PRODUCT SPECIFICATION

HDM120 SERIES | HIGH DENSITY

120W Medical AC-DC Power Supply

MODEL: HDM120 | CATEGORY: AC-DC | RATED POWER: 120W | FORM: FLEXIBLE

PRODUCT OVERVIEW

Key Product Features

- Universal 90-264 VAC input range
- 12V, 24V, and 48V output model options
- Low no-load power consumption under 0.3W
- Operating altitude up to 5000m
- Active PFC function
- 4000VAC input-to-output isolation
- EMI support for Class I and Class II configurations

PRODUCT DESCRIPTION

Digital Power's HDM120 Series are switching power supplies that produce superior output wattages with natural convection. The series include enclosed, open fame and U bracket format with output voltage options of 12V, 24V and 48V. Featured with compact, low profile footprint, and best-in-class performance, HDM120 Series are optimal for Medical Applications. Designed with energy saving in mind, Digital Power's HDM120 Series boasts not only high operating efficiency up to 91%, but also high-power density with full input range of 90-264Vac. HDM120 operates over wide temperature The series is especially suited for medical and healthcare electronics where isolation, leakage current, EMC behavior, and long-term reliability are central design requirements.

SAFETY CERTIFICATES

- Medical Certification: Certified to UL / IEC / EN 60601-1 Edition 3.1
- Insulation Class: Features 2MOPP (Means of Patient Protection) insulation.
- Agency Marks: cURus, CE, and CB certified (File E199779 and E308218).
- Fusing Safety: Features double pole, neutral fusing.

E199779

APPLICATIONS

- Medical carts and clinical workstations
- Diagnostic and monitoring equipment
- Patient-adjacent healthcare electronics
- Laboratory instruments and analyzers
- Dental, therapy, and treatment devices

ELECTRICAL SPECIFICATIONS

MODEL INFORMATION

Parameter	HDM120O-112	HDM120O-124	HDM120O-148
Format / Type	Open Frame	Open Frame	Open Frame
Output Voltage (V.DC.)	12V	24V	48V
Max Current (Convection)	8.333 A	4.167 A	2.083 A
Max Current (10CFM Fan)	10 A	5 A	2.5 A
Max Capacitive Load	3000µF	1500µF	500µF
Efficiency (230VAC)	90%	90%	91%
Max Wattage (Convection)	100 W	100 W	100 W
Max Wattage (10CFM Fan)	120 W	120 W	120 W
Dimensions (L x W x H)	3.04 × 2.0 x 1.2" (77.2 x 50.8 × 30.7 mm)	3.04 × 2.0 x 1.2" (77.2 x 50.8 × 30.7 mm)	3.04 × 2.0 x 1.2" (77.2 x 50.8 × 30.7 mm)
Weight	172 g	172 g	172 g
EMS / Standards	Not Specified	Not Specified	Not Specified

Parameter	HDM120U-112	HDM120U-124	HDM120U-148
Format / Type	U-Bracket	U-Bracket	U-Bracket
Output Voltage (V.DC.)	12V	24V	48V
Max Current (Convection)	7.5 A	3.75 A	1.875 A
Max Current (10CFM Fan)	10 A	5 A	2.5 A
Max Capacitive Load	3000µF	1500µF	500µF
Efficiency (230VAC)	90%	90%	91%
Max Wattage (Convection)	90 W	90 W	90 W
Max Wattage (10CFM Fan)	120 W	120 W	120 W
Dimensions (L x W x H)	3.15 × 2.35 × 1.5" (80.0 x 59.7 × 38.0 mm)	3.15 × 2.35 × 1.5" (80.0 x 59.7 × 38.0 mm)	3.15 × 2.35 × 1.5" (80.0 x 59.7 × 38.0 mm)
Weight	246 g	246 g	246 g
EMS / Standards	EN60601-1-2 4th ed.	EN60601-1-2 4th ed.	EN60601-1-2 4th ed.

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ELECTRICAL SPECIFICATIONS

MODEL INFORMATION

Parameter	HDM120E-112	HDM120E-124	HDM120E-148
Format / Type	Enclosed	Enclosed	Enclosed
Output Voltage (V.DC.)	12V	24V	48V
Max Current (Convection)	7.083 A	3.542 A	1.771 A
Max Current (10CFM Fan)	10 A	5 A	2.5 A
Max Capacitive Load	3000µF	1500µF	500µF
Efficiency (230VAC)	90%	90%	91%
Max Wattage (Convection)	85 W	85 W	85 W
Max Wattage (10CFM Fan)	120 W	120 W	120 W
Dimensions (L x W x H)	3.15 × 2.35 × 1.7" (80.0 x 59.7 × 45.2 mm)	3.15 × 2.35 × 1.7" (80.0 x 59.7 × 45.2 mm)	3.15 × 2.35 × 1.7" (80.0 x 59.7 × 45.2 mm)
Weight	258 g	258 g	258 g
EMS / Standards	EN60601-1-2 4th ed.	EN60601-1-2 4th ed.	EN60601-1-2 4th ed.

