


UniVERTER™

AC-DC Power Factor Correction Modules, 600 & 1000 Watt

World's Most Advanced Ultra High
Density AC-DC Converters

600 and 1000 Watts

AC Input w/Power Factor Correction
380 VDC Output

Evaluation Boards Available

DESCRIPTION

UniVerter PFC modules accept 85-265 VAC (PFC-600) or 170-265 VAC (PFC-1000) and convert it to 380 VDC to power 300VDC input DC-DC converters. Power factor correction meets low harmonic distortion requirements of IEC 1000-3-2 and the new European EN55022 emissions specification when used with the Model HH-1199-6 EMI filter. UniVerter modules utilize a boost converter incorporating a solid state series switch for active inrush and short circuit current limiting. The series switch is also used to provide over temperature shut-down with automatic recovery.

FEATURES

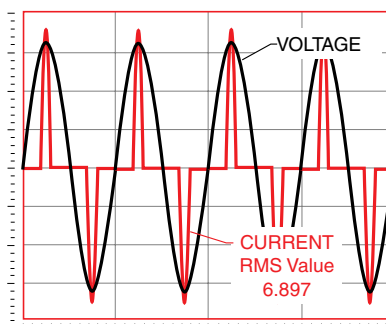
- 600 & 1000 Watts
- UL, CSA, & TUV Approved
- Meets New European EN55022 Emissions when used with HH-1199-6 EMI Filter
- Unity Power Factor
- High Efficiency
- Active Inrush Limiting and Short Circuit Protection
- Very Low Harmonic Distortion
- Auxiliary Supply
- Power Fail Warning Via DC OK Signal
- Load Enable Signal to Control DC-DC Converters
- Very Low Thermal Resistance
- Superior Thermal Design
- 100°C Baseplate Operation



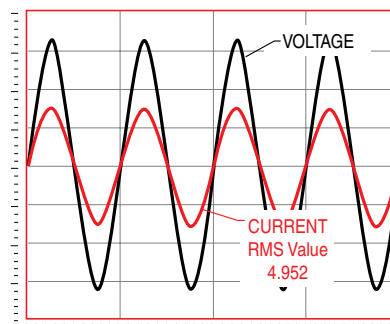
MODEL SELECTION

Model Number	Input Voltage	Output Voltage	Output Power
PFC-600	85-265VAC	380VDC	600 Watts
PFC-1000	170-265VAC	380VDC	1000 Watts

