

200W Medical series



Specification

AC INPUT VOLTAGE 90~264 VAC, 47~440Hz / 127~370VDC.

POWER FACTOR (Typ.)

AC INPUT CURRENT (Typ.) Maximum input current 3.5A at 115VAC, 60Hz or 1.6A at 230VAC, 60Hz with 100% output load.

INRUSH CURRENT (Typ.) Inrush current is less than 25A at 115VAC or less than 40A at 230VAC under cold start conditions. Limiting provided by internal thermistors.

SETUP, RISE TIME 1000ms, 20ms / 230VAC at full load 3000ms, 20ms / 115VAC at full load

HOLD-UP TIME (Typ.) 16ms / 230VAC at full load 16ms / 115VAC at full load

LEAKAGE CURRENT

Leakage current is less than 180µA at 264VAC for earth leakage current Leakage current is less than 100µA at 264VAC for patient leakage current

DC OUTPUT ADJ. RANGE

DC output voltage (or CH1 of multiple output models) can be adjusted between -5%~+10% rated output voltage by potential meter.

OVERLOAD PROTECTION

Fully protected against short circuit and output overload. The hiccup type protection will be activated at 120~160% rated load and recovers automatically after fault condition is removed.

OVER VOLTAGE PROTECTION

Provided on output channel 1 only at 115%~135% rated output voltage. Output will be shut down when this protection is activated.

OVER TEMPERATURE PROTECTION

When the temperature of TSW1 which detect on heat sink of power transistor reaches 95°C, This protection is activated. Then output will be shut down and recovers automatically after temperature goes down.

POWER GOOD / FAIL SIGNAL

TTL logic high for power good and TTL low for power fail. When the output voltage reaches 90% of rated value, a +5V TTL signal will be sent out with a 10~500ms delay; At least 1ms before the output voltage goes below 90% of the rated value, the TTL signal will be turned off. * MPS-200-3.3 does not have this function.

REMOTE CONTROL

RC+/RC-:0 ~ 0.8V=power on; 4 ~ 10V=power off sink current<4~10mA

Features

- Universal AC input / Full range
- Low leakage current <180µA
- · Protections: Short circuit / Overload / Over voltage / Over temperature
- · Free air convection for 140W and forced air convection for 200W
- ANSI/AAMI ES60601-1 medical safety approved
- · With power good and fail signal output
- Built-in remote ON-OFF control
- · Built-in remote sense function
- Fixed switching frequency at 100KHz
- 3 years warranty



WORKING TEMP.

Whole series can operate from -20~70°C. Please refer to the derating curves.

WORKING HUMIDITY

20~90% RH non-condensing.

STORAGE TEMP., HUMIDITY

-40~+85°C, 10~90% RH

TEMP. COEFFICIENT

 $\pm 0.04\%$ /°C on all outputs at full load between 0~50°C of ambient temperature.

VIBRATION

2G of acceleration, vibrating frequency adjust from 10Hz ~500Hz within a 10-minute cycle. 6 testing cycles (60 minutes) each along X, Y, Z axes.

SAFETY STANDARDS

Medical : ANSI/AAMI ES60601-1, TUV EN60601-1, IEC60601-1 approved Commercial : Also design refer to UL60950-1, TUV EN60950-1

WITHSTAND VOLTAGE

4000VAC between input and output 1500VAC between input and F.G. 1500VAC between output and F.G.

ISOLATION RESISTANCE

>100M Ohms for I/P-O/P, I/P-FG, O/P-FG by using 500VDC test voltage.

EMI COMPLIANCE

EMI Specifications Conducted & Radiation Harmonic distortion

Compliance Level EN61000-3-2 EN61000-3-3

EMS COMPLIANCE

Voltage flicker

EMS Specification ESD air ESD contact RF field susceptibility

EFT(Electrical Fast Transient)/Burst

Lightning/Surge

Conducted RF susceptibility

Magnetic field immunity

Voltage dip, interruption Digital phone carrier immunity EN61000-4-6, Level 2, 3Vrms/m Level 3, 10Vrms/m EN61000-4-8, Level 2, 3A/m Level 3, 10A/m EN61000-4-11,Compliance Level 2, 3V/m, 900MHz ENV50204, Level 3. 10A/m. 900MHz

Level 3, 10V/m

Level 3, 2KV/5KHz

4KV/Line-Farth

MTBF

262,100 hours min. at full load and 25 $^\circ\!\mathrm{C}$ of ambient temperature, calculated per MIL-HDBK-217F.

