

# ARTESYN ADO300 SERIES

300 Watt 1/8 Brick DC-DC Converter



Advanced Energy's Artesyn ADO300 series eighth-brick isolated DC-DC converters provides a single fully regulated at 3.3 V, 5 V or 12 V output. Rated at 300 watts, these converters can deliver up to 300 W power and have no minimum load requirement. They have an input voltage range of 36 to 75 V and are primarily designed for use with standard 48 V supplies in computing and server applications, as well as regulated 48 V supplies in communications equipment.

## SPECIAL FEATURES

- 300 W continuous power
- Ultra high efficiency
- 36 to 75 Vdc Telecom input range
- Baseplate version for contact cooling or heatsink mounting
- Parallel and Droop current sharing
- Remote output sense
- Fully regulated output voltage
- No minimum load requirement
- Remote control function
- Low ripple and noise
- Fixed switching frequency

- High capacitive load capability
- Pre-bias start-up capability
- Excellent thermal performance
- High reliability
- RoHS 6 compliant
- UL94 V-0 materials
- Two-year warranty (consult factory for extended terms)

## SAFETY

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

## AT A GLANCE

### Total Power:

300 Watts  
(11.77 V @ 26 A)  
(5 V @ 60 A)  
(3.3 V @ 60 A)

### Input Voltage:

36 to 75 Vdc

### Single Output:

12 V, 5 V, 3.3 V



## ELECTRICAL SPECIFICATIONS

| Input                                         | 12 V                                                       | 5 V              | 3.3 V            |
|-----------------------------------------------|------------------------------------------------------------|------------------|------------------|
| Input voltage                                 | 36 - 75 Vdc                                                |                  |                  |
| Input surge                                   | 95 V / 100 mSec                                            |                  |                  |
| Input UVLO (typical)                          | Turn-on: 34 Vdc<br>Turn-off: 32 Vdc<br>Hysteresis: 2 Vdc   |                  |                  |
| Efficiency                                    | 95.5% (60% load)                                           | 95.2% (50% load) | 93.7% (50% load) |
| I/O insulation                                | Basic insulation                                           |                  |                  |
| I/O isolation                                 | 1500 Vdc                                                   |                  |                  |
| Output                                        | 12 V                                                       | 5 V              | 3.3 V            |
| Output voltage (Vin = 48 V)                   | 11.82 V                                                    | 5 V              | 3.3 V            |
| Output current maximum                        | 26 A                                                       | 60 A             | 60A              |
| Noise & ripple                                | 70 mV pk-pk typ.                                           | 50 mV pk-pk typ. | 20 mV pk-pk typ. |
| Overtemperature protection                    | Baseplate: 110 °C typ.<br>Open frame: 125 °C hot spot typ. |                  |                  |
| Overvoltage protection method / OCP operation | 115%-150% rated output voltage/hiccup and auto restart     |                  |                  |
| Overcurrent protection method / OCP operation | 110%-150% rated output current /hiccup and auto restart    |                  |                  |
| Control                                       | 12 V                                                       | 5 V              | 3.3 V            |
| Enable                                        | TTL compatible (negative logic)                            |                  |                  |
| Switching frequency                           | 150 KHz fixed frequency                                    |                  |                  |
| Pre-bias start-up                             | 0% - 90% Vout                                              |                  |                  |
| Parallel connection & droop share             | Droop share                                                |                  |                  |

## PIN ASSIGNMENTS

| Pin # | Name          | Function                 | Optional |
|-------|---------------|--------------------------|----------|
| 1     | +Vin          | Positive input voltage   |          |
| 2     | Remote On/Off | Remote control           |          |
| 3     | -Vin          | Negative input voltage   |          |
| 4     | -Vo           | Negative output voltage  |          |
| 5     | -Sense        | Remote sense negative    | Yes      |
| 6     | Trim/C1       | Voltage adjustment       | Yes      |
| 7     | +Sense        | Remote sense positive    | Yes      |
| 8     | +Vo           | Positive output voltages |          |
| 9     | C2            | Digital                  | Yes      |
| 10    | Sig_Gnd       | Digital                  | Yes      |
| 11    | Data          | Digital                  | Yes      |
| 12    | SMBAlert      | Digital                  | Yes      |
| 13    | Clock         | Digital                  | Yes      |
| 14    | Addr1         | Digital                  | Yes      |
| 15    | Addr0         | Digital                  | Yes      |

