

FEATURES

- Small, encapsulated Module for PCB Mounting
- Universal Input 85-264VAC, 47-440Hz
- Constant Power Mode
- Regulated Output Voltage 8, 14 or 24VDC
- Models with additional 3.3 or 5VDC Output
- Operating Temp. Range -30°C to 70°C
- 3k VAC Isolation, Protection Class II level
- EMI meets EN55022, class B, FCC part15, Class B and EN55014-1
- Safety Approval to UL/cUL/IEC/EN 60950-1 TUV IEC/EN 60335-1
- 3 Years Product Warranty



The AC02S/D series is a new range of small, fully encapsulated AC/DC power supply modules. They are designed for direct PCB mounting with solder pins. They feature regulated output voltages which have a constant output power mode instead of a conventional current limit characteristics, which makes the power modules suitable to drive relays, solenoids, capacitive loads and LED's. To power logic circuits for standby functions models with an additional second, voltage regulated 3.3 or 5VDC output are available.

The AC02S/D power supply modules provide a cost-effective new solution for standby power applications in appliances and consumer electronics equipment. Universal input voltage 85-264VAC and International safety approvals including IEC/EN60335-1 qualifies the product for worldwide markets

Model Selection Guide

| Model Number | Output 1 | | Output 2 | | Input Current @Max. Load mA(typ.) | Efficiency (typ.) @Max. Load % |
|----------------|----------|-----------------|----------|-----------------|---|---|
| | Voltage | Current Max. | Voltage | Current Max. | | |
| | VDC | mA | VDC | mA | | |
| AC02S0800A | 8 | 250 | --- | --- | 42 | 72 |
| AC02S1400A | 14 | 143 | --- | --- | 40 | 74 |
| AC02S2400A | 24 | 83 | --- | --- | 39 | 76 |
| AC02D0803A *** | 8 | * | 3.3 | 160 | 43 | 69 |
| AC02D0805A *** | 8 | * | 5 | 250 | 43 | 69 |
| AC02D1403A *** | 14 | ** | 3.3 | 70 | 43 | 70 |
| AC02D1405A *** | 14 | ** | 5 | 83 | 43 | 70 |

* $I_{o1} + I_{o2} \leq 250\text{mA}$

** $I_{o1} + I_{o2} \leq 143\text{mA}$

*** The definition of output power (Po) for dual-output modules : $P_o = V_{o1} \times (I_{o1} + I_{o2})$

Input Specifications

| Parameter | Model | Min. | Typ. | Max. | Unit |
|---------------------------|------------|------|------|------|------|
| Input Voltage Range | All Models | 85 | --- | 264 | VAC |
| Input Frequency Range | | 47 | --- | 440 | Hz |
| Input Voltage Range | | 120 | --- | 370 | VDC |
| No-Load Power Consumption | | --- | 30 | --- | mW |
| Input Surge Voltage | | --- | --- | 308 | VAC |

Output Specifications

| Parameter | Conditions | | Min. | Typ. | Max. | Unit |
|--------------------------|--------------------|-----------------------------|------|-----------|-----------|-----------|
| Output Voltage Accuracy | Output 1 | $V_{in}=115VAC$, Full Load | --- | --- | ± 5.0 | % |
| | Output 2 | | --- | --- | ± 2.0 | % |
| Line Regulation | Output 1 | $V_{in}=85\sim 264VAC$ | --- | ± 1.0 | --- | % |
| | Output 2 | | --- | ± 0.3 | --- | % |
| Load Regulation | Output 1 | $I_o=10\%$ to 100% | --- | ± 1.0 | --- | % |
| | Output 2 | | --- | ± 0.5 | --- | % |
| Ripple & Noise | 0-20 MHz Bandwidth | Output 1 | --- | 1 | --- | V_{P-P} |
| | | Output 2 | --- | 0.1 | --- | V_{P-P} |
| Short Circuit Protection | Continuous | | | | | |

General Specifications

| Parameter | Conditions | Min. | Typ. | Max. | Unit |
|-----------------------|--|---------|------|------|-------|
| I/O Isolation Voltage | Input to Output, 60 Seconds | 3000 | --- | --- | VAC |
| Switching Frequency | | --- | 45 | --- | KHz |
| MTBF (calculated) | MIL-HDBK-217F@25°C, Ground Benign | 500,000 | --- | --- | Hours |
| Safety Approvals | UL/cUL 60950-1 recognition(UL certificate) IEC/EN 60950-1(CB-scheme) IEC/EN 60335-1 recognition(TUV certificata,CB-scheme) | | | | |

EMC Specifications

| Parameter | Standards & Level | | Performance |
|-----------|---------------------------------|---|-------------|
| EMI | EN55014-1, EN55022, FCC part 15 | | Class B |
| EMS | EN55014-2 ,EN55024 | | |
| | ESD | EN61000-4-2 air $\pm 8kV$, Contact $\pm 4kV$ | A |
| | Radiated immunity | EN61000-4-3 10V/m | A |
| | Fast transient | EN61000-4-4 $\pm 2kV$ | A |
| | Surge | EN61000-4-5 $\pm 1kV$ | A |
| | Conducted immunity | EN61000-4-6 10Vrms | A |
| | PFMF | EN61000-4-8 30A/M | A |
| | Dips | EN61000-4-11 30% 10ms | A |
| | Interruptions | EN61000-4-11 >95% 5000ms | B |

