

HDM240 SERIES | HIGH DENSITY

240W Medical AC-DC Power Supply

MODEL: HDM240 | CATEGORY: AC-DC | RATED POWER: 240W | FORM: FLEXIBLE

PRODUCT OVERVIEW



Key Product Features

- Universal 90-264 VAC input range
- Operating altitude up to 5000m
- Active PFC function
- 4000VAC input-to-output isolation
- EMI support for Class I and Class II configurations
- Enclosed, Open Frame, U Bracket Switching Power-Supply

PRODUCT DESCRIPTION

Digital Power's HDM240 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, 15V, 24V and 48V. Featured with compact, low profile footprint, and best-in- class performance, HDM240 Series are optimal for Medical Applications. Designed with energy saving in mind, Digital Power's HDM240 Series boasts not only high operating efficiency up to 94%, but also high-power density with full input range of 90-264Vac. 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.

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 | HDM2400-112 | HDM2400-115 | HDM2400-124 | HDM2400-148 |
|--------------------------|---|---|---|---|
| Format / Type | Open Frame | Open Frame | Open Frame | Open Frame |
| Output Voltage (V.DC.) | 12V | 15V | 24V | 48V |
| Max Current (Convection) | 13.33 A | 10.66 A | 7.50 A | 3.75 A |
| Max Current (Forced Air) | 20.00 A | 16.00 A | 10.00 A | 5.00 A |
| Max Capacitive Load | 6000 μ F | 4000 μ F | 3000 μ F | 1000 μ F |
| Efficiency (230VAC) | 92% | 92% | 94% | 94% |
| Max Wattage (Convection) | 160 W | 160 W | 180 W | 180 W |
| Max Wattage (Forced Air) | 240 W | 240 W | 240 W | 240 W |
| Dimensions (L x W x H) | 4.0 x 2.0 x 1.16" (101.6 x 50.8 x 29.5 mm) | 4.0 x 2.0 x 1.16" (101.6 x 50.8 x 29.5 mm) | 4.0 x 2.0 x 1.16" (101.6 x 50.8 x 29.5 mm) | 4.0 x 2.0 x 1.16" (101.6 x 50.8 x 29.5 mm) |
| Weight | 235 g | 235 g | 235 g | 235 g |
| EMS / Standards | Built to meet EN55011 (Medical) | Built to meet EN55011 (Medical) | Built to meet EN55011 (Medical) | Built to meet EN55011 (Medical) |

| Parameter | HDM240U-112 | HDM240U-115 | HDM240U-124 | HDM240U-148 |
|--------------------------|---|---|---|---|
| Format / Type | U-Bracket | U-Bracket | U-Bracket | U-Bracket |
| Output Voltage (V.DC.) | 12V | 15V | 24V | 48V |
| Max Current (Convection) | 12.50 A | 10.00 A | 7.08 A | 3.54 A |
| Max Current (Forced Air) | 20.00 A | 16.00 A | 10.00 A | 5.00 A |
| Max Capacitive Load | 6000 μ F | 4000 μ F | 3000 μ F | 1000 μ F |
| Efficiency (230VAC) | 92% | 92% | 94% | 94% |
| Max Wattage (Convection) | 150 W | 150 W | 170 W | 170 W |
| Max Wattage (Forced Air) | 240 W | 240 W | 240 W | 240 W |
| Dimensions (L x W x H) | 4.13 x 2.44 x 1.54" (105.0 x 62.0 x 39.0 mm) | 4.13 x 2.44 x 1.54" (105.0 x 62.0 x 39.0 mm) | 4.13 x 2.44 x 1.54" (105.0 x 62.0 x 39.0 mm) | 4.13 x 2.44 x 1.54" (105.0 x 62.0 x 39.0 mm) |
| Weight | 310 g | 310 g | 310 g | 310 g |
| EMS / Standards | Built to meet EN55011 (Medical) | Built to meet EN55011 (Medical) | Built to meet EN55011 (Medical) | Built to meet EN55011 (Medical) |

For quotes and customization requests, contact Digital Power sales at (877) 634-0982 or sales@digipwr.com.

ELECTRICAL SPECIFICATIONS

MODEL INFORMATION

| Parameter | HDM240E-112 | HDM240E-115 | HDM240E-124 | HDM240E-148 |
|--------------------------|--|--|--|--|
| Format / Type | Enclosed | Enclosed | Enclosed | Enclosed |
| Output Voltage (V.DC.) | 12V | 15V | 24V | 48V |
| Max Current (Convection) | 11.66 A | 9.33 A | 6.66 A | 3.33 A |
| Max Current (Forced Air) | 20.00 A | 16.00 A | 10.00 A | 5.00 A |
| Max Capacitive Load | 6000 μ F | 4000 μ F | 3000 μ F | 1000 μ F |
| Efficiency (230VAC) | 92% | 92% | 94% | 94% |
| Max Wattage (Convection) | 140 W | 140 W | 160 W | 160 W |
| Max Wattage (Forced Air) | 240 W | 240 W | 240 W | 240 W |
| Dimensions (L x W x H) | 4.13 x 2.44 x 1.69" (105.0 x 62.0 x 43.0 mm) | 4.13 x 2.44 x 1.69" (105.0 x 62.0 x 43.0 mm) | 4.13 x 2.44 x 1.69" (105.0 x 62.0 x 43.0 mm) | 4.13 x 2.44 x 1.69" (105.0 x 62.0 x 43.0 mm) |
| Weight | 335 g | 335 g | 335 g | 335 g |
| EMS / Standards | Built to meet EN55011 (Medical) | Built to meet EN55011 (Medical) | Built to meet EN55011 (Medical) | Built to meet EN55011 (Medical) |

