

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

**FEATURES**

- medical approvals: UL 60601-1, CSA C22.2 No. 60601-1-03
- dual output
- current monitoring and remote voltage adjustments (margin)
- compact 1U size and high power density: 5.56 W/inch<sup>3</sup>
- power factor corrected to EN 61000-3-2 Class D
- short circuit, overload, over voltage and over temperature protections
- optional IEC320 AC inlet or terminal block
- current sharing

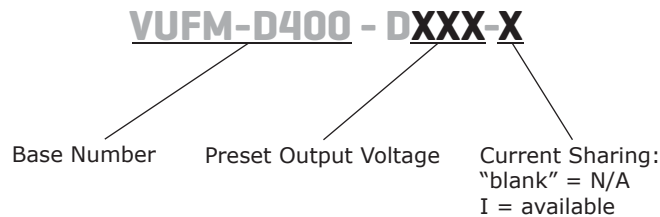


MODEL	output voltage <sup>1,2,3</sup>		output current		ripple and noise <sup>6,7</sup>	efficiency
	(Vdc)	max <sup>4</sup> (A)	max <sup>5</sup> (A)	max <sup>5</sup> (A)	max (% Vp-p)	typ (%)
VUFM-D400-D312	3.3	30	40		±1	75
	12	16.7	25			
VUFM-D400-D324	3.3	30	40		±1	75
	24	8.34	12.5			
VUFM-D400-D512	5	30	40		±1	75
	12	16.7	25			
VUFM-D400-D524	5	30	40		±1	75
	24	8.34	12.5			
VUFM-D400-D1242	12	16.7	25		±1	75
	24	8.33	12.5			

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. convection cooling
5. 23 CFM cooling
6. 1% minimum load is required to maintain the ripple and regulation
7. 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

**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	meets EN 61000-3-2 Class D				

## 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.				
turn-on delay	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	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.				
current sharing	designated as CSH on CN3, optional single wired for forced current 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) <sup>2</sup>	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% minimum load is required to maintain ripple and regulation
- Not available for current sharing models
- Input voltage protection must be disabled when AC Fail is enabled

## 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	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	UL 60601-1, CSA C22.2 No. 601.1-M90, TUV 60601-1, CE Mark (LVD) EN 61204-3/60601-1-2/61000-3-(2,3) & IEC 61000-4 Series Regulations, CB				
EMI/EMC	FCC Part 15, CISPR22 Class B, conducted				
leakage current				300	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**

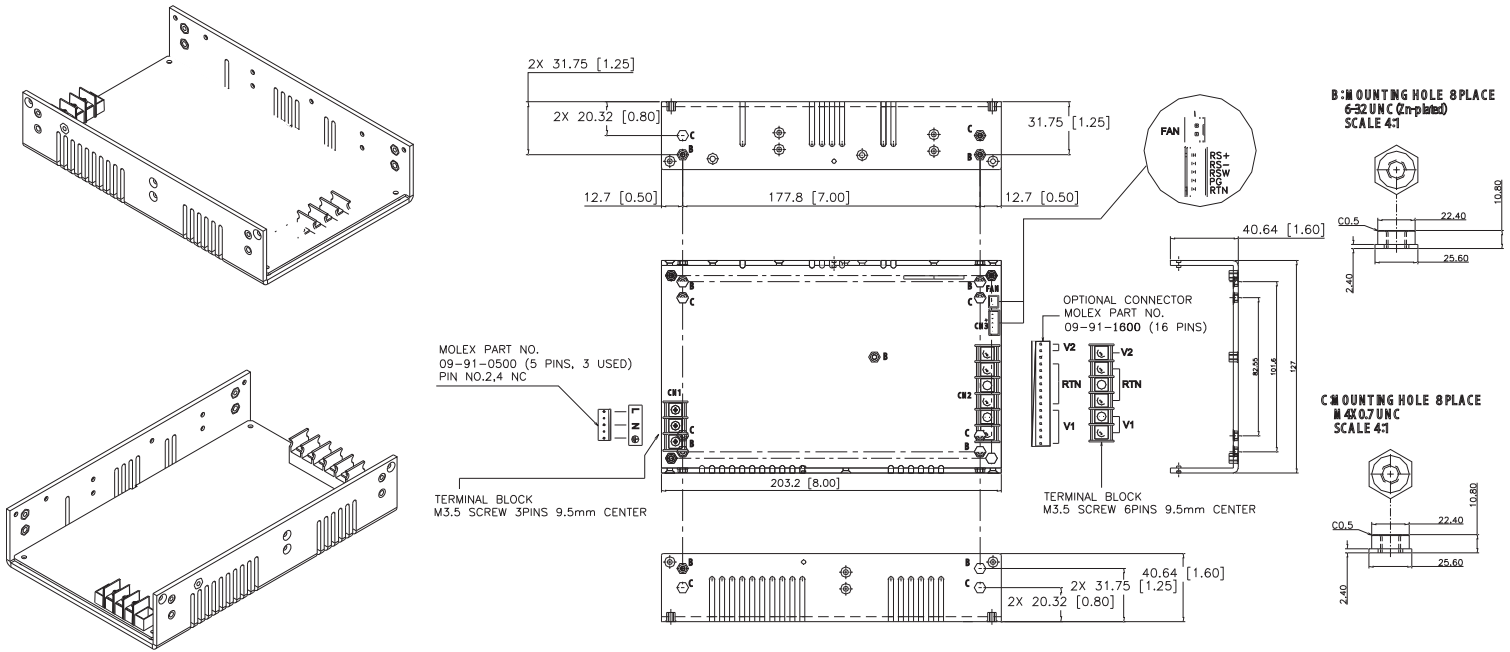
parameter	conditions/description	min	typ	max	units
operating temperature	derating linearly at 2.5% from 50~70°C	0		70	°C
storage temperature		-20		85	°C
operating humidity	non-condensing	5		90	%RH
storage humidity	non-condensing	5		95	%RH

## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	8 x 5 x 1.6 (203.2 x 127 x 40.64 mm)				inch
weight				1.3	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]	
Howder HD-121-3P (option 1)	Molex Part No. 26-48-1071 or similar. (option 2)
	Suggested mating plug Molex Part No. 09-91-0700

OUTPUT CONNECTOR [CN2]			
Howder HD-121-6P (option 1)		Molex 26-48-1161 or similar. (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-001T-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

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<b>rev.</b>	<b>description</b>	<b>date</b>
1.0	initial release	07/11/2006
1.04	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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