SynQor's® New Additions to its Mil-COTS 270 Vin DC-DC Product Family - MCOTS-C-270-40-HE & MCOTS-C-270-60-HE

- ***600 W***
- ***Variable Output range (10-40 or 24-60 VDC)***
- ***Unlimited Load Capacitance or Battery Load***

Boxborough, MA – October 5, 2023 – SynQor, Inc., announces new additions to its MCOTS product line**:** the MCOTS-C-270-40-HE & MCOTS-C-270-60-HE. These new compact, high efficiency, high power, half brick DC-DC converters are based on SynQor's next generation, isolated, fixed frequency synchronous rectifier technology. The superior power density of these modules allows for more efficient layout optimization where space is a critical consideration. These MIL-STD-704 compliant converters are capable of down-converting 155-425 Vdc input voltage to an adjustable output between 10-40 Vdc for the MCOTS-C-270-40-HE or 24-60 Vdc for the MCOTS-C-270-60-HE. Additionally, these converters offer an adjustable current limit feature that allows them to power near infinite capacitive loads or a battery. When the load current demand is above the set current limit, the unit behaves as a constant current source, delivering constant current independent from the output voltage. Below the set current limit, the unit behaves as a regulated voltage source, delivering a fixed regulated voltage to the load. The designer can select the output voltage through trim resistors or by adjusting the voltage into the voltage set pin. As with SynQor's other Mil-COTS products, these converters offer extremely efficient high-power conversion across its entire output power range, with low power dissipation enabling full-load operation at temperatures as high as 85 °C.

The MCOTS-C-270-40-HE & MCOTS-C-270-60-HE come fully encased in SynQor's proprietary ruggedized packaging allowing them to operate in the harshest military conditions including applications such as radar/pulse loads, battery charging, electronic warfare, RF power amplifiers, solid-state lasers, UAV/UUVs, rotary wing applications, and much more. These modules also include an array of advanced features such as serial communication for module configuration and monitoring, active current share for paralleling converters, external clock synchronization to improve EMI performance, and a battle short feature that overrides the over-temperature shutdown functionality in applications where the module needs to operate in conditions beyond the intended temperature range. SynQor's field-proven, highly reliable technology shortens design cycles and helps designers/integrators yield reliable, dependable solutions for the defense and aerospace markets.

Features	Specification Compliance

• High power density:
  ○ up to 600 W / 35 A for MCOTS-C-270-40-HE
  ○ up to 600 W / 25 A for MCOTS-C-270-60-HE
• Wide input range: 155-425 Vdc
• High efficiency: 94.5% at half load, 93% at full load
• Variable output voltage
• Programable current limit
• Maximum base plate temperature: 100 °C
	• MIL-STD-704 (A-F)
	• MIL-STD-461 (C-F)
	• MIL-STD-810G

Click the following links to download the MCOTS-C-270-40-HE and MCOTS-C-270-60-HE datasheets from our website. For more information on this or your other power needs, please visit us at www.synqor.com or contact us via your local SynQor representative.

About SynQor: Located in Boxborough, MA USA, SynQor is a leading supplier of power conversion solutions to the military, avionics, transportation, medical, industrial, telecommunications, and computing markets. SynQor's innovative products are designed to exceed the demanding performance, quality, and reliability requirements of today's power electronic engineers who develop leading-edge infrastructure hardware. SynQor provides all the power conversion modules needed to build a power system, and we also provide complete power systems. SynQor's capabilities include both standard and custom solutions, and we deliver them with industry-leading service and support. SynQor's total commitment to quality, customer satisfaction, and continuous improvement drives our business processes.