POWER FACTOR CORRECTION



Without PFC

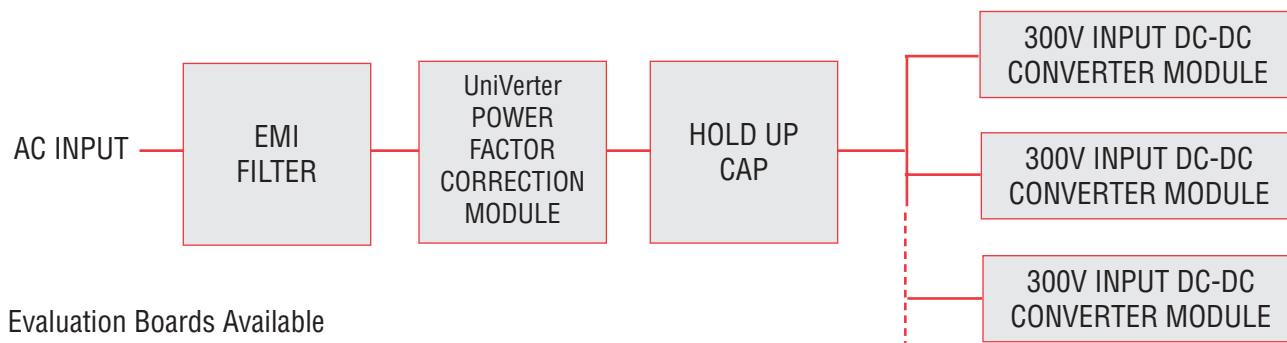


With PFC

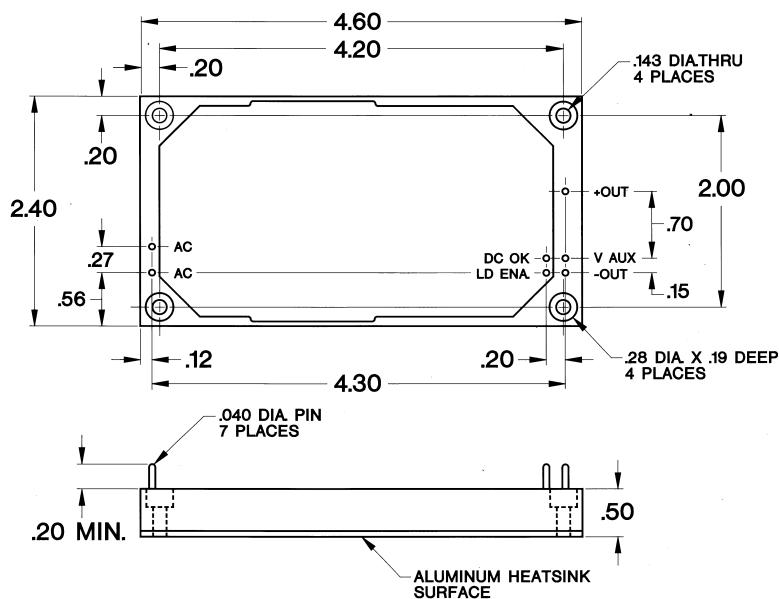
SPECIFICATIONS

	PFC-600	PFC-1000
Power (watts)	600 W Derate output power linearly below 105 VAC from 600W at 105 VAC to 400W at 85 VAC	1000 W Derate output power linearly below 205 VAC from 1000W at 205 VAC to 750W at 170 VAC.
Input Range	85-265 VAC	170-265 VAC
Input Frequency	47-63 Hz (operation up to 440Hz w/reduced specifications)	47-63 Hz (operation up to 440Hz w/reduced specifications)
Power Factor	.99	.99
Harmonic Distortion	<5% (conforming to IEC 1000-3-2)	<5% (conforming to IEC 1000-3-2)
Output Voltage	380 VDC	380 VDC
Efficiency	90/94 % (120/240 VAC) typical	94 % (240 VAC input)
Inrush Limiting	<15 A peak typical	30 A (max)
Short Circuit Protection	Trip point 1.8 A (Shutdown, auto. recovery after removal of short)	2.8 A (Shutdown, auto. recovery after removal of short)
Thermal Protection	105-110°C (Shutdown, automatic recovery)	105-110°C (Shutdown, automatic recovery)
Auxiliary Supply	14 V @ 10 mA	14 V, @10 mA
DC OK Signal	Provides power fail warning when output drops below 355VDC	Provides power fail warning when output drops below 355VDC
Load Enable	Direct interface with MicroVerter® & picoVerter® DC-DC Converter logic on/off pin	Direct interface with MicroVerter® & picoVerter® DC-DC Converter logic on/off pin
Operating Temp.	-40 to +100°C Case	-40 to +100°C Case
Overvoltage Protection	415 VDC non-shutdown	415 VDC non-shutdown
Safety	UL1950, CSA22.2-234-M90, EN 60950	UL1950, CSA22.2-234-M90, EN 60950
Thermal Resistance (Case To Ambient)	3.3°C/W	3.3°C/W
Isolation		
Input-Output	Non-isolated	Non-isolated
Input/Output-Case	2500 VDC	2500 VDC

