VPX-1000S-3P-G-24V

1000W CONDUCTION-COOLED VITA 62 POWER SUPPLY

PULSE-LOAD READY

EXTERNAL 100 kHz OUTPUT-REGULATOR SYNC

DESIGNED & MANUFACTURED IN THE USA

VPX-1000S platform shown

Built for pulsed loads.

Stable +24V power for demanding mission systems

A rugged 1000W VITA 62 supply for repetitive pulsed loads. The +24V regulator can synchronize to a user clock for coordinated switching in radar, EW, RF and other mission systems.

1000W
TOTAL OUTPUT POWER
Conduction cooled

+24V
MAIN OUTPUT
Pulse-load configured

EXTERNAL SYNCHRONIZATION

100 kHz nominal, +/-1 kHz, 40-60% duty cycle
+3.3V TTL-compatible SYNC*/SYNC* RTN interface

LARGE CAPACITIVE-LOAD STARTUP

Supports startup into large capacitor banks while maintaining controlled +24V output

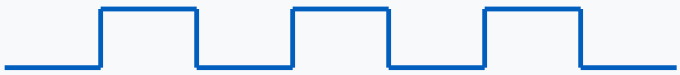
KEY FEATURES

- 1000W total output in a 6U x 5HP (1 inch) x 160mm modular design
- Three-phase 115/200Vac, 60Hz input with active power factor correction greater than 0.98
- Input current THD not exceeding 4%
- Meets MIL-STD-1399, section 300A (type 1) grounded for the voltage range specified
- VITA 62 output; +24V/41.7A
- 100 kHz external synchronization for coordinated system operation
- Custom input/output configurations available
- Conduction cooled through VITA 62 wedge-lock retainers
- N+1 redundant operation with internal ORing FETs/diodes
- Remote sense, current limit, overvoltage and overtemperature protection
- Rugged side-cover construction supports two-level military maintenance
- Optional parylene conformal coating and application-specific I/O configurations
- Designed and manufactured in the USA
- Greater than 150,000 hours MTBF
- One year warranty

WHY PULSE-LOAD CAPABILITY MATTERS

Radar transmitters, RF amplifiers, electronic-warfare equipment and other mission systems can demand fast, repetitive bursts of current. The VPX-1000S-3P-G-24V is configured around the customer's pulse profile to maintain controlled output voltage through these dynamic events.

Peak, width, repetition rate and duty cycle are application-specific



REPETITIVE PULSE / BURST LOAD PROFILE

APPLICATIONS

- Radar and phased-array subsystems
- High-power communications systems
- Directed-energy and high-power RF systems
- Electronic warfare and RF payloads
- Mission computing and sensor systems
- High-power sensor and surveillance systems

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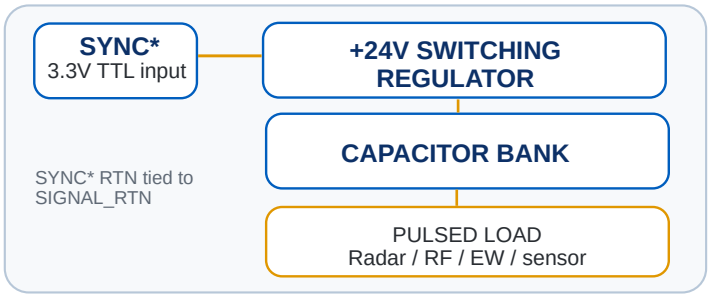
AS9100 ISO9001 REGISTERED 17022 ISOQAR

VPX-1000S-3P-G-24V

ELECTRICAL SPECIFICATIONS

Nominal Input	115/200Vac, 3-phase, 60Hz grounded
Operating Range	+20%, -15%; input transients +/-25%
Power Factor	Greater than 0.98 at full load
Input Current THD	4% maximum
Input Load Balance	Phase current within 5% of 3-phase average
Inrush Current	Less than 4ms; 40A at 200Vac
Hold-Up Time	12ms minimum after loss of AC input at full load
Efficiency	89% typical, configuration dependent
Turn-On Time	1 second maximum from power-up
Main Output	+24V nominal; up to 1000W total output
Capacitive-Load Startup	High-inrush startup into large capacitor banks
Line / Load Regulation	+/-2% over input range and 0-100% load
Ripple & Noise	0.5% maximum or 50mV, whichever is greater
Remote Sense	Compensates for up to 0.5V total distribution drop

