

ARTESYN AIF-PFC SERIES

1600 Watts



Advanced Energy's Artesyn AIF04ZPFC series full-brick power factor correction module accepts a wide 85 to 264 VAC input and presents a unity power factor. It can also be configured to accept a DC input within the range 120 to 370 VDC. Rated at 1,600 watts, the module has a high conversion efficiency of 95% and provides a nominal non-isolated output voltage of 380 Vdc. Featuring an industry-standard 2.4 x 4.6 full-brick form factor and a height of only 0.5 inch, they have a power density of 290 watts per cubic inch.

SPECIAL FEATURES

- Unity power factor
- High efficiency - up to 95%
- Universal input voltage and frequency range
- Up to 1600 W output power
- Positive and Negative enable function
- Parallelable with accurate current sharing
- <10% harmonic distortion conforming to IEC1000-3-2 Compliance
- 100°C baseplate operating temperature
- DC Input option

- Power fail warning signal
- Enable output to control DC-DC Converter
- EEPROM data storage via I2C Interface
- External inrush current limited protection
- Power density up to 290 W/in³
- Two year warranty

SAFETY

- UL 62368 Recognized
- cUL 62368 Recognized
- TUV EN62368 Licensed
- UKCA Mark

AT A GLANCE

Total Power:

1600 Watts
120 to 370 VDC (Configurable)

Input Voltage:

85 to 264 VAC

of Outputs:

Single



ELECTRICAL SPECIFICATIONS

| Input | |
|--|--|
| Input range | 85 to 264 VAC / 120 to 370 VDC (configurable) |
| Input surge | 290 Vac / 1s |
| Input Frequency | 50/60 Hz |
| Efficiency | 95% @ 230 VAC, 1600 W (typical) |
| Total Harmonic Distortion | Less than 10% |
| Power Factor | 0.99 typical ($P_o \pm 500$ W); 0.97 typical ($P_o \pm 1000$ W) |
| Output | |
| Output Voltage | 380V typical ($I_o = 4.2$ A / $V_i > 180$ Vac); 393 V typical ($I_o = 0$ A) Note: V_{in} peak must always be lower than V_{out} |
| Current Share Accuracy | 10% max |
| Overvoltage Protection | 430 max |
| Power Limit for AC input for DC input | $V_{in} = 85$ VAC, $P_{max} = 1000$ W; $V_{in} = 230$ VAC, $P_{max} = 1600$ W Case; $V_{in} = 370$ VDC, $P_{max} = 1600$ W |
| Isolation | |
| Power Fail Warning | Direct drive output to opto-isolator |
| Power Fail Warning Adjust | 195 to 355 VDC adjustable |
| LD Enable | Direct drive output to opto-isolator |
| PFC Enable | TTL compatible |
| Voltage Adjust | 76% to 100% V_o |
| DC Input Enable | |
| Clock Input (external sync) | 6 Vp-p typical @ 1 MHz $\pm 5\%$ |
| Clock Output (int. clock) | 6 Vp-p typical @ 1 MHz $\pm 5\%$ |
| Temperature Monitor Output | 10 mV/ $^{\circ}$ C |
| Current Monitor Output | 0 to 1 mA (1 mA = 4.2 A output) |
| I ² C Interface | |

Notes: Nominal values apply with sense pins disconnected and other control pin unconnected.

ENVIRONMENTAL SPECIFICATIONS

| | |
|----------------------------|---|
| Operating temperature | -20 $^{\circ}$ C to +100 $^{\circ}$ C (baseplate temperature) |
| Startup temperature | -40 $^{\circ}$ C to +100 $^{\circ}$ C (baseplate temperature) |
| Storage temperature | -40 $^{\circ}$ C to +120 $^{\circ}$ C |
| Overtemperature protection | 120 $^{\circ}$ C max |
| MTBF | 1million hours |

ORDERING INFORMATION

| Model Number | Description | Notes |
|----------------|------------------------------|---|
| AIF04ZPFC-01L | 1600 W Low Profile PC Module | For parallel operation the total input current must be <16Arms. |
| AIF04ZPFC-02L | 1600 W Low Profile PC Module | Designed for parallel operation where the total input current >16Arms, requires external rail rectifiers. |
| AIF04ZPFC-01NL | | Negative Enable |
| AIF04ZPFC-02NL | | Negative Enable |

1. For Non-thread hole, add suffix "-NT".

PIN ASSIGNMENTS

| Input (AC) | Output | Control Pins |
|------------|--------------|---------------|
| 31. L1 | 21. Positive | 1. PV Aux - |
| 32. L1 | 22. Positive | 2. Temp Mon |
| 33. L2 | 23. Negative | 3. C Mon |
| 34. L2 | 24. Negative | 4. C Share |
| | | 5. Clk Out |
| | | 6. Clk In |
| | | 7. PV Aux + |
| | | 8. SDA |
| | | 9. SCL |
| | | 10. DC Enable |
| | | 11. V Adj |
| | | 12. PFW Adj |
| | | 13. S Gnd |
| | | 14. PFW |
| | | 15. LD Enable |
| | | 16. PF Enable |





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ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE

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