ARTESYN ADC100S SERIES

100 Amp & 120 Amp PSA Satellite DC/DC Converter

Advanced Energy's Artesyn ADC100S-04 is a Direct conversion PSA satellite unit.
With the ever increasing power demands of server processors and associated memory devices, new power conversion design approaches need to be considered both at system and server level.The solution to achieve the high power required is to move to a 48 volt system with the power conversion design approaches of either distributed power conversion, or direct power conversion employed in the server.
ADC100 series follow The Power Stamp Alliance's standard product footprint and functions that provide a standard modular board-mounted solution for power conversion for 48Vin / 54Vin to low voltage, high current applications.

DATA SHEET

Total Power:

1.0 V @ 120 A
1.8 V @ 100 A

Input Voltage:

40 - 60 Vdc

Single Output Versions:

0.8 - 1.1 V
1.6 - 2.0 V

SPECIAL FEATURES

- Up to 120 Amp peak current
- PSA compliant
- Up to 91% efficient
- Low ripple and noise
- Data center 48 Vdc input range
- Open frame optimized for air cooling
- Surface mount termination
- Fixed switching frequency
- High capacitive load capability
- Pre-bias startup capability
- High reliability
- RoHS 3.0 (2011/65/EU) compliant
- UL94 V-0 materials
- Two year warranty (consult factory for extended terms)

SAFETY

- TUV/CE 62368-1
- UL/cUL 62368-1

ELECTRICAL SPECIFICATIONS

Input	
Input voltage	40 to 60 Vdc
Input undervoltage shutdown/startup	39 Vdc startup 37 Vdc shutdown
Efficiency	91%
I/O insulation	Functional insulation
I/O isolation	500 Vdc
Output	
Output voltage	1.0 V nominal (-04J variant) 1.8 V nominal (-04Y variant)
Output voltage adjustment	0.8 V to 1.1 V (-04J variant) 1.6 V to 2.0 V (-04Y variant)
Output current maximum	1.0 V at 120 Amps (-04J variant) 1.8 V at 100 Amps (-04Y variant)
Noise and ripple	±22 mV (04Y variant) TBD (04J variant)
Overtemperature protection (Open frame)	125 °C hot spot Latch protection, configurable
Overvoltage protection method/OVP operation	400 mV above Vout (-04Y variant) TBD (-04J variant) Latch protection, configurable
Overcurrent protection method/OCP operation	Latch protection, configurable
Control	
Enable	Positive enable
Columbus™ communication	All control functions supported from Main-Stamp control
Switching frequency	TBD

ORDERING INFORMATION

Model Number	Input Voltage	Output Voltage	Output Current	Structure
ADC100S-04J	40 - 60 Vdc	1.0 Vdc	120 A	Open frame, surface mount
ADC100S-04Y	40 - 60 Vdc	1.8 Vdc	100 A	Open frame,surface mount

ADC = Artesyn Direct Conversion
100 = 100/120 A peak current
04 = 40-60 Vin

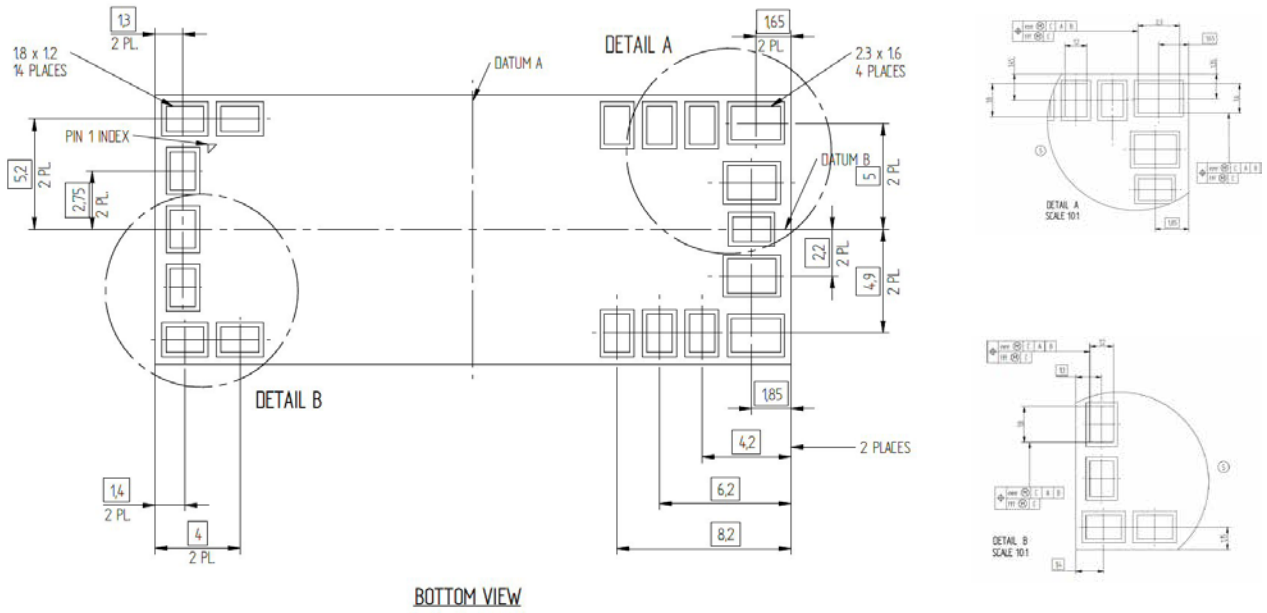
J = 1.0 V output version
Y = 1.8 V output version