SPECIFICATION INFORMATION

[INPUT]	Value
Voltage (Note 3)	90-264 VAC
Frequency	47-63 Hz
Current (Full load)	< 2.0 A max. (115 VAC) / <1.0 A max. (230 VAC)
Inrush Current (<2ms)	< 40 A max. (115 VAC) / <70 A max. (230 VAC)
Leakage Current	<0.1mA / 264 VAC (Touch Current)
Power Factor (at 230 VAC)	PF > 0.9 at Full Load
No Load Power	<0.3W (115/230 VAC)

[OUTPUT]	Value
Voltage Adj Range	±10% Output Voltage
Voltage Accuracy	±2%
Line Regulation	±1%
Load Regulation (10-100%)	±1%
Minimum Load	0%
Ripple & Noise (max.) (Note 1)	1% Vout / 160mV
Hold-up Time (at 115 VAC) (Note 2)	10 ms min.

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ELECTRICAL SPECIFICATIONS

[PROTECTION]	Value
Over Power Protection	Auto recovery, Hiccup mode
Over Voltage Protection	Latch off
Over Temperature Protection	Latch off
Short Circuit Protection	Level 1: Continuous, Auto recovery; Level 2: Latch

[ISOLATION]	Value
Input-Output	4000VAC or 5656VDC
Input-FG	2000VAC or 2828VDC
Output-FG	1500VAC or 2121VDC

[ENVIRONMENT]	Value
Operating Temperature	-30°C to +70°C (with derating)
Storage Temperature	-30°C to +85°C
Temperature Coefficient	±0.05% / °C
Operating Altitude	5000m
Humidity	20 - 90% RH
Atmospheric Pressure	56 kPa to 106 kPa
MTBF	>250,000 h @ 25°C (MIL-HDBK-217F)
Vibration	IEC60068-2-6 (10-500Hz, 2G 10min/1cycle)
Shock	IEC60068-2-27

[SPECIFICATIONS]	Value
Cooling Method	Free convection / 10 CFM FAN
Safety Approvals	UL/IEC/EN 60601 3.1 Edition
Conducted EMI (Note 5)	EN55011 Conducted Class B
Radiated EMI (Note 5)	EN55011 Class I class B / Class II class A

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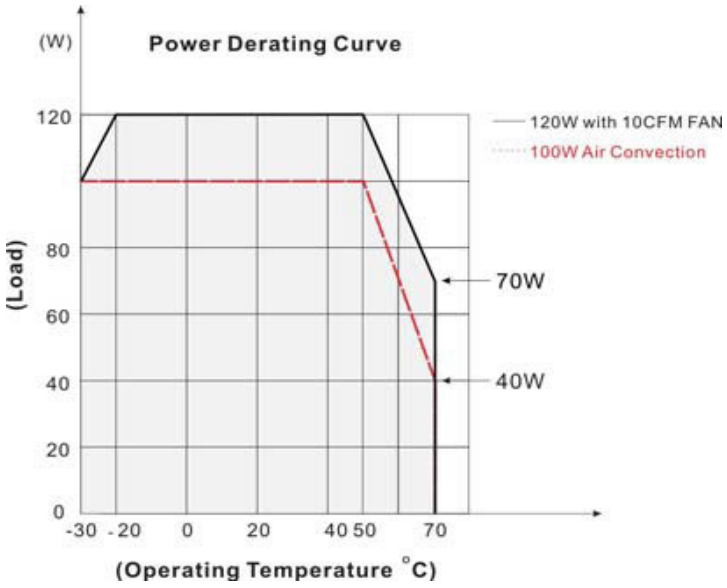
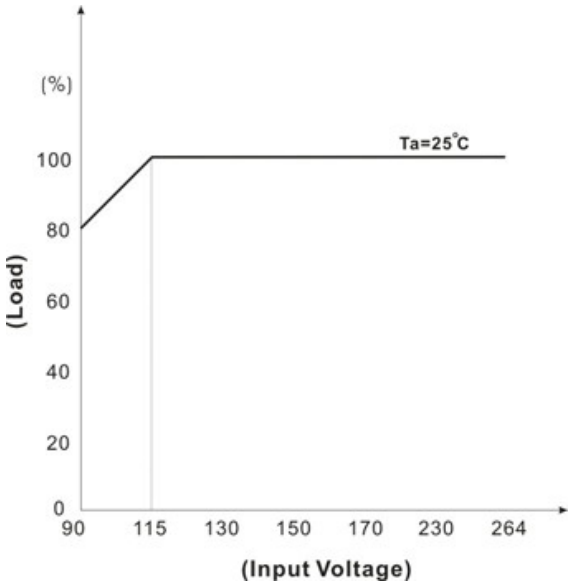
ELECTRICAL SPECIFICATIONS

