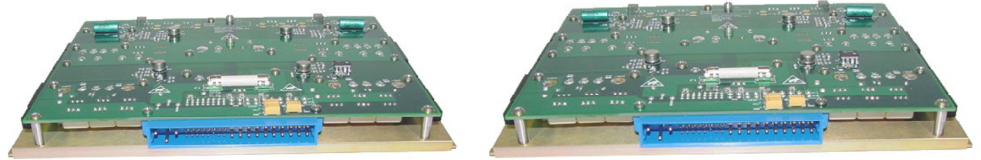


## AG2512

### DC-DC VME Power Converter Card

(Document Rev A06, 09/01/2015)



**28Vdc Input  
4 Output, 300W Max**

### Features

- 28Vdc input per MIL-STD-704E/F \*
- 4 Output Voltages, 300W Max.
- MIL-STD-810E Environmental \*
- MIL-STD-461E EMI \*
- Dual Slot VME Power Card

\* Designed to meet portions of the standard. Contact Aegis for details.

**Table 1: Maximum Ratings**

| Parameter             | Rating     | Unit | Notes                    |
|-----------------------|------------|------|--------------------------|
| Vin max range         | 22 to 29   | Vdc  |                          |
| Temperature           | -46 to +65 | °C   | Baseplate Wedgelock 300W |
| Temperature           | -46 to +71 | °C   | Baseplate Wedgelock 250W |
| Combined output power | 300        | W    |                          |
| Input power           | 385        | W    |                          |
| Max +5Vdc Output      | 200        | W    |                          |
| Max +3.3Vdc Output    | 150        | W    |                          |
| Max +12Vdc Output     | 100        | W    |                          |
| Max -12Vdc Output     | 100        | W    |                          |

### Product Highlights

The AG2512 is a dual slot 8HP wide x 6U high filtered dc-dc power converter card with four outputs (+3.3Vdc, +5Vdc, and ±12Vdc) at 300W maximum (all four outputs combined). This power converter card is developed for Mil-COTS military ground mobile defense solutions and designed to meet portions of MIL-STD-704E/F input requirements, MIL-STD-810E vibration and shock requirements, and MIL-STD-461E EMI requirements. The AG2512 military Mil-COTS designed VME power converter card provides users with an efficiency of 78% and the low weight of 3.5 pounds in a dual slot conduction cooled power card.

**AEGIS Power Systems, Inc.** specializes in the front end design, development, and manufacture of Rapid Response Custom Switching Power Supplies for defense, industrial, telecommunication, shipboard, aircraft, rackmounted, and electric powered vehicle applications. Contact Aegis Power Systems for details on Mil-Specs that this product is designed to meet.

**Table 2: Voltage Outputs**

|                                                                                            | V1    | V2      | V3     | V4     |
|--------------------------------------------------------------------------------------------|-------|---------|--------|--------|
| <b>AG2512</b> Maximum individual DC outputs.*                                              | +5Vdc | +3.3Vdc | +12Vdc | -12Vdc |
|                                                                                            | 40A   | 45A     | 8.3A   | 8.3A   |
|                                                                                            | 200W  | 150W    | 100W   | 100W   |
| Max total output power is 300W (all DC outputs combined). Contact AEGIS sales for details. |       |         |        |        |

