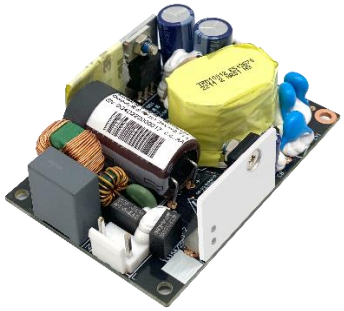
Medical Grade Power Supply

MIS65

High Efficiency Compact Power Supply



Highlights:

- **For Industrial and Medical Application**
- **High Power Density**
- **65W Convection Cooling**
- **Class I & Class II**
- **Up to 93% Efficiency**
- **-10°C to +70°C Operation, up to +50°C without derating**
- **Low Standby < 0.15W**
- **Light Weight**
- **>1MHour MTBF**
- **2MOPP Isolation**
- **Suitable for BF Type MD**
- **5000 meter operation altitude**

RoHS 2MOPP 5000M Altitude OP

Key Specification

Model	MIS65□12	MIS65□15	MIS65□18	MIS65□24	MIS65□36	MIS65□48
Output Voltage	12V	15V	18V	24V	36V	48V
Rated Output Current	5.42A	4.33A	3.61A	2.71A	1.81A	1.35A
Rated Output Power	65W					
Warranty	3 Years					
Dimension	2”x3”x1” or 50.8mm x 76.2mm x 25.4mm					
EMC	IEC60601-1-2 4th Edition					
Safety Approvals	IEC60601-1 3rd +A1 Edition CB Report, TUV62368-1, CSA/UL62368-1					

Model Name

MIS	65	□	24	□□
Series Name	Rated Power	CLASS	Output Voltage	Control Code
		A: CLASS I B: CLASS II		AA: Standard Model

SPECIFICATIONS

All specifications are for rated input/output and 25°C unless otherwise specified

INPUT CHARACTERISTICS

Function	Minimum	Typical	Maximum	Condition
Rated Input Voltage	100 VAC		240 VAC	
Input Voltage Range	85 VAC		264 VAC	Output Power Derating from 100% load at 90VAC to 85% load at 85VAC. See Fig.1
Input Frequency	47 Hz	50 / 60 Hz	63 Hz	
Input Current			1.5 A @ 100VAC 0.9A @ 240VAC	
Efficiency		93%		24V Model, Rated Input and Output
Inrush Current			40 A	240VAC Input, Cold Start

OUTPUT CHARACTERISTICS

Function	Minimum	Typical	Maximum	Condition
Peak Power			120% Load	20ms duration
Output Voltage Total Regulation			±3%	Including initial tolerance, line regulation and load regulation
Output Ripple & Noise			1% or 150mV	Which is greater. Peak to peak value.
Turn on delay Time			3s	
Rise Time			100ms	
Holdup Time	10ms			115VAC 60Hz Input
Output Voltage Adjustment Range	±10%			Rated output current and rated output power applies

PROTECTION CHARACTERISTICS

Function	Minimum	Typical	Maximum	Condition
Over Current Protection (OCP)	120% Rated Current		160% Rated Current	Auto-restart after fault condition is removed
Short Circuit Protection (SCP)				Auto-restart after fault condition is removed
Over Voltage Protection (OVP)			130% Rated Output Voltage	Latch off
Over Temperature Protection (OTP)				Latch off

ENVIROMENTAL

Function	Minimum	Typical	Maximum	Condition
No Load Power Consumption			0.21W	115VAC/60Hz and 230VAC/50Hz Input
Operation Ambient Temperature	-10 °C		70 °C	Output Power Derating from 100% load at 50°C to 50% load at 70°C. See Fig.2
Cooling				Convection Cooled
Operation Humidity	10% RH		95% RH	Non-condensing
Storage Ambient Temperature	-40 °C		80 °C	
Storage Humidity	10% RH		95% RH	Non-condensing
Operating Altitude			5000 m	Or 16,400 feet
Shock (Non-Operation)			50 g	11ms, 3 shocks for each direction
Vibration (Operation)			2 g_{RMS}	5-500Hz, 15 Minutes for each three axis
Weight			90 gram	