APPLICATION & INSTALLATION NOTES

- General Baseline: All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.
- Note 1: Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
- Note 2: Hold-up Time measured at 90% Vout.
- Note 3: Please check the derating curve for more details.
- Note 4: Strongly recommend to conduct this test with AC Voltage. If customer wishes to test with DC Voltage, please disconnect all Y-Capacitors from Digital Power power supply.
- Note 5: Please secure the power supply unit to your metal case by using the four screw holes in the corners for either Class I or Class II equipment.
- CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.
- DERATING STATEMENT: If the input voltage is below 99VAC, the product can be used only in an environment where temperature is higher than -10 degrees Celsius.

DERATING





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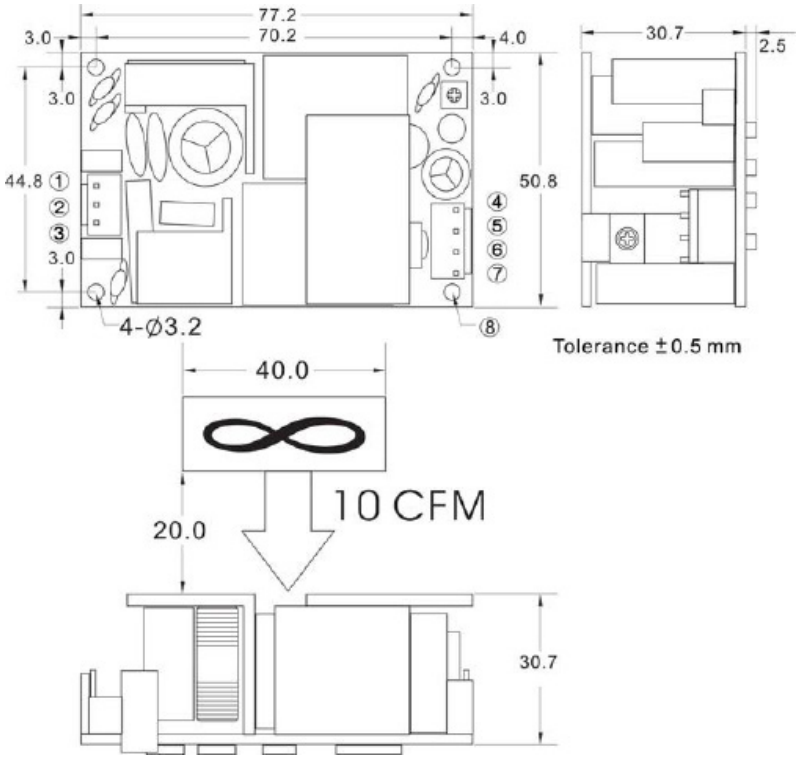
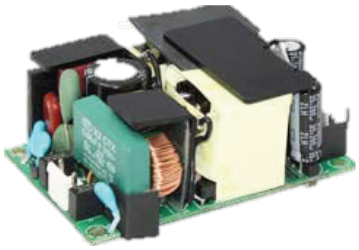
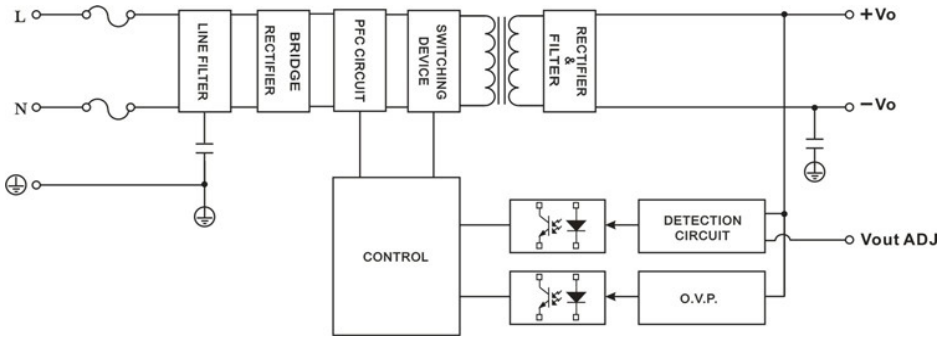
MECHANICAL DIMENSIONS - HDM120O





Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)				
4~5	+DC OUT	9396-4	96T series	VHR-4N	SVH-41T-P1.1
6~7	-DC OUT				
8	PE	-	-	-	-

BLOCK DIAGRAM



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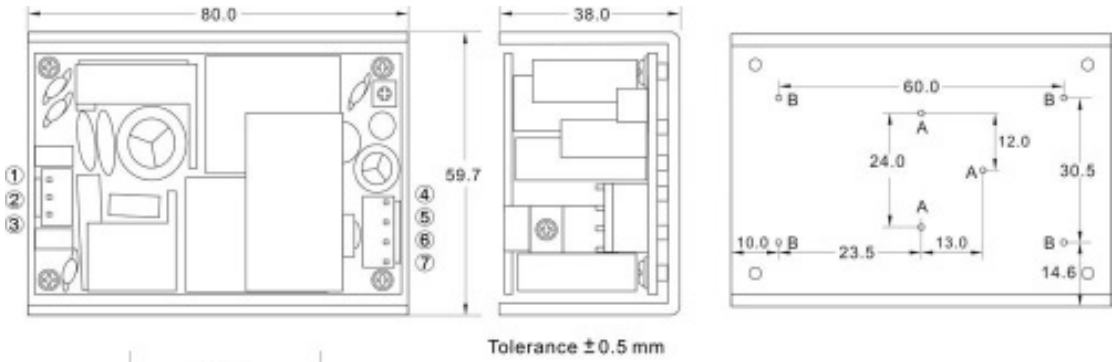
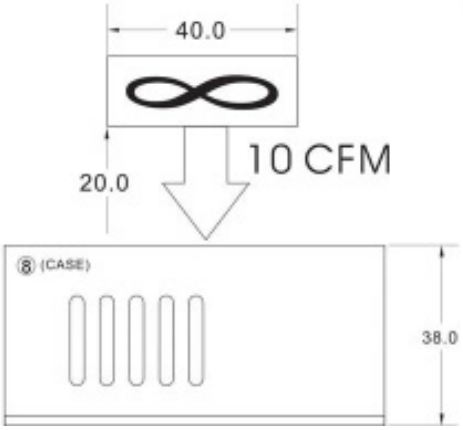
MECHANICAL DIMENSIONS - HDM120U

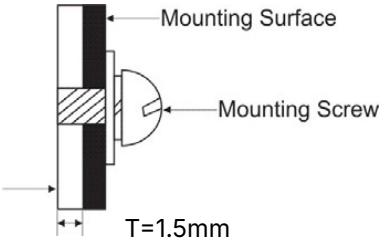




A= For fixture to chassis only
A=M3×0.5P B=For fixture to pcb/chassis only
B=M3×0.5P

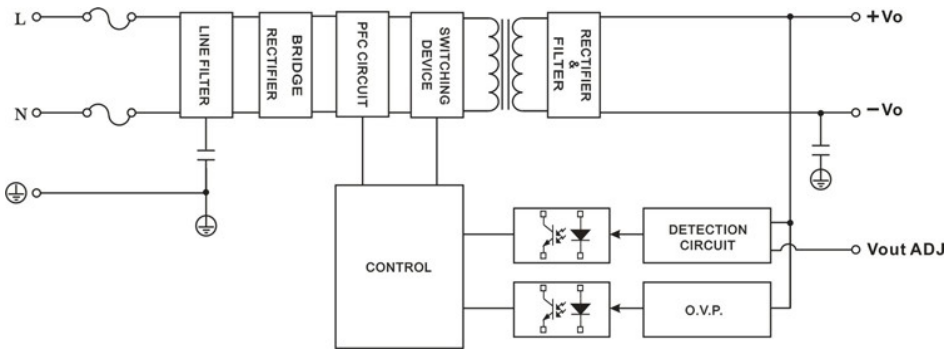
ASSEMBLY INSTRUCTIONS
U Case T=1.5mm Customer is advised to screw into the threads no more than 1.5mm