## **SPECIFICATIONS**

**(Typical at 25°C, nominal line and 100% load, unless otherwise specified.)**

|                                 |                                                                                                                                                                                                        |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DC input voltage:</b>        | Designed to meet Mil-Std-704E Normal Range.<br>22Vdc to 29Vdc, 28Vdc nominal.<br>50Vdc 12.5msec transient, shutdown for longer automatic restart.<br>Shuts down for Abnormal Range, automatic restart. |
| <b>DC input line current:</b>   | 18A Max @ 22Vdc, 14A typical @ 28Vdc input.                                                                                                                                                            |
| <b>Input power:</b>             | 385W Maximum.                                                                                                                                                                                          |
| <b>Output power:</b>            | 300W Maximum all outputs combined.                                                                                                                                                                     |
| <b>Output voltages:</b>         | See table 2.<br>+5Vdc 40A 200W<br>+3.3Vdc 45A 150W<br>+12Vdc 8.3A 100W<br>-12Vdc 8.3A 100W                                                                                                             |
| <b>Output ripple:</b>           | 50mV pk-pk Max. all except +3.3VDC 65mV pk-pk Max. (20MHz BW).                                                                                                                                         |
| <b>Current Limit:</b>           | Short circuit protected with automatic recovery.                                                                                                                                                       |
| <b>Remote Sense:</b>            | +5Vdc and +3.3Vdc remote sense 0.25Vdc correction.                                                                                                                                                     |
| <b>Over Voltage Protection:</b> | Typical 115%, Recycle input power to reset (1 minute off).                                                                                                                                             |
| <b>Efficiency:</b>              | 78% minimum.                                                                                                                                                                                           |
| <b>Start up time:</b>           | 1 second maximum.                                                                                                                                                                                      |
| <b>Voltage set point:</b>       | +/-0.5%                                                                                                                                                                                                |
| <b>Line/Load regulation:</b>    | +/- 1%                                                                                                                                                                                                 |
| <b>Temperature regulation:</b>  | +/-0.01%/deg C                                                                                                                                                                                         |
| <b>Temperature:</b>             | -46°C to +71°C Operating baseplate wedgelocks 250W.<br>-46°C to +65°C Operating baseplate wedgelocks 300W.<br>-55°C to +100°C Non-operating.                                                           |
| <b>Cooling:</b>                 | Baseplate conduction through wedgelocks to customer's card rack.                                                                                                                                       |
| <b>Package:</b>                 | Dual slot pluggable slide-in card with baseplate attached.                                                                                                                                             |
| <b>Dimension:</b>               | 6U x 8hp x 160mm (see mechanical drawing).                                                                                                                                                             |
| <b>Weight:</b>                  | 3.5 lbs. Maximum.                                                                                                                                                                                      |
| <b>Connector:</b>               | 1ea Positronics PCIH47M400A1 or equivalent (see pin assignments page).                                                                                                                                 |
| <b>Vibration:</b>               | MIL-STD-810E, Procedure I, Ground Mobile. Call for details.                                                                                                                                            |
| <b>Shock:</b>                   | MIL-STD-810E, Procedure I, Functional Ground Equipment. Call for details.                                                                                                                              |
| <b>Humidity:</b>                | 0 – 95% non-condensing.                                                                                                                                                                                |
| <b>EMI:</b>                     | Mil-Std-461E (CE102 and CS101). Call for details.                                                                                                                                                      |

Specifications subject to change without notice.