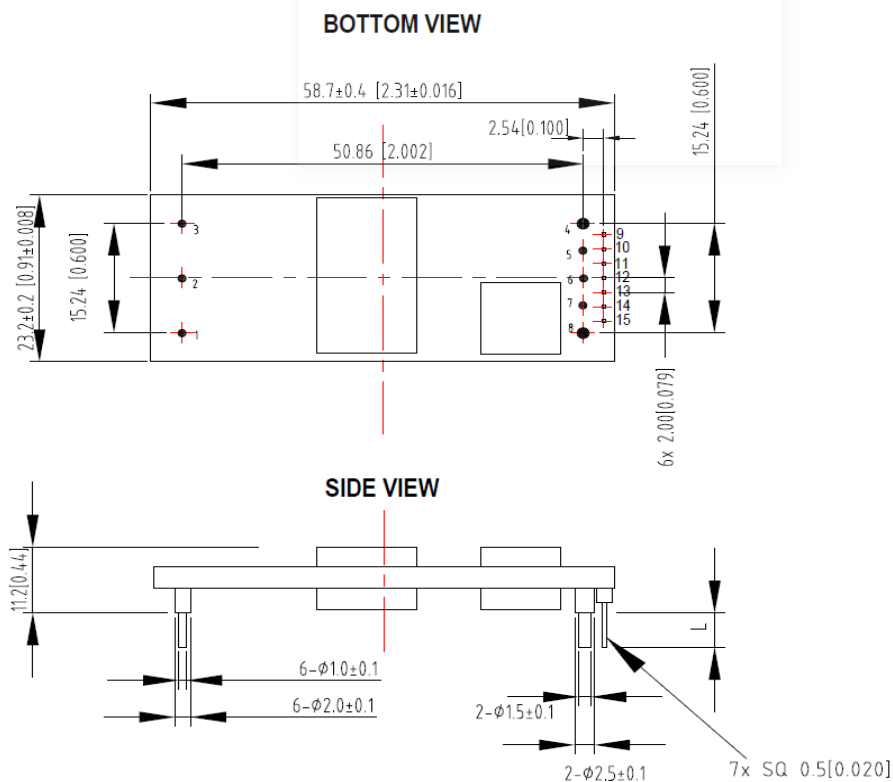
## PIN LENGTH OPTIONS

| Device code suffix | Pin Length           |
|--------------------|----------------------|
| -4                 | 4.6 mm $\pm$ 0.25 mm |
| -6                 | 3.8 mm $\pm$ 0.25 mm |
| -8                 | 2.8 mm $\pm$ 0.25 mm |
| None               | 5.8 mm $\pm$ 0.25 mm |

