



30W High Reliable Green Medical Encapsulated Type

MPM-30 series



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



TPTC004



■ Features

- 2.73" x 1.53" compact size
- 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 <0.075W
- Extremely low leakage current
- Wide operating temp. range -40 ~ +85°C
- EMI class B for class II configuration
- Protections: Short circuit / Overload / Over voltage
- No minimum load required
- 3 years warranty

■ Applications

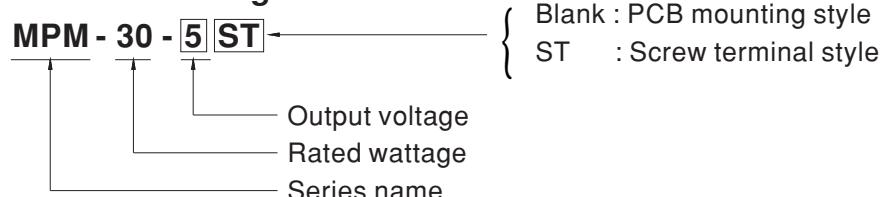
- Portable medical device
- Mobile clinical workstation
- Medical computer monitor
- Medical examination instrument

■ Description

MPM-30 is a 30W high density and small size (69.5x39x24mm) AC/DC module type medical power supply series offered in pin type. It features the operation for 80~264VAC, a low no load power consumption less than 0.075W, a high efficiency up to 91%, Class II (no FG) double insulation, outstanding dissipation and high lifespan thanks to the interior potting, high EMC performance, 4KVAC isolation, etc. PCB mounting style model(Blank) meet the anti-vibration demand up to 2G and screw terminal style model (ST) meet the anti-vibration demand up to 5G .

The design observes IEC/BS EN/EN60601-1 and ANSI/AAMI ES60601-1 version three with 2xMOPP level and ultra-low leakage current (<80 μ A). It is very suitable for BF (patient contact) type medical device or relevant equipment. In addition to PCB mounting style, MPM-30 series also offers the screw terminal style model (ST).