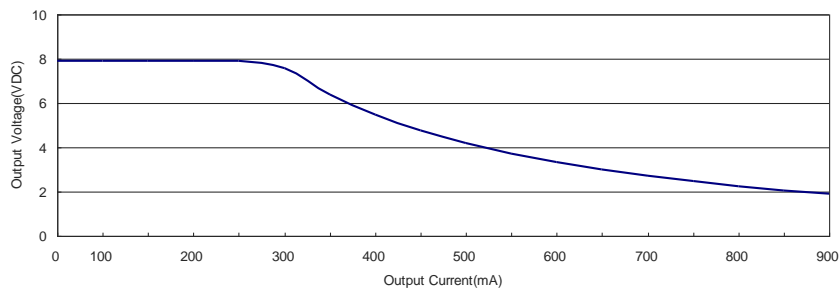
Environmental Specifications

| Parameter | Conditions | Min. | Max. |
|---------------------------------|---------------------|-------|-------------|
| Temperature Range (operational) | Ambient | -30°C | +70°C |
| Storage Temperature Range | | -40°C | +85°C |
| Humidity (non condensing) | | --- | 95 % rel. H |
| Cooling | Free-Air convection | | |

Notes

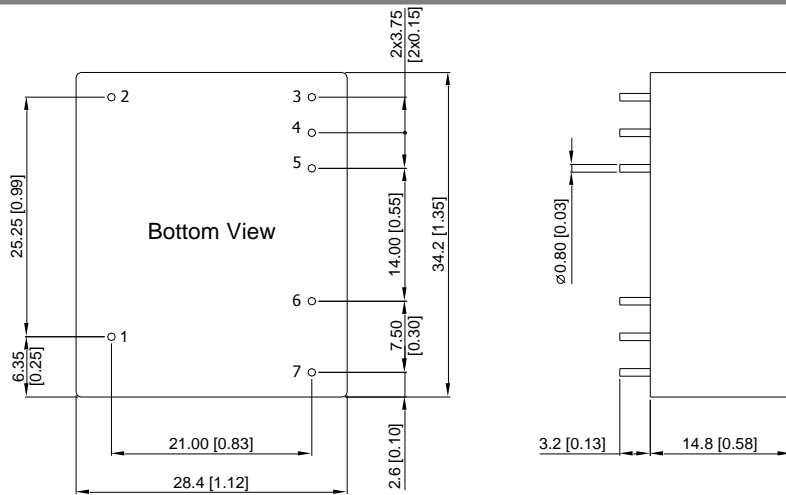
- All specifications typical at $T_a=+25^\circ C$, resistive load, 115VAC, 60Hz input voltage and after warm-up time rated output current unless otherwise noted.
- These power modules require a minimum output loading to maintain specified regulation, operation under no-load conditions will not damage the power supplies however they may not meet all listed specifications.
- We recommend to protect the converter by a slow blow fuse in the input supply line.
- Other input and output voltage may be available, please contact factory.
- Specifications are subject to change without notice.

Typical Constant Power V/I Curve



Package Specifications

Mechanical Dimensions



Pin Connections

| Pin | Single Output | Dual Output |
|-----|---------------|-------------|
| 1 | | NC |
| 2 | | NC |
| 3 | +Vout | +Vout1 |
| 4 | -Vout | Common |
| 5 | NP | +Vout2 |
| 6 | | AC(N) |
| 7 | | AC(L) |

- ▶ All dimensions in mm (inches)
- ▶ Tolerance: $\pm 0.5 (\pm 0.01)$
- ▶ Pin diameter $\Leftrightarrow 0.8 \pm 0.1 (0.03 \pm 0.004)$

Physical Characteristics

| | |
|---------------|---|
| Case Size | : 34.2x28.4x14.8mm (1.35x1.12x0.58 inches) |
| Case Material | : Plastic resin (flammability to UL 94V-0 rated) |
| Pin Material | : Copper Alloy with Gold Plate Over Nickel Subplate |
| Weight | : 24g |



Part Numbering System

| A | C | 02 | S | 08 | 00 | A |
|--------------------|---------------------|---------|-------------------|------------------|---------------------|---------------|
| Product type | Family series | Watt | Number of Outputs | Output Voltage I | Output Voltage II | Option Code |
| AC/DC Power Module | Constant Power Mode | 02 - 2W | S - Single | 08 - 8V | 00 - not applicable | A - PCB Mount |
| | | | D - Dual | 14 - 14V | 03 - 3V | |
| | | | | 24 - 24V | 05 - 5V | |

CONTACT: www.deltaww.com/dcdc

Email: dcdc@deltaww.com

USA:

Telephone:

East Coast: 978-656-3993

West Coast: 510-668-5100

Fax: (978) 656 3964

Europe:

Phone: +31-20-655-0967

Fax: +31-20-655-0999

Asia & the rest of world:

Telephone: +886 3 4526107

ext 6220~6224

Fax: +886 3 4513485

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JONHON

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Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А