SPECIFICATION INFORMATION

| [INPUT] | Value |
|---------------------------|---|
| Voltage (Note 1) | 90-264 VAC / 127-370 VDC |
| Frequency | 47-63 Hz |
| Current (Full load) | < 3.0 A max. (115 VAC) / < 1.5 A max. (230 VAC) |
| Inrush Current (<2ms) | < 40 A max. (115 VAC) / < 80 A max. (230 VAC) |
| Leakage Current | < 0.10 mA / 264 VAC (Patient Leakage Current) |
| Power Factor (at 230 VAC) | PF > 0.95 at Full Load |
| No Load Power | < 0.5 W (115/230 VAC) |

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ELECTRICAL SPECIFICATIONS

| [OUTPUT] | Value |
|------------------------------------|--------------------|
| Voltage Adj Range | ±5% Output Voltage |
| Voltage Accuracy | ±2% |
| Line Regulation | ±1% |
| Load Regulation (10-100%) | ±1% |
| Minimum Load | 0% |
| Ripple & Noise (max.) (Note 2) | 1% Vout |
| Hold-up Time (at 115 VAC) (Note 3) | 10 ms min. |
| Auxiliary Fan Output (Note 6) | 12 VDC / 0.3 A |

| [PROTECTION] | Value |
|-----------------------------|----------------------------|
| Over Power Protection | Auto recovery, Hiccup mode |
| Over Voltage Protection | Latch off |
| Over Temperature Protection | Latch off |
| Short Circuit Protection | Continuous, Auto recovery |

| [ISOLATION] | Value |
|--------------|---------------------|
| Input-Output | 4000 VAC (2 x MOPP) |
| Input-FG | 2000 VAC (1 x MOPP) |
| Output-FG | 1500 VAC (1 x MOPP) |

| [ENVIRONMENT] | Value |
|-----------------------------|--|
| Operating Temperature | -30°C to +70°C (with derating) |
| Storage Temperature | -40°C to +85°C |
| Temperature Coefficient | ±0.03% / °C |
| Operating Altitude (Note 5) | 5000m |
| Humidity | 20 - 90% RH |
| Atmospheric Pressure | 56 kPa to 106 kPa |
| MTBF | > 200,000 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 / Forced Air (External 10 CFM) |
| Safety Approvals | ANSI/AAMI ES60601-1, IEC/EN 60601-1 3.1 Edition |
| Conducted EMI (Note 4) | EN55011 Conducted Class B |
| Radiated EMI (Note 4) | EN55011 Class I class B / Class II class A |

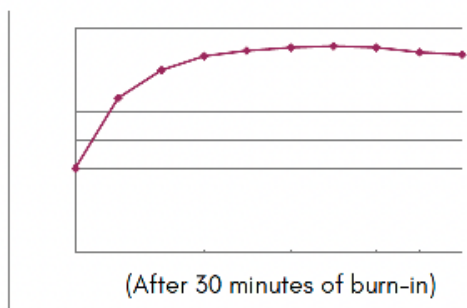
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ELECTRICAL SPECIFICATIONS

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: Please check the derating curve for more details. If input voltage is lower than 100VAC, please refer to the output derating V.S. input voltage curve for details.
- Note 2: Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
- Note 3: Hold-up Time measured at 90% Vout.
- Note 4: 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. 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: 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 baseline.
- Note 6: The auxiliary fan output is designed to power an external cooling fan and remains active whenever primary AC input power is applied to the unit.
- Thermal Performance Note: For optimizing thermal performance, the aluminum plate must have an even and smooth surface (or coated with thermal grease), and the HDM240 series must be firmly mounted at the center of the aluminum plate (Suggested size: 300 × 300 × 3.0 mm).
- CAUTION: Double pole, neutral fusing. Disconnect mains before servicing. Medical equipment isolation rules apply; ensure 2 x MOPP boundaries are preserved during installation.