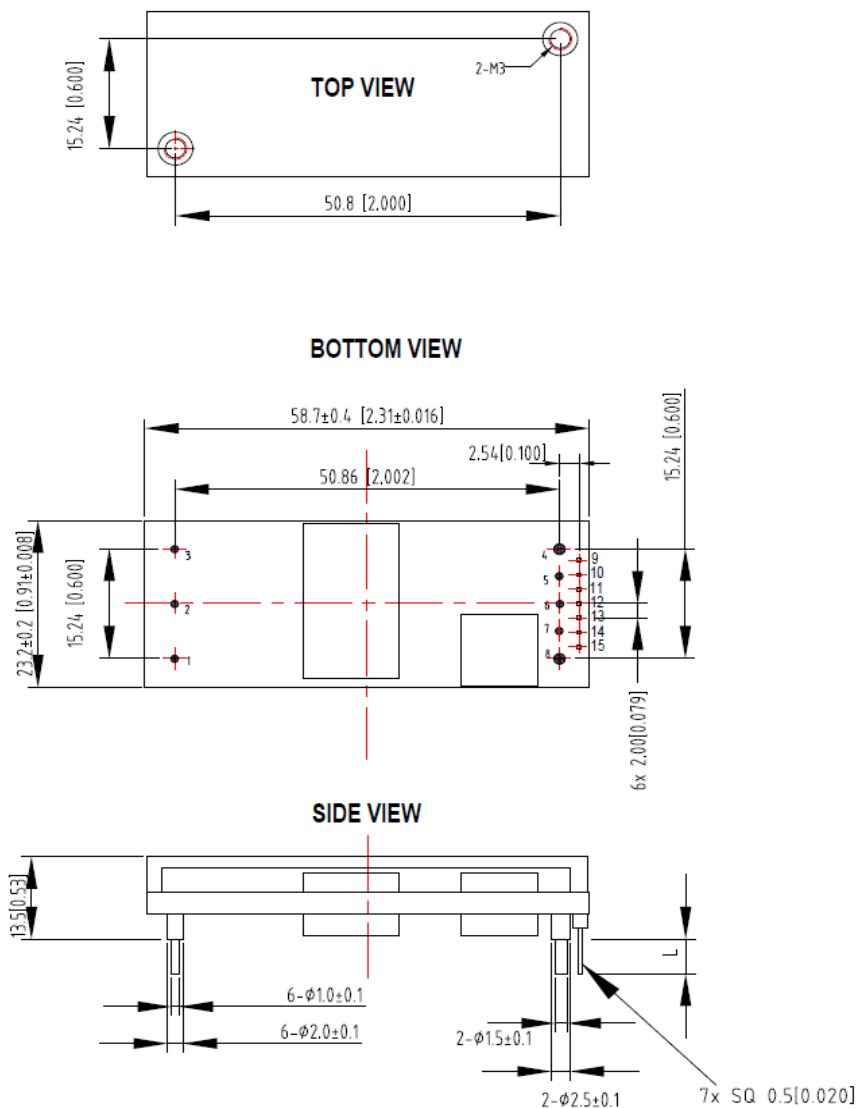
## ENVIRONMENTAL SPECIFICATIONS

|                       |                   |
|-----------------------|-------------------|
| Operating temperature | -40 to +85 °C     |
| Storage temperature   | -55 to +125 °C    |
| MTBF                  | 1.5 million hours |

## ADO300-48S12-6LI MECHANICAL DRAWING - OPEN FRAME MODULE



## ADO300-48S12B-6LI MECHANICAL DRAWING - BASEPLATE MODULE



Unit: mm[inch] L=3.8±0.5mm  
 Tolerance: X.Xmm±0.5mm[X.XX in.±0.02in.]  
 X.XXmm±0.25mm[X.XXX in.±0.01in.]

## Notes:

1. Dimensions within the box are critical dimensions.
2. Depth penetration into baseplate of M3 screws used at baseplate mounting holes, not to exceed maximum of 3.0mm.
3. No pin 9-15 for ADO300-48S12B-6LI; ADO300-48S12B-6LI with pin 9-15.
4. Different output voltage ADO300 products have slight differences in the mechanical drawing. Please check the specified product's Technical Reference Note for more details.
5. All specifications are subject to change without notice. Mechanical drawings are for reference only.

## ORDERING INFORMATION

| Model number       | Input voltage | Output voltage set point | Output current | Efficiency        |
|--------------------|---------------|--------------------------|----------------|-------------------|
| ADO300-48S12-6L    | 36 - 75 Vdc   | 11.77 Vdc                | 26 A           | 95.2% (full load) |
| ADO300-48S12B-6L   | 36 - 75 Vdc   | 11.77 Vdc                | 26 A           | 95.2% (full load) |
| ADO300-48S12-6LI   | 36 - 75 Vdc   | 11.77 Vdc                | 26 A           | 95.2% (full load) |
| ADO300-48S12B-6LI  | 36 - 75 Vdc   | 11.77 Vdc                | 26 A           | 95.2% (full load) |
| ADO300-48S05-6L    | 36 - 75 Vdc   | 5.0 Vdc                  | 60 A           | 94.6% (full load) |
| ADO300-48S05-6LI   | 36 - 75 Vdc   | 5.0 Vdc                  | 60 A           | 94.6% (full load) |
| ADO300-48S05B-6L   | 36 - 75 Vdc   | 5.0 Vdc                  | 60 A           | 94.6% (full load) |
| ADO300-48S05B-6LI  | 36 - 75 Vdc   | 5.0 Vdc                  | 60 A           | 94.6% (full load) |
| ADO300-48S05PB-6L  | 36 - 75 Vdc   | 5.0 Vdc                  | 60 A           | 94.6% (full load) |
| ADO300-48S3V3-6L   | 36 - 75 Vdc   | 3.3 Vdc                  | 60 A           | 93% (full load)   |
| ADO300-48S3V3-6LI  | 36 - 75 Vdc   | 3.3 Vdc                  | 60 A           | 93% (full load)   |
| ADO300-48S3V3B-6L  | 36 - 75 Vdc   | 3.3 Vdc                  | 60 A           | 93% (full load)   |
| ADO300-48S3V3B-6LI | 36 - 75 Vdc   | 3.3 Vdc                  | 60 A           | 93% (full load)   |

Default = Negative remote control

P = Positive remote control

B = Baseplate

-6 = 3.8 mm pin length

I = PMBus interface version



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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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