

## MPU101 series

The MPU101 series of AC/DC switching mode power supplies provide 100 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.







\* Class I system

**FEATURES:** 

\* IEC-320-C14 Input Inlet

\* Single to Triple Output

\* High ESD immunity

\* Input to Output : 2MOPP

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

#### **GENERAL SPECIFICATION:**

\* Short Circuit Protection: Auto Recovery

\* Suitable professional healthcare facility

- \* 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

100W External Medical Grade Power Supply

\* Wide Operating Voltage, 90 to 260 VAC, 47 to 63 Hz

The MPU101-105 is available on CCC mark



#### **APPROVALS:**









Symbol	Characteristic	Condition	Min.	Тур.	Max.	Unit
Vins	Safety Approval Input Voltage Range	Safety Approval & Specification in Label	100		240	VAC
Vin	Input Operate Voltage Range	Detail to see Fig.1	90		260	VAC
Fi	Input Frequency	Sine wave	47		63	Hz
PF	Power Factor Correction		0.95		1	
Po	Output Power Range	See Rating Chart			100	W
Iil	Low Line Input Current	Full Load, Vin=100VAC		1.25		Α
Iih	High Line Input Current	Full Load, Vin=240VAC		0.50		Α
Irl	Low Line Input Inrush Current	Full Load, 25°C, Cool start, Vin=100VAC			50	Α
Irh	High Line Input Inrush Current	Full Load, 25°C, Cool start, Vin=240VAC			120	Α
Ik	Safety Ground Leakage Current	Vin=264VAC, Fi=63Hz		0.1	0.175	mA
η	Efficiency	Full Load, Vin=230VAC, Detail to see Rating Chart	See Rating Cha		t	
△Voi	Line Regulation	Full Load, Vin=100~120VAC or 200~240VAC	0.5		1	%
OVP	Over Voltage Protection		112		132	%
OLP	Over Load Protection	Recovers automatically after fault condition is removed	110		150	%
ttr	Time of Transient Response	Io=Full Load to Half Load, Vin=110VAC			4	ms
thu	Hold-Up Time	Full Load, Vin=100VAC	S	ee Rati	ng Char	t
ts	Start-up time	Full Load, Vin=100~240VAC			2	S
Ris	Insulation Resistance	Primary to Secondary, 500VDC,25°XC/ 70% RH	50			$M\Omega$
Тс	Temperature Coefficient	All Condition			±0.04	%/°C
HV	Dielectric Withstanding Voltage (P-S)	Primary to Secondary, limit current <10mA			4000	VAC
Vpg	Dielectric Withstanding Voltage (P-G)	Primary to PE, limit current <10mA			1500	VAC
EMI	EMC Emission	Compliance to EN55011 (CISPR11), EN60601-1-2	В			Class

#### **Environmental:**

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Symbol	Characteristic	Condition	Min.	Тур.	Max.	Unit
То	Operating Temperature	Detail to see Fig.2 (Derate linearly from 100% load at 50°C to 50% load at 70°C)	-10		70	°C
Ts	Storage Temperature	10 ~ 95% RH	-40		85	°C
Но	Operating Humidity	non-condensing	0		95%	RH
Hs	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
Vsl	Surge Voltage	Line-Neutral			1	kV
Vsg	Surge Voltage	Line-PE & Neutral-PE			2	kV



## **SINPRO**

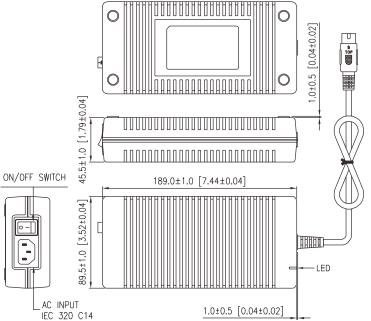
# MPU101 series

#### V1.7

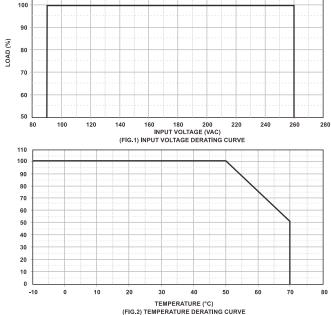
#### SPECIFICATION NOTE:

