

**UNI^{VER}TER™****AC-DC Converters, *PFC-1000 Module***
***380V Output* , 170~265Vdc Input**

World Most Advanced Ultra High Density AC-DC Converters with Unity Power Factor Correction. The Maximum Output Power Is 1000W with 380V Output Voltage

Size: 116.3mm x 60.45mm x 12.7mm
(4.58in. x 2.38in. x 0.50in.)

DESCRIPTION

UniVerter PFC is AC-DC converter which is accepted 170-265Vac as input and 380Vdc of output. Power Factor Correction meets low harmonic distortion requirements of IEC 1000-3-2 and the new European EN55022 emissions specification when used with EMI filter. UniVerter modules utilize a boost converter incorporating a solid state series switch for active inrush and short circuit current limiting. The modules provide over temperature shut-down and automatic recovery.

SPECIFICATION

ABSOLUTE MAXIMUM RATINGS:

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
Input Voltage(+In to -In)	170	230	265	Vac	
Input Power with No Damage	0		300	Vac	
Input Frequency	47		63	Hz	
Power Factor Correction	0.95				@Full Load
Maximum Input Current			5.4	Arms	
Inrush Current			30	Apeak	
Storage Temperature	-55		+125	°C	
Isolation (Input & Output to Case)	2500			Vdc	
Operating Temperature	-40		+100	°C	Baseplate
Soldering Temperature(Wave Solder)			260	°C	<5 Sec.
Soldering Temperature(Hand Solder)			390	°C	<7 Sec.

MODEL SELECTION

Model Name	Vin(Vdc)	Vout(Vdc)	Io(Amps)	Watts
PFC-1000	170~265	380	0~27	1000

FEATURES

- ▶ Miniature 1000 Watts.
UL & TUV approved.
- ▶ Meets New European EN55022 emissions when used with EMI filter.
- ▶ Unity power factor.
- ▶ High efficiency.
- ▶ Active inrush limiting and short circuit protection.
- ▶ Very low harmonic distortion.
- ▶ Auxiliary supply.
- ▶ Power fail warning via DC OK signal.
- ▶ Load Enable signal to control DC-DC converters.
- ▶ -40~100°C baseplate operation.

ACBEL POLYTECH INC.<http://www.acbel.com>

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- Specifications subject to change without notice.
- All illustrations are for reference only.

INPUT SPECIFICATIONS:

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
Operation Input Voltage (V_i)	170	230	265	Vac	Derate Output Power Linearly Below 205Vac from 1000W At 205Vac to 750W At 170Vac
Maximum Input Current ($I_{i,max}$)			5.4A	Arms	$V_i=205\text{Vac}$ to 265Vac $I_o=I_{o,max}$
Inrush Limiting			30	A	$U_o=0$
Power Factor	0.95				@Full Load
Harmonic Distortion			5	%	Conforming to IEC 1000-3-2 with Filter
Input Frequency	47		63	Hz	

OUTPUT SPECIFICATIONS:

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
Output Voltage Set Point ($V_{o,set}$)	375	380	385	V	With No Load Start
Line Regulation		1	2	%	$V_i=205\text{Vac}$ to 265V $I_o=0\text{A}$ to 2.65A
Load Regulation		1	2	%	$I_o=0\text{A}$ to 2.65A
Output Ripple and Noise Voltage: @120Hz Peak to Peak			25	Vp-p	Bandwidth 5Hz to 20MHz With Output Capacitor 440uF/450V
Output Current Limit	2.8		3.3	A	When Over Current Occurs, Output Drops to 0V
Switching Frequency		130		KHz	
Efficiency	91	94		%	@ $T_c=25^\circ\text{C}$ $V_{in}=230\text{Vac}$ $I_o=2.65\text{A}$ @ $T_c=90^\circ\text{C}$ $V_{in}=230\text{Vac}$ $I_o=2.65\text{A}$
DC OK Signal(@25°C) Maximum Sink Current Maximum Break Voltage			115 60	mA V	Provides Power Fail Warning When Output Drops Below 355V
Load Enable Signal (@25°C) Maximum Sink Current Maximum Break Voltage			115 60	mA V	Direct interface with Next Stage DC-DC Converter
Auxiliary Supply Voltage Output Current	13.2	14	14.8 10	V mA	When Input Exists, the Auxiliary Supply Works

CONTROL SPECIFICATIONS:

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
Turn-On Time		2		Sec	$I_o = 0A$ V_o within $\pm 1\% V_{o, set}$ With 440uF / 450V Output CAP.
Output Over Voltage Clamp			425	V	
Over Temperature Shutdown	100	105	110	°C	Auto Recovery

