CUI INC®

SERIES: VUM-S400-XXR | **DESCRIPTION:** MEDICAL AC-DC POWER SUPPLY

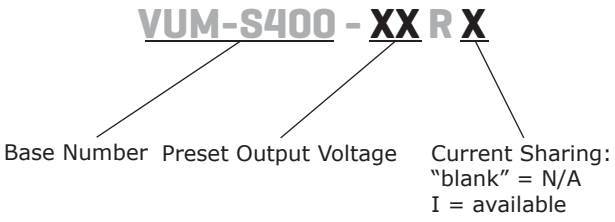
FEATURES

- current monitoring and remote voltage adjustments (margin)
- compact 1U size and high power density: 5.56 W/inch^3
- power factor corrected to EN 61000-3-2 Class D
- short circuit, overload, over voltage and over temperature protections
- safety approvals: EN/IEC/UL 60950-1
- optional IEC320 AC inlet or terminal block
- optional current sharing

MODEL	preset voltage	output voltage[1,2,3,4]		output current[5]	ripple and noise[6,7]	efficiency
		min	max	max	max	typ
	(Vdc)	(Vdc)	(Vdc)	(A)	(% Vp-p)	(%)
VUM-S400-03R	3.3	2	3.3	60	±1	70
VUM-S400-5R	5	5	6	60	±1	75
VUM-S400-12R	12	12	15	33.34	±1	80
VUM-S400-18R	18	16	21	25	±1	83
VUM-S400-24R	24	22	30	18.19	±1	83
VUM-S400-36R	36	31	41	12.9	±1	83
VUM-S400-48R	48	42	58	9.53	±1	83

Notes:
1. customer must specify output voltage
2. output is fully isolated
3. output voltage is measured at output power connector
4. provides peak power of 700 W within 500 µs for all models
5. must use external forced airflow min. 23 CFM to achieve maximum current
6. 1% minimum load is required to maintain the ripple and regulation
7. ripple & noise are measured at 20 MHz BW with 0.1 µF ceramic cap and a 22 µF electrolytic capacitors on the output

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
voltage		90		264	Vac
frequency		47		63	Hz
current	at 90 Vac, full load			6.35	A
inrush current	at 230 Vac, full load, cold start			35	A
input fuse	built-in ac fuse. A blown fuse usually indicates permanent damage to the power supply serviceable by factory only.				
active power correction	at 230 Vac, full load		0.98		

OUTPUT

parameter	conditions/description	min	typ	max	units
total regulation			±1		%
transient response	output voltage returns to within 1% in less than 2.5 ms for a 50% load change. Peak transient does not exceed 5%.				
overshoot	turn-on and turn-off overshoot shall not exceed 5% over nominal voltage.				
start-up time	at 230 Vac			1	s
hold-up time	at 80% load	20			ms
adjustment range	output user adjustable		±5		%
switching frequency			30		kHz
remote sense[1]	designated as RS+ and RS- on CN3.				
remote on/off	defined RSW on CN3, requiring a low signal to inhibit output.				
LED display (LED 1)	green - the power supply is operating normally. orange - when any protection occurs or RSW is low.				
power good	designated as PG on CN3. This signal goes high 100~500 ms after the output reaches regulation. It goes low at least 1 ms before loss of regulation.				
current sharing	designated as CSH on CN3, optional single wired for forced surrent sharing function and parallel up to 4 units within 10% accuracy at full load.				
current monitor	designated as CMN on CN3 for for current sense for 0.5~3 Vdc to represent 0~100% output current.				
AC fail (optional)	designated as ACF on CN3 to monitor the input voltage when input goes under 80 ±5 Vac the signal will go low (0 V) and then go high (+5 V) once it reappears over 86 Vac.				

Notes: 1. Not available for current sharing models

PROTECTIONS

parameter	conditions/description	min	typ	max	units
input under voltage protection	power supply shuts down when ac input is under 80 ±5 Vac. When ac line reappears over 86 ±5 Vac, the power supply restarts automatically.				
over voltage protection	shutdown and latches, ac input reset required to restart			130	%
over current protection	auto recovery	110		140	%Io
short circuit protection	continuous, auto recovery upon removal of short				
over temperature protection	shutdown, auto recovery	85			°C

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	primary to secondary at 2 mA for 3 seconds primary to transformer core at 2 mA for 3 seconds primary to earth ground at 2 mA for 3 seconds	4,000 1,500 1,500			Vac Vac Vac
safety approvals	EN/IEC/UL 60950-1				
EMI/EMC	EN 55022 Class B conducted/radiated, EN 61000-3-(2,3), EN 55024 (IEC 61000-4-(2,3,4,5,6,8,11))				
leakage current	at 264 Vac			200	µA
grounding test	allowable resistance measured when 40 A current is applied from the ground pin of the three prong plug to the farthest earthed connection point.			0.1	Ω
RoHS compliant	yes				
MTBF	according to MIL-HBK-217F at 30°C	100,000			hours