- 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).
- 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])



### 100W External Medical Grade Power Supply



**NET WEIGHT:** 778~800g approx.

### **Rating Chart: (Single Output)**

MODEL NO.	Setting Voltage Range (Factory setting, can't be adjusted)		Output Current (Based on the output volt.)		Maximum Output Power	Ripple & No	Total Regulation	Typ. Efficiency	Typ. No Loa Consumptic	Hold-Up Time	Protection
	min	max	min	max	ver	Noise	tion	псу	oad tion	me	Mod
	(VDC)	(VDC)	(A)	(A)	(W)	(mVp-p)	(%)	(%)	(W)	(ms)	ē
MPU101-102	5.0	6.0	11.66	14.00	70	50	±5	76	3	16	Hiccup
*MPU101-103	6.0	8.0	10.00	13.33	80	60	±5	77	3	16	Hiccup
*MPU101-104	8.0	11.0	8.20	11.25	90	80	±4	82	3	16	Hiccup
MPU101-105	12.0	13.0	7.70	8.33	100	100	±3	83	3	16	Hiccup
MPU101-106	13.0	16.0	6.30	7.70	100	100	±3	83	3	16	Hiccup
MPU101-107	16.0	21.0	4.80	6.30	100	100	±3	85	3	16	Hiccup
MPU101-108	21.0	27.0	3.70	4.80	100	100	±2	86	3	16	Hiccup
*MPU101-109	27.0	33.0	3.00	3.70	100	100	±2	86	3	16	Hiccup
MPU101-110	33.0	40.0	2.50	3.00	100	100	±2	86	3	16	Hiccup



# **SSINPRO**

# MPU101 series

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## 100W External Medical Grade Power Supply

## **Rating Chart: (Multi Output)**

MODEL NO.	Setting Voltage Range (Factory setting, can't be adjusted)		Output Current (Based on the output volt.)		Maximum Output Power	Ripple & Noise	Total Regulation	Typ. Efficiency	Typ. No Load Consumption	Hold-Up Time	Protection Mode
			min	max	·	ise			ad	ne	Mod
		(VDC)	(A)	(A)	(W)	(mVp-p)	(%)	(%)	(W)	(ms)	Ф
*MPU101-200	Vo1	+3.3	1.0	10.0	69	66	±7	75	3	16	Hiccup
	Vo2	+12.0	0.3	3.0	05	100	±5	, 3	3	10	Песир
MPU101-201	Vo1	+5.0	1.0	10.0	80	50	±5	76	3	16	Hiccup
	Vo2	+12.0	0.3	3.0	00	100	±5	, 0	3	10	Пссир
MPII101-202	Vo1	+5.0	1.0	10.0	80	50	±5	76	3	16	Hiccup
MPU101-202	Vo2	+15.0	0.3	3.0	00	100	±6	, 0	3	10	Пссир
MPU101-203	Vo1	+5.0	1.0	10.0	80	50	±5	76	3	16	Hiccup
	Vo2	+24.0	0.2	2.0	80	100	±7	70	,	10	ПССир
*MPU101-204	Vo1	+3.3	1.0	10.0	55	66	±7	76	3	16	Hiccup
WIF 0 101-204	Vo2	+5.0	0.5	5.0	33	50	±5	70	3	10	πιτευρ
MPU101-209	Vo1	+12.0	0.7	7.0	80	100	±5	81	3	16	Hiccup
	Vo3	-12.0	0.0	1.0	80	100	±5		3	10	Пссир
*MPU101-210	Vo1	+15.0	0.6	6.0	80	100	±5	82	3	16	Hiccup
	Vo3	-15.0	0.0	1.0	80	100	±5		3	10	піссир
*MPU101-215	Vo1	+5.0	1.0	10.0	74	50	±5	82	3	16	Hissup
WF0101-213	Vo3	-24.0	0.0	1.0	74	100	±5	02	3	10	Hiccup
	Vo1	+3.3	1.0	10.0		66	±7				
*MPU101-300	Vo2	+12.0	0.3	3.0	74	100	±5	76	3	16	Hiccup
	Vo3	-12.0	0.0	1.0		100	±5				
	Vo1	+3.3	1.0	10.0		66	±7				
*MPU101-300-1	Vo2	+12.0	0.3	3.0	7.4	100	±5	76	3	16	Hiccup
	Vo3	+12.0	0.0	1.0	74	100	±5				
	Vo1	+5.0	1.0	10.0		50	±5		4	16	
*MPU101-301	Vo2	+12.0	0.3	3.0	80	100	±5	76			Hiccup
	Vo3	-5.0	0.0	1.0		100	±5				
	Vo1	+5.0	1.0	10.0		50	±5				
*MPU101-301-1	Vo2	+12.0	0.3	3.0	80	100	±5	76	4	16	Hiccup
	Vo3	+5.0	0.0	1.0		100	±5				
	Vo1	+5.0	1.0	10.0		50	±5				
*MPU101-302	Vo2	+12.0	0.3	3.0	80	100	±5	78	4	16	Hiccup
	Vo3	-12.0	0.0	1.0		100	±5				
	Vo1	+5.0	1.0	10.0		50	±5				
*MPU101-302-1	Vo2	+12.0	0.3	3.0	80	100	±5	78	4	16	Hiccup
	Vo3	+12.0	0.0	1.0		100	±5				
	Vo1	+5.0	1.0	10.0		50	±5				
*MPU101-303	Vo2	+15.0	0.3	3.0	80	100	±6	79	4	16	Hiccup
	Vo3	-15.0	0.0	1.0		100	±5				
	Vo1	+5.0	1.0	10.0		50	±5				
*MPU101-303-1	Vo2	+15.0	0.3	3.0	80	100	±6	79	4	16	Hiccup
1411 0 101-202-1	Vo3	+15.0	0.0	1.0		100	±5		4		

