

## MPU64 series

V1.6

The MPU64 series of AC/DC switching mode power supplies provide 63 Watts of continuous output power. All supplies are UL94V-1 min compliant. All models meet FCC Part-18, CISPR-11 and EN55011 class B emission Limits, IEC 60601-1-2:2014 and are designed to comply with UL/cUL, TUV T-mark and conformity assessment in CE marking. All units pass burn-in test at full load condition.



**RoHS2**  
2011/65/EU



## 63W External Medical Grade Power Supply

### FEATURES:

- \* Wide Operating Voltage, 80 to 275 VAC, 47 to 63 Hz
- \* IEC-320-C14 Input Inlet
- \* Single Output
- \* Crowbar Mode Over Voltage Protection
- \* Input to Output : 2MOPP
- \* High ESD immunity
- \* Efficiency level V (MPU64-105~110)
- \* Class I system
- \* 5 year warranty



### APPLICATIONS:

- \* Medical Equipment
- \* Patient Monitor
- \* Ultrasound system
- \* Blood chemistry analyzer
- \* Medical Image

### GENERAL SPECIFICATION:

- \* **Short Circuit Protection:** Auto Recovery
- \* **Cooling:** Free Air Convection
- \* **Flammability Rating:** UL94V-1
- \* **Protection Classes:** Class I
- \* **Safety:** IEC60601-1 Edition3.1, ES60601-1:2005(R2012), CSAC22.2 NO.60601-1:14, EN60601-1:2006/A1:2013

### APPROVALS:



### Electrical Characteristics:

Symbol	Characteristic	Condition	Min.	Typ.	Max.	Unit
V <sub>ins</sub>	Safety Approval Input Voltage Range	Safety Approval & Specification in Label	100		240	VAC
V <sub>in</sub>	Input Operate Voltage Range	Detail to see Fig.1 (Derate linearly from 100% load at 90VAC to 80% load at 80VAC)	80		275	VAC
F <sub>i</sub>	Input Frequency	Sine wave	47		63	Hz
P <sub>o</sub>	Output Power Range	See Rating Chart			63	W
I <sub>il</sub>	Low Line Input Current	Full Load, V <sub>in</sub> =100VAC		1.62		A
I <sub>ih</sub>	High Line Input Current	Full Load, V <sub>in</sub> =240VAC		0.72		A
I <sub>rl</sub>	Low Line Input Inrush Current	Full Load, 25°C, Cool start, V <sub>in</sub> =100VAC			45	A
I <sub>rh</sub>	High Line Input Inrush Current	Full Load, 25°C, Cool start, V <sub>in</sub> =240VAC			108	A
I <sub>k</sub>	Safety Ground Leakage Current	V <sub>in</sub> =240VAC, F <sub>i</sub> =60Hz		0.1	0.13	mA
η	Efficiency	Full Load, V <sub>in</sub> =230VAC, Detail to see Rating Chart	See Rating Chart			
ΔV <sub>oi</sub>	Line Regulation	Full Load, V <sub>in</sub> =100~120VAC or 200~240VAC			1	%
OVP	Over Voltage Protection		112		132	%
OLP	Over Load Protection	Recovers automatically after fault condition is removed	110		150	%
t <sub>tr</sub>	Time of Transient Response	I <sub>o</sub> =Full Load to Half Load, V <sub>in</sub> =110VAC			4	ms
t <sub>hu</sub>	Hold-Up Time	Full Load, V <sub>in</sub> =110VAC	See Rating Chart			
t <sub>s</sub>	Start-up time	Full Load, V <sub>in</sub> =100~240VAC			2	s
R <sub>is</sub>	Insulation Resistance		50			MΩ
T <sub>c</sub>	Temperature Coefficient	All Condition			±0.04	%/°C
HV	Dielectric Withstanding Voltage (P-S)	Primary to Secondary, limit current <10mA			4000	VAC
V <sub>pg</sub>	Dielectric Withstanding Voltage (P-G)	Primary to PE, limit current <10mA			1500	VAC
EMI	EMC Emission	Compliance to EN55011 (CISPR11), EN60601-1-2	B			Class

### Environmental:

Symbol	Characteristic	Condition	Min.	Typ.	Max.	Unit
T <sub>o</sub>	Operating Temperature	Detail to see Fig.2 (Derate linearly from 100% load at 50°C to 50% load at 70°C) (MPU64-102~104 100% load at 40°C to 40% load at 70°C)	-10		70	°C
T <sub>s</sub>	Storage Temperature	10 ~ 95% RH	-40		85	°C
H <sub>o</sub>	Operating Humidity	non-condensing	0		95%	RH
H <sub>s</sub>	Storage Humidity		0		95%	RH
ESDa	Electro Static Discharge	Air Discharge, IEC61000-4-2			15	kV
ESDc	Electro Static Discharge	Contact Discharge, IEC61000-4-2			8	kV
MTBF	Mean Time Between Failure	Operating Temperature at 25°C, Calculated per MIL-HDBK-217F	200k			h
ELEV	Operating Altitude (Elevation)	All condition			3000	m
VBR	Vibration	10 ~ 500Hz, 10min./1cycle, 60min. each along X, Y, Z axes			5	G
V <sub>sl</sub>	Surge Voltage	Line-Neutral			1	kV
V <sub>sg</sub>	Surge Voltage	Line-PE & Neutral-PE			2	kV