RELIABILITY

Function	Minimum	Typical	Maximum	Condition
MTBF	1M Hours			According to Telecordia SR-332. 25℃
Life	3 Years			Rated input and output condition

EMC

Item	Description
Conducted Emissions	EN55011/EN55022, FCC TITLE 47: Class B
Radiated Emissions	EN55011/EN55022, FCC TITLE 47: Class B
Voltage Flicker	IEC61000-3-3
Electrostatic Discharge	IEC61000-4-2, Level 4, Criteria A. Air Discharge 15kV, Contact Discharge 8kV
Electrical Fast Transient / Burst	IEC61000-4-4, Level 3 Criteria A. 2kV
Surge	IEC61000-4-5, Level 3 Criteria A. Common mode 2kV, Differential Mode 1kV
Conducted Immunity	IEC61000-4-6, Level 2 Criteria A. 150kHz-80MHz, 3Vrms 6Vrms at ISM Band sand Amateur radio bands
Power Frequency Magnetic Fields	IEC61000-4-8, Criteria A. 30A/m
Voltage Dips	IEC61000-4-11 Criteria A: 30% 10ms, Criteria B: 60% 100ms, 100% 5000ms
	IEC60601-1-2 Criteria A: 100% 10ms at step 45° (load derating required for 100VAC) Criteria B: 30% 500ms, 100% 20ms, 100% 5000ms

SAFETY & DIRECTIVES

Item	Description
Safety Standards(*)	IEC62368-1 CB Report, TUV62368-1, CSA/UL62368-1 GB4943.1-2011, GB9254-2008, GB17625.1-2003 UL60601-1 3rd edition+A1 CB Report TUV EN60601-1:2006, UL60601-1+CAN/CSA C22.2 NO.60601-1
Directives	MDD Directive 93/42/EEC RoHS Directive 2011/65/EU Compliant
Dielectric Voltage	Primary to Secondary (2XMOPP): 4kVAC Primary to Earth (1XMOPP): 1.5kVAC, Class I models only Secondary to Earth (1XMOPP): 1.5kVAC, Class I models only
Touch Current @264VAC, 60Hz	<100uA @ Normal Condition <300uA @ Single Fault Condition