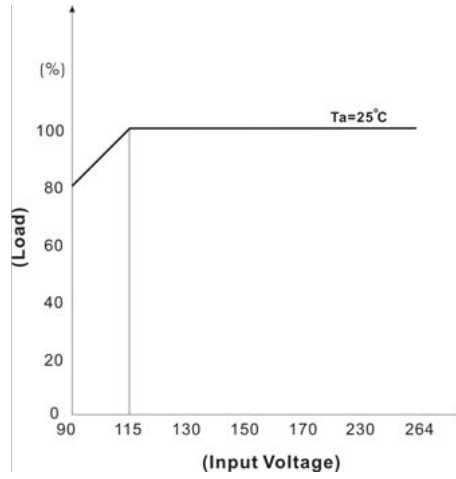
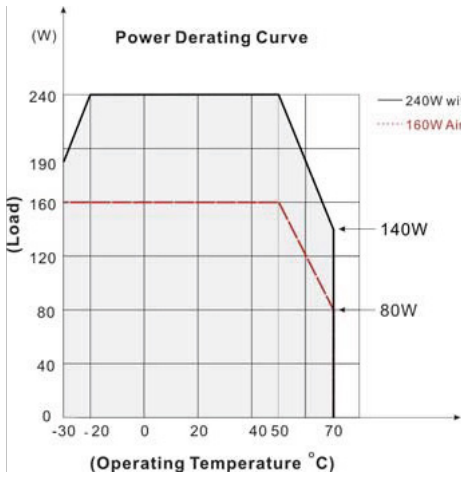
| For 112, 124, 148 | | | | For 115 | | | |
|-------------------|-----------------------|------------------------|-----------------------|-------------------|-----------------------|------------------------|-----------------------|
| Main Output Power | FAN Voltage (at 0.1A) | FAN Voltage (at 0.25A) | FAN Voltage (at 0.5A) | Main Output Power | FAN Voltage (at 0.1A) | FAN Voltage (at 0.25A) | FAN Voltage (at 0.5A) |
| 25% | 12.1V | 11.8V | 11.5V | 25% | 10.8V | 10.2V | 9.3V |
| 50% | 12.2V | 11.9V | 11.7V | 50% | 10.9V | 10.3V | 9.4V |
| 75% | 12.3V | 12.0V | 11.8V | 75% | 10.9V | 10.4V | 9.5V |
| 100% | 12.5V | 12.2V | 11.9V | 100% | 11.0V | 10.4V | 9.5V |



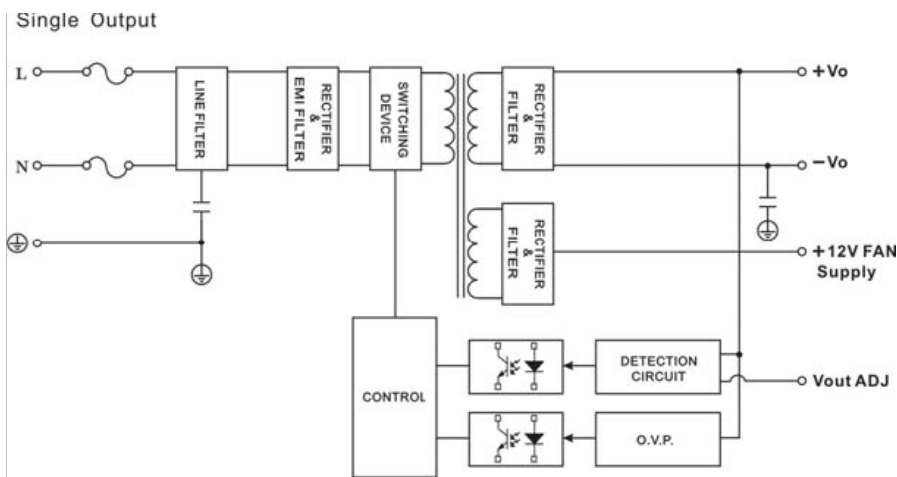
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ELECTRICAL SPECIFICATIONS - HDM2400

DERATING



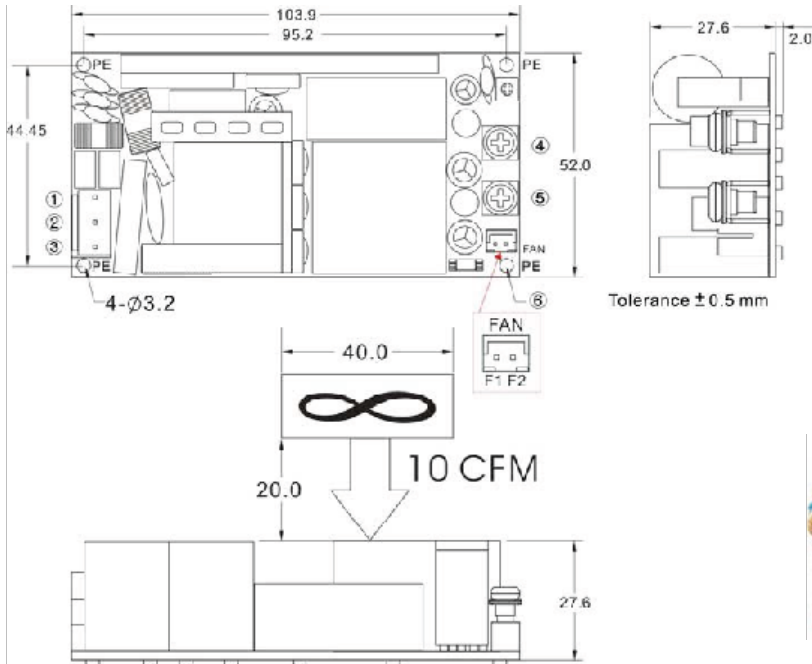
BLOCK DIAGRAM



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MECHANICAL DIMENSIONS - HDM2400

Standard



Standard



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.



