



Collins Aerospace

MODEL 1462 Rev3 (3 Apr 2023)

6U 1.57" PITCH OPEN VPX VITA 62.1 COMPATIBLE

AC-DC PRIME POWER CONVERSION MODULE

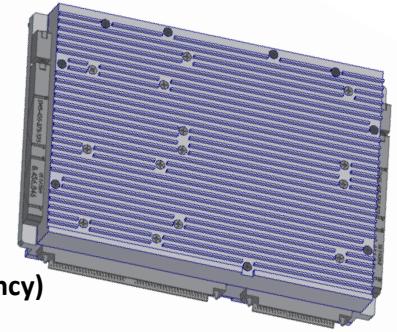
INPUT: 115/200VAC THREE PHASE 47 – 800HZ

COMPLIANT TO MIL-STD-704E/F; D0-160G; MIL-STD-461F/G
ELEVEN ISOLATED DC OUTPUTS AT 1kW

The 6U 1.57" PITCH VPX VITA 62.1 AC-DC Power Module converts 3-Phase MIL-STD-704E/F prime power to ELEVEN Isolated, Independently Regulated and protected DC Outputs delivering a combined total of 1kW. Demonstrated compliance to EMI standards of MIL-STD-461G. The 6U VPX VITA 62.1 AC-DC Power Module provides the ultimate overall solution in prime power conditioned performance, protection and reliability for airborne, shipboard and vehicle applications. Thermal management is accomplished by a combination of conductive card edge thermal surfaces to the heat exchanger utilizing wedge lock retainers and forced air convection cooling along both sides of the finned covers of the 6U enclosure.

AC-DC PRIME POWER CONVERTER MODULE FEATURES:

- 6U VITA 62 VPX 1.57" Pitch Single Slot
- Input: 173 - 240VAC, 47 – 800HZ per MIL-STD-704F
- Eleven Isolated/Regulated Custom Configurable Output Voltages
- Low output ripple and noise; less than Vo nominal
- Efficiency: 87.1% typical; 50 – 100% Load
- Power Factor: 0.99 minimum from 47 – 800Hz @800W
(Performance data available upon request. PF vs Load and Input Frequency)
- EMI: Embedded EMI Filter designed to meet MIL-STD-461G compliance
- Meets CE101 and CE102 per MIL-STD-461F/G W/O EXTERNAL EMI FILTER
(Performance data available upon request. CE101 & CE102 vs Load and Input Frequency)
- Meets Harmonic Content per MIL-STD-461F/G, RTCA/D0-160G
- Meets Input voltage transient and surge protection per MIL-STD-704F
- Operating temperature at Wedge Locks: -40 to +71°C (power derating to +85°C)
- Over-current, Over-voltage and Over-temperature protection with auto-recovery
- I²C interface for monitoring and control
- Isolation: 2150Vdc Input to Chassis, 2150Vdc Input to Outputs, 500Vdc Output to Chassis
- NAVSO P-3641A Power Supply De-rating and Manufacturing Guidelines



Input										
Input Voltage	3-PH 173 - 240VAC L-L; 47 – 800HZ									
Input Current	3.3 Amps @ 200VAC @ PO = 1kW									
Efficiency	87.1% Typical (including embedded EMI filter losses) @ 200VAC; 1kW; Thermal Loading = 150W									
Output										
Total Output Power										
Output Voltages	VS1: 5VDC	1A	5W	VS5: 8.9VDC	12A	107W	VS9: 13VDC	20A	260W	
	VS2: 5.6VDC	1A	5.6W	VS6: 12VDC	5A	60W	VS10: 16VDC	1A	16W	
	VS3: 6.4VDC	3A	20W	VS7: -12VDC	5A	60W	VS11: 28VDC	3A	84W	
	VS4: 8.4VDC	1A	8.4W	VS8: 13VDC	32A	385W				
Ripple / Noise	1% VO NOMINAL (0 – 100MHz)									
Line Regulation	±1%									
Load Regulation	±3% (10 – 100% Load)									
Turn on Overshoot	≤ 1%									
Temperature Coefficient	Less Than 0.05 % / °C									

