CUI INC
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SERIES: VUFM-S400 | **DESCRIPTION:** MEDICAL AC-DC POWER SUPPLY

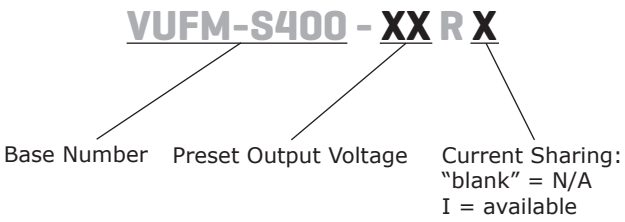
FEATURES

- up to 400 W continuous power
- compact 1U size
- 5.56 W/inch^3 power density
- universal input (90~264 Vac)
- single output from 3.3~48V
- short circuit, over voltage and over temperature protections
- full medical approvals
- built-in active PFC function
- built-in remote sense function
- efficiency up to 83%

MODEL	output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise[4] max (mVp-p)	efficiency typ (%)
VUFM-S400-03R*	3.3	60	200[1]	33	70
VUFM-S400-05R*	5	60	300[2]	50	75
VUFM-S400-12R	12	33.34	400[3]	120	80
VUFM-S400-18R*	18	25	400[3]	180	83
VUFM-S400-24R*	24	18.19	400[3]	240	83
VUFM-S400-36R	36	12.9	400[3]	360	83
VUFM-S400-48R	48	9.53	400[3]	480	83

Notes:
1. total continuous output power will not exceed 200 W forced air (23 CFM), 150 W without fan
2. total continuous output power will not exceed 300 W forced air (23 CFM), 225 W without fan
3. total continuous output power will not exceed 400 W forced air (23 CFM), 250 W without fan
4. 1% minimum load is required to maintain the ripple and regulation
5. * Discontinued model.

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	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%.				
start-up time	at 120 Vac			1	s
hold-up time	at 120 Vac, 80% load	20			ms
adjustability	output user adjustable			±5	%
switching frequency			30		kHz
overshoot	Turn-on and turn-off overshoot shall not exceed 5% over nominal voltage.				
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.				
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	auto recovery upon removal of short				
over temperature protection	shutdown	85			°C

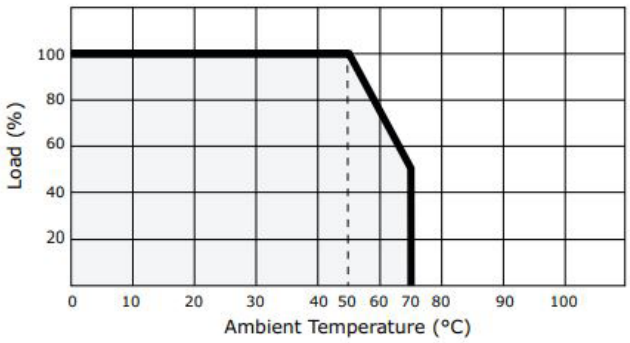
SAFETY & COMPLIANCE

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
isolation resistance	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
safety approvals	UL 60601-1, CSA C22.2 No. 601.1-M90, TUV EN 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
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
vibration	5 ~ 50 Hz, per axis		±7.35		m/s^2