SYSTEM DIAGRAM

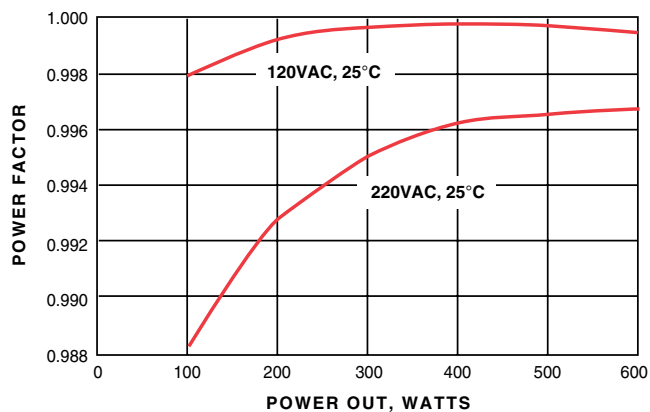


OUTLINE DRAWING

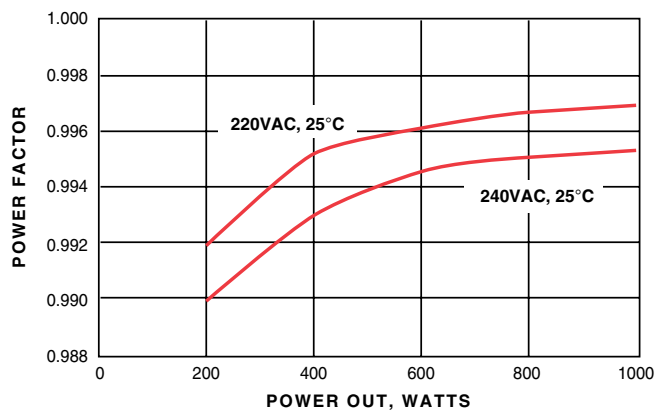


POWER FACTOR VS. LOAD

Power Factor — PFC 600

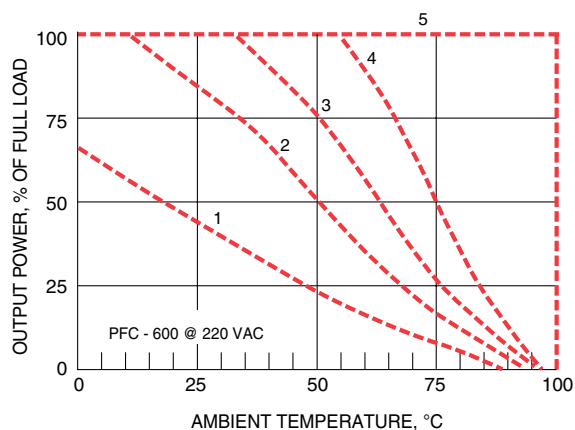


Power Factor — PFC 1000



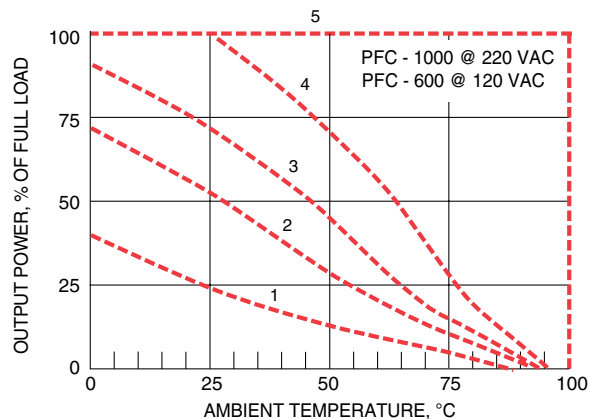
THERMAL PERFORMANCE

UniVerter Thermal



- 1 - With No Heatsink and No Airflow
- 2 - With 2006 Heatsink and No Airflow or, with a 2.0°C/W Heatsink
- 3 - With 2006 Heatsink and 200 LFM Airflow or, with a 1.5°C/W Heatsink
- 4 - With 2006 Heatsink and 400 LFM Airflow or with a 1.0°C/W Heatsink
- 5 - Output Power vs. Case Temperature

