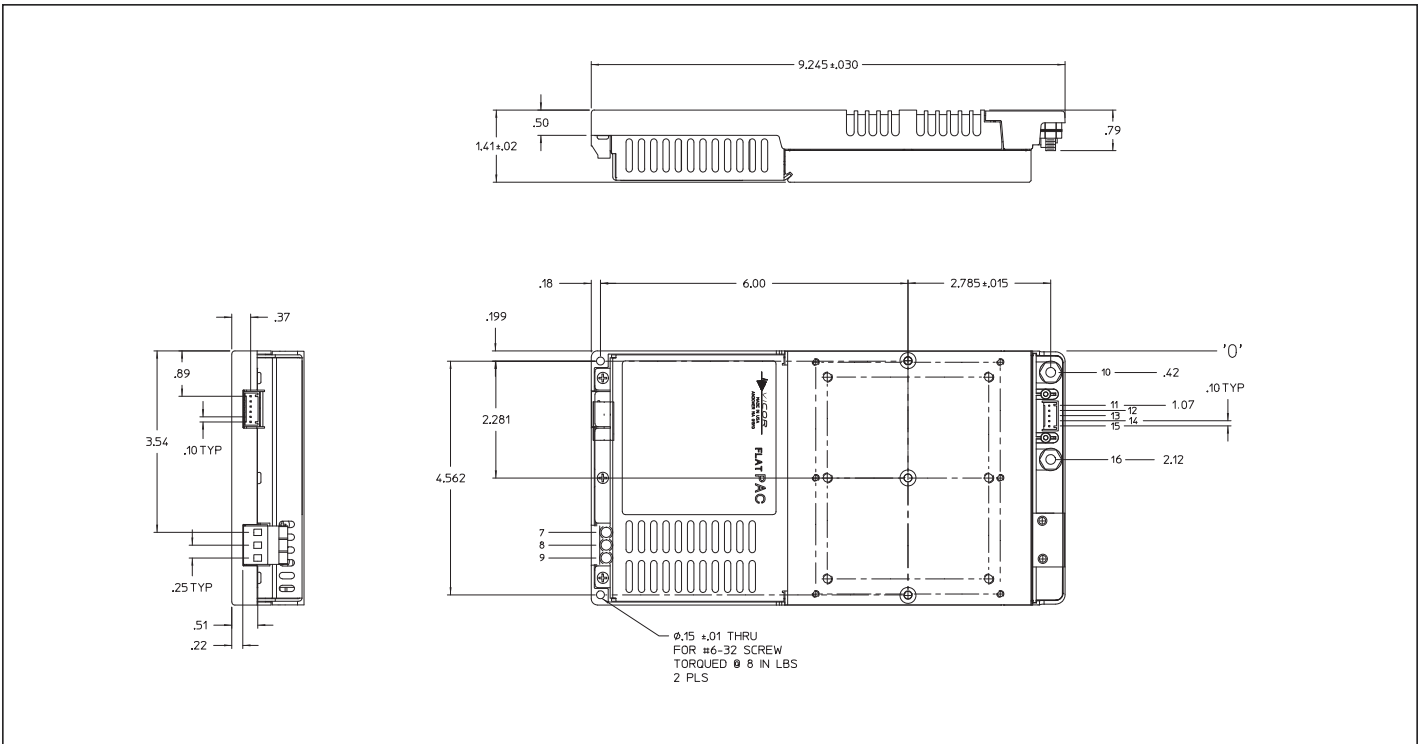


Figure b — Mechanical drawings; conduction cooled.

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