SynQor® Releases an Advanced 3U 3-Phase 115 AC Input VPX Power Supply (VPX-3U-AC115-3-C)

- ***3U 3-Phase 115 Vrms L-N Input VPX Power Supply***
- ***Isolated Outputs 28 Vdc at 27 A and 3.3 Vdc at 150 mA***
- ***Balanced Input Currents, Power Factor near Unity***
- ***700 W Output Power Over Full Temperature Range: -40 to 85 °C***
- ***Integrated EMI Filter***
- ***Low Inrush Current***
- ***Load Sharing Output Capability on 28 Vdc Output***

Boxborough, MA – July 12, 2023 – SynQor, Inc., announces its new 3-Phase 100 to 140 $Vrms_{L-N}$, 47-800 Hz AC input, 28 Vdc output VPX power supply for critical military and aerospace applications. This 3U VPX power supply, designed to meet VITA 62.1, VITA 47, and VITA 46.11 standards, allows designers in the defense markets to power their chassis with the latest flexible, efficient and reliable VPX technology.

The VPX-3U-AC115-3-C power supply can deliver up to 700 W and has an efficiency rating of 91.5% at 85°C (at card wedge locks). With a balanced current draw within 3%, the delta 3-Phase input power supply features a low inrush and has a power factor near unity for power levels exceeding 200 W. It delivers an isolated 28 Vdc output at 27 A through its main output power rail and 3.3 Vdc at 150 mA through its AUX rail. The main output rail also includes load-sharing capabilities for higher power or redundant systems. The power module is equipped with several features, including an integrated EMI filter, conduction cooling, low inrush, and over-voltage, under-voltage, short circuit and over-temperature protections. It also offers an I2C communications (IPMI, PMBus, VITA 46.11) feature. The VPX power supply is also designed to meet MIL-STD-704 (B-F), MIL-STD-461F, MIL-STD-810G standards, making it suitable for the most demanding military applications.

Features

- Delta 3-Phase AC Input 100-140 $Vrms_{L-N}$, 47-800 Hz
- Low Inrush and Power Factor near unity at power levels above 200 W
- Two Isolated Outputs (Main 28 V at 27 A; Aux: +3.3 V at 150 mA)
- 700 W Output Power
- Temperature Operating Range: -40 to 85 °C
- Integrated EMI Filter
- Over Voltage, Under Voltage, Short Circuit, Over Temperature Protections
- Redundancy and Current Sharing on Main Output
- I2C communication function (Supports IPMI, PMBus, VITA 46.11)
- Conformal Coated

Specification Compliance

- VITA 47
- VITA 46.11
- VITA 62.1
- MIL-STD-704 (B-F)
- MIL-STD-461F
- MIL-STD-810G

Please click here to download the VPX-3U-AC115-C datasheet and here to download the VPX-3U-AC115-C Operator's Guide. For more information on this or for additional power application assistance, please explore more at www.synqor.com or contact your Local SynQor Representative.

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SynQor® Releases an Advanced Military Field-Grade 3-Phase Programmable High Output Voltage Power Supply (MPPS-4000-270)

- ***4 kW Adjustable Output Voltage 25-400 Vdc and Current Limit***
- ***Wide Input Voltage 360-528 VrmsL-L***
- ***Balanced 3-Phase Power Factor Correction Input***
- ***Paralleling of up to 32 units***
- ***Sealed, Shock-Proof, Weather-Proof Construction***
- ***1U Rack Unit, Ultra-Low Weight (33 lbs.)***

Boxborough, MA – June 13, 2024 – SynQor, Inc. has unveiled its latest innovation, the MPPS-4000-270, a compact and lightweight high output voltage programmable power supply, designed for military field use. The device can accept a 3-Phase input ranging from 360-528 $Vrms_{L-L}$ and is capable of delivering an output voltage of 25 to 400 Vdc, with full power available between 175 and 400 Vdc. As a safety measure, it comes equipped with a user-programmable current limit mode in which it can run indefinitely and can be set from 0.2 to 24A. The MPPS is ideal for a variety of applications including powering pulse loads, high capacitive loads and battery charging.

The MPPS power supply boasts exceptional compliance with military standards, including MIL-STD-1399-300B, 461F and 810G. This advanced device offers a solution to the challenge of unbalanced 3-Phase loads commonly encountered on naval vessels. Adhering to MIL-STD-1399-300B, the MPPS maintains phase current balance within ±5% for ships and ±3% for submarines while providing tightly regulated DC power. The power supply's superior conducted and radiated emissions performance has been rigorously tested to meet MIL-STD-461F, while also meeting MIL-STD-810G requirements for shock, drop and vibration. The MPPS is built to withstand extremely harsh environmental conditions including rain, sand, salt, high altitude and a temperature range of -40 °C to +70 °C.

