

ARTESYN AIF06ZPFC SERIES

2400 Watt Full Brick PFC Converter



The AIF06ZPFC series full-brick power factor correction module accepts a wide 85–264 Vac input and presents a unity power factor. Rated at 2400 watts, the module has a high conversion efficiency of 97.3% and provides a nominal non-isolated output voltage of 400 Vdc. Featuring an industry-standard 2.4 x 4.6 full-brick form factor and a height of only 0.55 inch, they have a power density of 395 watts per cubic inch.

DATA SHEET

Total Power:

2400 Watts 230 Vac
(400 V @ 6 A)
1400 Watts 115 Vac
(400 V @ 3.5 A)

Input Voltage:

85 - 264 Vac

SPECIAL FEATURES

- 2400 W continuous power high-line
- 1400 W continuous power low-line
- Ultra high efficiency; 97%
- 85-264 Vac input range
- Baseplate optimized for contact cooling or heatsink mounting
- Fixed switching frequency
- Pre-bias startup capability
- Programmable phase shift angle in parallel application
- High reliability
- RoHS 6 compliant
- UL94 V-0 materials
- PMBus® communication
- Non-isolated PFC
- Feature rich control functions
- Standard full brick outline
- Parallel and current share version

- Internal inrush limit control (01 Version only)
- No external diodes required for two units sharing (external diodes required for >2)
- -40 °C startup, -25 °C operation
- Two-year warranty (consult factory for extended terms)

SAFETY

- CSA C22.2. No.62368-1
- CE EN62368-1
- UL 62368-1

TYPICAL APPLICATIONS

- Industrial
- Medical

TECHNICAL DATA

Electrical Specifications	
Input	
Input voltage	85 - 264 Vac
Input surge	290 Vac / 1s
Input frequency	50/60 Hz
Efficiency	97% (full load @ 230 Vac)
Total harmonic distortion	IEC 61000-3-2 for 1 module; IEC 61000-3-12 for 2 or more modules in parallel
Power factor	0.99 typical ($P_o > 1400$ W) 0.97 typical ($P_o > 700$ W)
Output	
Output voltage	400 V Typ Vin pk must be < Vout -10 V
Output voltage load regulation*	2% maximum
Max Output power & current	Vin < 180 Vac, Pmax = 1400 W Iomax = 3.5 A 180 ≤ Vin < 200 Vac, Pmax = 2200 W, Iomax = 5.5 A Vin ≥ 200 Vac, Pmax = 2400 W Iomax = 6 A
Overvoltage protection	450 Vdc max
Overtemperature protection - baseplate	110 °C max
Overcurrent protection method/OCP operation**	4.2 A typ @ Vin = 115 Vac 7.2 A typ @ Vin = 230 Vac
Peak surge power	17.5 A for 1 mSec
Output capacitanc	2000 µF max per module
Aux O/P	11-13 V @ 20 mA
Control	
Tmon (0.5 V @ 25 °C)	10 mV / °C
LD enable	Drive output via opto-isolator
PFC enable	TTL compatible (and CMOS compatible)
Voltage adjust*	330 V to 400 V
Clock input***	280 kHz ± 5%
Clock output	280 kHz ± 5%
Cmon output	0.3 V/A
Unit startup time	2 seconds max (01 Version only)