ENVIRONMENTAL SPECIFICATIONS

Storage temperature	-40 to +125 °C
Ambient operating temperature	-40 to +55 °C
MTBF	>3800 k hours at 25 °C, nominal input / rated output, TDC load, Telcordia, SR332 Method 1 Case 3

MECHANICAL DIAGRAMS

Mechanical outline and pin-out definitions

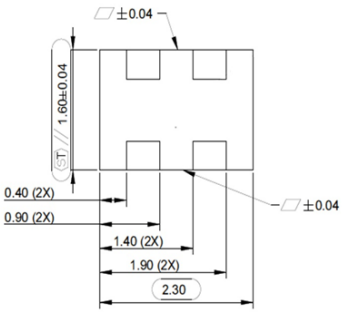


MECHANICAL DIAGRAMS (CONTINUED)

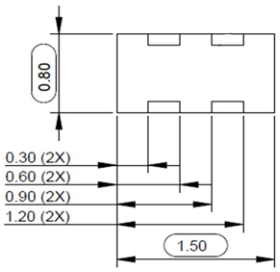
Pin 1-18 Functions					
Pin #	Pin Name	Pin Function	Pin #	Pin Name	Pin Function
1	-IN	Primary side ground connection	10	CSP	Positive current sense signal
2	+IN	Positive input voltage supply connection	11	GND	Secondary side ground connection
3	PWM¬_Y	PWM input Y connection	12	VOUT	Positive output voltage connection
4	VSS	Primary auxiliary voltage supply	13	CSN	Negative current sense signal
5	PWM_X	PWM input X connection	14	VOUT	Positive output voltage connection
6	+IN	Positive input voltage supply connection	15	GND	Secondary side ground connection.
7	-IN	Primary side ground connection	16	TMP	Positive temperature sense signal
8	PWM_S	Reserved for non-resonant topology; Short to GND	17	TMN	Negative temperature sense signal
9	VCC	Secondary side auxiliary voltage supply	18	START	START signal for secondary driver

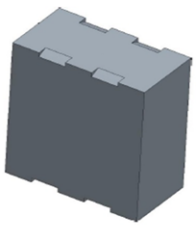
BLOCK PIN TERMINATION DESIGN

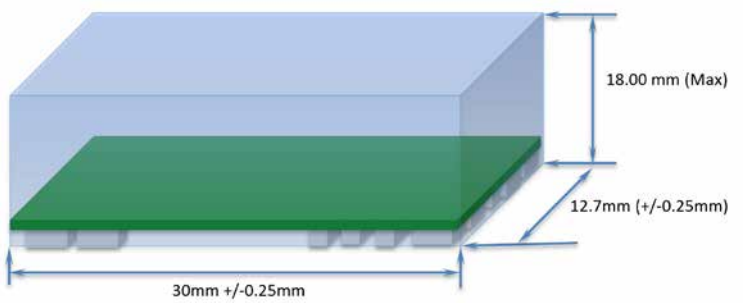
Block power pin dimensions



Block signal pin dimensions







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.

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