The MPPS offers remarkable versatility and an array of features that make it a valuable asset for today's military field operations groups. It has the ability to be configured in parallel with up to 32 units, providing increased power output or N+M redundant systems. The MPPS features internal control systems that allow for synchronized start and stop of the parallel group, making it function as a single power supply. The device also has a battle short feature, which enables it to continue functioning beyond the specified temperature range. Additionally, an SNMP Ethernet base module allows real-time remote monitoring, with trap/email features to alert users and monitoring consoles of important system events. The MPPS outperforms other products in its class, delivering superior output power, efficiency, reliability, flexibility, size and weight.

Features

- 4 kW programmable output voltage (25-400 Vdc) and current limit
- Universal AC input: 360-528 $Vrms_{L-L}$; 47-65 Hz
- Programable Current Limit feature: 0.2-24 A
- Balanced load currents for 3-Phase sources; MIL-STD-1399-300B
- Up to 32 units can be paralleled for higher power or N+M redundant configurations
- 1U High Rack-Mount unit (17" x 20.42" x 1.73")
- Low Weight: 33 lbs.

Specification Compliance

- MIL-STD-1399-300B
- MIL-STD-461F
- MIL-STD-810G

Please click **here** to download the MPPS-4000-270 datasheet. For more information on this or for additional power application assistance, please explore more at **www.synqor.com** or contact your local **SynQor representative**.

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SynQor® Releases an Advanced Military Grade Compact 4 kW, 270 Vdc input Inverter (MINV-4000-1U-270)

- ***Converts 270 Vdc Input to Single Phase AC (115 or 230 Vrms at 50, 60, or 400 Hz)***
- ***Multi-Unit Capabilities allow Parallel, Redundant and 3-Phase Systems***
- ***Sealed, Shock and Weather-Proof Construction***
- ***1U Rack Unit, Ultra-Low Weight (33 lbs.)***

Boxborough, MA – December 15, 2022 – SynQor, Inc. announces the new rugged, 270 Vdc input, high power, compact, military grade inverter (MINV-4000-1U-270). The new 4000 W 115/230 AC output inverter is low-weight with an easy-to-use design for military, airborne, naval, and mobile high reliability applications. This inverter is designed to withstand extreme electrical, shock, vibration, and environmental conditions. The inverter draws power from a standard 270 Vdc power supply and delivers a fully isolated, well-conditioned, pure-sinusoidal AC output. Compliant with a wide range of military standards, this inverter is designed for applications where output power, space, weight, and reliability in harsh environments are a major concern.

The MINV inverter is also exceptionally flexible. It supports parallel and N+M redundant configurations of up to 32 units for high power and/or high-reliability requirements. Multiple MINV units can be arranged to deliver complex multi-phase power schemes like 3-Phase and split-phase (doubling line-to-line output voltage and total output power).

The new MINV-4000-1U-270 has an SNMP Ethernet base module that allows configuration via a user-friendly web interface and real-time remote monitoring with trap/email features that warn users and monitoring consoles of important system events. Other options include the wide range of AC output characteristics (115 or 230 Vrms at 50, 60 or 400 Hz); a floating ground option for aerospace and naval applications; and an electronic AC output breaker that allows users to build fault-tolerant, dependable, redundant, high-output power solutions.

Features	Specification Compliance
• 160-330 Vdc to single-phase AC (4 kW 115 or 230 Vrms at 50, 60 or 400 Hz) • Pure sinusoidal, well-formed AC output for 0.0-1.0 power factor linear/non-linear loads • Parallel and N+M redundant power solutions of up to 32 units • Rugged, sealed, weather and shock-proof, wide temperature range -40 to +55 °C • Compact, ultra-low weight, 1U high rack-mount unit (17" x 22.42" x 1.73"; 33 lbs.)	• MIL-STD-704 • MIL-STD-461F • MIL-STD-810G

The MINV-4000-1U-270 and all its internal electronic sub-assemblies are designed and manufactured by SynQor in its US facilities. Please download the MINV-4000-1U-270 datasheet, the Operators Guide, and the accessories information. For more information on this

or additional power application assistance, please explore www.synqor.com or contact your local SynQor representative.