 $<sup>[*] = \</sup>mathsf{MOQ} \ \mathsf{is} \ \mathsf{required}. \ \mathsf{Please} \ \mathsf{contact} \ \mathsf{sales}.$ 



## **SSINPRO**

# MPU101 series

V1.

## 100W External Medical Grade Power Supply

## **Rating Chart: (Multi Output)**

MODEL NO.	Setting Voltage Range (Factory setting, can't be adjusted)  Output Current (Based on the output volt.)				Maximum Output Power	Ripple & Noise	Total Regulation	Typ. Efficiency	Typ. No Load Consumption	Hold-Up Time	Protection Mode	
			min max		er er	ise	tion	ісу	ad On	ne	Mod	
		(VDC)	(A)	(A)	(W)	(mVp-p)	(%)	(%)	(W)	(ms)	ē	
	Vo1	+5.0	1.0	10.0		50	±5					
*MPU101-304	Vo2	+24.0	0.3	3.0	80	100	±5	82	3	16	Hiccup	
	Vo3	-24.0	0.0	1.0		100	±5					
	Vo1	+5.0	1.0	10.0		50	±5			16		
*MPU101-304-1	Vo2	+24.0	0.3	3.0	80	100	±5	82	3		Hiccup	
	Vo3	+24.0	0.0	1.0		100	±5					
	Vo1	+5.0	1.0	10.0		50	±5	82				
MPU101-305	Vo2	+24.0	0.3	3.0	80	100	±5		4	16	Hiccup	
	Vo3	-12.0	0.0	1.0		100	±5					
	Vo1	+5.0	1.0	10.0	80	50	±5					
*MPU101-305-1	Vo2	+24.0	0.3	3.0		100	±5	82	4	16	Hiccup	
	Vo3	+12.0	0.0	1.0		100	±5					
	Vo1	+3.3	1.0	10.0		66	±7		3	16		
*MPU101-306	Vo2	+12.0	0.3	3.0	74	100	±5	75			Hiccup	
	Vo3	-5.0	0.0	1.0		50	±5					
	Vo1	+3.3	1.0	10.0		66	±7					
*MPU101-306-1	Vo2	+12.0	0.3	3.0	74	100	±5	75	3	16	Hiccup	
	Vo3	+5.0	0.0	1.0		100	±5					
	Vo1	+3.3	1.0	10.0		66	±7					
MPU101-308	Vo2	+5.0	0.3	3.0	60	50	±5	60	3	16	Hiccup	
	Vo3	-12.0	0.0	1.0		100	±5					
	Vo1	+3.3	1.0	10.0		66	±7					
MPU101-308-1	Vo2	+5.0	0.3	3.0	60	50	±5	60	3	16	Hiccup	
	Vo3	+12.0	0.0	1.0		100	±5					

