

GTA401

AC-DC Power Supply

(Document Rev A03 9/2/15)



Single Phase 47- 440Hz 95/250Vac Input Dual Output, 200W Max Total

Market: Military, Industrial

Application: Electronic Equipment Rack

Features

- 95/250Vac input.
- Designed to meet portions of MIL-Std-704F*
- Dual Output, 200W.
- Designed to meet portions of Mil-Std-810F environmental specs.*
- Designed to meet portions of Mil-Std-461F EMI specifications.*

* Contact AEGIS Power Systems for specific details.

Table 1: Maximum Ratings

Parameter	Rating	Unit	Notes
Vin max range	95 to 250	Vac	
Temperature range	-40 to +85	°C	
Output power	200	W	
Input power	260	W	
+3.6Vdc output	100	W	
+5.3Vdc output	100	W	

Product Highlights

This chassis mounted filtered ac-dc power converter has Power Factor Correction. Factory configured outputs (+3.6Vdc, +5.3Vdc) with 200W max total combined output. This COTS solution works well for Mil-cots and is designed to meet portions of Mil-Std-704F input, MIL-STD-810F vibration and shock, and MIL-STD-461E EMI requirements.

AEGIS Power Systems, Inc. specializes in the front end design, development, and manufacture of Rapid Response Custom Switching Power Supplies for defense, industry, telecomm, aircraft, shipboard, rack mount, electric powered vehicle, and Mil-Cots military power supply applications. Contact Aegis for specific details on what can be designed for your particular military power supply application and what portions of a particular military standard can be offered for that power supply.

SPECIFICATIONS

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

Input voltage:	Normal 95VAC to 250VAC, 47Hz to 440Hz (Optimized for 400Hz) Transient 70VAC to 270VAC, 100 msec Mil-Std-704F Normal and abnormal range
Input current:	2.3A @ 115VAC.
Input power:	260W @ 115VAC.
Power factor:	0.97 typical 360-440Hz.
Output power:	200W Max. All outputs combined.
Holdup time:	18 msec typical.
Output voltages:	See table 2 for details.
Efficiency:	77.2%/115VAC typical. full load.
Output ripple:	See table 2 for details.
Current Limit:	Short circuit protected with automatic recovery.
Start up time:	500 millisecond Max.
Voltage set point:	± 2%.
Line regulation:	± 2%.
Load regulation:	± 2%.
Temperature regulation:	± 0.02% / °C.
Temperature:	−40°C to +85°C Operating. -20°C to +120°C Non-Operating.
Cooling:	Customer provided forced fan cooling across attached Heatsink.
Package:	Chassis mounted enclosed metal case.
Dimensions:	9" x 5" x 1.5" see mech dwg.
Weight:	3.2 lbs. Typical.
Connector:	Molex Minifit Jr. 39-30-0040 (Input Power) Molex Minifit Jr. 39-30-0120 (Output Power)
Vibration:	MIL-STD-810F, Method 514.5, Procedure 1
Shock:	MIL-STD-810F, Method 514.5, Procedure 1
Humidity:	0 – 95% non-condensing.
EMI:	Mil-Std-461F, CE102, CS101

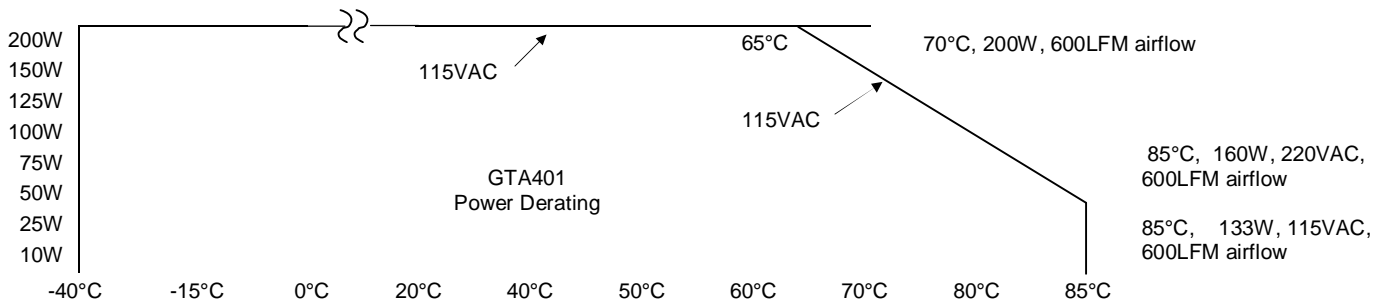
Table 2: Voltage Outputs

GTA401	V1	V2
Voltage	+3.6Vdc	+5.3Vdc
Current	27.8A	18.9A
Power	100W ¹	100W ¹
Ripple	150mVpk-pk ²	150mVpk-pk ²
Maximum total output power is 200W (all DC outputs combined).		

- 1 Isolated from input and chassis.
- 2 pk-pk 20MHz BW limit.