EXTERNAL SYNCHRONIZATION



Input Pins	SYNC* / SYNC* RTN
Interface	+3.3V TTL-compatible, buffered by SN74LVC1G34
Frequency	100 kHz nominal, +/-1 kHz
Duty Cycle	40-60%
Return	SYNC* RTN tied to SIGNAL_RTN
Sync Stage	Only the +24V output switching regulator
Other Stages	Input/PFC stage and auxiliary output are not

PROTECTION / CONTROLS

Current Limiting	Protected; automatic recovery after overload removal
Overvoltage	Shutdown at approximately 130% of nominal output
Overtemperature	Automatic shutdown; recycle input to reset
Reverse Voltage	Protected to the supply current rating
Enable* / INHIBIT*	VITA 62 compliant control interfaces
SYSRESET* / FAIL*	VITA 62 compliant status interfaces
I2C / Addressing	VITA 62 compliant management interface
Indicators	Green Input OK and red power-supply fault LEDs

PULSED-LOAD CONFIGURATION

Supports repetitive and high-dynamic burst loads.

Output stage is configured to support repetitive pulsed and high-dynamic loads. Final peak current, pulse width, repetition rate, duty cycle, allowable droop and recovery limits are established from the specific load profile.

MECHANICAL / ENVIRONMENTAL / QUALITY

Cooling	Conduction cooled via wedge-lock retainers
Operating Temperature	-40C to +71C at wedge-lock edge, 1000W
Storage Temperature	-55C to +105C
Humidity	Up to 95% non-condensing
Size / Weight	6U x 5HP (1 inch) x 160mm; approximately 3.5 lb

EMC	Designed to meet MIL-STD-461 with qualified external filtering
Environmental	Platform designed for MIL-STD-810 environments
Input Power	MIL-STD-1399, Section 300A platform heritage
Workmanship	IPC J-STD-001 Class 3 manufacturing
Manufacturing	Designed and manufactured by Switching Power, Inc. in New York, USA

NOTE: Pulse-load performance is application dependent. Peak current, pulse width, repetition rate, duty cycle, allowable voltage droop, and recovery requirements should be confirmed against the specific load profile and system requirements.

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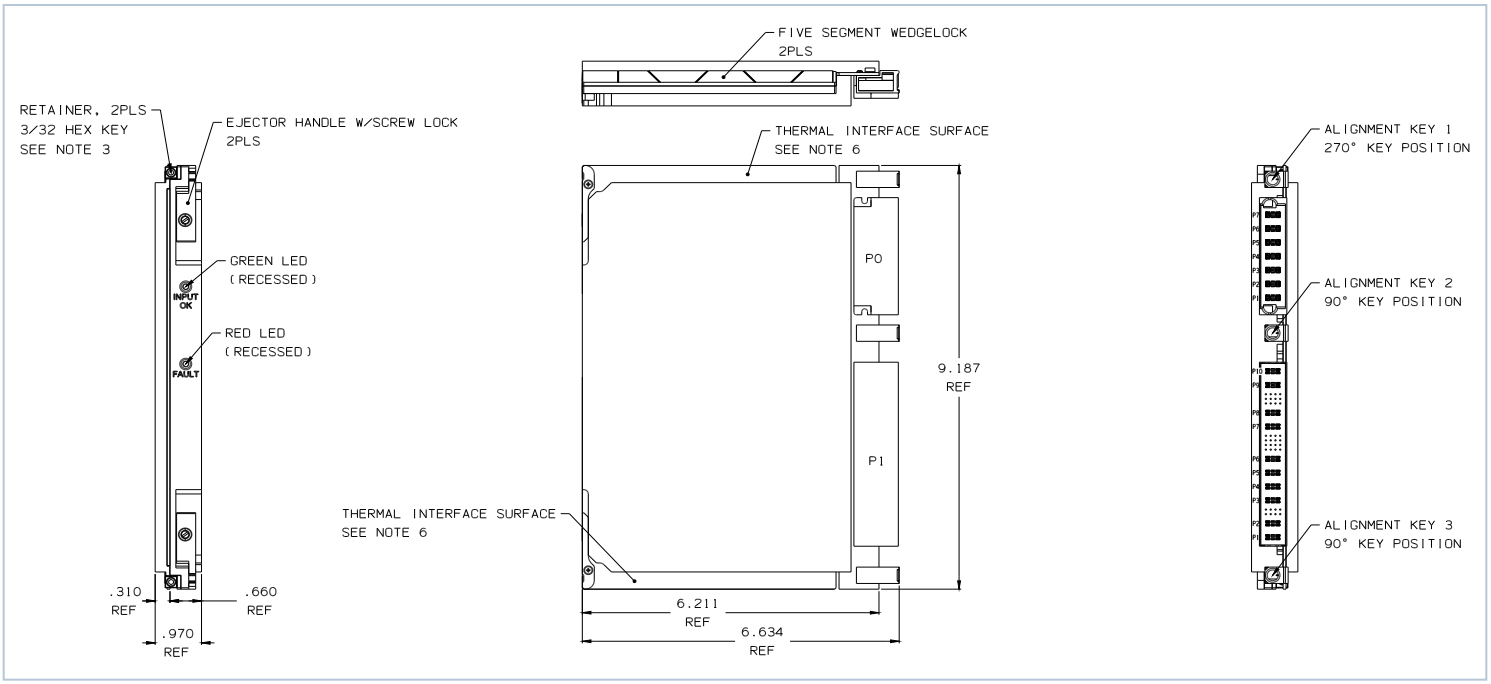
MECHANICAL OUTLINE



