


SERIES: VUMM-D400-D | **DESCRIPTION:** MEDICAL AC-DC POWER SUPPLY

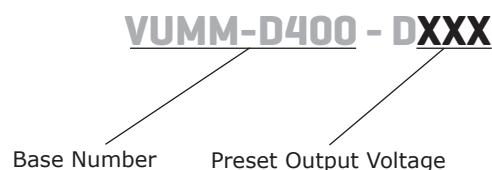
FEATURES

- medical approvals: EN/IEC/UL 60601-1 3rd edition
- universal input (90~264 Vac)
- dual output
- current monitoring and remote voltage adjustments (margin)
- compact 1U size and high power density: 5.56 W/inch³
- power factor corrected to EN 61000-3-2 Class D
- metal enclosed
- short circuit, overload, over voltage and over temperature protections
- optional IEC320 AC inlet or terminal block



MODEL ¹	output voltage ^{1,2,3}	output current ⁴	ripple and noise ^{5,6}	efficiency
	(Vdc)	max (A)	max (% Vp-p)	typ (%)
VUMM-D400-D312	3.3 12	40 25	±1	75
VUMM-D400-D324	3.3 24	40 12.5	±1	75
VUMM-D400-D512	5 12	40 25	±1	75
VUMM-D400-D524	5 24	40 12.5	±1	75
VUMM-D400-D1224	12 24	25 12.5	±1	75

- Notes:
1. output is fully isolated
 2. output voltage is measured at output power connector
 3. provides peak power of 700 W within 500 μ s for all models
 4. must use external forced airflow min. 23 CFM to achieve maximum current
 5. 1% minimum load is required to maintain the ripple and regulation
 6. Ripple and noise is measured from 10 KHz to 20 MHz at output terminals with a 0.1 μ F ceramic capacitor and a 22 μ F electrolytic capacitor in parallel

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.				
power factor correction	at 230 Vac, full load		0.98		

OUTPUT

parameter	conditions/description	min	typ	max	units
total regulation			±5		%
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. Total voltage compensation for cable losses with respect to the main output.				
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.				

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	4,000			Vac
	primary to transformer core at 2 mA for 3 seconds	1,500			Vac
	primary to earth ground at 2 mA for 3 seconds	1,500			Vac
safety approvals	EN/IEC/UL 60601-1 3rd edition				
EMI/EMC	EMI/EMC, EN 60601-1, EN 61204-3 Class B conducted/radiated, EN 61000-3-(2,3), IEC 61000-4-(2,3,4,5,6,8,11)				
leakage current				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

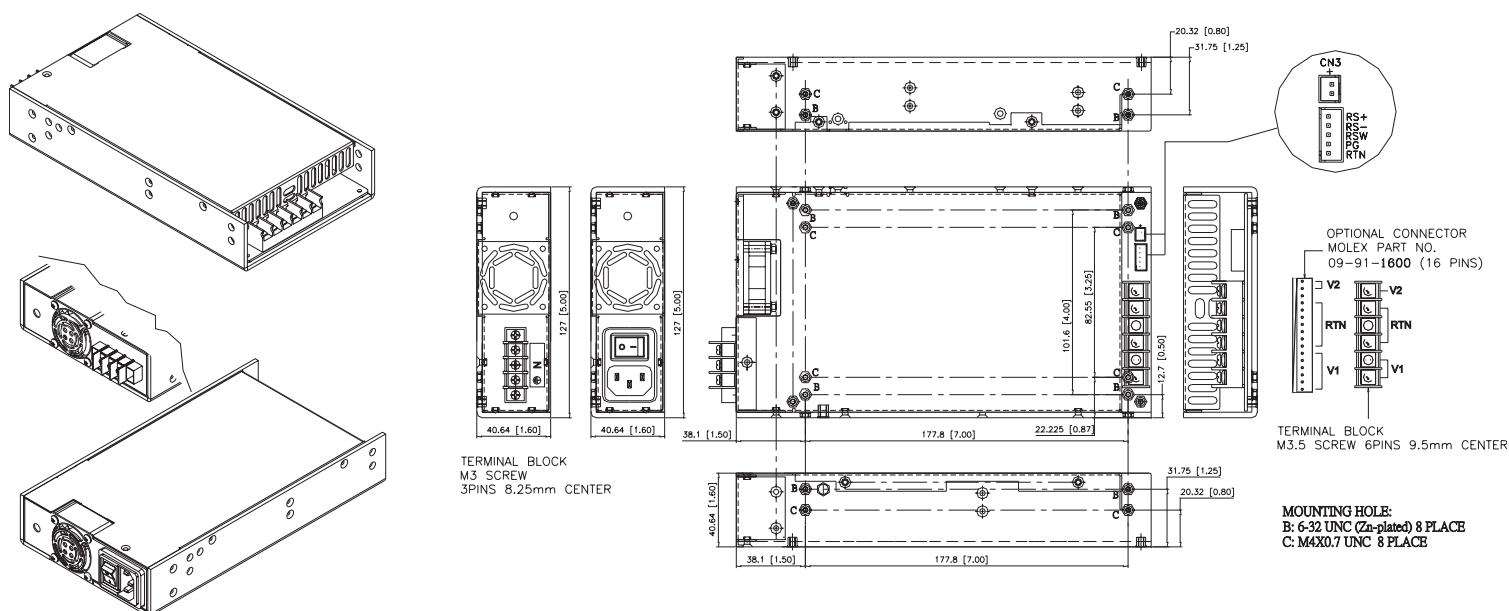
parameter	conditions/description	min	typ	max	units
operating temperature	derating linearly at 2.5% from 50~70°C	0		70	°C
storage temperature		-20		85	°C
operating humidity	non-condensing	5		90	%RH
storage humidity	non-condensing	5		95	%RH

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				1.0	kg
Mounting screws	6-32, 1/4" or shorter				

MECHANICAL DRAWING

units: inches [mm]
 tolerance: inches: x.xx = ±0.02
 mm: x.xx = ±0.5



INPUT CONNECTOR (CN1)	
IEC320 or equivalent snap-in mounting type (option 1)	DINKLE DT-35-A02W-03 (option 2)
Suggested mating plug IEC320	Suggested mating connector Molex 19198-0016 or similar

OUTPUT CONNECTOR (CN2)			
Howder HD-121-6P (option 1)		Molex 26-48-1161 (option 2)	
Suggested mating connector Molex 19198-0045 or similar		Suggested mating connector Molex 09-91-1600	
PIN	FUNCTION	PIN	FUNCTION
1~2	+Vo	1~6	+Vo
3~5	RTN	7~13	RTN
6	-Vo	14~16	-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-002T-P0.6
PIN	FUNCTION	
1	RTN - return	
2	PG - power good signal	
3	RSW - remote on/off	
4	RS- - remote sense (-)	
5	RS+ - remote sense (+)	

REVISION HISTORY

rev.	description	date
1.0	initial release	07/10/2006
1.01	new template applied, V-Infinity branding removed	08/28/2012
1.02	updated spec	03/22/2013

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



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