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SynQor® Releases an Advanced 28 Vdc Input 3U VPX with Extended Hold-Up (VPX-3U-DC28TH-001)

- ***3U 28 Vdc Input VPX Power Supply***
- ***500 W Output Power Over Full Temperature Range: -40 to 85 °C***
- ***Extended Hold-Up over 50ms at 500 W***
- ***Integrated EMI Filter with Reverse Polarity Protection***
- ***VS1, VS2 and VS3 Load Sharing Output Capability***

Boxborough, MA – March 26, 2024– SynQor, Inc., announces its latest 28 Vdc input VPX power supply featuring extended hold-up designed for critical aerospace and shipboard applications: the VPX-3U-DC28TH. This 3U VPX adheres to VITA 46 standards enabling military and industrial designers to power VITA 62 chassis with the latest flexible, efficient and reliable VPX technology. Notably, a 50ms hold-up feature has been integrated into this VPX to meet the power interruption and drop-off requirements set out by MIL-STD-704F.

The VPX-3U-DC28TH is extremely efficient at 91% and is able to deliver 500 W throughout its full temperature range of -40 to 85 °C (at the wedge-locks). It is also equipped with an advanced set of features such as an integrated EMI filter, conduction cooling, six output voltages with reverse polarity, over-voltage, under voltage, short circuit, and over-temperature protections. In addition, this VPX supports I2C communications (IPMI, PMBus, VITA 46.11). The power supply's standard VS1, VS2, and VS3 outputs can be load-shared on a standard VITA 62 chassis. Designed for the most demanding military and commercial applications the VPX-3U-DC28TH meets VITA 46, 47, 62, MIL-STD-704F, 461F, and 810G standards.

Features

- Six outputs (VS1: +12 V; VS2: +3.3 V; VS3: +5 V; Aux: +3.3 V, +12 V and -12 V)
- 500 W output power over a temperature operating range: -40 to 85 °C
- Extended hold-up time of over 50ms at 500 W
- Integrated EMI filter with reverse polarity
- Over voltage, under voltage, short circuit, over temperature protections
- Current sharing on VS1, VS2 and VS3 outputs
- I2C communication function (supports IPMI, PMBus, VITA 46.11)

Specification Compliance

- VITA 46
- VITA 47
- VITA 62
- MIL-STD-461F
- MIL-STD-704F
- MIL-STD-810G

SynQor's field-proven, highly reliable technology shortens design cycles and helps designers/integrators yield reliable, dependable solutions for the very competitive military markets. Please click **here** to download the VPX-3U-DC28TH datasheet and **here** for the Operator's Guide. For more information on this or for additional power application assistance, please explore more at **www.synqor.com** or contact your local SynQor representative.

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SynQor® Announces New Additions to its Mil-COTS 28V Vin DC-DC Product Family (*MCOTS-C-28V-[12,28]-HY)*

- ***Wide input Range 9-40 Vdc***
- ***Output 12 or 28 Vdc at 504 W***
- ***High Output Capacitance Option***
- ***Integrated Digital Load Sharing Capabilities***

Boxborough, MA – April 11, 2023 – SynQor, Inc., announces the latest additions to its Mil-COTS 28V (9-40 Vin) DC-DC product line: the MCOTS-C-28V-12-HY and MCOTS-C-28V-28-HY. These new compact, high efficiency, high power, half-brick DC-DC converters are based on SynQor's next-generation, isolated, fixed frequency synchronous rectifier technology. Given the topological restraints of modern power applications, the markedly impressive power density of these half-brick converters offers engineers more headroom and flexibility in designing power systems.