<sup>[\*] =</sup> MOQ is required. Please contact sales.



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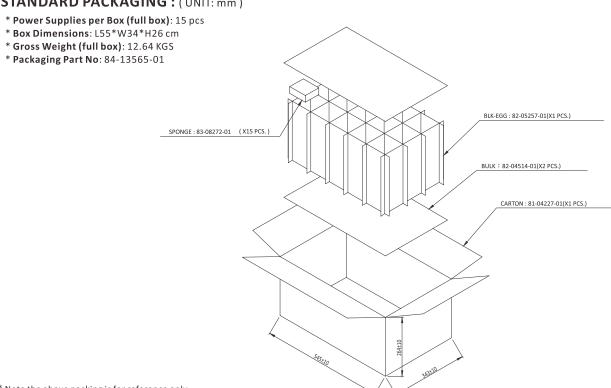
## 100W External Medical Grade Power Supply

## **EMC Specifications:**

EMISSION									
ITEM	ITEM STANDARD								
Conducted	EN55011	CLASS B							
Radiated	EN55011	CLASS B							
Harmonics	EN61000-3-2	CLASS A							
Flicker	EN61000-3-3	PASS							

	ITEM	STANDARD	RESULT	CRITERION
	ESD	EN61000-4-2	15KV air discharge, 8KV contact discharge	А
	RS	EN61000-4-3	PASS	А
	EFT	EN61000-4-4	2KV	А
	SURGE	EN61000-4-5	1KV line to line, 2KV line to ground	А
	CS	EN61000-4-6	3Vrms, 6Vrms	А
IMMUNITY	PFMF	EN61000-4-8	PASS	А
			I) 0% reduction for 0.5 cycle at 50Hz	В
	Voltage dips	EN61000-4-11	ii) 0% reduction for 1 cycle at 50Hz	В
			iii) 70% reduction for 25/30 cycles at 50/60Hz	C (240VAC)
	Voltage interruptions	EN61000-4-11	0% reduction for 250/300 cycles at 50/60Hz	С

#### **STANDARD PACKAGING:** (UNIT: mm)



 $<sup>^{</sup>st}$  Note the above packing is for reference only, please contact sales for a confirm packing information.





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# 100W External Medical Grade Power Supply

### **Standard Connector:**

Barrel Female Plug	Plug PN	Standard Connection(Default)	Wire Material	Wire Type
13.2±0.2 10.0±1.0 Shield	PO5B	P1,P2,P4=RTN P3,P5=OUT SHIELD=GND	UL2464	102~107:16AWG*5C/4FT 108~111:16AWG/4FT

### **Optional Connector:**

Barrel Female Plug	Plug PN	OD	ID	L	Standard Connection(Default)	Wire Material	Wire Type
O.D I.D Center	P01J	5.5	2.1	9.5			
	P01K	5.5	2.1	11	Center=OUT(+)	1112464	100×111.1CAN/C/AFT
L Sleeve	P01M	5.5	2.5	9.5	Sleeve=RTN(-)	UL2464	108~111:16AWG/4FT
	P01N	5.5	2.5	11			

 $<sup>\</sup>hbox{\bf *} \ {\bf Optional} \ {\bf output} \ {\bf connectors} \ {\bf available} \ {\bf contact} \ {\bf sales} \ {\bf for} \ {\bf details}.$