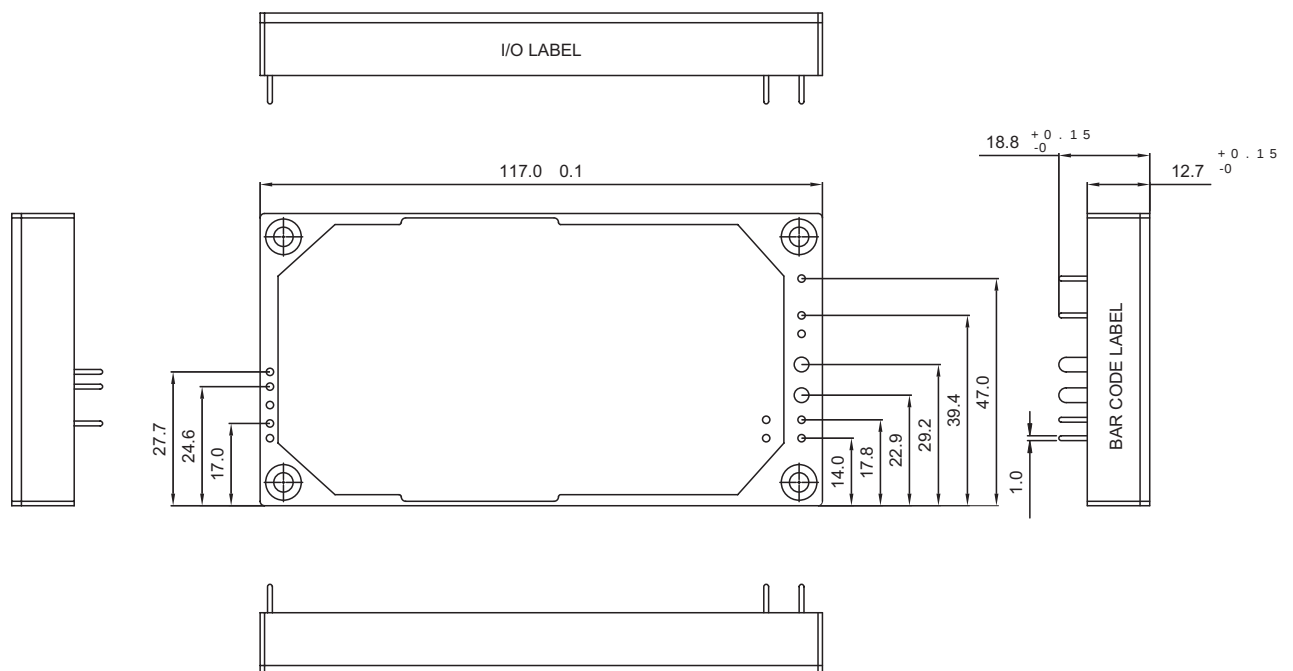
ISOLATION SPECIFICATIONS:

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
Input to Case		2500		Vdc	
Output To Case		2500		Vdc	

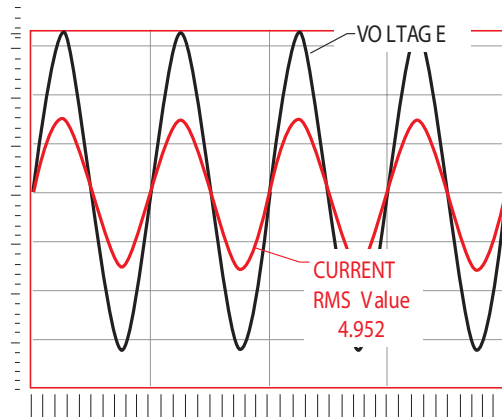
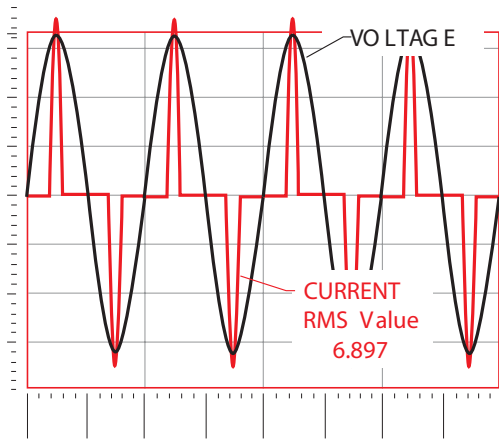
GENERAL SPECIFICATIONS:

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
Safety					UL, TUV
Thermal Resistance		3.3		°C/W	
MTBF		1.0		Mhrs	$T_c = 40^\circ C$, $I_o = 2.65$ Vin=230Vac
Weight		225		g	
Size		4.6 x 2.4 x 0.5		in ³	

OUTLINE DRAWING

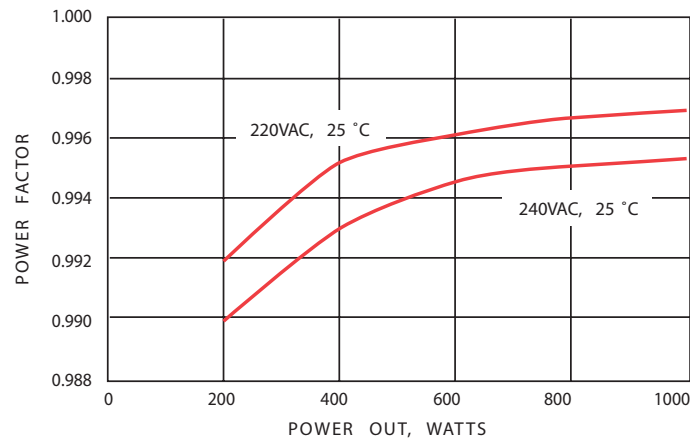


POWER FACTOR CORRECTION



POWER FACTOR V.S. LOAD

Power Factor — PFC 1000



EFFICIENCY

Efficiency PFC - 1000