■ Model Encoding



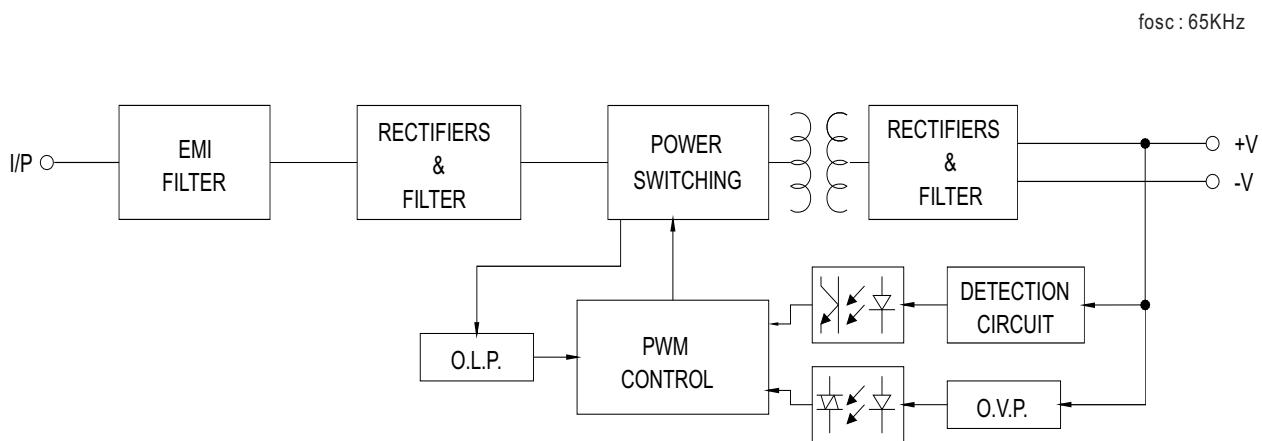
MODEL	MPM-30-3.3□	MPM-30-5□	MPM-30-12□	MPM-30-15□	MPM-30-24□	MPM-30-48□											
OUTPUT	DC VOLTAGE	3.3V	5V	12V	15V	24V											
	RATED CURRENT	6A	6A	2.5A	2A	1.3A											
	CURRENT RANGE Note.2	0 ~ 6A	0 ~ 6A	0 ~ 2.5A	0 ~ 2A	0 ~ 1.3A											
	PEAK CURRENT	7.8A	6.9A	2.9A	2.3A	1.5A											
	RATED POWER	19.8W	30W	30W	30W	30.2W											
	PEAK LOAD(10sec.) Note.3	25.7W	34.5W	34.8W	34.5W	36W											
	RIPLPE & NOISE (max.) Note.4	80mVp-p	80mVp-p	120mVp-p	120mVp-p	200mVp-p											
	VOLTAGE TOLERANCE Note.5	±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%											
INPUT	SETUP, RISE TIME	500ms, 30ms/230VAC	500ms, 30ms/115VAC at full load														
	HOLD UP TIME (Typ.)	40ms/230VAC	12ms/115VAC at full load														
PROTECTION	VOLTAGE RANGE Note.6	80 ~ 264VAC															
	FREQUENCY RANGE	47 ~ 63Hz															
	EFFICIENCY (Typ.)	82.5%	86.5%	90%	89%	90%											
	AC CURRENT (Typ.)	0.75A/115VAC	0.5A/230VAC														
	INRUSH CURRENT (Typ.)	COLD START	25A/115VAC	45A/230VAC													
ENVIRONMENT	LEAKAGE CURRENT (max.) Note.7	Touch current <80μA/264VAC															
	OVERLOAD	115% ~ 165% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed															
	OVER VOLTAGE	3.5 ~ 4.5V	5.3 ~ 6.8V	12.6 ~ 16.2V	15.8 ~ 20.3V	25.2 ~ 32.4V											
		Protection type : Shut down o/p voltage, re-power on to recover															
	WORKING TEMP.	-40 ~ +85°C (Refer to "Derating Curve")															
	WORKING HUMIDITY	20 ~ 90% RH non-condensing															
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C , 10 ~ 95% RH non-condensing															
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 60°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															
SAFETY & EMC (Note 9)	LEAD TEMPERATURE	260±5°C,5s (max.)															
	OPERATING ALTITUDE Note.8	PCB mounting: 5000 meters Screw terminal style: 3000 meters															
	SAFETY STANDARDS	IEC60601-1, BS EN/EN60601-1, EAC TP TC 004, UL ANSI/AAMI ES60601-1(3.1 version), CAN/CSA-C22 3rd Edition approved; Design refer to BS EN/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	BS EN/EN55011 (CISPR11)	Class B													
		Radiated	BS EN/EN55011 (CISPR11)	Class B													
		Harmonic Current	BS EN/EN61000-3-2	Class A													
	EMC IMMUNITY	Voltage Flicker	BS EN/EN61000-3-3	-----													
		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													
OTHERS	Voltage dip, interruption					100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods											
	MTBF	779Khrs min. MIL-HDBK-217F (25°C)															
	DIMENSION	PCB mounting style:69.5*39*24mm (L*W*H) or 2.73" * 1.53" * 0.94" inch Screw terminal style:91*39.5*28.5mm (L*W*H) or 3.58" * 1.55" * 1.12" inch															
NOTE	PACKING																
	PCB mounting style:0.102Kg;144pcs/15.7Kg/0.97CUFT Screw terminal style :0.12Kg;120pcs/14.9Kg/0.74CUFT																
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. 2. No minimum load required. 3. 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power. 4. 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. 5. Tolerance : includes set up tolerance, line regulation and load regulation. 6. Derating may be needed under low input voltages. Please check the derating curve for more details. 7. Touch current was measured from primary input to DC output. 8. 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). 9. 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																	