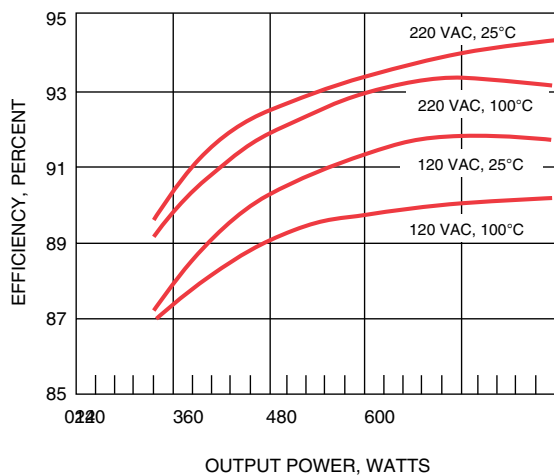
UniVerter Thermal



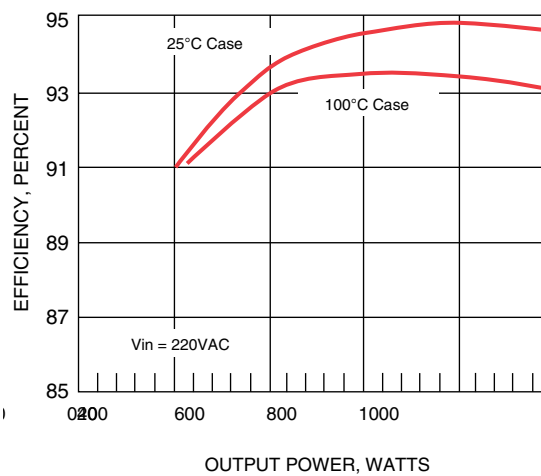
- 1 - With No Heatsink and No Airflow
- 2 - With 2006 Heatsink and No Airflow or, with a 2.0°C/W Heatsink
- 3 - With 2006 Heatsink and 200 LFM Airflow or, with a 1.5°C/W Heatsink
- 4 - With 2006 Heatsink and 400 LFM Airflow or with a 1.0°C/W Heatsink
- 5 - Output Power vs. Case Temperature

EFFICIENCY

Efficiency PFC - 600



Efficiency PFC - 1000





AC-DC Front End

Model FE-300

300 Watts
110/220 VAC Input
300 VDC Output

DESCRIPTION

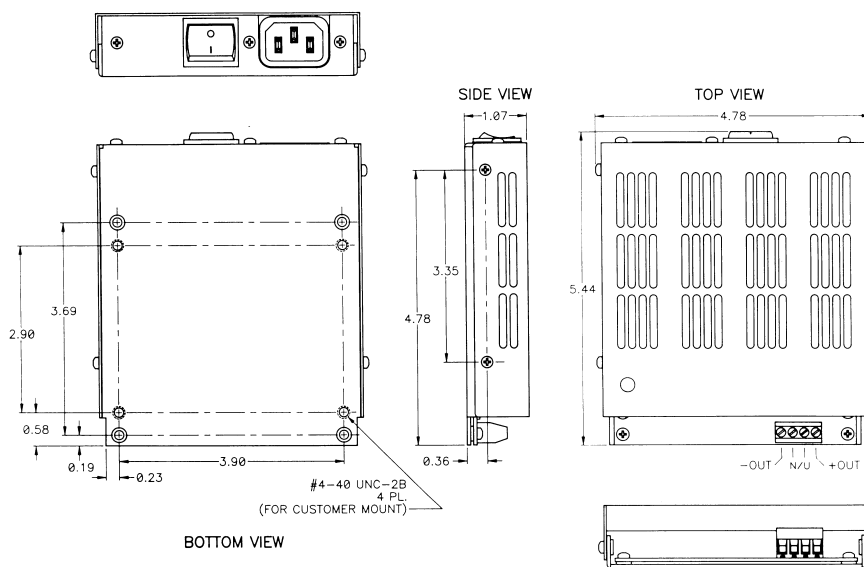
The FE-300 has an autoranging input which accepts either 110 VAC or 220 VAC and provides 300 VDC nominal output to power 300V DC-DC converters. The convenient package has an IEC 320 input receptacle and has a front entry cage output terminal strip for easy wire connection to the DC-DC converters. The unit contains a built in EMI filter and input transient voltage protection.



