

ARTESYN AIF 300V Vin SERIES



Advanced Energy's Artesyn AIF 300V Vin 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.

SPECIAL FEATURES

- Maximum 600 W continuous power at 100°C baseplate temperature
- 108 W/in³ (6.6 W/cm³)
- 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 l²C bus with digital mode control
- Paralleable with accurate current sharing

- EU Directive 2002/95/EC compliant for RoHS
- Two years warranty

SAFETY

- UL UL62368-1 Recognized
- CUL UL62368-1 Recognized
- TUV EN62368-1 Licensed
- CE Mark
- UKCA Mark

AT A GLANCE

Maximum Power:

600 Watts

Input Voltage:

300 VDC

of Outputs:

Single



ELECTRICAL SPECIFICATIONS

Input	
Input range	250 to 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 5 V and above; +10%/-50% for below 5 V
Transient response	5% max for 3.3 V and above, 150 mV for 1.8 V , deviation with 25% to 75% full load $250~\mu S$ (max) recovery
Current share accuracy	3% typical
Overvoltage protection	115% Vo (nominal)
Current limit	115% lo 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 to 5.0 V
Enable	TTL compatible (positive & negative enable options)
Current limit adjust	20 to 100% lo 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% lo 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 VDC	1.8 V @ 120 A	80% (Typ)	AIF120Y300 *-**L
300 VDC	3.3 V @ 120 A	87% (Typ)	AIF120F300 *-**L
300 VDC	5.0 V @ 80 A	90% (Typ)	AIF80A300 *-**L
300 VDC	12 V @ 50 A	90% (Typ)	AIF50B300 *-**L
300 VDC	15 V @ 40 A	90% (Typ)	AIF40C300 *-**L
300 VDC	24 V @ 25 A	90% (Typ)	AIF25H300 *-**L

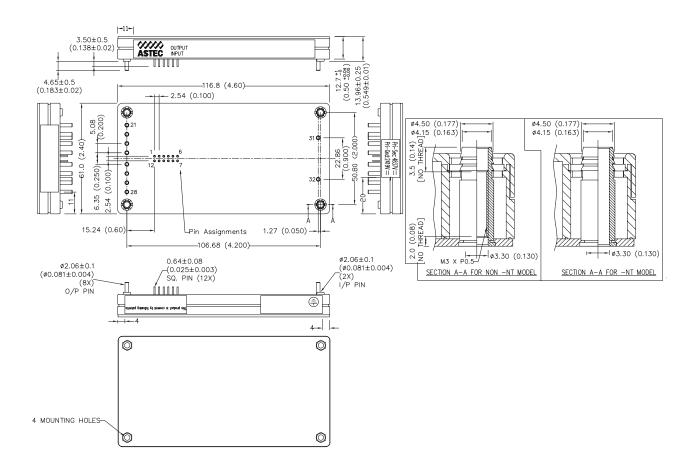
PIN ASSIGNMENTS

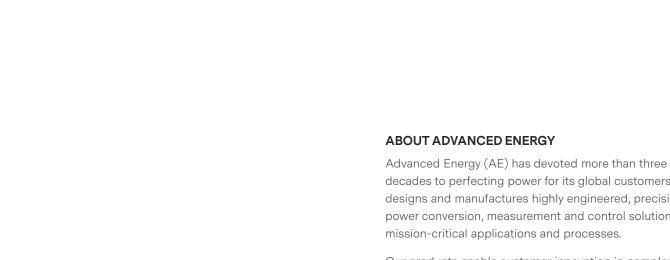
Input (DC)	Output (DC)	Control Pins
31. Positive	21. Positive	1. +Sense
32. Negative	22. Positive	2. Temp Mon
	23. Positive	3. C Mon
	24. Positive	4. C Share
	25. Negative	5. Clk Out
	26. Negative	6. Clk In
	27. Negative	7. PG/ID
	28. Negative	8. C Lim Adj
		9. OVP Adj
		10. V Adj
		11. Enable
		12Sense



^{1.} For Negative enable, add suffix "-N".
2. For Non-thread hole, add suffix "-NT".
3. For RoHS 6, add suffix "-L".

MECHANICAL DRAWINGS





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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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