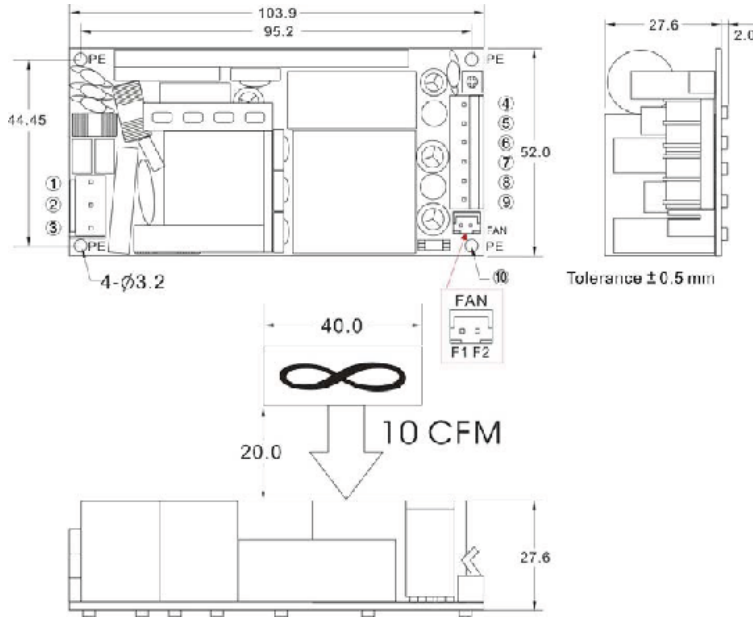
| Brands | | Alex | | JST | |
|--------|-----------|---|------------|----------------|--------------|
| PIN# | Single | Mating Housing | Terminal | Mating Housing | Terminal |
| 1 | AC IN (N) | 9396-3 | 96T series | VHR-3N | SVH-41T-P1.1 |
| 2 | NO PIN | | | | |
| 3 | AC IN (L) | | | | |
| 4 | +DC OUT | Terminal : M5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max. | | | |
| 5 | -DC OUT | | | | |
| 6 | PE | — | — | — | — |

| Connector Pin (FAN) | | | | | |
|---------------------|----------|----------------|----------|----------------|---------------|
| Brands | | Cherng Weei | | JST | |
| PIN# | Single | Mating Housing | Terminal | Mating Housing | Terminal |
| F1 | +AUX OUT | CX-H250-02 | CX-T2501 | XHP-2 | SXH-002T-P0.6 |
| F2 | -AUX OUT | | | | |

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MECHANICAL DIMENSIONS - HDM2400

A Type



A Type



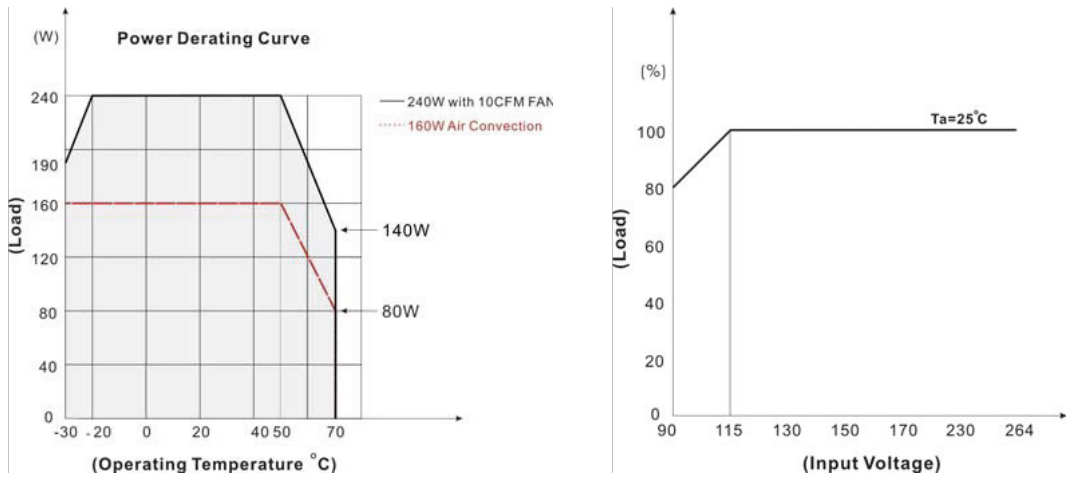
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| Brands | | Alex | | JST | |
|---------------------|-----------|----------------|------------|----------------|---------------|
| PIN# | Single | Mating Housing | Terminal | Mating Housing | Terminal |
| 1 | AC IN (N) | 9396-3 | 96T series | VHR-3N | SVH-41T-P1.1 |
| 2 | NO PIN | | | | |
| 3 | AC IN (L) | 9396-6 | 96T series | VHR-6N | SVH-41T-P1.1 |
| 4~6 | +DC OUT | | | | |
| 7~9 | -DC OUT | | | | |
| 10 | PE | — | — | — | — |
| Connector Pin (FAN) | | | | | |
| Brands | | Cherng Weei | | JST | |
| PIN# | Single | Mating Housing | Terminal | Mating Housing | Terminal |
| F1 | +AUX OUT | CX-H250-02 | CX-T2501 | XHP-2 | SXH-002T-P0.6 |
| F2 | -AUX OUT | | | | |

