



(MPM-65)



(MPM-65-xxST)



■ Features

- 3.43"x2.05" compact size
- PCB chassis or screw terminal mounting version
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1 and IEC/EN60601-1
- Suitable for BF application with appropriate system consideration
- No load power consumption < 0.1W
- Extremely low leakage current
- Wide operating temp. range -30 ~ +80°C
- EMI Class B without additional components
- Isolation Class II
- Protections: Short circuit / Overload / Over voltage
- No minimum load required
- Operating altitude up to 4000 meters(Note.7)
- 71W peak(10 sec.)
- 3 years warranty

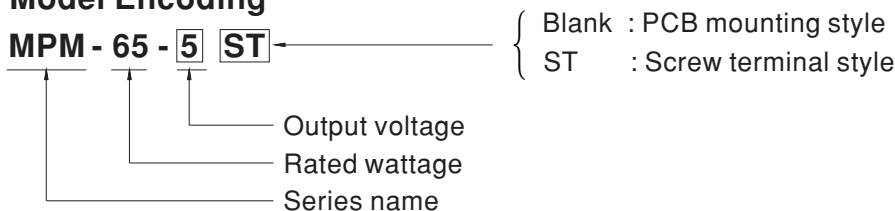
■ Applications

- Portable medical device
- Mobile clinical workstation
- Medical computer monitor
- Medical examination instrument

■ Description

MPM-65 is a 65W high density and small size (87x52x29.5mm) AC/DC PCB-mount type medical grade power supply. It features the operation for 80~264VAC, a low no load power consumption less than 0.1W, a high efficiency up to 93%, Class II (no FG) double insulation, outstanding dissipation, 5G anti-vibration, high EMC performance, 4KVAC isolation, etc. The design observes IEC/EN60601-1 and ANSI/AAMI ES60601-1 version three with 2 x MOPP level and ultra-low leakage current (<100µA). It is very suitable for BF (patient contact) type medical device or relevant equipment.