The MIL-STD-704 compliant power converters deliver a regulated output at either 12 or 28 Vdc respectively. This output voltage can be trimmed up to +10% via a trim resistor connected to the positive SENSE line and trimmed down to -50% if connected to the negative SENSE line. The units include a high output capacitive option that allows them to power loads with up to 1225 mF for the 12 Vdc output version and 225 mF for the 28 Vdc version. The units also include a built-in digital load-sharing feature allowing up to 100 units to load share in a system. These products are designed to maintain extremely high efficiencies while facilitating high-power conversion, which, in effect, enables designers to deliver full power to the load at baseplate temperatures as high as 100 °C given input voltages above 12 Vdc on account of the low dissipation characteristics of the modules.

Designed with military standard compliance as a guiding tenet, the MCOTS-C-28V-12-HY and MCOTS-C-28V-28-HY are capable of operating in the harshest of military environments including ground-based, naval, and airborne applications. Additionally, the wide input range and impressive power density of the modules help optimize space in an industry where space is a critical consideration. SynQor's field-proven, highly reliable technology shortens design cycles and helps designers/integrators yield reliable, dependable solutions for the very competitive military markets.

Features	Specification Compliance
• High Power density, 504 W in a half-brick package • Wide input range: 9-40 Vdc • High efficiency: 96% • High output capacitance options: 1225 mF at 12 Vdc or 225 mF at 28 Vdc • Built-in Digital Load Sharing capabilities • Maximum Base plate temperature 100 °C	• MIL-STD-704 (A-F) • MIL-STD-1275 (B, D) • MIL-STD-461 (C-F) • DEF-STAN-61-5 Part 6/(5 or 6) • DO-160E Section 16 • MIL-STD-810G

Download the MCOTS-C-28V-12-HY and MCOTS-C-28V-28-HY datasheets here. For more information on this or your other power needs, please visit us at www.synqor.com or contact us via your local SynQor representative.

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SynQor® Releases an Advanced Military-Field Grade 3-Phase 440 Vrms Input UPS (UPS-1500-X-1U-4)

- **Balanced 3-Phase 440 Vrms Input Military Field-Grade UPS**
- **1250 W Single Phase Output, 115V or 230V**
- **On-line Double Conversion, Hot-swappable Internal Battery**
- **Sealed, Shock-Proof, Weather-Proof Construction**
- **1U Rack Unit, Ultra-Low Weight (33lbs.)**

Boxborough, MA – SynQor, Inc., announces its new 3-phase 440 Vrms balanced input military field grade UPS. The latest addition to SynQor's lineup of Uninterruptible Power Supplies addresses the unique challenge of connecting single phase loads to 3-phase power systems on aircraft and ships. The UPS-1500-x-1U-4 balances phase currents within the strict requirements dictated by MIL-STD-1399-300B, which stipulates phases to be balanced within ±5% for ships and ±3% for submarines. This power supply simplifies achieving a high degree of phase current balance with today's single-phase electronic critical loads, streamlining system integration and shortening design cycles. A single phase load with poor power factor, high current distortion, or high reactance will appear as a resistive 3-phase load compliant with MIL-STD-1399-300B 440 type I.

The UPS-1500-x-1U-4 can be configured for a diverse range of power applications and offers advanced options including a selection of output voltages (115 or 230 Vrms), frequencies (50, 60, or 400 Hz), and an electronic breaker on the AC output that permits glitch-free, fault-tolerant parallel operation of up to 32 units in Single-Phase, Split-Phase, or 3-phase N+M redundant configurations. Additionally, the UPS has an optional floating neutral wire feature ideal for MIL-STD-1399-300 type I compliant applications. The unit can be configured with two optional ports: DC1 and DC2. The DC1 port can deliver several different voltages from 12 to 50 Vdc at 500 W. The DC2 port, in the absence of the DC input option, is able to deliver up to 1250 W of regulated or semi-regulated 24, 28, or 50 Vdc. A droop load option is also available which allows load sharing through the DC2 port. In addition, the UPS includes an Ethernet-SNMP module that allows real-time remote system monitoring with trap/email features that warn users and monitor consoles of important system events.

