# Medical Power Supplies

www.DeltaPSU.com

# About Delta

Delta, founded in 1971, is a global leader in switching power supplies and thermal management products with a thriving portfolio of smart energy-saving systems and solutions in the fields of industrial automation, building automation, telecom power, data center infrastructure, EV charging, renewable energy, energy storage and display, to nurture the development of smart manufacturing and sustainable cities. As a world-class corporate citizen guided by its mission statement, "To provide innovative, clean and energy-efficient solutions for a better tomorrow," Delta leverages its core competence in high-efficiency power electronics and its ESG-embedded business model to address key environmental issues, such as climate change. Delta serves customers through its sales offices, R&D centers and manufacturing facilities spread over close to 200 locations across 5 continents.

Throughout its history, Delta has received various global awards and recognition for its business achievements, innovative technologies and dedication to ESG. Since 2011, Delta has been listed on the DJSI World Index of Dow Jones Sustainability ™ Indices for 11 consecutive years. In 2021, Delta was also recognized by CDP with leadership level ratings for its substantial contribution to climate change and water security issues and named Supplier Engagement Leader for its continuous development of a sustainable value chain.

For detailed information about Delta, please visit: www.deltaww.com

# Business Categories

## Power Electronics

- Components
- Power and System
- Fan & Thermal Management
- Automotive Electronics

Innergie

## Automation

- Industrial Automation
- Building Automation

## Infrastructure

- ICT Infrastructure
- Energy Infrastructure & Industrial Solutions

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## About Power and System Business Group (PSBG)

- World's leading provider of power products and solutions
- Started mass production of switching power supplies in 1983

**P**ower Conversion

**S**mart Drive & Control

**B**attery Charger

**G**reen Energy

## Power to a Smart Future with High Energy Efficiency

PSBG offers cutting-edge power products and system to innovate cloud computing, network connectivity, client devices, industrial and medical industry, lighting, appliances, and e-mobility with global customers.

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# Delta Medical Power Supplies

Delta provides high quality power supplies with high reliability and performance, including open frame, enclosed, and configurable power supplies and AC adapters. All products conform to major medical safety standards for various healthcare and medical applications.

## Configurable

The MEG-A configurable power supply is designed for use in both medical and industrial applications. It supports up to 9 isolated outputs. The products can be configured for output voltages ranging from 2 $V_{DC}$ to 60 $V_{DC}$.

## Enclosed

Encased in strong metal casings, the medical enclosed power supplies can be used in a wide variety of equipment for medical and industrial applications.

## Open Frame

The medical open frame provides a high performance and reliable solution as an internal power supply for various types of medical equipment.

## ATX

Highly reliable design features the ATX standard form factor and output cable pin-outs. Certified with medical standards, it is suitable for use in medical devices with Type BF classification.

## Adapters

The medical adapter utilizes Delta's market leading adapter technology to provide the same high quality external power supplies for medical systems and equipments.

# Applications

Da Vinci Robot

X-Ray

CT Scan

Ultrasound

Dialysis

Medical Display

Dental

IVD

Patient Bed

Aesthetic

Respiratory

CPAP

# Product Selection Guide

New products are frequently introduced. Please visit www.DeltaPSU.com for latest product updates.

| Product Type | Series | Model Name | Module Slots | Output Voltage | Output Power (Max) | Page |
|---|---|---|---|---|---|---|
| **Configurable Power Supply** | **MEG-A** | MEG-700A3 | 3 Slots | Single Output<br>Single Slot: 2 V - 60 V<br>Triple Slot: 8 V - 60 V<br><br>Dual Output<br>Single Slot: 3.3 V - 30 V | 700 W | 11 |
| | | MEG-1K2A4 | 4 Slots | | 1,200 W | |
| | | MEG-2K1A6 | 6 Slots | | 2,100 W | 12 |
| | | MEG-3K0A9 | 9 Slots | | 3,000 W | |

## Model Numbering

| ME | G – | XXX | A | □ |
|---|---|---|---|---|
| **Delta Medical Power Supply** | G - Configurable | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Slot Number** |
| | | 700 - 700 W | A - Family A | 3 - 3 Slots |
| | | 1K2 - 1,200 W | | 4 - 4 Slots |
| | | 2K1 - 2,100 W | | 6 - 6 Slots |
| | | 3K0 - 3,000 W | | 9 - 9 Slots |

New products are frequently introduced. Please visit www.DeltaPSU.com for latest product updates.