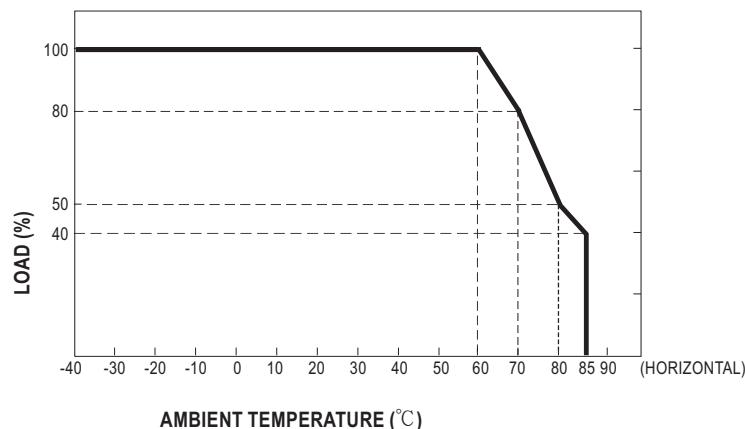
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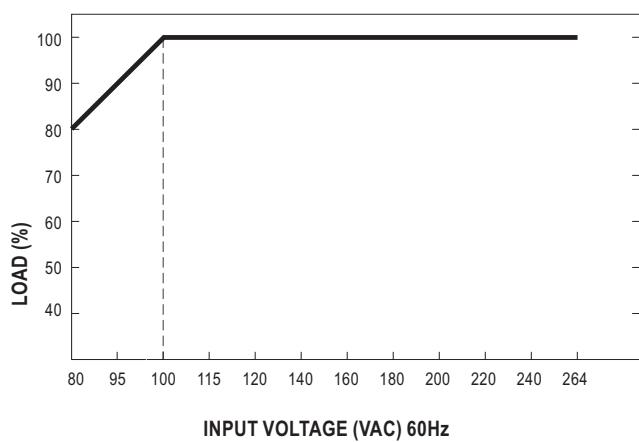
■ Block Diagram



■ Derating Curve



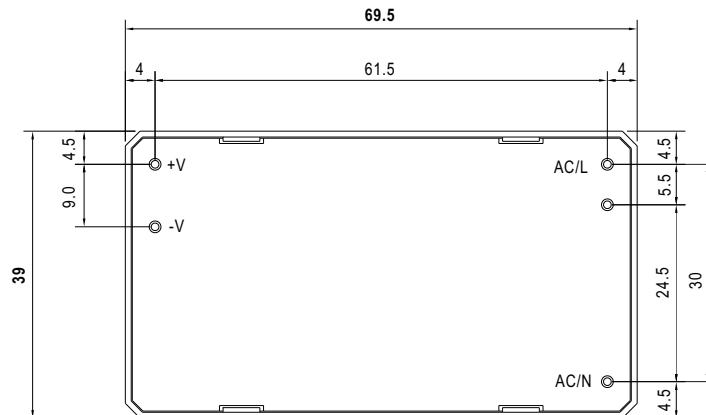
■ Output Derating VS Input Voltage



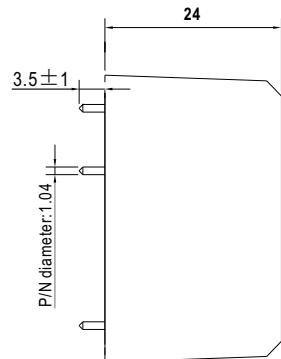
■ Mechanical Specification

Case No. Unit:mm

- MPM-30 (PCB mounting style)

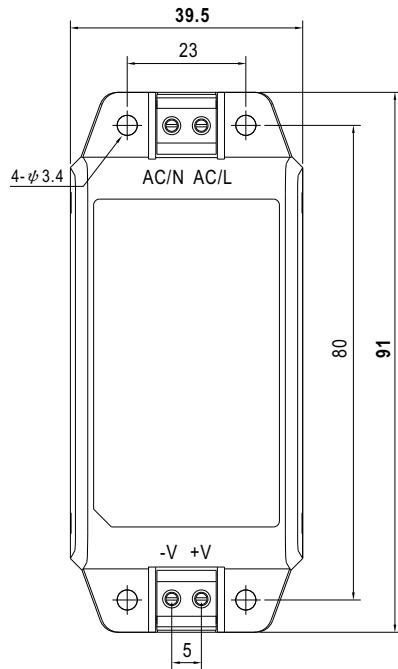


BOTTOM VIEW

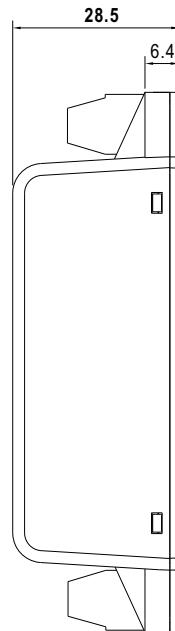


SIDE VIEW

- MPM-30-ST (Screw terminal style)



TOP VIEW



SIDE VIEW

■ Installation Manual

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