ARTESYN AIF SERIES

600 Watts

The AIF series of high voltage DC-DC converters comprises six single output models offering voltages of 1.8 V, 3.3 V, 5.0 V, 12 V, 15 V or 24 V. Designed for use with power factor correction (PFC) modules, the converters accept a wide range input of 250 to 420 Vdc. They have a 600 watt continuous power rating at baseplate temperatures from -20 to 100˚C and can start up from temperatures as low as -40˚C. The output voltage can be adjusted using an analog signal, external resistor or digital data – there is a built-in I2C interface. The output of the 1.8 V and 3.3 V converters can be adjusted from 50% to 110% of nominal, while the 5 V, 12 V, 15 V and 24 V converters can be adjusted from 80% to 120% of nominal. Overvoltage and overcurrent protection thresholds can also be set by analog or digital control.

DATA SHEET

Total Power:

600 Watts
(12 V @ 50 A)

Input Voltage:

300 V

# of Outputs:

Single

SPECIAL FEATURES

- 600 W continuous power at 100 °C baseplate temperature
- 108 W/in^3 (6.6 W/cm^3)
- High efficiency - up to 90%
- Low output ripple and noise
- Positive and Negative enable function
- Excellent transient response
- OVP, OCP, V Adj control with ALP™ analog mode linear control, or through I^{2}C bus with digital mode control
- Paralleable with accurate current sharing
- EU Directive 2002/95/EC compliant for RoHS
- Two year warranty

SAFETY

- UL 60950 Recognized
- cUL 60950 Recognized
- TUV EN60950 Licensed
- CE CE Mark

ELECTRICAL SPECIFICATIONS

Input	
Input range	250 - 420 Vdc
Input surge	450 V / 100 ms
Efficiency	90% @ 5.0 V (Typical)
Output	
Load regulation	0.2% typical down to no load
Line regulation	0.2% typical
Noise ripple	100 mV typical (below 5 V); 2% typical (5 V and above)
Remote sense	Up to 0.5 V
Output voltage adjust range	+/-20% for 5V and above; +10%/-50% for below 5 V
Transient response	5% max for 3.3 V and above, 150 mV for 1.8V , deviation with 25% to 75% full load 250 µS (max) recovery
Current share accuracy	3% typical
Overvoltage protection	115% Vo (nominal)
Current limit	115% Io maximum
Isolation	
Voltage adjust	80 to 120% Vo linear programming for 12 V, 15 V, 24 V, 48 V 50% to 110% for 1.8 V - 5.0 V
Enable	TTL compatible (positive & negative enable options)
Current limit adjust	20 to 100% Io linear programming or digital mode control
Clock input (external sync)	3.3 to 5.5 Vp-p @ 800 KHz ±10%
Clock output (internal clock)	4.5 Vp-p typical@ 800 KHz ±5%
Power good identification	High (Vo) = power good
Temperature monitor output	10 mV/°K (2.73 = 0°C)
Current monitor output	0 to 1 mA (1 mA = 100% Io rated)
Overvoltage protection adjust	110 to 150% Vo linear programming by voltage or resistor, or digital mode control

Notes: Nominal values apply with sense pins connected and other control pin unconnected.
ALP: Astec Linear Programming

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-20 °C to +100 °C (case temperature)
Start up temperature	-40 °C to +100 °C (case temperature)
Storage temperature	-40 °C to +125 °C
Overtemperature protection	110 °C max