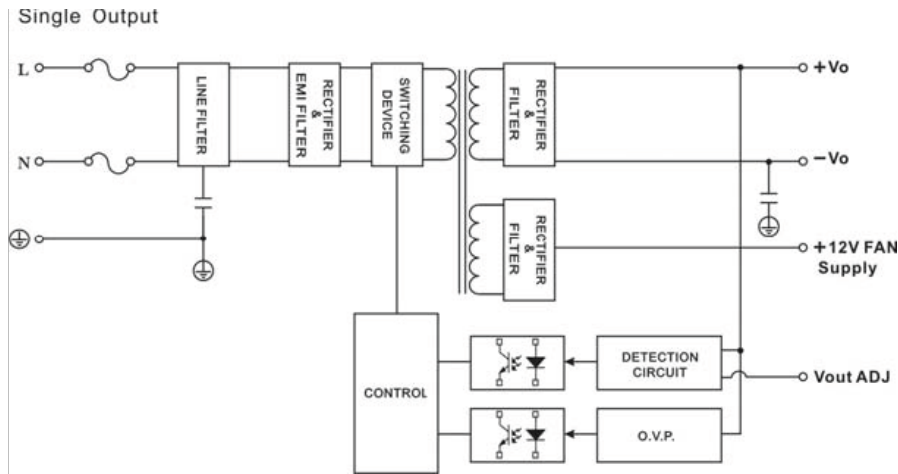
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ELECTRICAL SPECIFICATIONS - HDM240U

DERATING



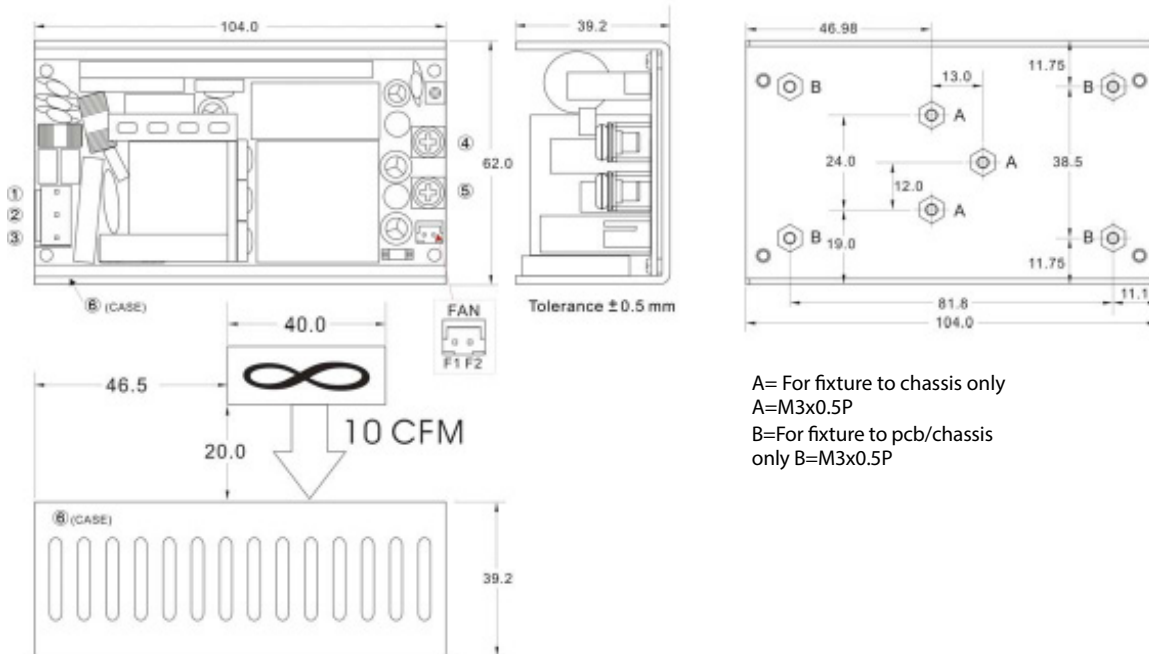
BLOCK DIAGRAM



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MECHANICAL DIMENSIONS - HDM240U