- **Protection**
 - **Over Voltage**
 - All outputs are over voltage protected
 - **Over Current / Short Circuit**
 - Individual over current protection 105 – 110% of max load and short circuit protection with automatic recovery
 - **Over Temperature**
 - Internal heat sink monitor disables output if unit temperature rises above 95°C
- **External Controls and interfaces**
 - **Discrete I/O**
 - VITA 62 Discrete I/O
 - ENABLE*
 - INHIBIT*

Electromagnetic interference / Electromagnetic Compatibility	
Conducted Emissions	MIL-STD-461E CE102
Conducted Susceptibility	MIL-STD-461E CS101, CS102, CS114, CS115, CS116
Radiated Emissions	MIL-STD-461E RE102
Radiated Susceptibility	MIL-STD-461E RS103

- **Environmental**
 - **Single Slot Conduction Cooled Model: -40 to +85°C**
 - **Storage**
 - -55 to +125°C
 - **Humidity**
 - 0 to 95% Non-Condensing
 - **Operating Acceleration**
 - 3g, in any direction
 - **Operating Vibration**
 - Sinusoidal vibration 0.05g cont. 10 to 2000 Hz

Isolation	
Input to Output	2150 VDC
Input to Chassis	2150 VDC
Output to Chassis	1000 VDC

- **Mechanical**
 - **Size and Weight**
 - VITA 62.1 compliant ruggedized size package with internal conduction cooling and maximum weight not to exceed 1.8 lbs.
 - **I/O Connector**
 - SEE SHEET 5