ORDERING INFORMATION

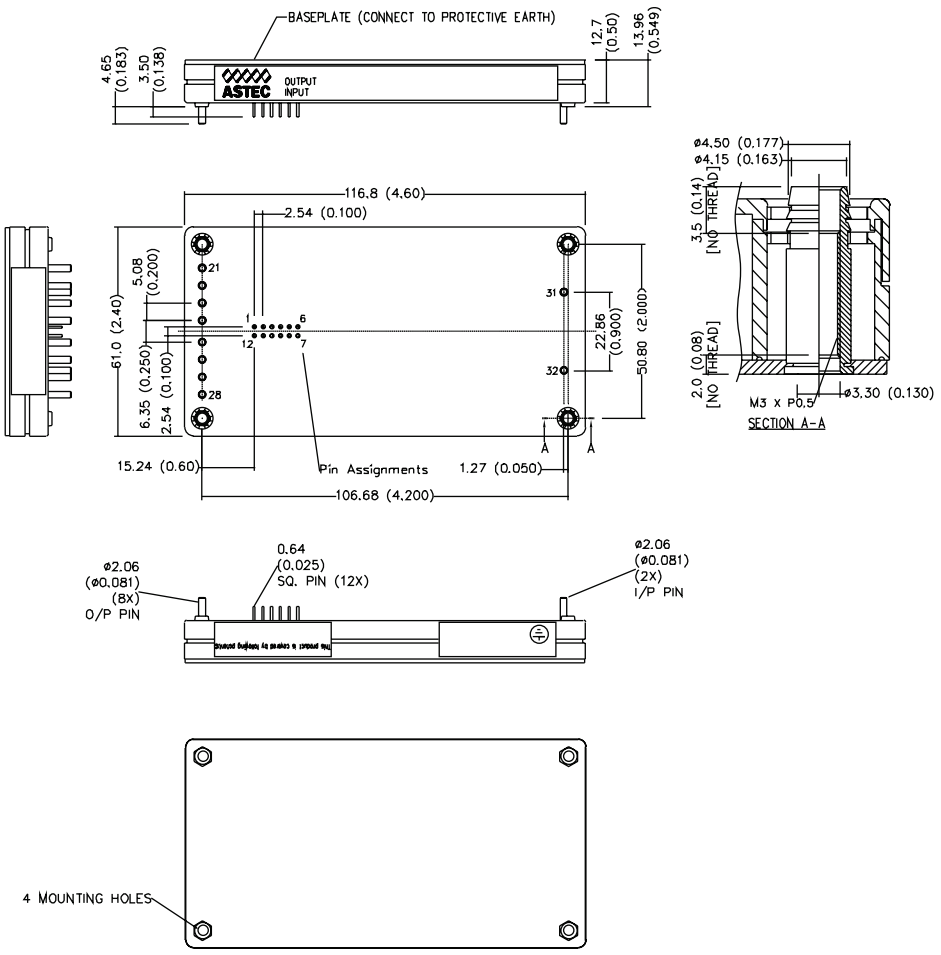
Input Voltage	Output Voltage	Efficiency	Model Number
300 V	1.8 V @ 120 A	80% (Typ)	AIF120Y300 *-**L
300 V	3.3 V @ 120 A	87% (Typ)	AIF120F300 *-**L
300 V	5.0 V @ 80 A	90% (Typ)	AIF80A300 *-**L
300 V	12 V @ 50 A	90% (Typ)	AIF50B300 *-**L
300 V	15 V @ 40 A	90% (Typ)	AIF40C300 *-**L
300 V	24 V @ 25 A	90% (Typ)	AIF25H300 *-**L

1. For Negative enable, add suffix “-N”.
2. For Non-thread hole, add suffix “-NT”.
3. For RoHS 6, add suffix “-L”.

PIN ASSIGNMENTS

Input (AC)	Output (DC)	Control Pins
31. Positive	21. Positive	1. +Sense
32. Negative	22. Positive	2. Temp Mon
	23. Positive	3. C Mon
	24. Positive	4. C Share
	25. Negative	5. Clk Out
	26. Negative	6. Clk In
	27. Negative	7. PG/ID
	28. Negative	8. C Lim Adj
		9. OVP Adj
		10. V Adj
		11. Enable
		12. -Sense

MECHANICAL DRAWINGS



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

For international contact information,
visit advancedenergy.com.

powersales@aei.com (Sales Support)
productsupport.ep@aei.com (Technical Support)
+1 888 412 7832

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