## Connector Pin Out Assignment

47 Pin Positronic Connector P/N PCIH47M400A1 or Equivalent

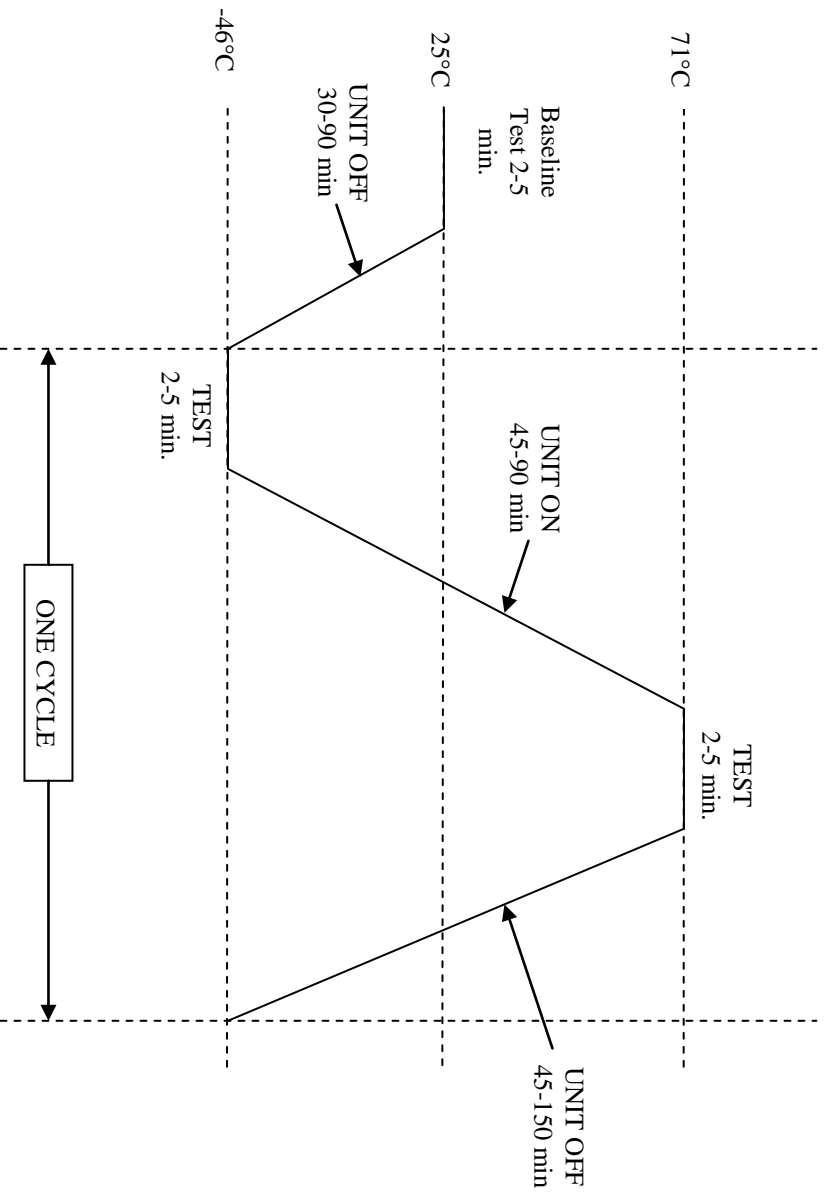
| <u>Pin Number</u>          | <u>Size</u> | <u>Rated Amps</u> | <u>Signal Name</u>     | <u>Mating</u>       | <u>Comments</u>                                  |
|----------------------------|-------------|-------------------|------------------------|---------------------|--------------------------------------------------|
| <b>Pins 1, 2, 3, 4</b>     | <b>16</b>   | <b>28</b>         | <b>+5 Vdc Output</b>   | <b>2nd to Mate</b>  | <b>+5V Output</b>                                |
| <b>Pins 5, 6, 7, 8</b>     | <b>16</b>   | <b>28</b>         | <b>GND</b>             | <b>2nd to Mate</b>  | <b>+5V Rtn (Common)</b>                          |
| <b>Pins 9, 10, 11, 12</b>  | <b>16</b>   | <b>28</b>         | <b>GND</b>             | <b>2nd to Mate</b>  | <b>+3.3V Rtn (Common)</b>                        |
| <b>Pins 13, 14, 15, 16</b> | <b>16</b>   | <b>28</b>         | <b>+3.3Vdc Output</b>  | <b>2nd to Mate</b>  | <b>+3.3V Output</b>                              |
| <b>Pin 17</b>              | <b>16</b>   | <b>28</b>         | <b>+12Vdc Output</b>   | <b>2nd to Mate</b>  | <b>+12V Output</b>                               |
| <b>Pin 18</b>              | <b>16</b>   | <b>28</b>         | <b>GND</b>             | <b>2nd to Mate</b>  | <b>+12V Rtn (Common)</b>                         |
| <b>Pin 19</b>              | <b>16</b>   | <b>28</b>         | <b>-12Vdc Output</b>   | <b>2nd to Mate</b>  | <b>-12V Output</b>                               |
| <b>Pin 20</b>              | <b>16</b>   | <b>28</b>         | <b>GND</b>             | <b>2nd to Mate</b>  | <b>-12V Rtn (Common)</b>                         |
| <b>Pin 21</b>              | <b>20</b>   | <b>3</b>          | <b>Not Used</b>        | <b>2nd to Mate</b>  |                                                  |
| <b>Pin 22</b>              | <b>20</b>   | <b>3</b>          | <b>GND</b>             | <b>2nd to Mate</b>  | <b>Signal Rtn (Common)</b>                       |
| <b>Pin 23</b>              | <b>20</b>   | <b>3</b>          | <b>Not Used</b>        | <b>2nd to Mate</b>  | <b>Test (+5V Trim)</b>                           |
| <b>Pin 24</b>              | <b>20</b>   | <b>3</b>          | <b>Not Used</b>        | <b>2nd to Mate</b>  |                                                  |
| <b>Pin 25</b>              | <b>20</b>   | <b>3</b>          | <b>Not Used</b>        | <b>2nd to Mate</b>  |                                                  |
| <b>Pin 26</b>              | <b>20</b>   | <b>3</b>          | <b>Not Used</b>        | <b>2nd to Mate</b>  | <b>Test (+12V Trim)</b>                          |