Figure 1: Power Derating for Temperature and Input Voltage

Power Derating for Temperature and Input Voltage per below Graph

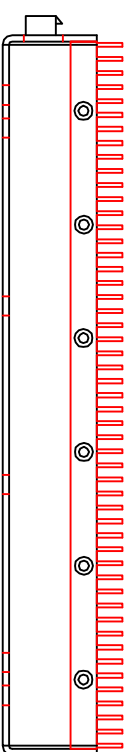
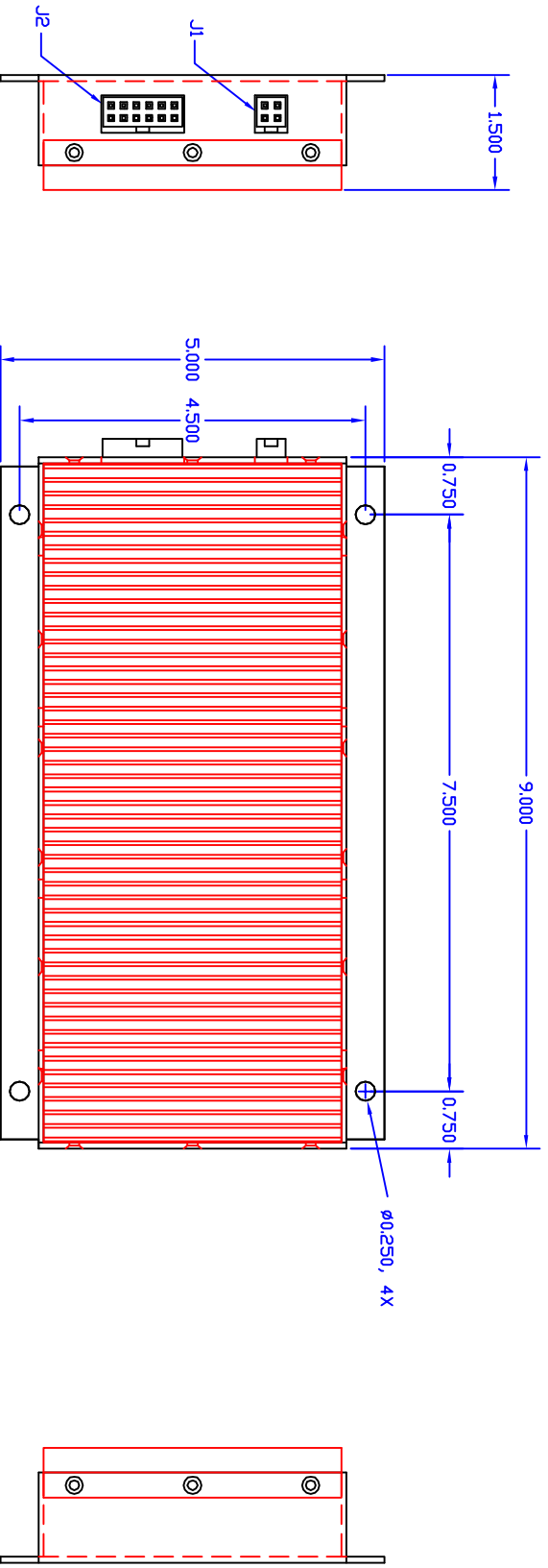


Forced Air Cooling 600LFM

NOTES: UNLESS OTHERWISE SPECIFIED
 1. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1994.
 2. MATERIAL: ALUMINUM ALDY
 3. FINISH: CHEMICAL FILM PER MIL-DTL-5541F, CLASS 3, TYPE II, COLOR CLEAR

ZONE	REV	DESCRIPTION	DATE	APPROVED
A01	XXX		XXX	XXX
A02		ROTATE HEATSINK FINS	4/28/14	NVM
A03		height from 1.6" to 1.5"	4/29/14	NVM
A04		CHANGED LAYOUT OF INPUT PINS	6/30/14	TLD
A05		CHANGED LAYOUT OF OUTPUT PINS	6/30/14	TLD
B01		FIXED OUTPUT PIN LOCATIONS	9/17/14	TLD
B02		CHANGED ENABLE PINS TO SENSE PINS	6/11/15	TLD

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY.



NOTE: MIN 600 LFM EXPECTED AT MAX LOAD

MINI-FIT JR. 39-30-0040

CONNECTION	FUNCTION
J1:1	SPARE
J1:4	NEUTRAL
J1:2	CHASSIS GND
J1:3	LINE

MINI-FIT JR. 39-30-0120

CONNECTION	FUNCTION
J3:1	3.6V RETURN
J3:7	3.6V
J3:2	3.6V RETURN
J3:8	3.6V
J3:3	3.6V RETURN
J3:9	3.6V
J3:4	5.5V SENSE
J3:10	5.5V SENSE RTN
J3:5	5.5V RETURN
J3:11	5.5V
J3:6	5.5V RETURN
J3:12	5.5V

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UNLESS OTHERWISE SPECIFIED, DIMENSIONS IN INCHES FRACTIONS DECIMALS ANGLES DEGREES
 * N/A .XX * .02 * 5
 .XXX * .005

CONTRACT NO.	APPROVALS	DATE	TITLE
	DRAWN	6/11/14	GTA401 OUTLINE
	CHECKED		AEGIS P/N: GTA401 REV A01
	PROJ. ENG.		SIZE FSCM NO. D 06ES8
	MFG.		DWG NO. GTA401-M00
	QUALITY		REV B02
			SCALE 1/1
			SHEET 1 OF 1

UNLESS OTHERWISE SPECIFIED, DIMENSIONS IN INCHES FRACTIONS DECIMALS ANGLES DEGREES	DO NOT SCALE DRAWING
MATERIAL	FINISH
SEE NOTE 2	SEE NOTE 3
NEXT ASSY	USED IN
APPLICATION	

A

B

C

D

A

B

C

D