



(MPM-90)



(MPM-90-xxST)



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

TPTC004



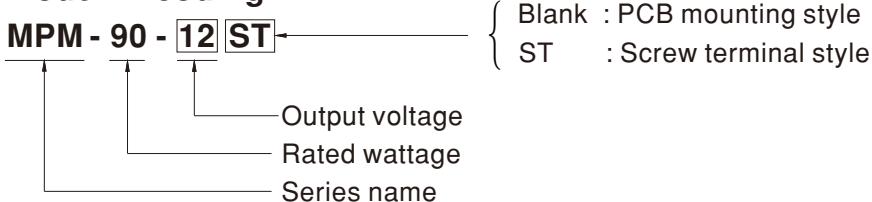
■ Features

- 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)
- 100W peak(10 sec.)
- 3 years warranty

■ Description

MPM-90 is a 90W high density and small size (87x52x29.5mm) AC/DC PCB-mount module 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



■ Applications

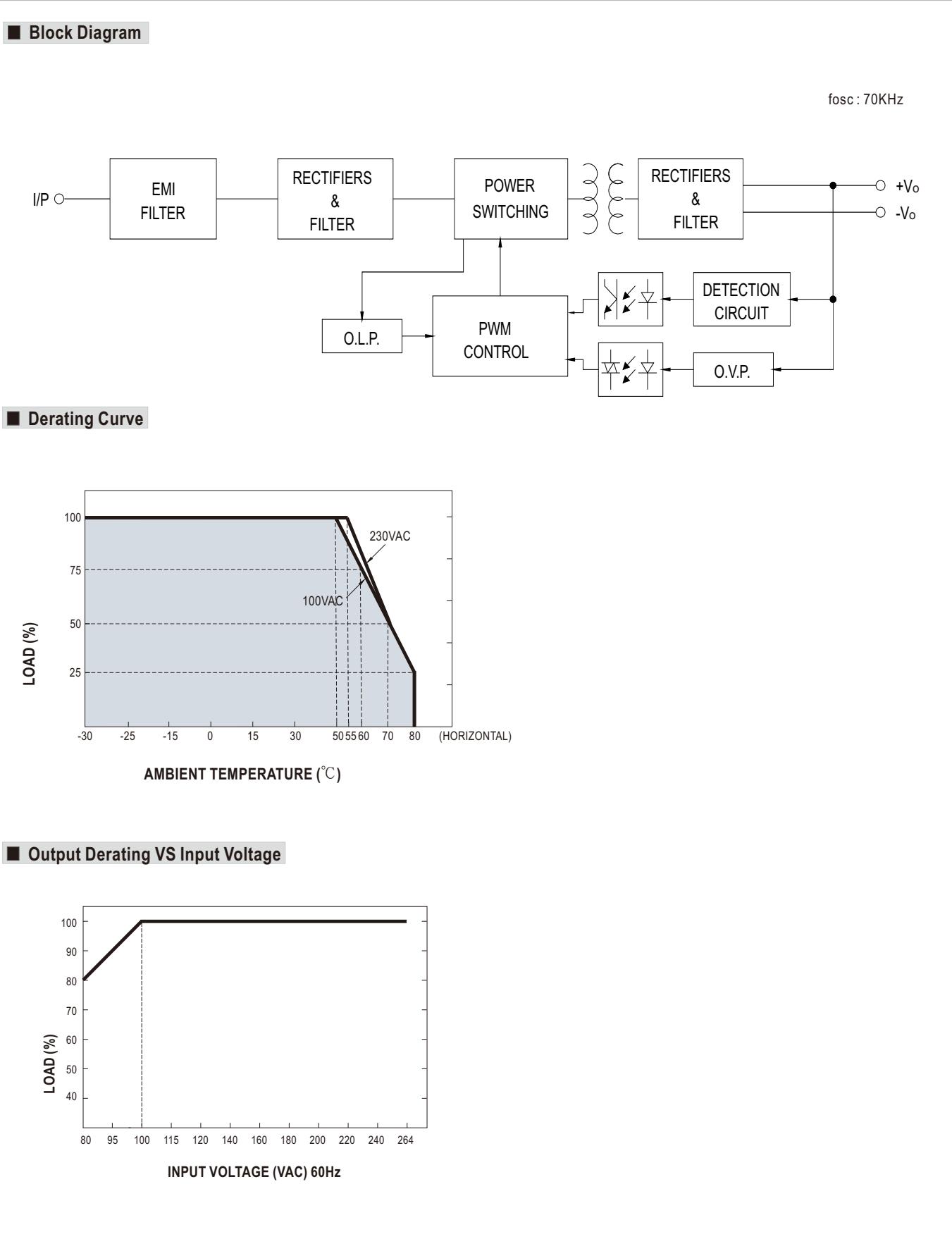
- Portable medical device
- Mobile clinical workstation
- Medical computer monitor
- Medical examination instrument