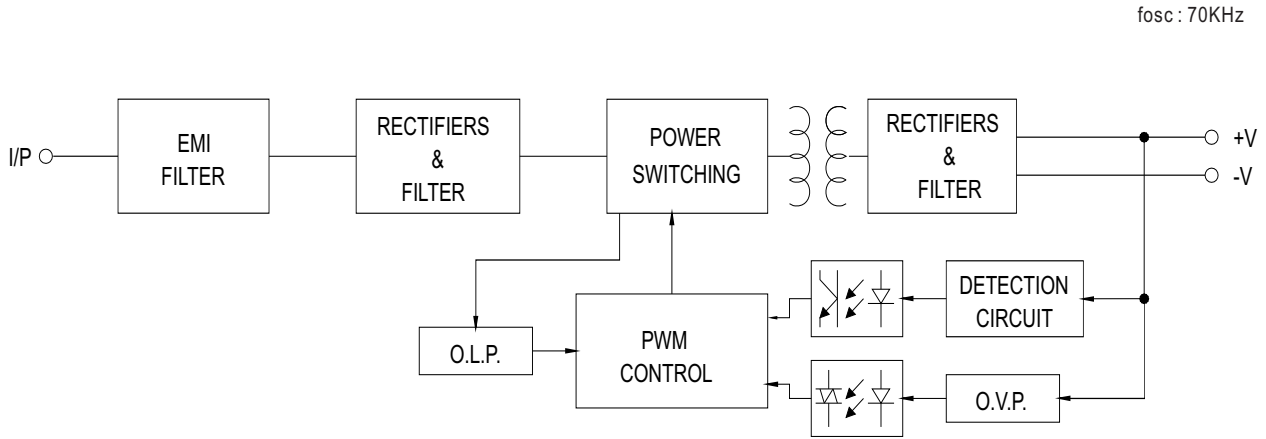
■ Model Encoding



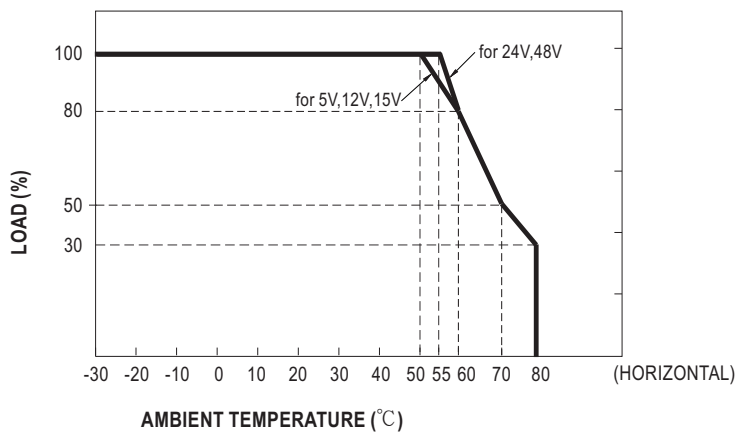
SPECIFICATION

MODEL		MPM-65-5 □	MPM-65-12 □	MPM-65-15 □	MPM-65-24 □	MPM-65-48 □		
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	48V		
	CURRENT	Peak(10 sec.)	11A	5.96A	4.77A	2.98A	1.49A	
		Convection	10A	5.42A	4.33A	2.71A	1.36A	
	RATED POWER	Peak(10 sec.) ^{Note.2}	55W	71.5W	71.6W	71.5W	71.5W	
		Convection	50W	65W	65W	65W	65.3W	
	RIPPLE & NOISE (max.) ^{Note.3}	80mVp-p	120mVp-p	120mVp-p	200mVp-p	240mVp-p		
	VOLTAGE TOLERANCE ^{Note.4}	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%		
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%		
	LOAD REGULATION	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%		
SETUP, RISE TIME	1000ms, 30ms/230VAC	1000ms, 30ms/115VAC	at full load					
HOLD UP TIME (Typ.)	50ms/230VAC	12ms/115VAC at full load						
INPUT	VOLTAGE RANGE ^{Note.5}	80 ~ 264VAC 113 ~ 370VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	EFFICIENCY (Typ.)	86.5%	92.5%	92.5%	93%	92%		
	AC CURRENT (Typ.)	1.5A/115VAC	1A/230VAC					
	INRUSH CURRENT (Typ.)	COLD START	30A/115VAC	65A/230VAC				
LEAKAGE CURRENT (max.) ^{Note.6}	Touch current <100µA/264VAC							
PROTECTION	OVERLOAD	115% ~ 135% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed						
	OVER VOLTAGE	5.3 ~ 7.2V	12.6 ~ 16.2V	15.8 ~ 20.3V	25.2 ~ 32.4V	50.4 ~ 64.8V		
	OVER TEMPERATURE	Protection type : Shut down o/p voltage, re-power on to recover						
ENVIRONMENT	WORKING TEMP.	-30 ~ +80°C (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 90% RH non-condensing						
	STORAGE TEMP.	-40 ~ +85°C						
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)						
	SOLDERING TEMPERATURE	260°C ±5°C/10sec.max.						
	VIBRATION	Blank:10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes ST:10 ~ 500Hz, 5G 10min./1cycle, period for 60min. each along X, Y, Z axes						
	OPERATING ALTITUDE ^{Note.7}	4000 meters / OVC II						
SAFETY & EMC (Note 8)	SAFETY STANDARDS	IEC60601-1, EN60601-1, EAC TP TC 004, UL ANSI/AAMI ES60601-1(3.1 version), CAN/CSA-C22 3 rd Edition approved; Design refer to EN60335-1(by request)						
	ISOLATION LEVEL	Primary-Secondary: 2xMOPP						
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC						
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH						
	EMC EMISSION	Parameter	Standard			Test Level / Note		
		Conducted	EN55011 (CISPR11)			Class B		
		Radiated	EN55011 (CISPR11)			Class B		
		Harmonic Current	EN61000-3-2			Class A		
		Voltage Flicker	EN61000-3-3			-----		
	EMC IMMUNITY	EN60601-1-2	Parameter			Standard		Test Level / Note
		ESD	EN61000-4-2			Level 4, 15KV air ; Level 4, 8KV contact		
		RF field susceptibility	EN61000-4-3			Level 3, 10V/m(80MHz~2.7GHz) Table 9, 9~28V/m(385MHz~5.78GHz)		
		EFT bursts	EN61000-4-4			Level 3, 2KV		
Surge susceptibility		EN61000-4-5			Level 3, 1KV/Line-Line			
Conducted susceptibility		EN61000-4-6			Level 3, 10V			
Magnetic field immunity		EN61000-4-8			Level 4, 30A/m			
Voltage dip, interruption		EN61000-4-11			>95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods			
OTHERS	MTBF	563.44Khrs min. MIL-HDBK-217F (25°C);		1530.14Khrs min. Telcordia TR/SR-332 (Bellcore) (25°C)				
	DIMENSION	PCB mounting style : 87*52*29.5mm (L*W*H)		Screw terminal style : 109*52*33.5mm (L*W*H)				
	PACKING	PCB mounting style : 0.191Kg;60pcs/12.5Kg/0.97CUFT		Screw terminal style : 0.216Kg;50pcs/11.8Kg/0.55CUFT				
NOTE	<ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 µf & 47 µf parallel capacitor. Tolerance : includes set up tolerance, line regulation and load regulation. Derating may be needed under low input voltages. Please check the derating curve for more details. Touch current was measured from primary input to DC output. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft). 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) 							

