

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


MODEL¹

	output voltage ^{1,2,3} (Vdc)	output current ⁴ max (A)	ripple and noise ^{5,6} max (% Vp-p)	efficiency
				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 µs 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 µF ceramic capacitor and a 22 µF electrolytic capacitor in parallel
7. * Discontinued model.

PART NUMBER KEY
VUMM-D400 - DXXX

Base Number

Preset Output Voltage

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 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.				

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

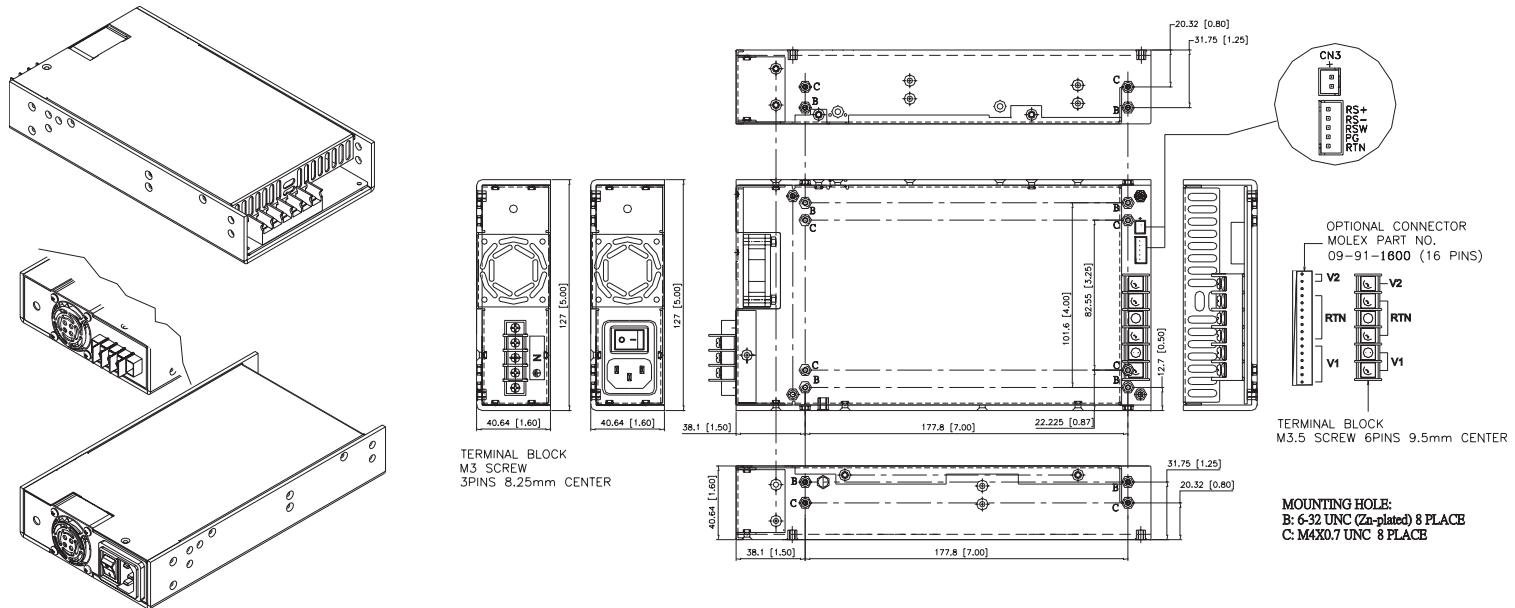
parameter	conditions/description	min	typ	max	units
operating temperature	derating linearly at 2.5% from 50~70°C	0		70	°C
storage temperature		-20		85	°C
operating humidity	non-condensing	5		90	%RH
storage humidity	non-condensing	5		95	%RH

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

LOGIC CONNECTOR [CN3]

JS B5B-XH-A

FAN

JS B2B-XH-A

Suggested mating connector JST XHP-5 or equivalent
Contact: SXH-002T-P0.6Suggested mating connector JST XHP-2 or equivalent,
Contact: SXH-002T-P0.6

PIN	FUNCTION
1~2	RTN - return
3~5	PG - power good signal
6	RSW - remote on/off

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
1~2	+Vo
3~5	RTN
6	-Vo
7~13	RTN
14~16	-Vo

Assembly recommendations:

Output M3.5 – Howder HD-121 and the screw torque is 15.7 In-Lb.

Input M3 – Excel ETB51 and the screw torque is 4.5 In-Lb.

Mounting Inserts:

6-32 (screw torque 21 In-Lb.), M4 (screw torque 13 In-Lb.)

4 Places individually with maximum penetration 0.15 inches on bottom side and 0.25 inch on both sides.

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
1.03	company logo updated	10/02/2020
1.04	mechanical section updated	05/14/2025
1.05	discontinued models VUMM-D400-D312, VUMM-D400-D324, VUMM-D400-D512 & VUMM-D400-D524	06/17/2025

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



15575 SW Sequoia Pkwy #100
Portland, OR 97224
800.275.4899

Fax 503.612.2383
Belfuse.com
powersupport@belf.com

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