Standard



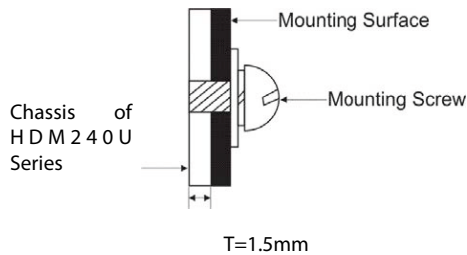
A= For fixture to chassis only
 A=M3x0.5P
 B=For fixture to pcb/chassis
 only B=M3x0.5P

| Brands | | Alex | | JST | |
|--------|-----------|---|------------|----------------|-------------|
| PIN# | Single | Mating Housing | Terminal | Mating Housing | Terminal |
| 1 | AC IN (N) | 9396-3 | 96T series | VHR-3N | SVH-41TP1.1 |
| 2 | NO PIN | | | | |
| 3 | AC IN (L) | | | | |
| 4 | +DC OUT | Terminal : M5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max. | | | |
| 5 | DC OUT | | | | |
| 6 | PE | — | — | — | — |

ASSEMBLY INSTRUCTIONS

U Case T=1.5mm

Customer is advised to screw into the threads no more than 1.5mm



Standard

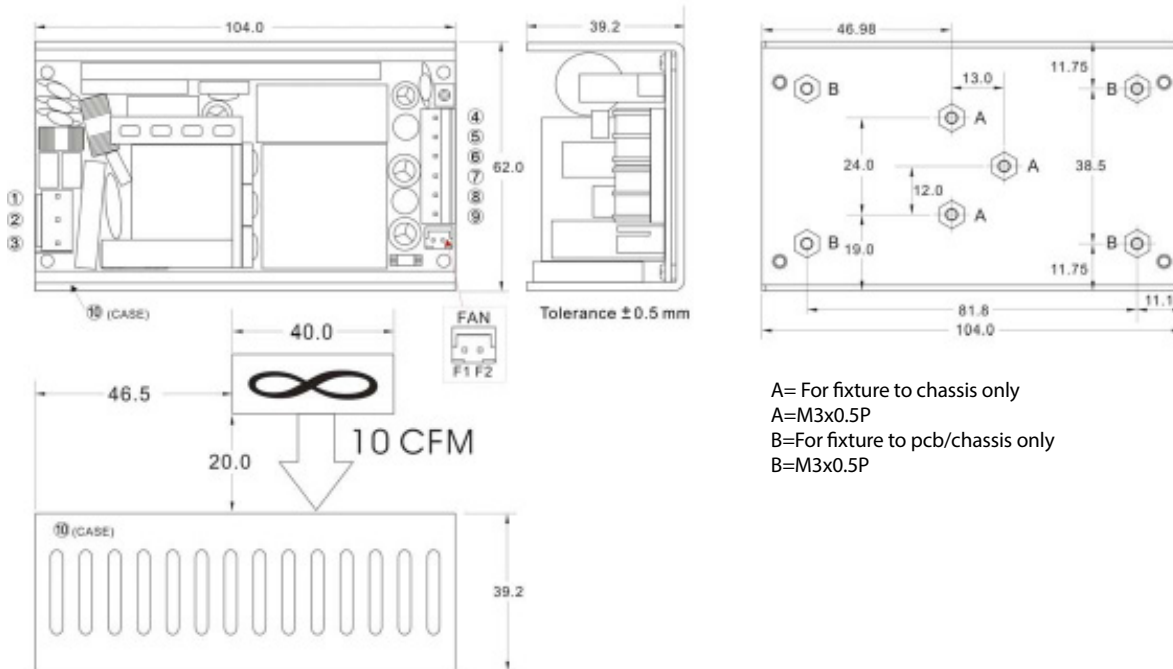


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MECHANICAL DIMENSIONS - HDM240U

A Type



A= For fixture to chassis only
 A=M3x0.5P
 B=For fixture to pcb/chassis only
 B=M3x0.5P

| 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) | | | | |
| 4~6 | +DC OUT | 9396-6 | 96T series | VHR-6N | SVH-41T-P1.1 |
| 7~9 | DC OUT | | | | |
| 10 | PE | — | — | — | — |

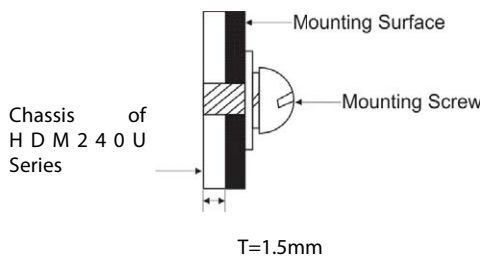
Connector Pin (FAN)

| Brands | | Cherng Weei | | JST | |
|--------|----------|----------------|----------|----------------|---------------|
| PIN# | Single | Mating Housing | Terminal | Mating Housing | Terminal |
| F1 | +AUX OUT | CX-H250-02 | CX-T2501 | XHP-2 | SXH-002T-P0.6 |
| F2 | -AUX OUT | | | | |