P0 - AC/DC INPUT CONNECTOR

TE CONNECTIVITY P/N 6450843-6

PIN NO.	SIGNAL
P7	PHASE A
P6	PHASE B
P5	PHASE C
P4	NEUTRAL
P3	N/C
P2	N/C
P1	CHASSIS GND

P1 - DC OUTPUT CONNECTOR

TE CONNECTIVITY P/N 6450849-6

PIN NO.	SIGNAL	PIN NO.	SIGNAL	PIN NO.	SIGNAL
P10	+24V/41.7A	B4	GA2*	C6	N/C
P9	+24V/41.7A	C4	GA1*	D6	SYSRESET*
A9	+24V SENSE	D4	GA0*	A5	GAP*
B9	+24V SENSE	A3	N/C	B5	GA4*
C9	N/C	B3	N/C	C5	SCLK
D9	SYNC*	C3	NED	B2	FAIL*
A8	+24V SENSE RTN	D3	NED_RTN	C2	INHIBIT*
B8	+24V SENSE RTN	P6	N/C	D2	ENABLE*
C8	N/C	P5	N/C	A1	N/C
D8	SYNC*_RTN	P4	N/C	B1	N/C
A7	N/C	P3	N/C	C1	N/C
B7	N/C	A2	N/C	D1	N/C
C7	N/C	P8	POWER RTN	P2	N/C
D7	SIGNAL_RTN	P7	POWER RTN	P1	POWER_RTN
D5	SDA	A6	N/C		
A4	GA3*	B6	N/C		

NOTES

1. VITA 62 COMPLIANT 6U POWER SUPPLY, CONDUCTION COOLED.
2. 1 INCH PITCH FORM FACTOR.
3. WEDGELOCK RETAINER INSTALLATION TORQUE VALUE IS 10 IN-LBS.
4. TOTAL POWER NOT TO EXCEED 1000 WATTS.
5. PRIMARY AND SECONDARY SIDE COVERS ARE 2 LEVEL MAINTENANCE COMPATIBLE.
6. OPERATING TEMPERATURE (AT THERMAL INTERFACE SURFACE): -40°C TO +85°C @ 1000W.
7. SYNC*/SYNC*_RTN IS AN INPUT TO A +3.3V TTL BUFFER PART NUMBER SN74LVC1G34. NOMINALLY 100 kHz +/-1 kHz, WITH A 40-60% DUTY CYCLE. SYNC*_RTN IS TIED TO SIGNAL_RTN.
8. ONLY THE OUTPUT +24V SWITCHING REGULATOR WILL BE SYNCHRONIZED TO THIS EXTERNAL CLOCK REFERENCE.