| <b>Pin 27</b>              | <b>20</b>   | <b>3</b>          | <b>Not Used</b>        | <b>Last to Mate</b> |                                                  |
| <b>Pin 28</b>              | <b>20</b>   | <b>3</b>          | <b>Not Used</b>        | <b>2nd to Mate</b>  |                                                  |
| <b>Pin 29</b>              | <b>20</b>   | <b>3</b>          | <b>Not Used</b>        | <b>2nd to Mate</b>  | <b>Test (-12V Trim)</b>                          |
| <b>Pin 30</b>              | <b>20</b>   | <b>3</b>          | <b>+5V Sense Pos</b>   | <b>2nd to Mate</b>  | <b>+5V Remote Sense Pos</b>                      |
| <b>Pin 31</b>              | <b>20</b>   | <b>3</b>          | <b>+5V Sense Neg</b>   | <b>2nd to Mate</b>  | <b>+5V Remote Sense Neg</b>                      |
| <b>Pin 32</b>              | <b>20</b>   | <b>3</b>          | <b>Not Used</b>        | <b>2nd to Mate</b>  | <b>Test (+3.3V Trim)</b>                         |
| <b>Pin 33</b>              | <b>20</b>   | <b>3</b>          | <b>+3.3V Sense Pos</b> | <b>2nd to Mate</b>  | <b>3.3V Remote Sense Pos</b>                     |
| <b>Pin 34</b>              | <b>20</b>   | <b>3</b>          | <b>+3.3V Sense Neg</b> | <b>2nd to Mate</b>  | <b>3.3V Remote Sense Neg</b>                     |
| <b>Pins 35 - 41</b>        | <b>20</b>   | <b>3</b>          | <b>Not Used</b>        | <b>2nd to Mate</b>  |                                                  |
| <b>Pin 42</b>              | <b>20</b>   | <b>3</b>          | <b>FAL#</b>            | <b>2nd to Mate</b>  | <b>Power OK</b><br><b>Open collector = Fail)</b> |
| <b>Pin 43</b>              | <b>20</b>   | <b>3</b>          | <b>Not Used</b>        | <b>2nd to Mate</b>  |                                                  |
| <b>Pin 44</b>              | <b>20</b>   | <b>3</b>          | <b>Not Used</b>        | <b>2nd to Mate</b>  |                                                  |
| <b>Pin 45</b>              | <b>16</b>   | <b>40</b>         | <b>Chassis GND</b>     | <b>1st to Mate</b>  | <b>Safety Ground</b>                             |
| <b>Pin 46</b>              | <b>16</b>   | <b>40</b>         | <b>POS Input</b>       | <b>2nd to Mate</b>  | <b>Positive Input</b>                            |
| <b>Pin 47</b>              | <b>16</b>   | <b>40</b>         | <b>NEG Input</b>       | <b>2nd to Mate</b>  | <b>Negative Input</b>                            |

# AEGIS Power Systems, Inc.

## AG2512 Temperature Cycle

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Page 1 of 1



CYCLE REPEATED  
10 TIMES, LAST  
TEST PERFORMED  
AT 71°C.

ALL TEST AND CYCLES CONTROLLED USING  
LABVIEW® AUTOMATED PROGRAM