1462 PIN OUT

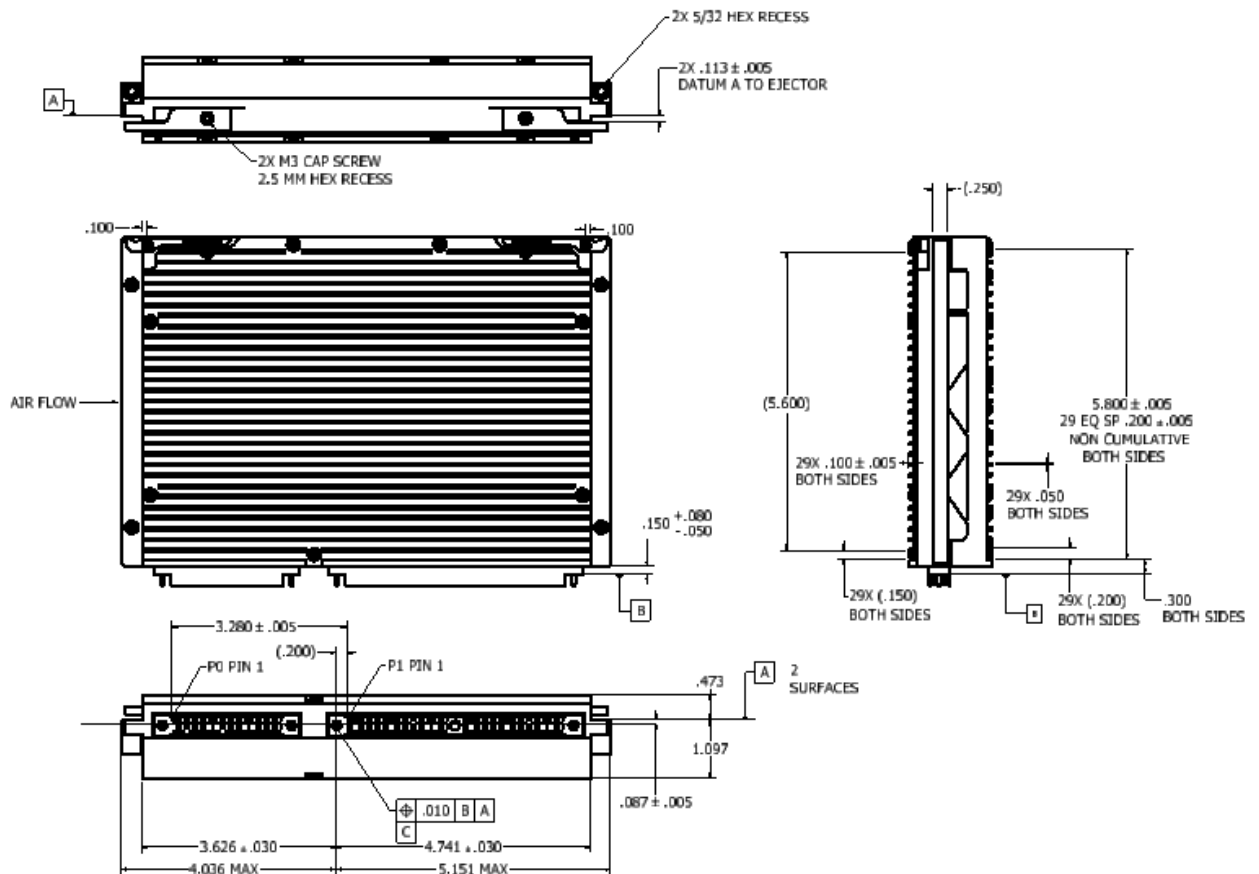
P0 INPUT CONNECTOR PINOUTS

PIN NUMBER	SIGNAL NAME	PIN NUMBER	SIGNAL NAME	PIN NUMBER	SIGNAL NAME
1	CHASSIS	37	115VAC_PH_C	73	NC
2	CHASSIS	38	115VAC_PH_C	74	115VAC_PH_B
3	NC	39	NC	75	115VAC_PH_B
4	NC	40	NC	76	NC
5	NC	41	NC	77	NC
6	NC	42	NC	78	NC
7	NC	43	NC	79	NC
8	NC	44	NC	80	NC
9	115VAC_PH_C	45	NC	81	NC
10	115VAC_PH_C	46	115VAC_PH_B	82	115VAC_PH_A
11	NC	47	115VAC_PH_B	83	115VAC_PH_A
12	NC	48	NC	84	28V_RTN
13	NC	49	NC	85	28V_ENABLE
14	NC	50	NC	86	NC
15	NC	51	NC	87	NC
16	NC	52	NC	88	NC
17	NC	53	NC	89	NC
18	115VAC_PH_B	54	115VAC_PH_A	90	NC
19	115VAC_PH_B	55	115VAC_PH_A	91	NC
20	NC	56	28V_RTN	92	115VAC_PH_C
21	NC	57	28V_ENABLE	93	FAN_PH_C
22	NC	58	NC	94	NC
23	NC	59	NC	95	NC
24	NC	60	NC	96	NC
25	NC	61	NC	97	NC
26	NC	62	NC	98	NC
27	115VAC_PH_A	63	NC	99	NC
28	115VAC_PH_A	64	NC	100	NC
29	CHASSIS	65	115VAC_PH_C	101	115VAC_PH_B
30	CHASSIS	66	115VAC_PH_C	102	FAN_PH_B
31	NC	67	NC	103	NC
32	NC	68	NC	104	NC
33	NC	69	NC	105	NC
34	NC	70	NC	106	NC
35	NC	71	NC	107	NC
36	NC	72	NC	108	NC
				109	115VAC_PH_A
				110	FAN_PH_A