| Product Type | Series | Model Name | CC Code | Input Terminal | Output Terminal | Output Voltage | Convection | | Forced Air | | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Output Current | Output Power | Output Current | Output Power | |
| **Enclosed Power Supply** | **MDS** | MDS-200ADB12 | AA | Molex 171813-9998 | JST B4P-VH | 12 V | 9.17 A | 110 W | 16.67 A | 200 W | 15 |
| | | MDS-250ADB12 | AA | Molex 26-62-4030 | M3 PCB terminal | | 11.25 A | 135 W | 20.84 A | 250 W | |
| | | MDS-250ADB12 | AB | | | | 11.25 A | 135 W | 20.84 A | 250 W | |
| | | MDS-300ADB12 | AA | Molex 26-62-4030 | M3 PCB terminal | | 15.83 A | 190 W | 25.0 A | 300 W | |
| | | MDS-400ADB12 | AA | Molex 171813-9998 | M3 PCB terminal | | | | 33.33 A | 400 W | |
| | | MDS-300ADB18 | AA | Molex 171813-9998 | M3 PCB terminal | 18 V | 10.55 A | 190 W | 16.66 A | 300 W | |
| | | MDS-300ADB18 | AB | | | | 10.55 A | 190 W | 16.66 A | 300 W | |
| | | MDS-200ADB24 | AA | Molex 171813-9998 | JST B4P-VH | 24 V | 5.0 A | 120 W | 8.33 A | 200 W | 16 |
| | | MDS-250ADB24 | AA | Molex 171813-9998 | M3 PCB terminal | | 5.62 A | 135 W | 10.41 A | 250 W | |
| | | MDS-300ADB24 | AA | Molex 26-62-4030 | M3 PCB terminal | | 8.75 A | 210 W | 12.5 A | 300 W | |
| | | MDS-300ADB24 | AB | | | | 8.75 A | 210 W | 12.5 A | 300 W | |
| | | MDS-400ADB24 | AA | Molex 71813-9998 | M3 PCB terminal | | | | 16.67 A | 400 W | |
| | | MDS-400ADB24 | AB | | | | | | 16.67 A | 400 W | |
| | | MDS-300ADB48 | AA | Molex 26-62-4030 | M3 PCB terminal | 48 V | 4.375 A | 210 W | 6.25 A | 300 W | |
| | | MDS-300ADB48 | AB | | | | 4.375 A | 210 W | 6.25 A | 300 W | |
| | **MEB** | NEW! NEW! MEB-750A12B | AAA | TU-301-SP-SA-AD2(D)V0 | M5 PCB terminal | 12 V | | | 58.4 A | 700 W | 17 |
| | | NEW! MEB-750A12T | AAA | Dinkle DT-2G-B95W-03 | M5 PCB terminal | | | | 58.4 A | 700 W | |
| | | MEB-500A24F | AA | Deca T24-EO3103A302 | DT-65-C14W-02 | 24 V | | | 21.0 A | 500 W | |
| | | MEB-750A24B | AAA | TU-301-SP-SA-AD2(D)V0 | M5 PCB terminal | | | | 31.25 A | 750 W | |
| | | MEB-750A24T | AAA | Dinkle DT-2G-B95W-03 | M5 PCB terminal | | | | 31.25 A | 750 W | |
| | | MEB-750A48B | AAA | TU-301-SP-SA-AD2(D)V0 | M5 PCB terminal | 48 V | | | 15.63 A | 750 W | |
| | | MEB-750A48T | AAA | Dinkle DT-2G-B95W-03 | M5 PCB terminal | | | | 15.63 A | 750 W | |
| | | MEB-1K2A24T | ABA | Anytek YK50A0323009G | M5 PCB terminal | 24 V | | | 50.0 A | 1,200 W | 18 |
| | | MEB-1K2A42T | ABA | Anytek YK50A0323009G | M5 PCB terminal | 42 V | | | 28.5 A | 1,200 W | |
| | | MEB-1K2A48T | ABA | Anytek YK50A0323009G | M5 PCB terminal | 48 V | | | 25.0 A | 1,200 W | |

