

MicroPAC AC-DC Power Supply



High efficiency up to 92%

Small Size

High power density

> 25 W/In³

Up to 1,300 W

> Configuration dependent

Low power standby mode

> Green mode

Universal input

> 47 to 400 Hz

> 85 to 264 Vac

DC input

> 120 to 300 Vdc

Up to 4 isolated outputs

12 V output standard

48 V output standard

Aux isolated 5 V @ 500 mA

bias standby supply

Output parallel capability

Output series capability

Output current sharing

MicroPAC to MicroPAC

current sharing

Optional power shed capability

Over temperature warning

Over temperature shutdown

Intelligent fan control

Field replaceable fan

Individual output enable / disable

All output enables / disable

capability

TTL control signals

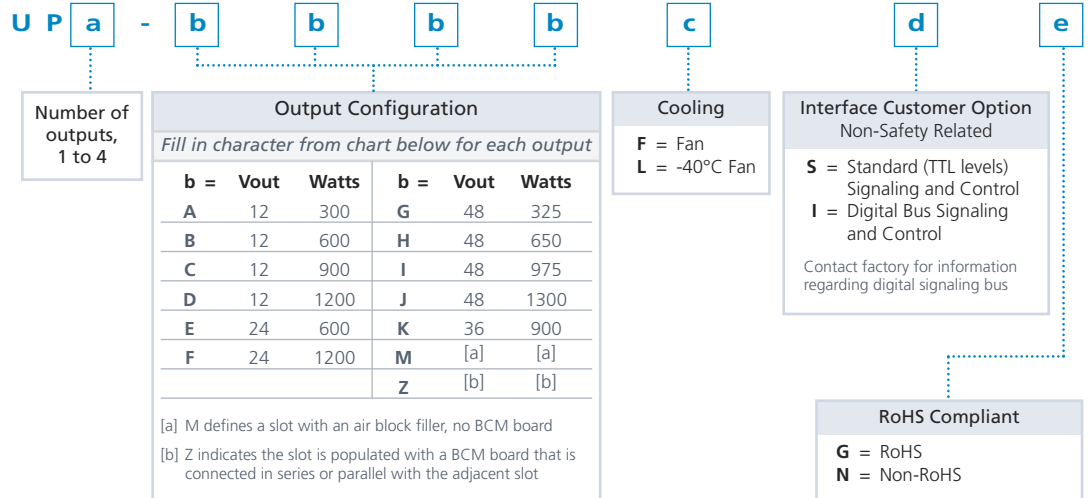
Visual LED display panel

Product Description

The MicroPAC is the first Westcor product to utilize Vicor's VI Chip technology. The power supply uses BCM modules to provide up to 4 isolated semi regulated output voltages of 12, 24, 36 and 48 Vdc and up to 1300 W of continuous power in a very small highly efficient package. The isolated outputs may be placed in parallel/series configurations and for applications requiring higher power levels MicroPAC power supplies can be configured in arrays up to several KW.

This factory configurable rugged power supply supports a wide range of customer power requirements and is especially suited for distributed power architectures. The design offers a small flexible cost effective solution for applications requiring Power Factor Correction, high efficiency and power density even in environmentally challenging conditions.

Part Numbering



Examples:

UP1-FZZZ-FSG Denotes a single output of 24 V 1200 W with a standard fan, standard TTL signaling and control, RoHS compliant

UP4-AAAA-LSN Denotes 4 output unit, each output is 12 V 300 W. The fan is a -40°C capable unit, standard TTL signaling, and the unit is non-RoHS

