



(MPM-65)



(MPM-65-xxST)



User's Manual



ANSI/AAMI ES60601-1 BS EN/EN60601-1 IEC60601-1

TPTC004



■ 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/BS EN/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

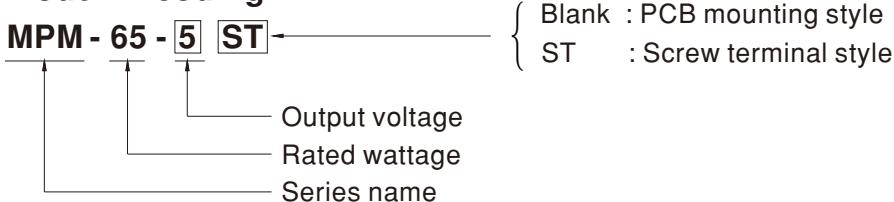
■ GTIN CODE

 MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

■ Description

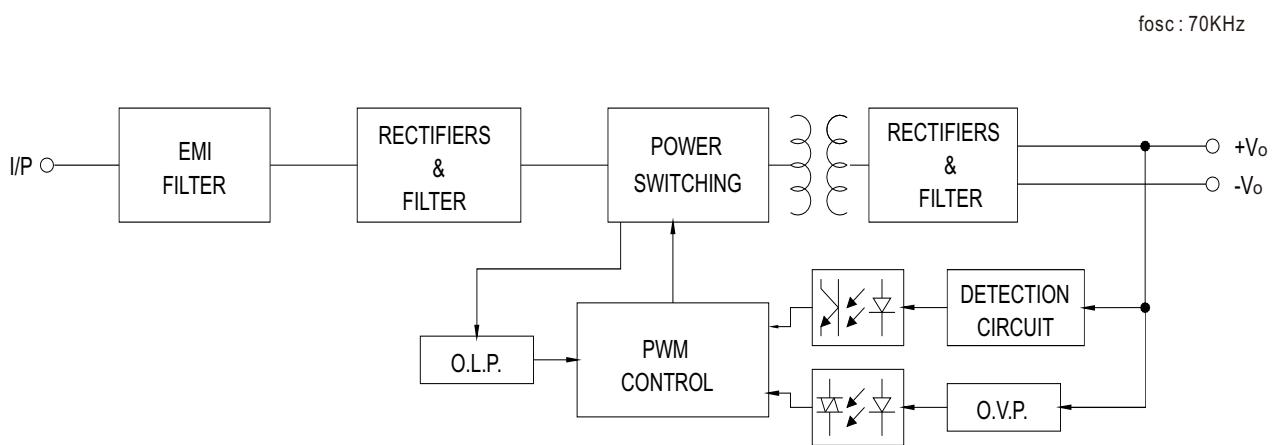
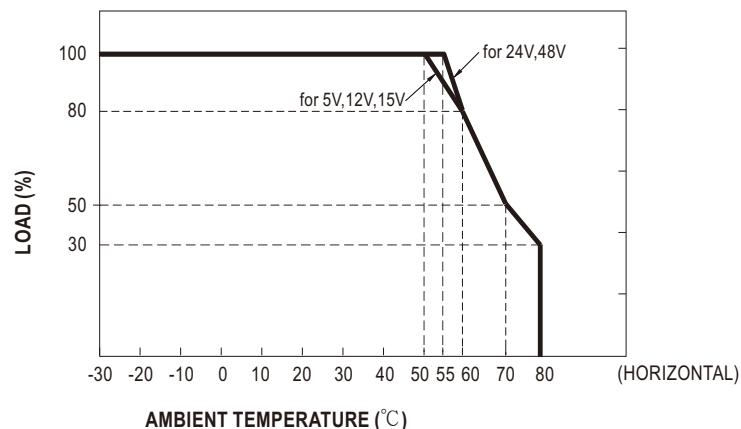
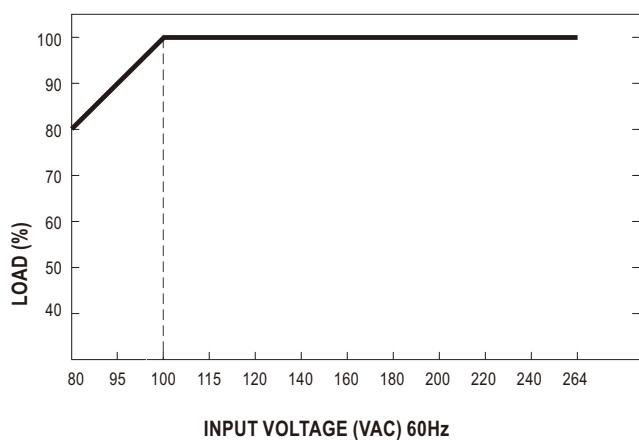
MPM-65 is a 65W high density and small size (87x52x29.5mm) AC/DC PCB-mount type medical grade power supply. It features the operation for 80~264VAC, a low no load power consumption less than 0.1W, a high efficiency up to 93%, Class II (no FG) double insulation, outstanding dissipation, 2~5G anti-vibration by model, high EMC performance, 4KVAC isolation, etc. The design observes IEC/BS EN/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