Chassis of HDM120U Series



Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)				
4~5	+DC OUT	9396-4	96T series	VHR-4N	SVH-41T-P1.1
6~7	-DC OUT				
8	PE	-	-	-	-

BLOCK DIAGRAM



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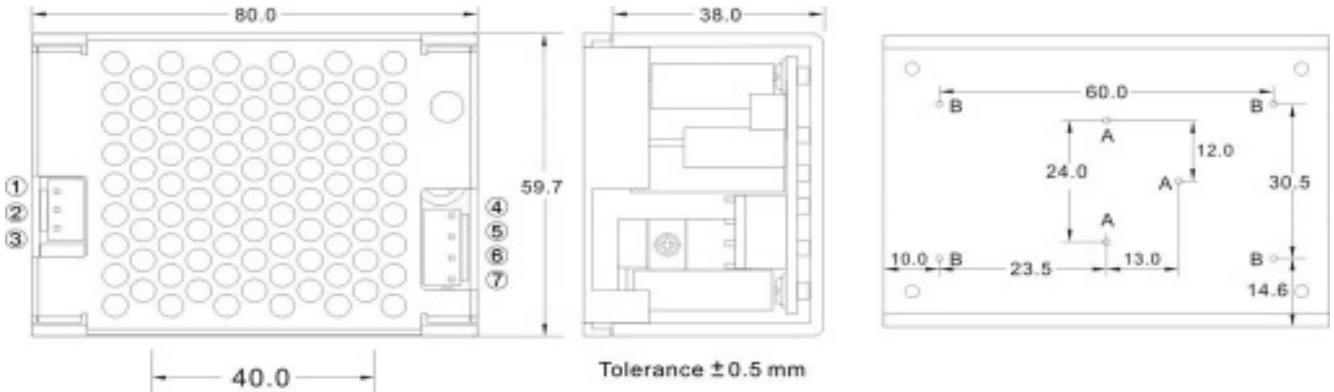
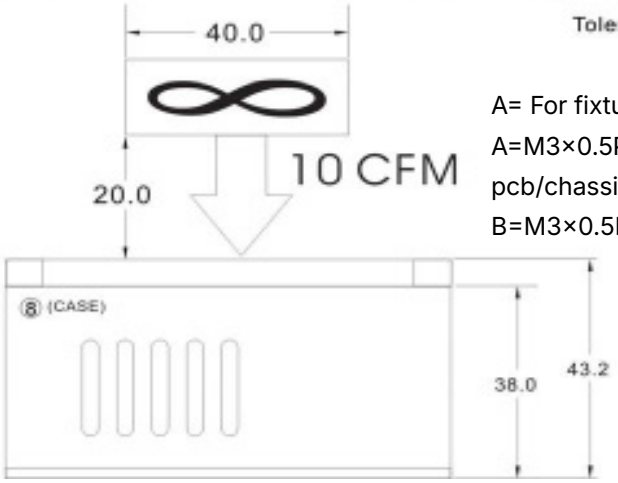
MECHANICAL DIMENSIONS - HDM120E

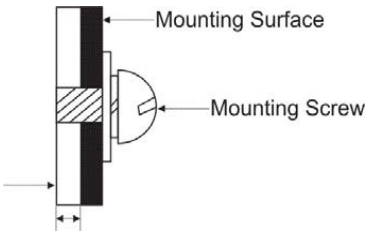




A= For fixture to chassis only
A=M3×0.5P B=For fixture to pcb/chassis only
B=M3×0.5P

Chassis of HDM120E Series

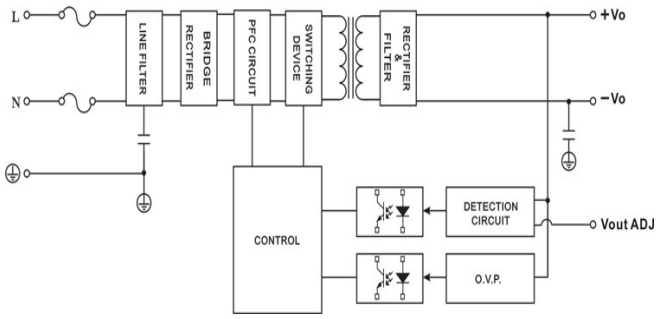
ASSEMBLY INSTRUCTIONS
U Case T=1.5mm Customer is advised to screw into the threads no more than 1.5mm



T=1.5mm

Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)				
4~5	+DC OUT	9396-4	96T series	VHR-4N	SVH-41T-P1.1
6~7	-DC OUT				
8	PE	-	-	-	-

BLOCK DIAGRAM



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