Specifications

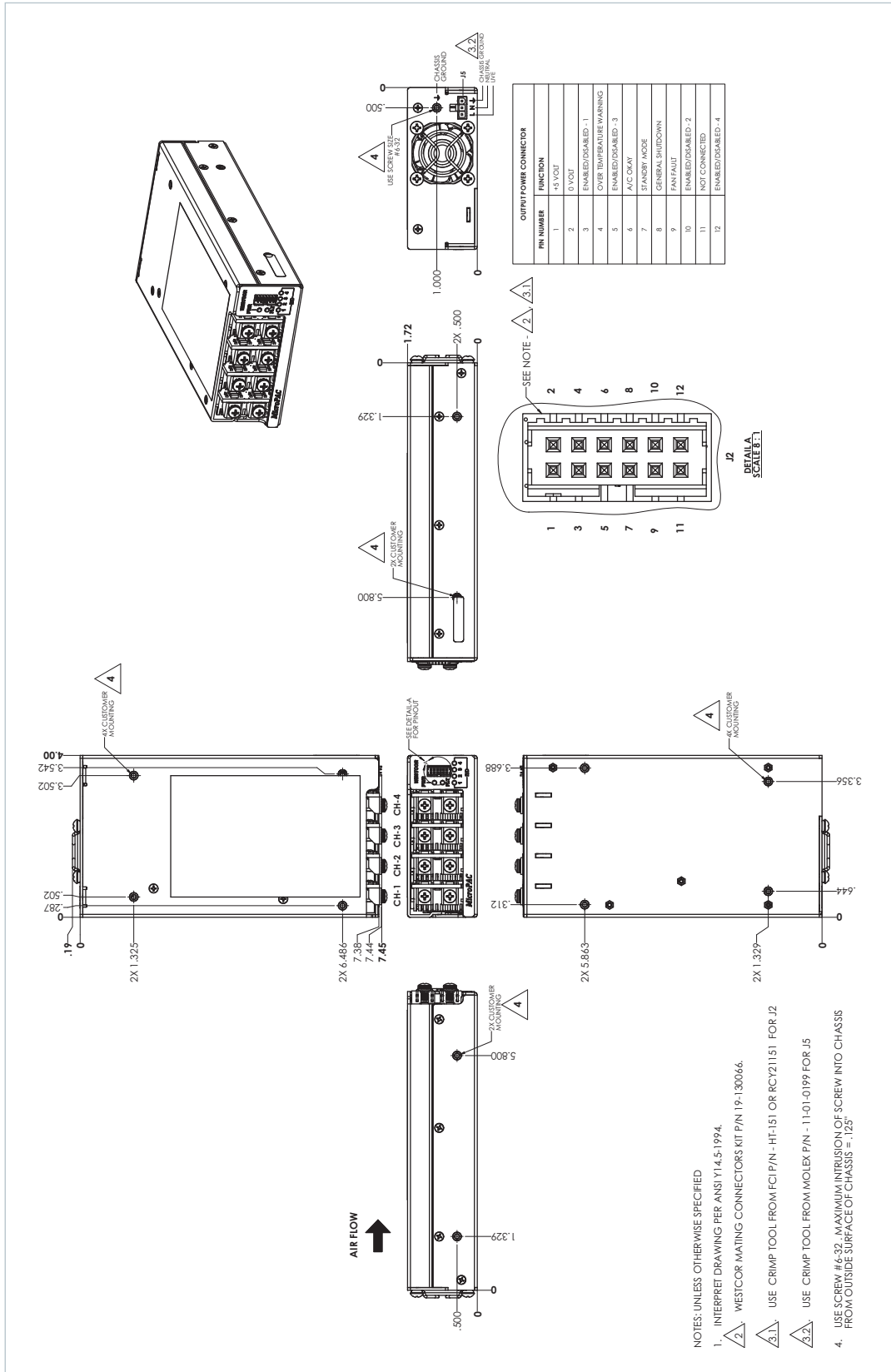
Input		
Input Voltage	85 – 264 Vac	DC Rating: 120 Vdc – 300 Vdc
External Fuse	($\frac{1}{4}$ " x $1\frac{1}{4}$ ") Cooper Bussmann, ABC-15, rated 15 A Littelfuse, 505 series, rated 16 A/500 Vdc	(5 x 20 mm) Littelfuse, 216 series, rated 16 A ($\frac{1}{4}$ " x $1\frac{1}{4}$ ") Littelfuse, 505 series, rated 16 A / 500 Vdc
Frequency	47 ~ 400 Hz	
Inrush Current	30 A Peak	
Efficiency	$\geq 92\%$ @ Full load @ 25°C ambient 48 V output	$\geq 91\%$ @ Full load @ 25°C ambient 12 V output
Power factor	> 0.95 typ. Meets EN61000-3-2	
Turn-on time	AC on 1.5 sec TYP	
Conducted EMI	EN55022 Class B Information technology equipment — Radio disturbances characteristics — Limits and methods of measurement BS EN55022:1998; CISPR 22:1997, incorporating corrigendum	
Harmonic distortion	Meets IEC 61000-3-2	
Isolation	Meets IEC 60950	
Leakage current	< 3.5 mA @ 264 Vac @ 63 Hz	
Hold up time	20 mS typical	
Warranty	2 Years	
Output		
Number of outputs	1 to 4	
Normal output voltages	12 V, 24 V, 36 V and 48 V (contact factory for details)	
Maximum output current	100 A @ 12 V	[27 A @ 48 V]
Auxiliary output	5 V @ 0.5 A 50 mV p-p	
Voltage regulation	12 V output (11.3 V ~ 12.5 V)	48 V output (45 V ~ 50 V)
Ripple and noise (20 MHz bandwidth)	12 V output (197 mV ~ 400 mV p-p)	48 V output (1.6 Vp-p)
Current sharing accuracy	5 to 10%	
Short circuit protection	"Fold-Back" Technique	
Over voltage protection	12 V output set point 12.5 V typical	48 V modules 50 V typical
Thermal protection	All outputs disabled when internal temperature exceeds safe operating	
Maximum load	12 V up to 1200 W	
Maximum load	48 V up to 1300 W	
Maximum load	5.0 V Aux up to 2.5 W	
Maximum load capacitance	1000 μ F per 12 V output	100 μ F per 48 V output

