CUI INC®

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

FEATURES

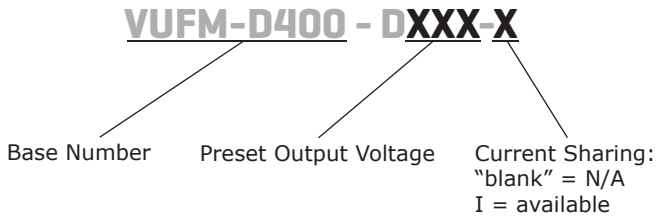
- medical approvals: UL 60601-1, CSA C22.2 No. 60601-1-03
- dual output
- current monitoring and remote voltage adjustments (margin)
- compact 1U size and high power density: 5.56 W/inch^3
- power factor corrected to EN 61000-3-2 Class D
- short circuit, overload, over voltage and over temperature protections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

RoHS c UL us IEC 60601-1 EN 60601-1 CE CB

MODEL	output voltage[1,2,3,] (Vdc)	output current max[4] (A)	output current max[5] (A)	ripple and noise[6,7] max (% Vp-p)	efficiency typ (%)
VUFM-D400-D312	3.3 12	30 16.7	40 25	±1	75
VUFM-D400-D324	3.3 24	30 8.34	40 12.5	±1	75
VUFM-D400-D512	5 12	30 16.7	40 25	±1	75
VUFM-D400-D524	5 24	30 8.34	40 12.5	±1	75
VUFM-D400-D1242	12 24	16.7 8.33	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. 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 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)[2]	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. 1% minimum load is required to maintain ripple and regulation
2. Not available for current sharing models
3. 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 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	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

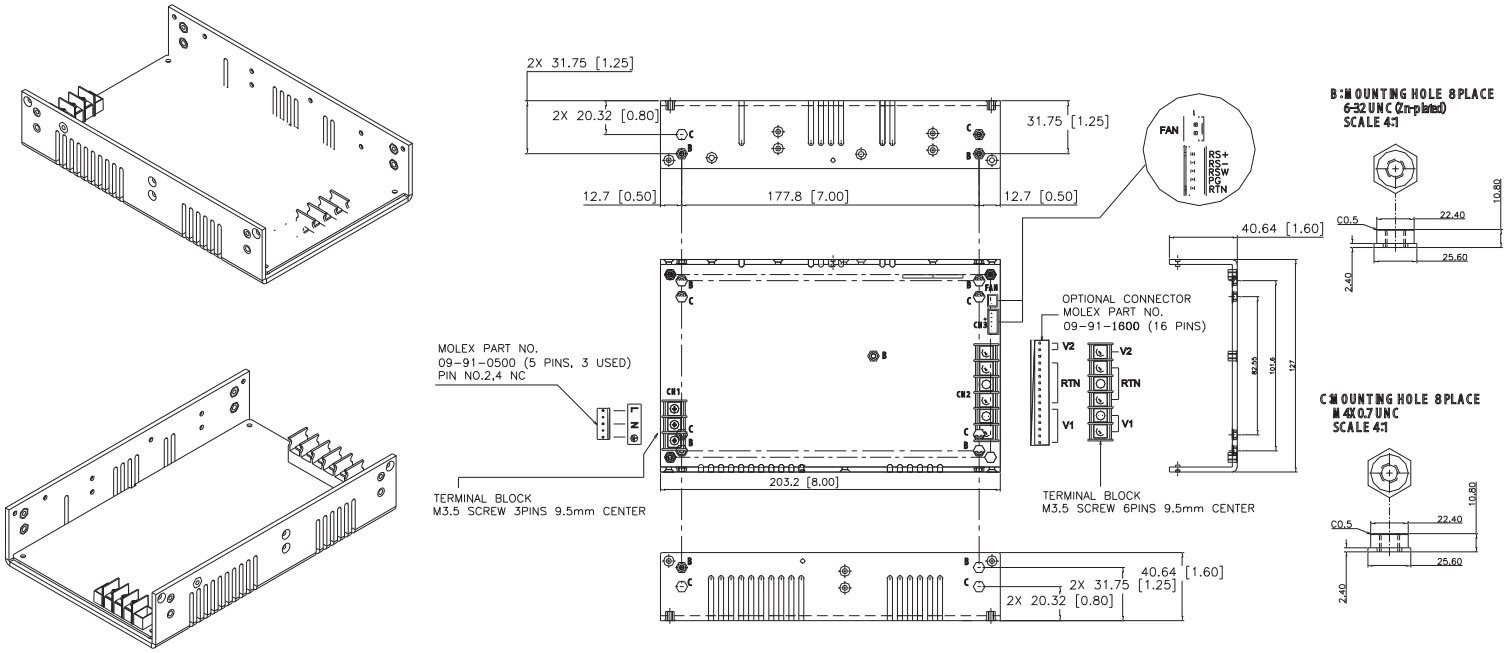
parameter	conditions/description	min	typ	max	units
operating temperature	derating linearly at 2.5% from 50~70°C	0		70	°C
storage temperature		-20		85	°C
operating humidity	non-condensing	5		90	%RH
storage humidity	non-condensing	5		95	%RH

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 - remore on/off	
4	RS- - remote sense (-)	
5	RS+ - remote sense (+)	

REVISION HISTORY

rev.	description	date
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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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

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