## Model Numbering

| MDS – | XXX | A | D | B | □ | □□ |
|---|---|---|---|---|---|---|
| **Delta Medical Power Supply** | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Product Type** | **Input Connector Type** | **Output Voltage** | **CC Code** [1] |
| MDS-200ADB series<br>MDS-250ADB series<br>MDS-300ADB series<br>MDS-400ADB series | 200 - 200 W<br>250 - 250 W<br>300 - 300 W<br>400 - 400 W | A - Family A | D - Enclosed | B - Class I 3-pin connector | 12 - 12 V<br>18 - 18 V<br>24 - 24 V<br>48 - 48 V | |

| ME | B – | XXX | A | □ | □ | □□□ |
|---|---|---|---|---|---|---|
| **Delta Medical Power Supply** | B - Enclosed | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Output Voltage** | **Input Connector Type** | **CC Code** |
| | | 500 - 500 W | A - Family A | 24 - 24 V | F - Front Face | AA - With Remote ON/OFF, with conformal coating |
| | | 750 - 750 W | | 12 - 12 V<br>24 - 24 V<br>48 - 48 V | B - C14<br>T - US Terminal | AAA - With Remote ON/OFF, with conformal coating |
| | | 1K2 - 1,200 W | | 24 - 24 V<br>42 - 42 V<br>48 - 48 V | T - US Terminal | ABA - With Remote ON/OFF, with conformal coating |

1) Refer to technical datasheet

# Product Selection Guide

New products are frequently introduced. Please visit www.DeltaPSU.com for latest product updates.

| Product Type | Series | Model Name | CC Code | Input Terminal | Output Terminal | Output Voltage | Convection | | Forced Air | | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Output Current | Output Power | Output Current | Output Power | |
| **Open Frame Power Supply** | **MDS** | MDS-040APS12B | A | JST B2P3-VH | JST B4P-VH | 12 V | 3.33 A | 40 W | | | 21 |
| | | MDS-065APS12B | A | JST B2P3-VH | JST B4P-VH | | 5.42 A | 65 W | | | |
| | | MDS-100APS12B | A | JST B2P3-VH | JST B8P-VH | | 8.33 A | 100 W | | | |
| | | MDS-100BPS12B | A | JST B2P3-VH | JST B4P-VH | | 6.67 A | 80 W | 8.33 A | 100 W | |
| | | MDS-040APS15B | A | JST B2P3-VH | JST B4P-VH | 15 V | 2.67 A | 40 W | | | 22 |
| | | MDS-065APS15B | A | JST B2P3-VH | JST B4P-VH | | 4.2 A | 63 W | | | |
| | | MDS-100APS15B | A | JST B2P3-VH | JST B8P-VH | | 6.67 A | 100 W | | | |
| | | MDS-100BPS15B | A | JST B2P3-VH | JST B4P-VH | | 5.3 A | 80 W | 6.7 A | 100 W | |
| | | MDS-040APS18B | A | JST B2P3-VH | JST B4P-VH | 18 V | 2.22 A | 40 W | | | 23 |
| | | MDS-065APS18B | A | JST B2P3-VH | JST B4P-VH | | 3.61 A | 65 W | | | |
| | | MDS-100APS18B | A | JST B2P3-VH | JST B8P-VH | | 5.55 A | 100 W | | | |
| | | MDS-100BPS18B | A | JST B2P3-VH | JST B4P-VH | | 4.4 A | 80 W | 5.5 A | 100 W | |
| | | MDS-040APS24B | A | JST B2P3-VH | JST B4P-VH | 24 V | 1.67 A | 40 W | | | 24 |
| | | MDS-065APS24B | A | JST B2P3-VH | JST B4P-VH | | 2.71 A | 65 W | | | |
| | | MDS-100APS24B | A | JST B2P3-VH | JST B8P-VH | | 4.17 A | 100 W | | | |
| | | MDS-100BPS24B | A | JST B2P3-VH | JST B4P-VH | | 3.3 A | 80 W | 4.2 A | 100 W | |
| | | MDS-200APB12 | AA | Molex 171813-9998 | JST B4P-VH | 12 V | 10.83 A | 130 W | 16.67 A | 200 W | 25 |
| | | MDS-250APB12 | AA | Molex 26-62-4030 | M3 PCB terminal | | 12.5 A | 150 W | 20.84 A | 250 W | |
| | | MDS-250APB12 | AB | | | | 12.5 A | 150 W | 20.84 A | 250 W | |
| | | MDS-300APB12 | AA | Molex 26-62-4030 | M3 PCB terminal | | 18.33 A | 220 W | 25.0 A | 300 W | |
| | | MDS-400APB12 | AA | Molex 171813-9998 | M3 PCB terminal | | 16.67 A | 200 W | 33.33 A | 400 W | |
| | | MDS-400APB12 | AB | | | | 16.67 A | 200 W | 33.33 A | 400 W | |
| | | MDS-300APB18 | AA | Molex 171813-9998 | M3 PCB terminal | 18 V | 12.22 A | 220 W | 16.66 A | 300 W | 26 |
| | | MDS-300APB18 | AB | | | | 12.22 A | 220 W | 16.66 A | 300 W | |
| | | MDS-200APB24 | AA | Molex 171813-9998 | JST B4P-VH | 24 V | 5.83 A | 140 W | 8.33 A | 200 W | |
| | | MDS-250APB24 | AA | Molex 171813-9998 | M3 PCB terminal | | 6.25 A | 150 W | 10.41 A | 250 W | |
| | | MDS-250APB24 | AB | | | | 6.25 A | 150 W | 10.41 A | 250 W | |
| | | MDS-300APB24 | AA | Molex 26-62-4030 | M3 PCB terminal | | 10.0 A | 240 W | 12.5 A | 300 W | |
| | | MDS-300APB24 | AE | | | | 10.0 A | 240 W | 12.5 A | 300 W | |
| | | MDS-400APB24 | AA | Molex 171813-9998 | M3 PCB terminal | | 8.33 A | 200 W | 16.66 A | 400 W | |
| | | MDS-400APB24 | AB | | | | 8.33 A | 200 W | 16.66 A | 400 W | |
| | | MDS-200APB36 | AA | Molex 171813-9998 | JST B4P-VH | 36 V | 3.33 A | 120 W | 5.56 A | 200 W | 27 |
| | | MDS-300APB48 | AA | Molex 26-62-4030 | M3 PCB terminal | 48 V | 5.0 A | 240 W | 6.25 A | 300 W | |
| | | MDS-300APB48 | AB | | | | 5.0 A | 240 W | 6.25 A | 300 W | |