DERATING CURVE

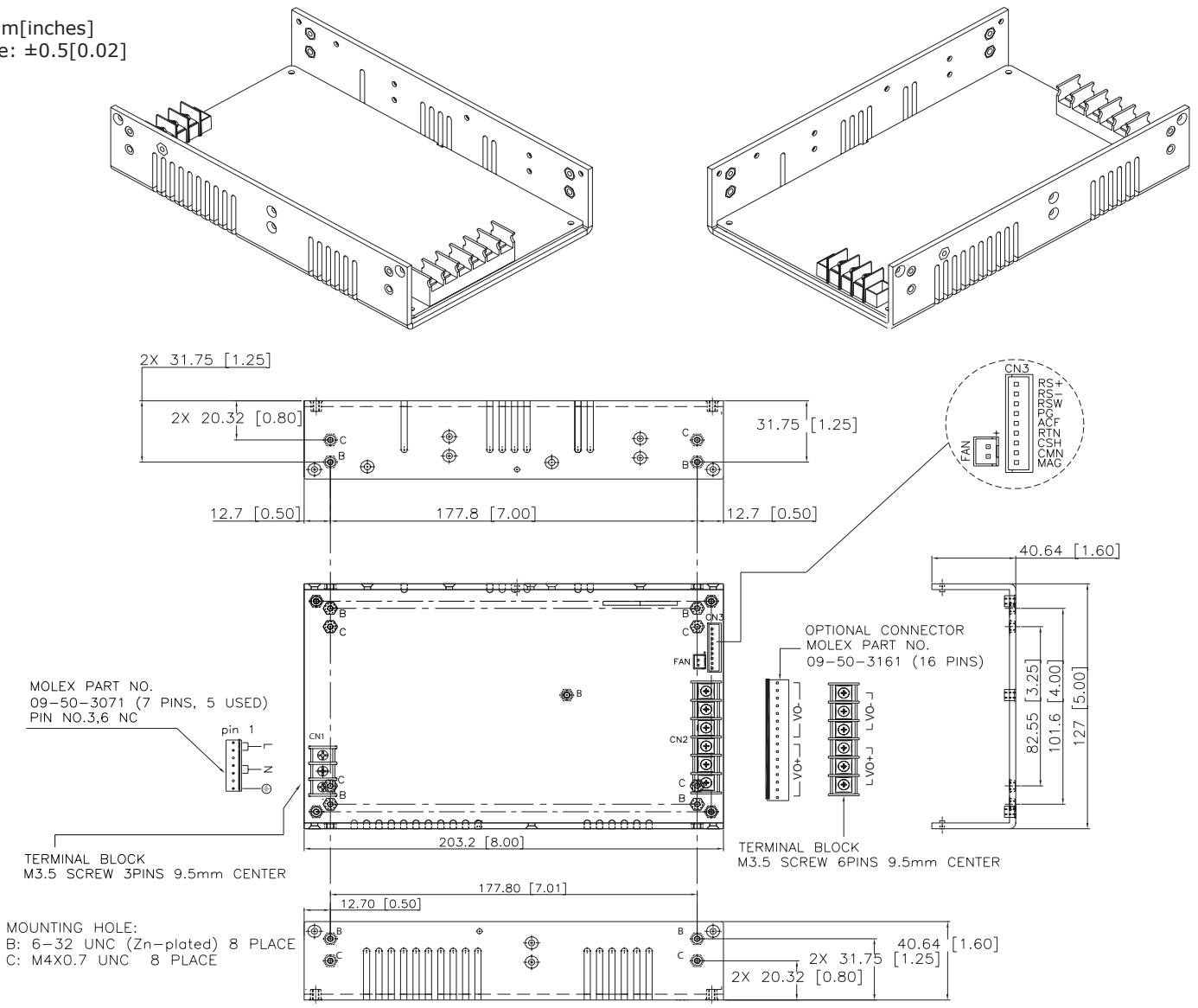


MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	203.2 x 127 x 40.64 (8 x 5 x 1.6 inch)				mm
weight				1.3	kg

MECHANICAL DRAWING

units: mm[inches]
tolerance: ±0.5[0.02]



INPUT CONNECTOR (CN1)	
Howder terminal block HD-121-3P (option 1)	Molex 09-50-3071 (7 pins, 5 used) (option 2)

OUTPUT CONNECTOR (CN2)			
Howder terminal block HD-121-6P (option 1)		Molex 09-50-3161 (16 pins) (option 2)	
PIN	FUNCTION	PIN	FUNCTION
1~3	+Vo	1~8	+Vo
4~6	-Vo	9~16	-Vo

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

FAN

Suggested mating connector --- or equivalent, Contact: SXH-002T-P0.6

Note: 1. Bottom mounting holes have a maximum screw depth of 3.8mm. Side mounting holes have a maximum screw depth of 6.3mm.

REVISION HISTORY

rev.	description	date
1.0	initial release	07/06/2006
1.01	updated features, added preset voltage data	12/27/2006
1.02	updated connector data and drawing	12/12/2007
1.03	new template applied	05/11/2012
1.04	V-Infinity branding removed	08/28/2012
1.05	added derating curve	10/30/2012
1.06	updated spec, Molex connectors changed	01/21/2014
1.07	company logo updated	10/02/2020
1.08	VUFM-S400-05R, VUFM-S400-03R, VUFM-S400-18R, VUFM-S400-24R discontinued models	04/20/2022

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

CUI INC
a bel group

Headquarters
20050 SW 112th Ave.
Tualatin, OR 97062
800.275.4899

Fax 503.612.2383
cui.com
techsupport@cui.com