A Type



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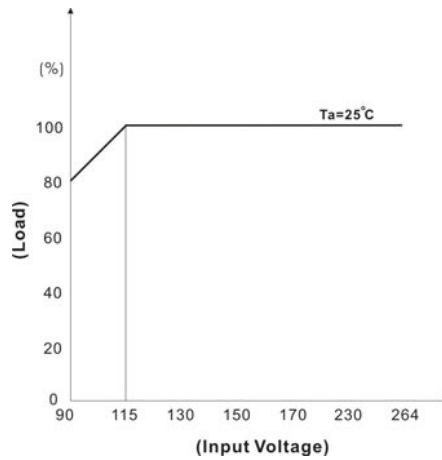
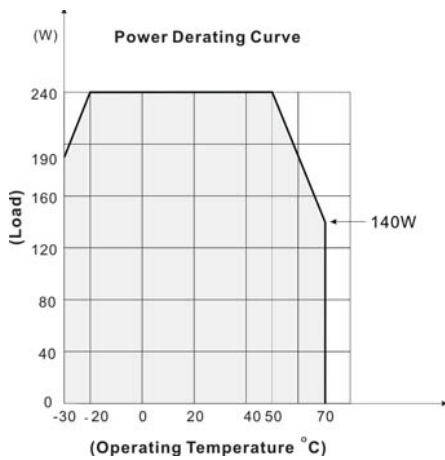


ASSEMBLY INSTRUCTIONS
 U Case T=1.5mm
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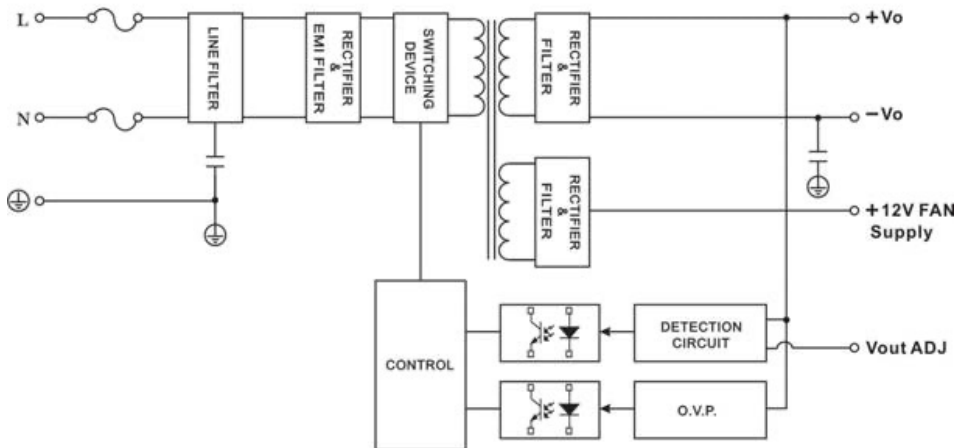
ELECTRICAL SPECIFICATIONS - HDM240E

DERATING



BLOCK DIAGRAM

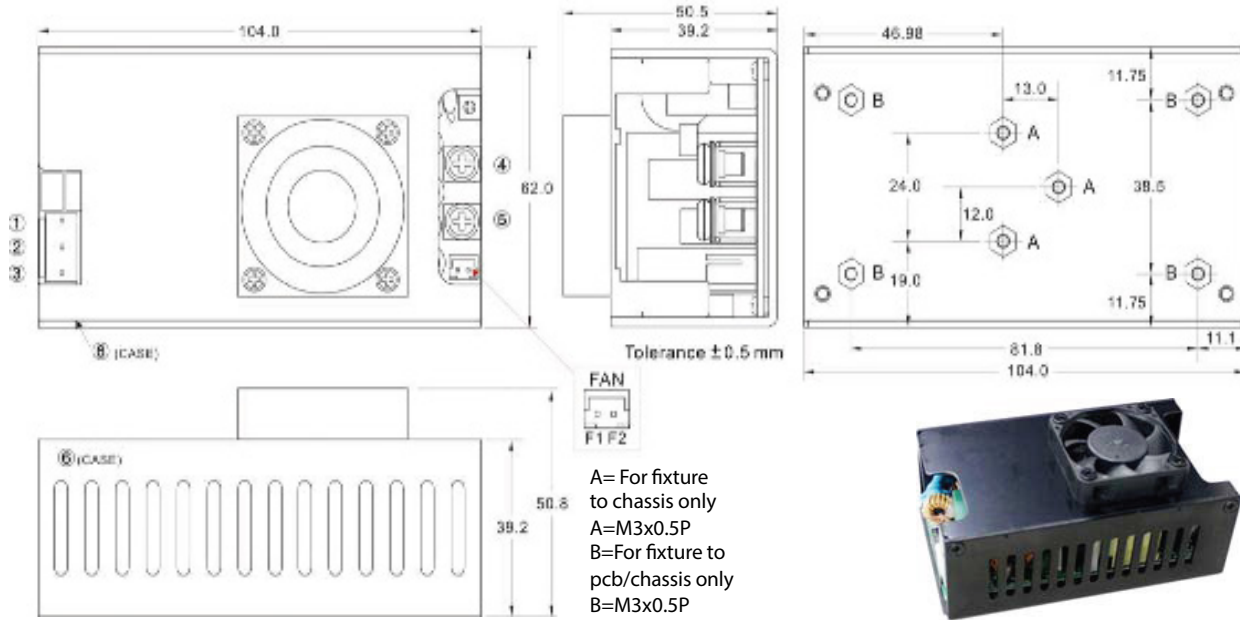
Single Output



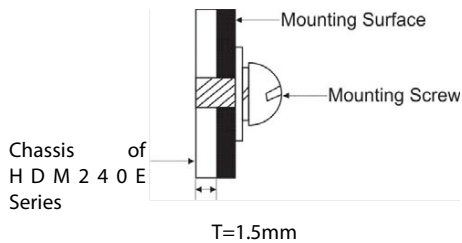
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MECHANICAL DIMENSIONS - HDM240E