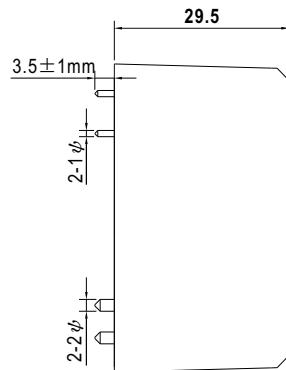
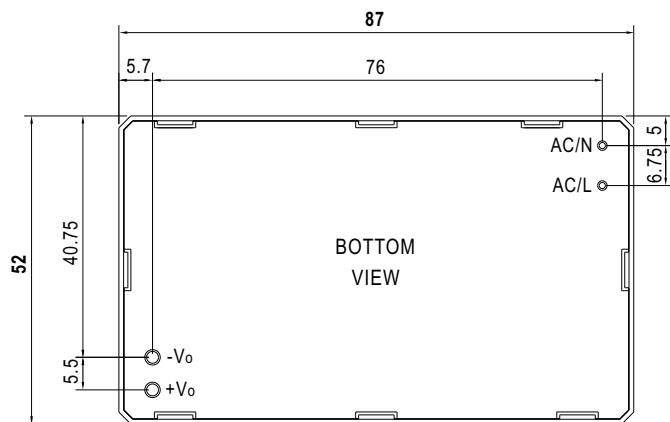
MODEL	MPM-65-5 <input type="checkbox"/>	MPM-65-12 <input type="checkbox"/>	MPM-65-15 <input type="checkbox"/>	MPM-65-24 <input type="checkbox"/>	MPM-65-48 <input type="checkbox"/>
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	CURRENT	Peak(10 sec.)	11A	5.96A	4.77A
		Convection	10A	5.42A	4.33A
	RATED POWER	Peak(10 sec.) ^{Note.2}	55W	71.5W	71.6W
		Convection	50W	65W	65W
	RIPPLE & NOISE (max.)	^{Note.3} 80mVp-p	120mVp-p	120mVp-p	200mVp-p
	VOLTAGE TOLERANCE	^{Note.4} $\pm 2.0\%$	$\pm 2.0\%$	$\pm 2.0\%$	$\pm 2.0\%$
	LINE REGULATION	$\pm 0.5\%$	$\pm 0.5\%$	$\pm 0.5\%$	$\pm 0.5\%$
	LOAD REGULATION	$\pm 1.0\%$	$\pm 1.0\%$	$\pm 0.5\%$	$\pm 0.5\%$
	SETUP, RISE TIME	1000ms, 30ms/230VAC	1000ms, 30ms/115VAC at full load		
INPUT	HOLD UP TIME (Typ.)	50ms/230VAC	12ms/115VAC at full load		
	VOLTAGE RANGE	^{Note.5} 80 ~ 264VAC	113 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	86.5%	92.5%	92.5%	93%
	AC CURRENT (Typ.)	1.5A/115VAC	1A/230VAC		
	INRUSH CURRENT (Typ.)	COLD START	30A/115VAC	65A/230VAC	
PROTECTION	LEAKAGE CURRENT (max.)	^{Note.6} Touch current <100 μ A/264VAC			
	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
ENVIRONMENT		Protection type : Shut down o/p voltage, re-power on to recover			
	OVER TEMPERATURE	Protection type : Shut down o/p voltage, re-power on to recover			
	WORKING TEMP.	-30 ~ +80 $^{\circ}$ C (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP.	-40 ~ +85 $^{\circ}$ C			
	TEMP. COEFFICIENT	$\pm 0.03\%/{\mathord{^{\circ}}\text{C}}$ (0 ~ 50 $^{\circ}$ C)			
SAFETY & EMC (Note 8)	SOLDERING TEMPERATURE	Wave soldering: 265 $^{\circ}$ C, 5s (max.); Manual soldering: 390 $^{\circ}$ C, 3s (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 STANDARDS	IEC60601-1, BS EN/EN60601-1, EAC TP TC 004, UL ANSI/AAMI ES60601-1(3.1 version), CAN/CSA-C22 3 rd Edition approved; Design refer to BS EN/EN60335-1(by request)			
	ISOLATION LEVEL	Primary-Secondary: 2xMOPP			
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC			
OTHERS	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25 $^{\circ}$ C / 70% RH			
	EMC EMISSION	Parameter	Standard	Test Level / Note	
		Conducted	BS EN/EN55011 (CISPR11)	Class B	
		Radiated	BS EN/EN55011 (CISPR11)	Class B	
		Harmonic Current	BS EN/EN61000-3-2	Class A	
		Voltage Flicker	BS EN/EN61000-3-3	-----	
	EMC IMMUNITY	BS EN/EN60601-1-2			
		Parameter	Standard	Test Level / Note	
		ESD	BS EN/EN61000-4-2	Level 4, 15KV air ; Level 4, 8KV contact	
		RF field susceptibility	BS EN/EN61000-4-3	Level 3, 10V/m(80MHz~2.7GHz) Table 9, 9~28V/m(385MHz~5.78GHz)	
		EFT bursts	BS EN/EN61000-4-4	Level 3, 2kV	
		Surge susceptibility	BS EN/EN61000-4-5	Level 3, 1kV/Line-Line	
		Conducted susceptibility	BS EN/EN61000-4-6	Level 3, 10V	
		Magnetic field immunity	BS EN/EN61000-4-8	Level 4, 30A/m	
		Voltage dip, interruption	BS EN/EN61000-4-11	>95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods	
NOTE	MTBF	5087.8K hrs min.	Telcordia SR-332 (Bellcore) ; 563.4K hrs min.	MIL-HDBK-217F (25 $^{\circ}$ 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/0.94CUFT	Screw terminal style : 0.216Kg;50pcs/11.8Kg/0.56CUFT		
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25 $^{\circ}$ C of ambient temperature. 2. 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power. 3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μ f & 47 μ f parallel capacitor. 4. Tolerance : includes set up tolerance, line regulation and load regulation. 5. Derating may be needed under low input voltages. Please check the derating curve for more details. 6. Touch current was measured from primary input to DC output. 7. The ambient temperature derating of 3.5 $^{\circ}$ C/1000m with fanless models and of 5 $^{\circ}$ C/1000m with fan models for operating altitude higher than 2000m(6500ft). 8. 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) ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx					