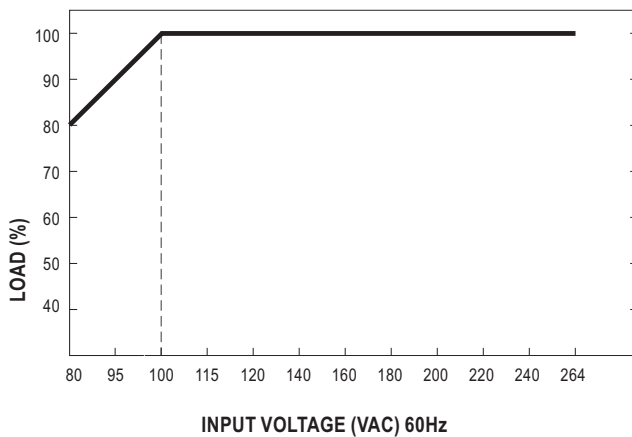
■ Block Diagram



■ Derating Curve



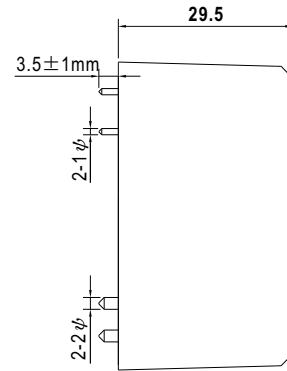
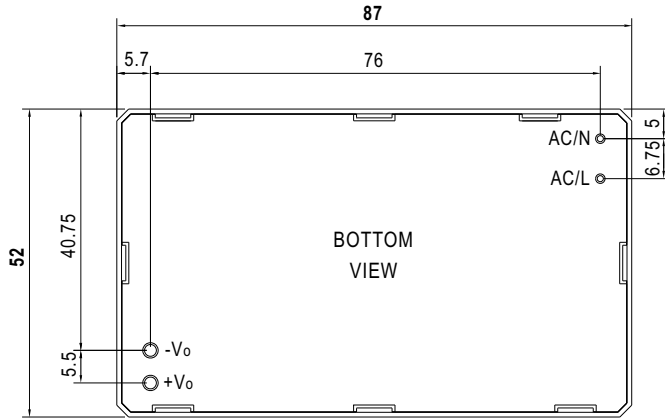
■ Output Derating VS Input Voltage



Mechanical Specification

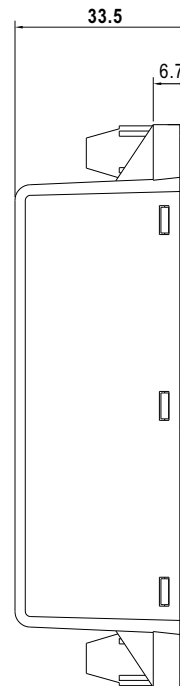
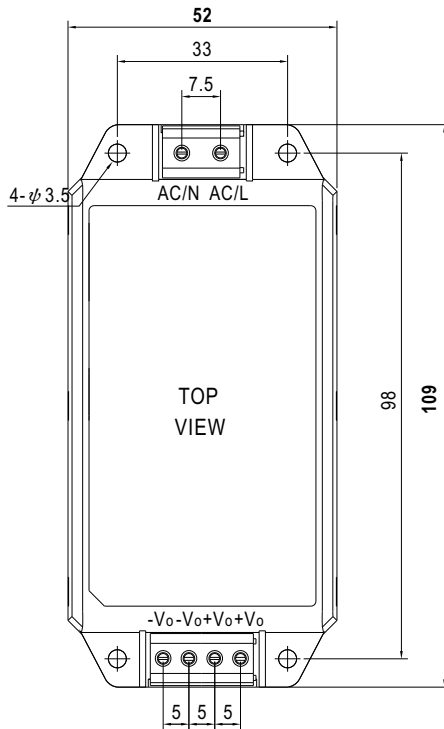
Case No. IRM60 Unit:mm

• PCB mounting style (MPM-65)



AC/L, AC/N P/N diameter: 1 φ
+Vo, -Vo P/N diameter: 2 φ

• Screw terminal style (MPM-65-xxST)



Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>