ENVIRONMENTAL

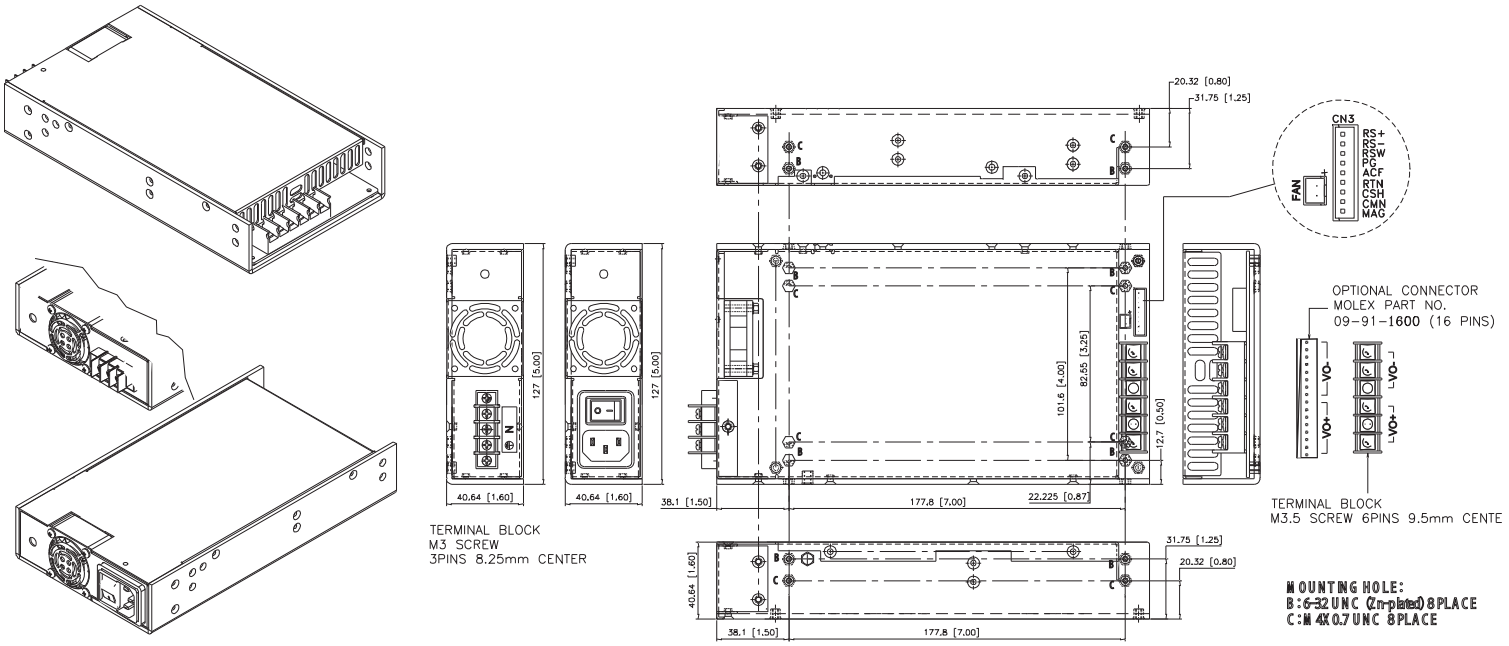
parameter	conditions/description	min	typ	max	units
operating temperature	derating linearly at 2.5% from 50~70°C	0		70	°C
storage temperature		-20		85	°C
operating humidity	non-condensing	5		90	%RH
storage humidity	non-condensing	5		95	%RH

MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	9 x 5 x 1.6 (228.6 x 127 x 40.64 mm)				inch
weight				1.6	kg
Mounting holes	Two sets of 8 threaded mounting holes available on the enclosure. B: 6-32, maximum insertion depth of 0.2 inches. C: M4, maximum insertion depth of 0.2 inches.				

MECHANICAL DRAWING

units: inches (mm)
tolerance: inches: x.xx = ±0.02
mm: x.xx = ±0.5



INPUT CONNECTOR (CN1)	
terminal block (option 1)	Molex 09-91-0500 (5 pins, 3 used, pins 2/4 nc) (option 2)
Suggested mating connector ---	Suggested mating plug --- or similar

OUTPUT CONNECTOR (CN2)			
terminal block (option 1)		Molex 09-91-1600 (16 pins) (option 2)	
Suggested mating connector --- or similar		Suggested mating connector Molex ---	
PIN	FUNCTION	PIN	FUNCTION
1~3	+Vo	1~8	+Vo
4~6	-Vo	9~16	-Vo

LOGIC CONNECTOR (CN3)		FAN
JS B5B-XH-A		JS B2B-XH-A
Suggested mating connector JST XHP-5 or equivalent Contact: SXH-002T-P0.6		Suggested mating connector JST XHP-2 or equivalent, Contact: SXH-001T-P0.6
PIN	FUNCTION	
1	MAG - margin	
2	CMN - current monitoring	
3	CSH - current sharing	
4	RTN - return	
5	ACF - AC fail	
6	PG - power good signal	
7	RSW - remore on/off	
8	RS- - remote sense (-)	
9	RS+ - remote sense (+)	

REVISION HISTORY

rev.	description	date
1.0	initial release	12/11/2007
1.01	new template applied, V-Infinity branding removed	08/28/2012

The revision history provided is for informational purposes only and is believed to be accurate.

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