Block Diagram

Derating Curve

Output Derating VS Input Voltage


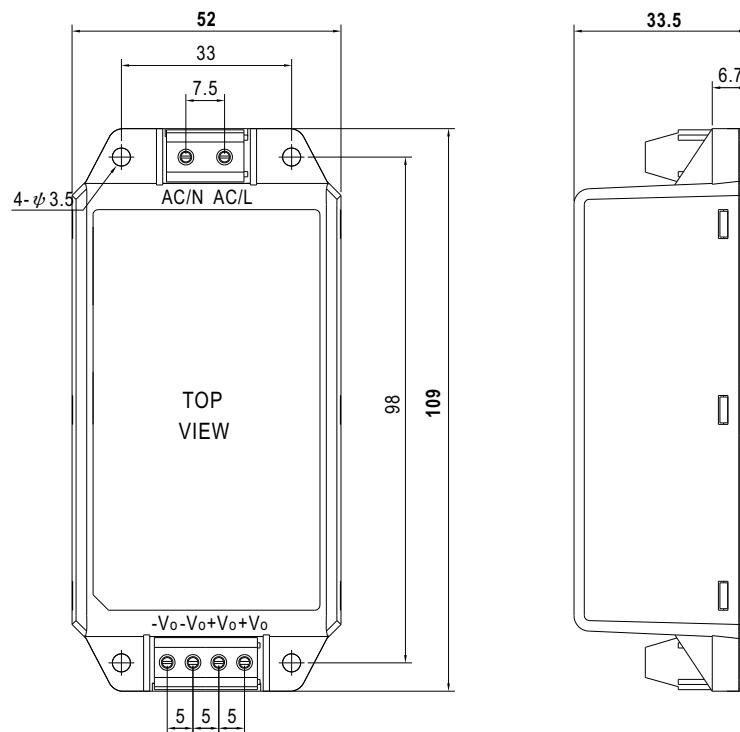
■ Mechanical Specification

Case No. IRM60 Unit:mm

- PCB mounting style (MPM-65)


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

- Screw terminal style (MPM-65-xxST)


■ Installation Manual

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