177.8x107.2x35.5mm or 7"x4.22"x1.4"

DIMENSION (L*W*H)

PACKING

0.66Kg; 24pcs/16.8Kg/0.99CUFT

EN55011, Class B EN55022, Class B

Compliance Level

EN61000-4-2, Level 3, 8KV

EN61000-4-2, Level 2, 4KV

EN61000-4-3, Level 2, 3V/m

EN61000-4-4, Level 2, 1KV/5KHz

EN61000-4-5, Level 4, 2KV/Line-Line



Output Chart

OUTPU'	OUTPUT	TPUT RATED	OUTPUT CURRENT		RIPPLE & NOISE	VOLTAGE	LINE	LOAD			
MODEL		CURRENT	MINIMUM LOAD	CONVECTION (max.)	WITH FAN (25CFM)	PEAK LOAD WITH 25CFM FAN (Note 4)	(Max.) (Note 2)	TOLERANCE (Note 3)	REGULATION	REGULATION	EFFICIENC' (typ.)
MPS-200-3.3	3.3V	40A	0A	28A	40A	48A	80mVp-p	± 2.0%	±0.5%	±1.0%	77%
MPS-200-5	5V	40A	0A	28A	40A	48A	80mVp-p	± 2.0%	±0.5%	±1.0%	81%
MPS-200-12	12V	16.7A	0A	11.7A	16.7A	20A	100mVp-p	± 2.0%	±0.5%	±1.0%	84%
MPS-200-15	15V	13.4A	0A	9.4A	13.4A	16A	100mVp-p	± 2.0%	±0.5%	±1.0%	85%
MPS-200-24	24V	8.4A	0A	5.9A	8.4A	10A	150mVp-p	±1.0%	±0.5%	±1.0%	86%
MPS-200-48	48V	4.2A	0A	3A	4.2A	5A	200mVp-p	±1.0%	±0.5%	±1.0%	87%
MPD-200A	5V	20A	4A	15A	20A	24A	80mVp-p	±2.0%	±0.5%	±1.0%	
	12V	8A	0.8A	5.4A	8A	9.6A	120mVp-p	+8,-5%	±1.0%	±4.0%	82%
MPD-200B	5V	20A	4A	15A	20A	24A	80mVp-p	±2.0%	±0.5%	±1.0%	
	24V	4A	0.4A	2.7A	4A	4.8A	180mVp-p	±6.5%	±1.0%	+4,-6%	83%
MPT-200A	5V	20A	4A	15A	20A	24A	80mVp-p	±2.0%	±0.5%	±1.0%	
	12V	7.5A	0.8A	5A	7.5A	9A	120mVp-p	±8.0%	±1.0%	±5.0%	80%
	-5V	2A	0A	1A	2A	2.4A	80mVp-p	±5.0%	±0.5%	±1.0%	0070
MPT-200B	5V	20A	4A	15A	20A	24A	80mVp-p	±2.0%	±0.5%	±1.0%	80%
	12V	6A	0.6A	4.4A	6A	7.2A	120mVp-p	±8.0%	±1.0%	±5.0%	
	-12V	2A	0A	1A	2A	2.4A	80mVp-p	±5.0%	±0.5%	±1.0%	
MPT-200C	5V	20A	4A	15A	20A	24A	80mVp-p	±2.0%	±0.5%	±1.0%	80%
	15V	4.7A	0.5A	3.3A	4.7A	5.6A	150mVp-p	±8.0%	±1.0%	±5.0%	
	-15V	2A	0A	1A	2A	2.4A	80mVp-p	± 5.0%	±0.5%	±1.0%	
MPT-200D	5V	20A	4A	15A	20A	24A	80mVp-p	±2.0%	±0.5%	±1.0%	81%
	24V	3A	0.3A	2.2A	3A	3.6A	180mVp-p	±8.0%	±1.0%	±5.0%	
	12V	2A	0A	1A	2A	2.4A	80mVp-p	±5.0%	±0.5%	±1.0%	
MPQ-200B	5V	15A	3A	12A	15A	18A	80mVp-p	±2.0%	±0.5%	±1.0%	- 78%
	12V	7A	0.7A	5.3A	7A	8.4A	120mVp-p	±8.0%	±1.0%	±5.0%	
	-5V	2A	0A	1A	2A	2.4A	80mVp-p	±5.0%	±0.5%	±1.0%	
	-12V	2A	0A	1A	2A	2.4A	80mVp-p	±5.0%	±0.5%	±1.0%	
MPQ-200C	5V	15A	3A	12A	15A	18A	80mVp-p	± 2.0%	±0.5%	±1.0%	- 78%
	15V	5A	0.5A	4A	5A	6A	150mVp-p	±6.0%	±1.0%	±5.0%	
	-5V	2A	0A	1A	2A	2.4A	80mVp-p	±5.0%	±0.5%	±1.0%	
	-15V	2A	0A	1A	2A	2.4A	80mVp-p	±5.0%	±0.5%	±1.0%	
MPQ-200D	5V	15A	3A	12A	15A	18A	80mVp-p	±2.0%	±0.5%	±1.0%	- 79%
	24V	3A	0.3A	2.3A	3A	3.6A	180mVp-p	±8.0%	±1.0%	±5.0%	
	12V	2A	0A	1A	2A	2.4A	80mVp-p	± 5.0%	±0.5%	±1.0%	
	-12V	2A	0A	1A	2A	2.4A	80mVp-p	±5.0%	±0.5%	±1.0%	
MPQ-200F	5V	15A	3A	12A	15A	18A	80mVp-p	± 2.0%	±0.5%	±1.0%	81%
	24V	2.7A	0.3A	2.1A	2.7A	3.3A	180mVp-p	±8.0%	±1.0%	±5.0%	
	15V	2A	0A	1A	2A	2.4A	80mVp-p	±5.0%	±0.5%	±1.0%	
-	-15V	2A	0A	1A	2A	2.4A	80mVp-p	±5.0%	±0.5%	±1.0%	