P1 OUTPUT/SIGNAL CONNECTOR PINOUTS

PIN NUMBER	SIGNAL NAME	PIN NUMBER	SIGNAL NAME	PIN NUMBER	SIGNAL NAME	PIN NUMBER	SIGNAL NAME	PIN NUMBER	SIGNAL NAME
1	INHIBIT (Not Used)	43	13.1V2	85	N12.2_RTN	127	13.1V2_RTN	169	13.1V1
2	INHIBIT_RTN (Not Used)	44	8.9_VDC	86	N12.2_RTN	128	I2C_SDA	170	13.1V1
3	13.1V1_RTN	45	8.9_VDC	87	N12.2_VDC	129	NC	171	13.1V1
4	13.1V1_RTN	46	8.9_VDC	88	13.1V2_RTN	130	NC	172	13.1V1
5	13.1V1_RTN	47	8.9_VDC	89	13.1V2_RTN	131	6.4_VDC	173	13.1V1
6	13.1V1_RTN	48	8.9_VDC	90	13.1V2_RTN	132	6.4_VDC	174	13.1V1
7	13.1V1_RTN	49	8.9_RTN	91	13.1V2	133	6.4_VDC	175	26.5_VDC
8	13.1V1_RTN	50	8.9_RTN	92	13.1V2	134	5.6_RTN	176	26.5_RTN
9	13.1V1_RTN	51	8.9_RTN	93	13.1V2	135	12.2_VDC	177	26.5_RTN
10	13.1V1_RTN	52	8.9_RTN	94	8.9_VDC	136	N8.4_RTN	178	13.1V2_RTN
11	13.1V1_RTN	53	MODE_B_EN	95	8.9_VDC	137	N12.2_RTN	179	I2C_SCL
12	13.1V1_RTN	54	13.1V2_RTN	96	8.9_VDC	138	N12.2_VDC	180	NC
13	13.1V1	55	13.1V2_RTN	97	8.9_VDC	139	N12.2_VDC	181	NC
14	13.1V1	56	13.1V2_RTN	98	8.9_RTN	140	13.1V2_RTN	182	6.4_VDC
15	13.1V1	57	13.1V2_RTN	99	8.9_RTN	141	13.1V2_RTN	183	5.0_VDC
16	13.1V1	58	13.1V2_RTN	100	8.9_RTN	142	13.1V2_RTN	184	5.6_VDC
17	13.1V1	59	13.1V2_RTN	101	NC	143	13.1V2	185	12.2_VDC
18	13.1V1	60	13.1V2_RTN	102	NC	144	13.1V2	186	N16.1_VDC
19	13.1V1	61	13.1V2_RTN	103	ADDR0	145	13.1V2	187	N8.4_VDC
20	13.1V1	62	13.1V2_RTN	104	13.1V2_RTN	146	8.9_VDC	188	N12.2_RTN
21	13.1V1	63	13.1V2_RTN	105	13.1V1_RTN	147	8.9_VDC	189	N12.2_VDC
22	26.5_VDC	64	13.1V1	106	13.1V1_RTN	148	8.9_VDC	190	13.1V2_RTN
23	26.5_VDC	65	13.1V1	107	13.1V1_RTN	149	8.9_RTN	191	13.1V2_RTN
24	26.5_RTN	66	13.1V1	108	13.1V1_RTN	150	8.9_RTN	192	13.1V2_RTN
25	13.1V2_RTN	67	13.1V1	109	13.1V1_RTN	151	8.9_RTN	193	13.1V2
26	PV	68	13.1V1	110	13.1V1_RTN	152	8.9_RTN	194	13.1V2
27	SYSRST	69	13.1V1	111	13.1V1_RTN	153	NC	195	13.1V2
28	13.1V2_RTN	70	13.1V1	112	13.1V1_RTN	154	NC	196	8.9_VDC
29	6.4_RTN	71	13.1V1	113	13.1V1_RTN	155	ADDR1	197	8.9_VDC
30	6.4_RTN	72	13.1V1	114	13.1V1	156	13.1V2_RTN	198	8.9_VDC
31	12.2_RTN	73	26.5_VDC	115	13.1V1	157	13.1V1_RTN	199	8.9_RTN
32	12.2_RTN	74	26.5_VDC	116	13.1V1	158	13.1V1_RTN	200	8.9_RTN
33	12.2_RTN	75	26.5_RTN	117	13.1V1	159	13.1V1_RTN	201	8.9_RTN
34	N12.2_RTN	76	13.1V2_RTN	118	13.1V1	160	13.1V1_RTN	202	8.9_RTN
35	N12.2_VDC	77	PDW	119	13.1V1	161	13.1V1_RTN	203	NC
36	13.1V2_RTN	78	OVERTEMP	120	13.1V1	162	13.1V1_RTN	204	NC
37	13.1V2_RTN	79	13.1V2_RTN	121	13.1V1	163	13.1V1_RTN		
38	13.1V2_RTN	80	6.4_RTN	122	13.1V1	164	13.1V1_RTN		
39	13.1V2_RTN	81	6.4_RTN	123	13.1V1	165	13.1V1_RTN		
40	13.1V2	82	13.1V2_RTN	124	26.5_VDC	166	13.1V1		
41	13.1V2	83	12.2_VDC	125	26.5_RTN	167	13.1V1		
42	13.1V2	84	N16.1_RTN	126	26.5_RTN	168	13.1V1		

MECHANICAL LAYOUT



CONNECTOR PART NUMBERS

P0 P/N: AIRBORN RM452-110-322-9000-R66

P1 P/N: AIRBORN RM452-204-322-9000

BACKPLANE CONNECTOR PART NUMBERS

P0 P/N: AIRBORN RM422-110-821-9100

P1 P/N: AIRBORN RM422-204-822-9100