FEATURES

- Autoranging Input
- Built-in EMI Filter
- Transient Voltage Protection
- Convenient IEC 320 Input Receptacle
- Inrush Current Limit
- Low Profile (1" high)
- Safety Enclosure

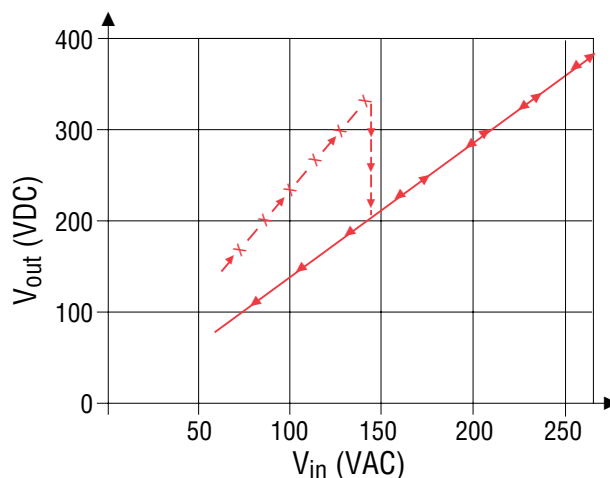
OUTLINE DRAWING



SPECIFICATIONS

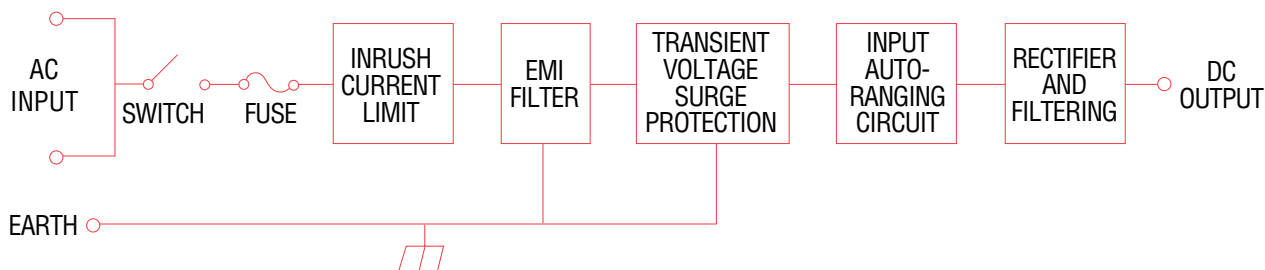
Power (Watts)	300W
Input Range	90-135 VAC or 180-270 VAC (autoranging)
Input Frequency	47-440 Hz
Inrush Current	10A (110 VAC operation) 20A (220 VAC operation)
Power Factor	.6 typical (120V full load)
Output Voltage	300 VDC nominal (see input/output plot)
Efficiency	94% typical
Hold Up Time	10ms (105 VAC 60Hz) 20ms (120 VAC 60Hz)
Operating Temp.	0-50°C ambient
Safety	UL1950, CSA22.2-234-M90, EN60950 Compliant
Isolation	
Input-Output	Non-isolated
Input/Output-Case	2500 VDC
Size	1.07"x4.78"x5.44"
Weight	14 oz.

INPUT/OUTPUT CHARACTERISTICS



- 220/240 Operation
- x - x - x - 110/120 Operation
- - - Automatic Range Switch Operation (switches only when V_{in} increasing)

BLOCK DIAGRAM



SYSTEM CONNECTION