Standard



| 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 | +DC OUT | Terminal : M5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max. | | | |
| 5 | DC OUT | | | | |
| 6 | PE | - | - | - | - |
| Connector Pin (FAN) | | | | | |
| Brands | | Cherng Weei | | JST | |
| PIN# | Single | Mating Housing | Terminal | Mating Housing | Terminal |
| F1 | +AUX OUT | CX-H250-02 | CXT2501 | XHP2 | SXH-002T-P0.6 |
| F2 | -AUX OUT | | | | |



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

Standard

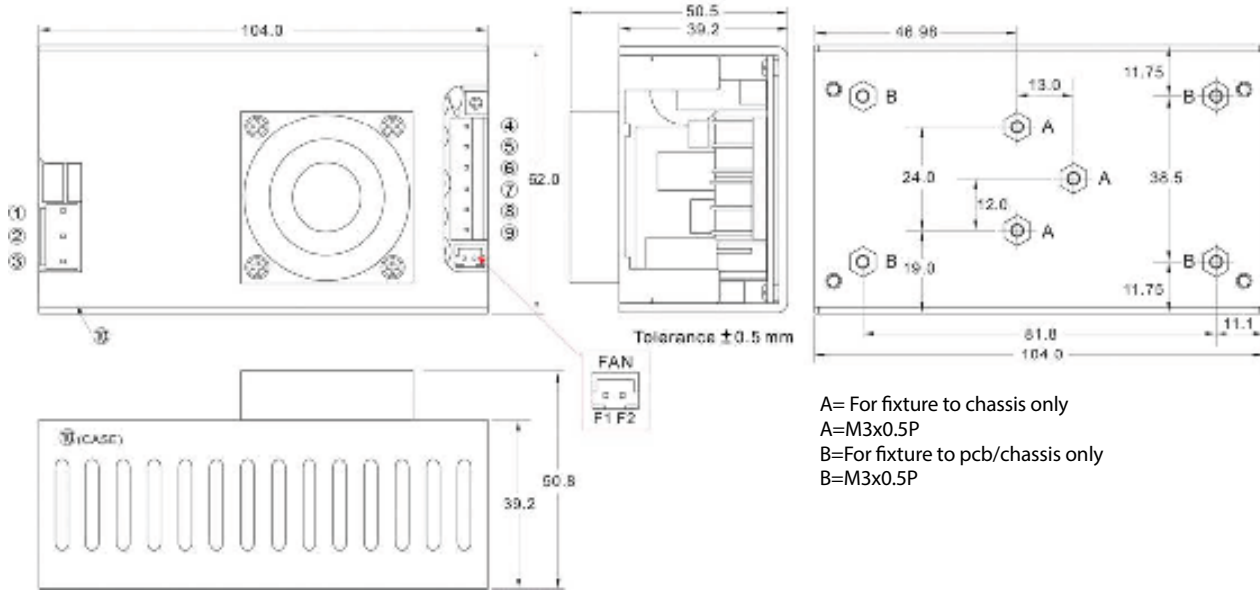


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MECHANICAL DIMENSIONS - HDM240E

A Type

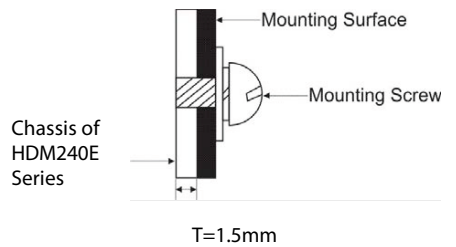


| Brands | | Alex | | JST | |
|--------|-----------|----------------|------------|----------------|--------------|
| PIN# | Single | Mating Housing | Terminal | Mating Housing | Terminal |
| 1 | AC IN (N) | 9396-3 | 96T series | VHR-3N | SVH-41T-P1.1 |
| 2 | NO PIN | | | | |
| 3 | AC IN (L) | | | | |
| 4~6 | +DC OUT | 9396-6 | 96T series | VHR-6N | SVH-41T-P1.1 |
| 7~9 | DC OUT | | | | |
| 10 | PE | — | — | — | — |

ASSEMBLY INSTRUCTIONS

U Case T=1.5mm

Customer is advised to screw into the threads no more than 1.5mm



| Connector Pin (FAN) | | | | | |
|---------------------|----------|----------------|----------|----------------|---------------|
| Brands | | Cherng Weei | | JST | |
| PIN# | Single | Mating Housing | Terminal | Mating Housing | Terminal |
| F1 | +AUX OUT | CX-H250-02 | CX-T2501 | XHP-2 | SXH-002T-P0.6 |
| F2 | -AUX OUT | | | | |

A Type



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