* V_ADJ set with 0.1% accuracy resistor

** OCP latching at 230 Vac; OCP auto-recovery at 115 Vac

*** CLK_IN signal is 3.3 V logic

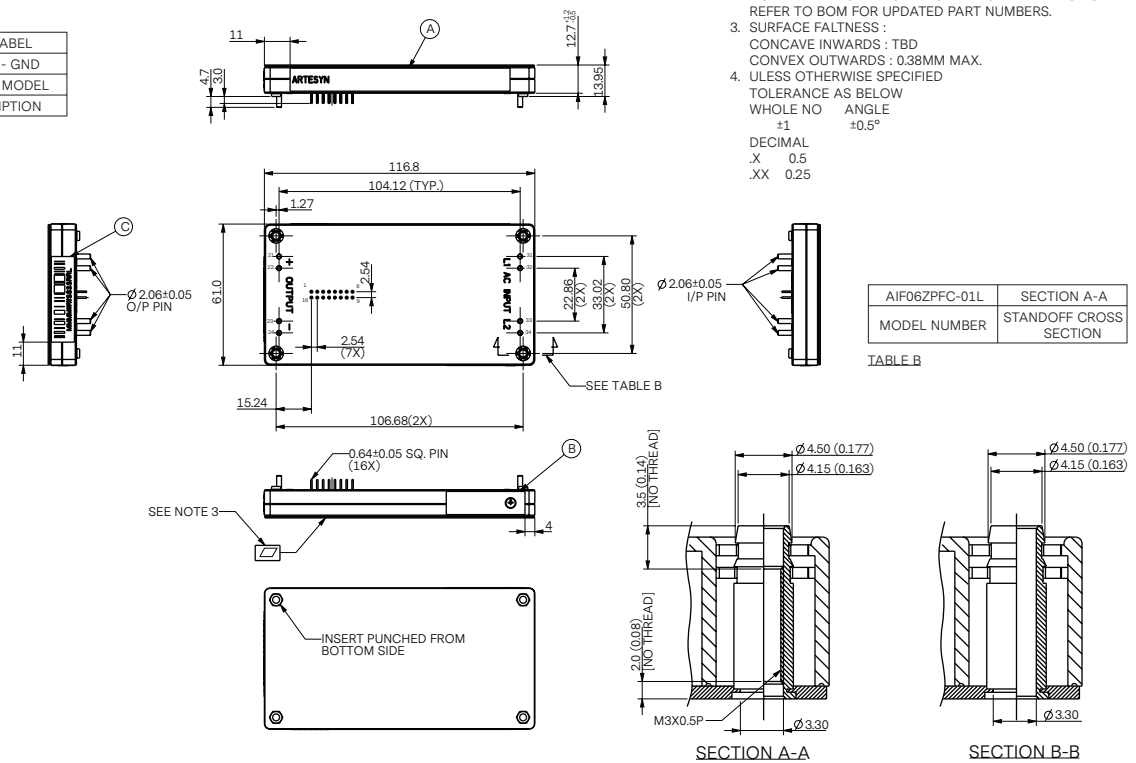
TECHNICAL DATA (CONTINUED)

General Specifications	
Unit weight	9.4 oz/ 266 g typical and 11.3 oz / 320 g maximum
Ambinet temperature - low	
Startup	-40 °C min
Operational	-25 °C min
Maximum operational baseplate temperature	100 °C
Storage temperature	-40 °C to 110 °C max
Operational altitude according to IEC62368-1	4,000 M maximum (pollution degree II, basic insulation, 240 Vrms)

MECHANICAL DRAWINGS

C	S/N LABEL
B	LABEL - GND
A	LABEL - MODEL
ITEM	DESCRIPTION

TABLE A



Pin Assignments							
Input (AC)				Output (DC)			
31	L1			21			Positive
32	L1			22			Positive
33	L2			23			Negative
34	L2			24			Negative
Control Pin							
1	PV AUX -	5	CLK OUT	9	SCL	13	S GND
2	TEMP MON	6	CLK IN	10	I ² C ADDRESS	14	PFW
3	C MON	7	PV AUX +	11	V ADJ	15	LD ENABLE
4	C SHARE	8	SDA	12	PFW ADJ	16	PF ENABLE

MECHANICAL DRAWINGS (CONTINUED)

Ordering Information				
Model Number	Input Voltage	Output Voltage	Output Current	Efficiency
AIF06ZPFC-01***L	85 - 264 Vac	400 Vdc	6 A	97% @ 230 Vac full load
AIF06ZPFC-02***L	85 - 264 Vac	400 Vdc	6 A	97% @ 230 Vac full load

AIF06ZPFC-01L	Single module operation and 2-module power sharing operation (TBC), Positive enable, RoHS-6, Threaded-inserts for mounting
AIF06ZPFC-01NL	Single module operation and 2-module power sharing operation (TBC), Negative enable, RoHS-6, Threaded-inserts for mounting
AIF06ZPFC-02L	3 to 10 module power sharing operation, external diodes required, Positive enable, RoHS-6, Threaded-inserts for mounting
AIF06ZPFC-02NL	3 to 10 module power sharing operation, external diodes required, Negative enable, RoHS-6, Threaded-inserts for mounting
AIF06ZPFC-01NLT	Single module operation or 2-module power sharing operation (TBC), Positive enable, RoHS-6, Non-Threaded-inserts for mounting
AIF06ZPFC-01NNTL	Single module operation or 2-module power sharing operation (TBC), Negative enable, RoHS-6, Non-Threaded-inserts for mounting
AIF06ZPFC-02NLT	3 to 10 module power sharing operation, external diodes required, Positive enable, RoHS-6, Non-Threaded-inserts for mounting
AIF06ZPFC-02NNTL	3 to 10 module power sharing operation, external diodes required, Negative enable, RoHS-6, Non-Threaded-inserts for mounting