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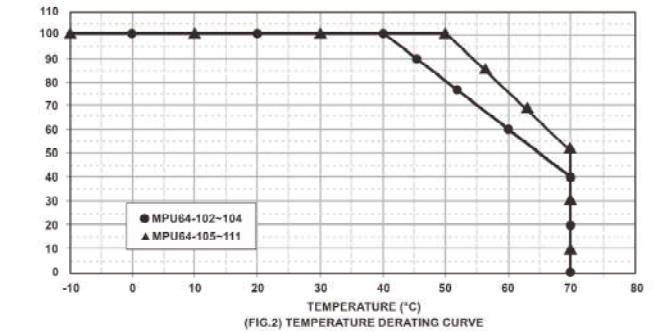
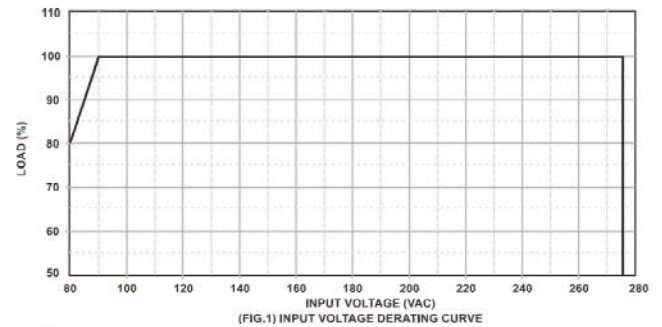
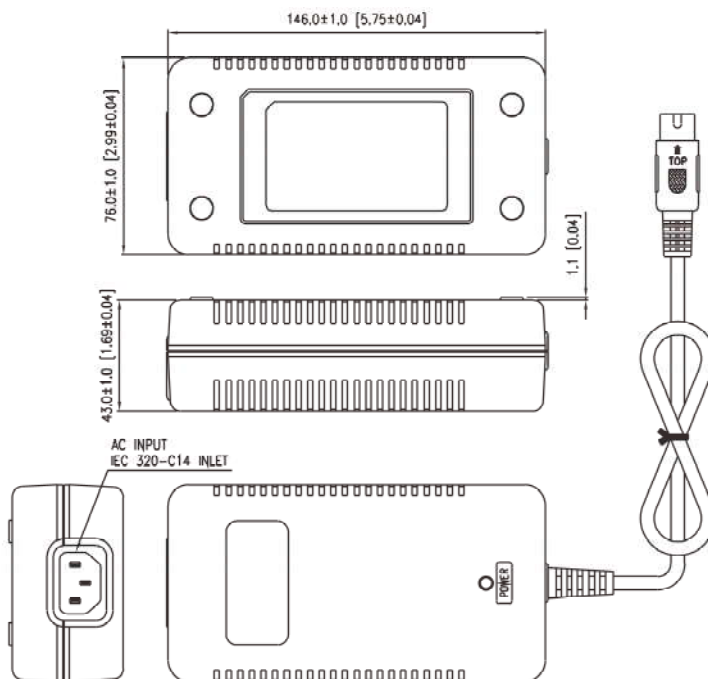
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## 63W External Medical Grade Power Supply

### SPECIFICATION NOTE :

1. Output can provide up to peak load when the power supply starts up. Continuous staying in more than rated load is not allowed.
2. At factory, in 60% rated load condition, each output is checked to be within voltage accuracy.
3. Line regulation is defined by changing  $\pm 10\%$  of input voltage from nominal line at rated load.
4. Load regulation is defined by changing  $\pm 40\%$  of measured output load from 60% rated load.
5. The ripple is measured from peak to peak with a bandwidth-limit of 20MHz (Measured at the output connector with a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor).
6. Hold up time is measured from the end of the last charging pulse to the time which the main output drops down to low limit of main output at rated load and nominal line.
7. Efficiency is measured at rated load, and nominal line.

### MECHANICAL DIMENSIONS: ( UNIT: mm [inch] )



### OUTPUT CABLE RECOMMEND :

1. MPU64-102~103 are required to use AWG#16/5C/4FT output cable.
2. MPU64-104~107 are required to use AWG#16/2C/4FT output cable.
3. MPU64-108~110 are required to use AWG#18/2C/4FT output cable.
4. The regulation and efficiency will be changed by modified output cable.

NET WEIGHT: 510~560g approx.

### Rating Chart:

MODEL NO.	Setting Voltage Range (Factory setting, can't be adjusted)	Output Current (Based on the output volt.)	Maximum Output Power (W)	Ripple & Noise (mVp-p)	Total Regulation (%)	Typ. Efficiency (%)	Typ. No Load Consumption (W)	Hold-Up Time (ms)	Protection Mode
	(VDC)	(A)							
*MPU64-102	5.0	9.00	45	50	$\pm 7$	76	0.5	16	Hiccup
*MPU64-103	7.0	7.85	55	70	$\pm 7$	76	0.5	16	Hiccup
*MPU64-104	9.0	6.44	58	90	$\pm 5$	79	0.5	16	Hiccup
MPU64-105	12.0	5.25	63	100	$\pm 5$	87	0.5	16	Hiccup
MPU64-106	15.0	4.20	63	100	$\pm 5$	87	0.5	16	Hiccup
MPU64-107	18.0	3.50	63	100	$\pm 5$	87	0.5	16	Hiccup
MPU64-108	24.0	2.62	63	100	$\pm 3$	87	0.5	16	Hiccup
*MPU64-109	30.0	2.10	63	100	$\pm 3$	87	0.5	16	Hiccup
*MPU64-110	36.0	1.75	63	100	$\pm 3$	87	0.5	16	Hiccup

MPU64-102~104 are not in compliance with CEC V.  
[\*]=MOQ is required. Please contact sales.

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