(*) Compliance only, contact Applied Power for detailed safety certifications

DERATING CURVE

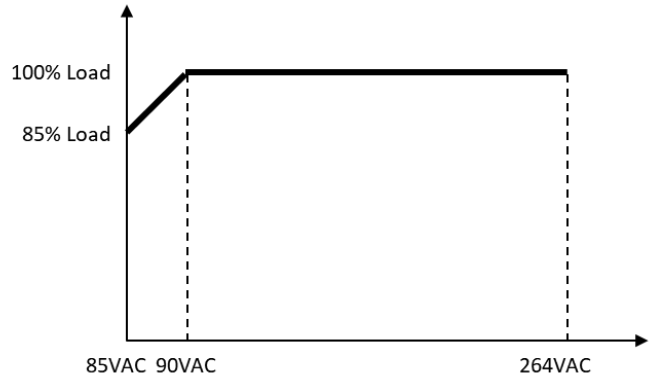


Figure 1

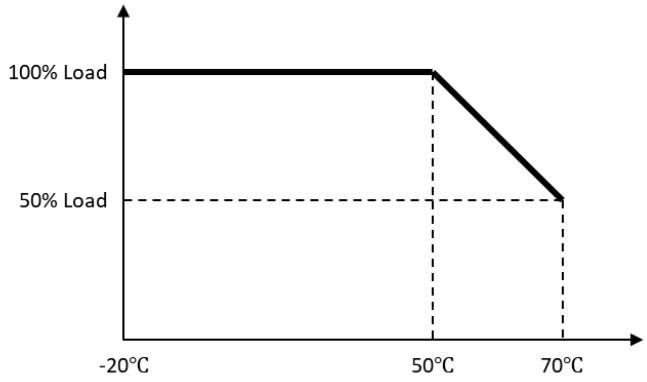
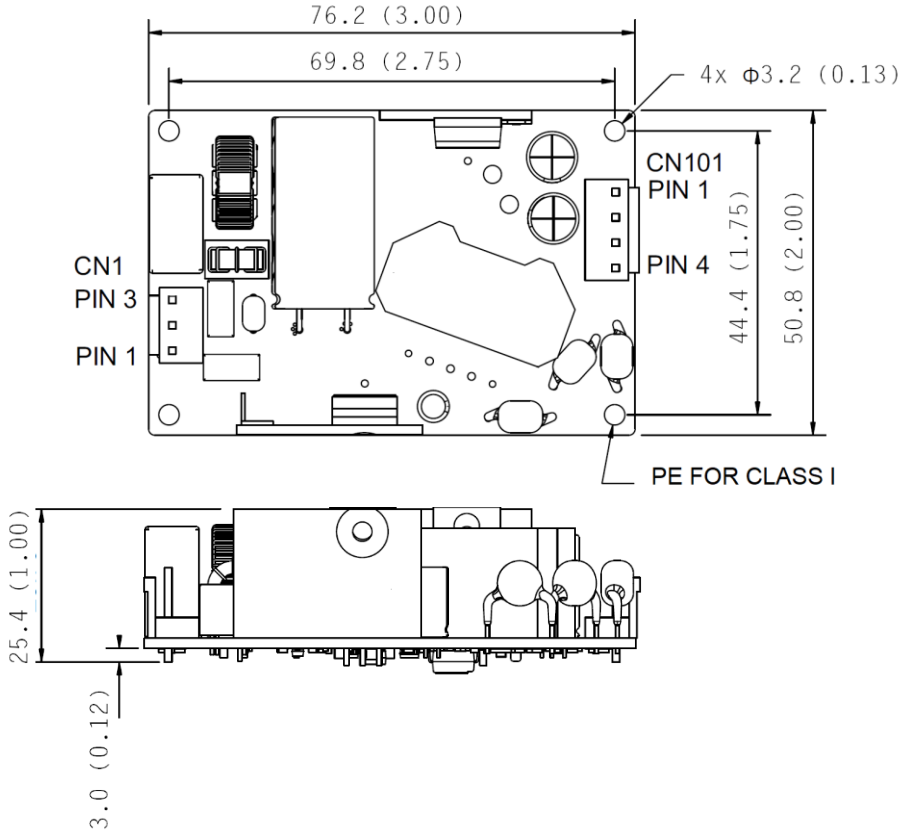


Figure 2

MECHANICAL DETAIL

Open Frame Chassis Mount



Dimension in mm(inches)
Tolerances:
X.X = ±0.5 (X.XX = ±0.02)

Note:
Mounting Hole marked as PE for CLASS I shall be connected to Earth Ground for CLASS I models, All other mounting holes related hardware must be non-conductive

For CLASS II models, all mounting hole related hardware must be non-conductive

PIN ASSIGNMENT

CN1, Input Connector

PIN 1	L	
PIN 2	REMOVED	
PIN 3	N	

CN101, Output Connector

PIN 1 & PIN 2	VO+
PIN 3 & PIN 4	VO-

MATING CONNECTOR

Input Connector: JST VHR-3N Crimp Terminals: SVH-21T-P1.1
Output Connector: JST VHR-4N Crimp Terminals: SVH-21T-P1.1

CONTACTS & OTHER INFORMATION

For more information, please visit www.appliedpsu.com

For sales inquiries, please send an email to sales@appliedpsu.com

User manual and other document available at www.appliedpsu.com/support