Specifications (CONT.)

Environmental	
Storage temperature	-40°C ~ +85°C
Operating temperature	-20°C ~ +55°C (Extended temperature range is available; -40°C to +55°C)
Functional shock	MIL-STD 810F Method 516.5 procedure 1, terminal peak saw-tooth wave, 40G 11 mS
Vibration	Mil-STD 810G for minimum integrity vibration
Humidity	95% non condensing
Cooling	Fan cooled (field replaceable) temperature speed control
Electromagnetic Compatibility	
	EN61000-6-1n European General EMC Immunity
IEC 61000-4-11 [50 Hz]	Voltage Dips 30% for 0.5 prd, pc C Voltage Interrupts (pc C)
IEC 61000-4-4 [TRANSIENT]	EFT/Burst ± 1 kV AC leads ± 500 V DC leads. 5/50 nsec 5 kHz rep rate (pc B)
IEC 61000-4-5 [SURGE]	Power line Surge AC in ± 2 kV CM ± 1 kV DM DC in ± 500 V CM & DM 1.2/ μ Sec (pc B)
EN 61000-4-6 [0.15 to 80 MHz]	RF Common Mode Input leads, AC & DC leads, CDN 150 kHz to 80 MHz, 3 Vrms with 80% AM @1 kHz (pa A)
EN 61000-4-2 [ELECTROSTATIC]	Electrostatic Discharge ± 4 kV Contact ± 8 kV Discharge (pc B)
EN 61000-4-3	RF E-Field 80 MHz to 1 GHz 3 V/m with 80% AM @ 1 kHz (pc A)
EN 61000-4-8	Power Freq H-Field 3A/M @ 50 Hz (pa A)
Reliability	
FIT	TBD
Service life	5 Years
Safety & Regulatory	
UL	UL 60950-1:2007 CAN C22.2 No. 60950-1-07
CSA	CSA*60950 3rd Edition (CB Report to include all national deviations)
EN	EN 60950-1/A1:2010
IEC	60950-1-2005 2 Ed. +A1:2009

Mechanical Drawings

Figure 1:
Physical Dimensions
and Electrical Connections



Vicor's comprehensive line of power solutions includes high density AC-DC and DC-DC modules and accessory components, fully configurable AC-DC and DC-DC power supplies, and complete custom power systems.

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