Featuring a ruggedized, compact, ultra-light, and fully isolated design, the UPS-1500-x-1U-4 is engineered to withstand the extreme electrical, shock/vibration, and environmental conditions of military and maritime applications. The backup power of the system is provided by an advanced, highly efficient, low-weight, compact, sealed lithium ion battery pack, which boasts a marked advantage in performance over similar market solutions. The UPS-1500-x-1U-4, as well as SynQor's other UPS systems, outperforms other products in its class in output power, efficiency, reliability, flexibility, weight, and size.

Features

- Complies with 3-Phase 440 Type I, II, and III sources MIL-STD 1399-300
- Balanced Currents less than 3%
- AC input: 360-528 Vac; 47-800 Hz
- Output Power: 1250 W / 1500 VA at 115 or 230 Vrms at 50, 60 or 400 Hz
- Built-in Load Sharing and Redundant (N+M) capabilities
- >10 min., >13.5 min, or >16 min. battery run-time at full power
- 1U High Rack-Mount unit (17" x 22.64" x 1.73")
- Low Weight: 33 lbs.

Specification Compliance

- MIL-STD-1399-300B
- MIL-STD-810G
- MIL-STD-461F
- MIL-STD-704F
- MIL-STD-1275D

SynQor's field-proven, highly reliable technology shortens design cycles and helps designers/integrators yield reliable, dependable solutions for the very competitive military markets. Please click **here** to download the UPS-1500-X-1U-4 datasheet and **here** for the Operator's Guide. For more information on this or for additional power application assistance, please explore more at **www.synqor.com** or contact your local SynQor representative.

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SynQor® Announces its New Mil-COTS 270F Vin DC-DC Sixteenth Brick Modules - MCOTS-C-270F-XX-SK

- ***Wide Input Range: 200-300 Vdc***
- ***Outputs 3.3, 5, 12 and 28 Vdc at 25 W***
- ***Remote Sense***
- ***Trim Range: +10%/-10%***

Boxborough, MA – October 31, 2023 – SynQor, Inc., announces the Mil-COTS 270F Vin DC-DC sixteenth-brick product family. These new modules are compact, regulated, high efficiency, sixteenth-brick DC-DC converters based on SynQor's next generation, isolated, fixed frequency synchronous rectifier technology. Boasting an exceptional power density, these new modules optimize space and help to alleviate layout restraint challenges faced by power system designers. These sixteenth-brick converters offer a wide input range (200-300 Vdc) and are capable of efficiently down-converting the input voltage to an isolated 3.3, 5, 12 or 28 Vdc at 25 W.

The MCOTS-C-270F-xx-SK family of converters offer an advanced set of control features including an on/off control referenced to the input return terminal and a trimmable output between -10% and +10% of the nominal output voltage. The designer can select the output voltage through trim resistors or by adjusting the voltage into the trim pin. Additionally, the units include remote sense lines, which allow the unit to compensate for losses on the output interconnects. Designed to provide extremely high power conversion at high efficiency throughout its entire output power range, these converters feature low power dissipation characteristics that enable designers to deliver full power to the load at baseplate temperatures as high as 100 °C.

In strict accordance with military standards, including MIL-HDBK-704-8 (A-F), MIL-STD-461 (C-F) and MIL-STD-810G, the MCOTS-C-270F-xx-SK family of converters ensure high reliability and performance in the most demanding military conditions. These highly flexible encased modules are well suited for applications such as computing, displays, communications, electronic warfare, RF power amplifiers, UAV/UUVs, fixed/rotary wing applications, and much more.

Features	Specification Compliance
• Wide input range: 200-300 Vdc • Output: 3.3, 5, 12 and 28 Vdc at 25 W • High efficiency: 84% • Trimmable output: -10% to +10% of nominal output voltage • On/Off control feature • Output sense lines • Maximum base plate temperature: 100 °C	• MIL-STD-704 (A-F) • MIL-STD-461 (C-F) • MIL-STD-810G

SynQor's field-proven, highly reliable technology shortens design cycles and helps designers/integrators yield reliable, dependable solutions for the very competitive military markets. Please click here to download the MCOTS-C-270F-XX-SK datasheets. For more information on this or your other power needs, please visit us at www.synqor.com or contact us via your local SynQor representative.

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