▶ Notes: 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.

2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf & 47µf parallel capacitor.

3. Tolerance : includes set up tolerance, line regulation and load regulation.

4. 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power.

5. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on http://www.meanwell.com)

6. Derating may be needed under low input voltages. Please check the derating curve for more details.



Mechanical Specification(MPS-200)

Unit:mm



AC Input Connector (CN1) : JST B3P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	AC/N		
2	No Pin	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
3	AC/L		

DC Output Connector (CN2) : MOLEX 5566-20 or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1~5,11~15	DC OUTPUT -V	MOLEX 5557	MOLEX 5556
6~10,16~20	DC OUTPUT +V	or equivalent	or equivalent

■ Derating Curve (MPS-200)



DC Output Connector (CN4) : JS-2008-03*2 or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	PG		
2	RS-		
3	GND	JS-2007-03*2	JS-2007-T
4	RC+	or equivalent	or equivalent
5	RS+		
6	RC-		

■ Static Characteristics (MPS-200)





Mechanical Specification(MPD/T/Q-200)



AC Input Connector (CN1) : JST B3P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal	
1	AC/N			
2	No Pin	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent	
3	AC/L	or oquiraioni	or oquiraioni	

DC Output Connector (CN2,3) : JST B8P-VH*2 or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1,2,3,4	V1		
5~11	COM		
12,13	V2	JST VHR	JST SVH-21T-P1.1
14	V3	or equivalent	or equivalent
15	No pin		
16	V4		

Derating Curve (MPD/T/Q-200)



DC Output Connector (CN4) : JS-2008-03*2 or equivalent

Pin No	o. Assignment	Mating Housing	Terminal
1	PG		
2	RS-		
3	GND	JS-2007-03*2	JS-2007-T
4	RC+	or equivalent	or equivalent
5	RS+		
6	RC-		

■ Static Characteristics (MPD,T,Q-200)

