ARTESYN AIH SERIES

250 Watts



The AIH 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 250 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 I^2C 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:

250 Watts
(12 V @ 20.8 A)

Input Voltage:

300 V

No. of Outputs:

Single

SPECIAL FEATURES

- 250 W continuous power at 100 °C baseplate temperature
- High efficiency - up to 88%
- Low output ripple and noise
- Positive and Negative enable function
- Excellent transient response
- Safety isolated low voltage control and monitoring
- High reliability
- Wide input voltage range
- Paralleable with accurate current sharing
- Adjustable output voltage
- Regulation to zero load
- Temperature monitor output
- EU Directive 2002/95/EC compliant for RoHS
- Two year warranty

SAFETY

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

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ELECTRICAL SPECIFICATIONS

Input	
Input range	250 - 420 VDC
Input surge	450 V / 100 ms
Efficiency*	88% @ 5.0 V (typical)
Output	
Load Regulation	60 W for convection; 80 W with 30 CFM forced air
Line Regulation	-5, +10% minimum
Noise / ripple	20 ms @ 60 W load, 115 VAC nominal line
Output voltage adjust range	Short circuit protection on all outputs Case overload protected @ 110 - 145% above peak rating
Transient response	5 V output; 5.7 - 6.7 VDC. Other outputs 10% to 25% above nominal output
Current share accuracy	Compensates for 0.5 V lead drop min. Will operate without remote sense connected Reverse connection protected
Overvoltage protection	130% Vo (3.3 Vo and 5 Vo); 125% Vo (other Vo)
Current limit	120% Io maximum
Control	
Voltage adjust	80 to 120% for 5 V and above; +10% / -50% for below 5 V
Enable	TTL compatible (positive & negative enable options)
Clock input (external sync)	3.3 to 5.5 Vp-p @ 800 MHz ±5%
Temperature monitor output	10 mV/°K (2.73 = 0 °C)
Current monitor output	0 to 1 mA (1 mA = 100% Io rated)

Note: Nominal values apply with sense pins disconnected and other control pin unconnected.
*For detailed technical information, please refer to the product's Technical Reference Notes found at www.Artesyn.com/power.

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-20 °C to +100 °C (case temperature)
Startup temperature	-40 °C to +100 °C (case temperature)
Storage temperature	-40 °C to +100 °C
Overtemperature protection	120 °C max
MTBF	1M hours (Demonstrated)

ORDERING INFORMATION

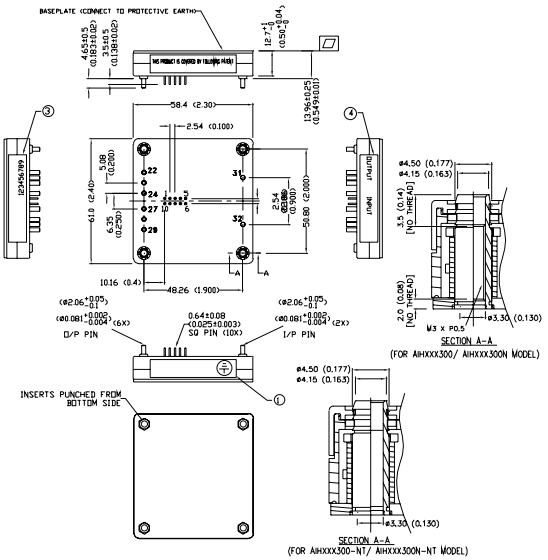
Input Voltage	Output Voltage	Efficiency	Model Number
300 V	1.8 V @ 50 A	80% (Typ)	AIH50Y300 *-**L
300 V	3.3 V @ 50 A	82% (Typ)	AIH50F300 *-**L
300 V	5.0 V @ 40 A	88% (Typ)	AIH40A300 *-**L
300 V	12 V @ 20.8 A	86% (Typ)	AIH20B300 *-**L
300 V	15 V @ 16.6 A	90% (Typ)	AIH16C300 *-**L
300 V	24 V @ 10.4 A	90% (Typ)	AIH10H300 *-**L

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

PIN ASSIGNMENTS

Input	Output	Control Pins
31. Positive	22. Positive	1. +Sense
32. Negative	23. Positive	2. Temp Mon
	24. Positive	3. C Mon
	27. Negative	4. C Share
	28. Negative	5. SDA
	29. Negative	6. SCL
		7. CLK IN
		8. V Adj
		9. Enable
		10. -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

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