■ GTIN CODE

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

SPECIFICATION

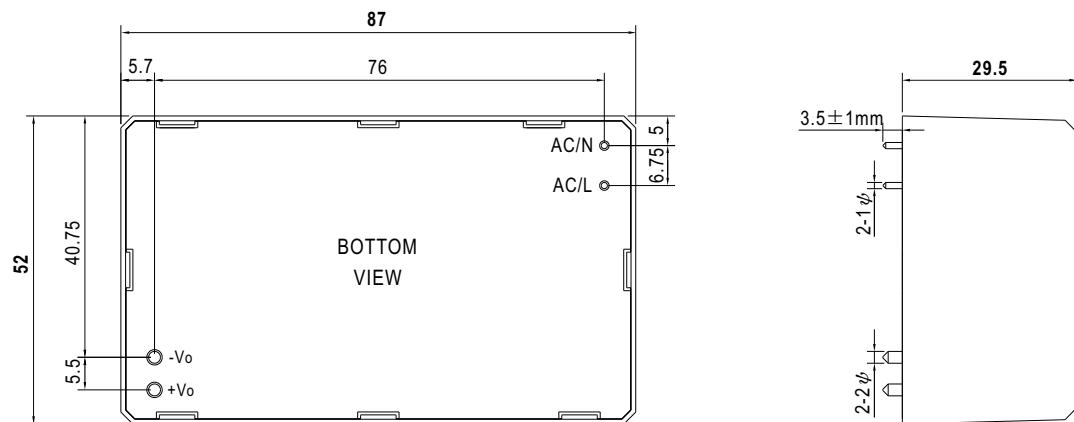
MODEL	MPM-90-12 <input type="checkbox"/>	MPM-90-15 <input type="checkbox"/>	MPM-90-24 <input type="checkbox"/>	MPM-90-48 <input type="checkbox"/>		
OUTPUT	DC VOLTAGE	12V	15V	24V		
	CURRENT	Peak(10 sec.) 7.37A	6.23A	4.13A		
	Convection	6.7A	5.67A	3.75A		
	RATED POWER	Peak(10 sec.) Note.2 88.4W	93.5W	99W		
	Convection	80.4W	85.05W	90W		
	RIPPLE & NOISE (max.) Note.3	120mVp-p	150mVp-p	200mVp-p		
	VOLTAGE TOLERANCE Note.4	±2.0%	±2.0%	±2.0%		
	LINE REGULATION	±0.5%	±0.5%	±0.5%		
	LOAD REGULATION	±1.0%	±0.5%	±0.5%		
	SETUP, RISE TIME	1000ms, 30ms/230VAC	1000ms, 30ms/115VAC at full load			
INPUT	HOLD UP TIME (Typ.)	30ms/230VAC	10ms/115VAC at full load			
	VOLTAGE RANGE Note.5	80 ~ 264VAC	113 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (Typ.)	92%	92.5%	93%		
	AC CURRENT (Typ.)	1.9A/115VAC	1.1A/230VAC			
PROTECTION	INRUSH CURRENT (Typ.)	COLD START 30A/115VAC	65A/230VAC			
	LEAKAGE CURRENT (max.) Note.6	Touch current <100 μA/264VAC				
	OVERLOAD	115% ~ 160% rated output power	Protection type : Hiccup mode, recovers automatically after fault condition is removed			
ENVIRONMENT	OVER VOLTAGE	12.6 ~ 16.2V	15.8 ~ 20.3V	25.2 ~ 32.4V		
		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				
SAFETY & EMC (Note 8)	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	Wave soldering: 265°C, 5s (max.); Manual soldering: 390°C, 3s (max.)				
	VIBRATION	Blank: 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes				
	OPERATING ALTITUDE Note.7	ST: 10 ~ 500Hz, 5G 10min./1cycle, period for 60min. each along X, Y, Z axes				
SAFETY & EMC (Note 8)	ISOLATION 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		
		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		
OTHERS	MTBF	4548.9K hrs min. Telcordia SR-332 (Bellcore) ; 570.5K hrs min. MIL-HDBK-217F (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 : 0.197Kg;60pcs/12.8Kg/0.94CUFT		Screw terminal style : 0.219Kg;50pcs/12Kg/0.56CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°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 μf & 47 μf 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°C/1000m with fanless models and of 5°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					



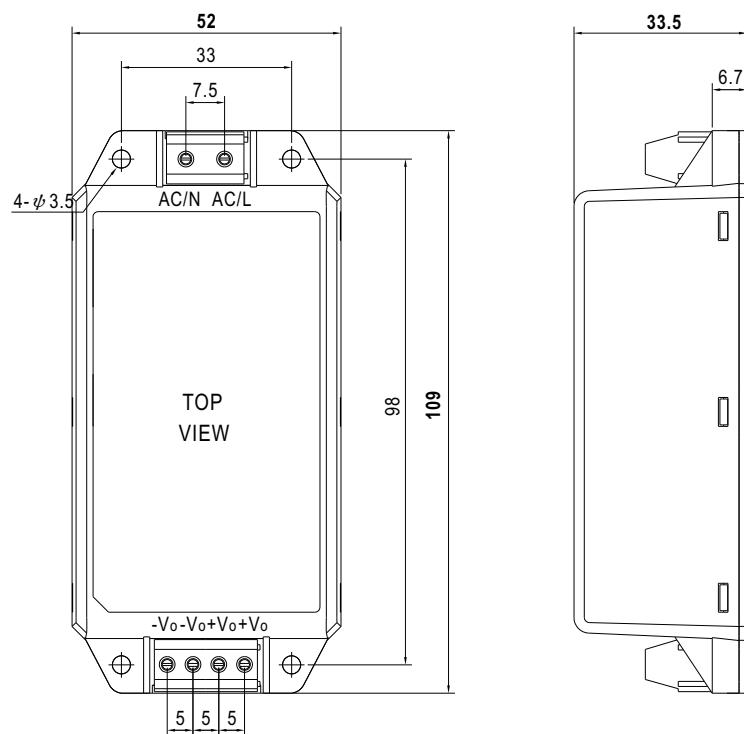
■ Mechanical Specification

Case No. IRM60 Unit:mm

- PCB mounting style (MPM-90)


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

- Screw terminal style (MPM-90-xxST)


■ Installation Manual

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