## Model Numbering

| MDS – | XXX | ☐ | P | S | ☐ | B | ☐ |
|---|---|---|---|---|---|---|---|
| **Delta Medical Power Supply** | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Product Type** | **No. of Output** | **Output Voltage** | **Input Connector Type** | **CC Code** [1] |
| MDS-040APS series<br>MDS-065APS series<br>MDS-100APS series | 040 - 40 W<br>065 - 65 W<br>100 - 100 W | A - Family A | P - Open Frame | S - Single Output | 12 - 12 V<br>15 - 15 V<br>18 - 18 V<br>24 - 24 V | B - Class I 3-pin connector | |
| MDS-100BPS series | 100 - 100 W | B - Family B | | | | | |

| MDS – | XXX | A | P | B | ☐ | ☐☐ |
|---|---|---|---|---|---|---|
| **Delta Medical Power Supply** | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Product Type** | **Input Connector Type** | **Output Voltage** | **CC Code** [1] |
| MDS-200APB series<br>MDS-250APB series<br>MDS-300APB series<br>MDS-400APB series | 200 - 200 W<br>250 - 250 W<br>300 - 300 W<br>400 - 400 W | A - Family A | P - Open Frame | B - Class I 3-pin connector | 12 - 12 V<br>18 - 18 V<br>24 - 24 V<br>36 - 36 V<br>48 - 48 V | |

1) Refer to technical datasheet

New products are frequently introduced. Please visit www.DeltaPSU.com for latest product updates.

| Product Type | Series | Model Name | CC Code | Input Terminal | Output Terminal | Output Voltage | Convection | | Forced Air | | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Output Current | Output Power | Output Current | Output Power | |
| **Open Frame Power Supply** | **MEU** | NEW MEU-650A12T | AAA | DG128-7.5-03P-14-1001A(H) | M4 PCB terminal | 12 V | 33.4 A | 400 W | 50.0 A | 600 W | 28 |
| | | MEU-600C24T | AAA | Anytek YK4020323200G | M5 PCB terminal | 24 V | 25.0 A | 600 W | | | |
| | | NEW MEU-650A24T | AAA | DG128-7.5-03P-14-1001A(H) | M4 PCB terminal | | 18.75 A | 450 W | 27.1 A | 650 W | |
| | | MEU-600C48T | AAA | Anytek YK4020323200G | M5 PCB terminal | 48 V | 12.5 A | 600 W | | | |
| | | NEW MEU-650A48T | AAA | DG128-7.5-03P-14-1001A(H) | M4 PCB terminal | | 9.375 A | 450 W | 13.6 A | 650 W | |
| | **MEP** | NEW MEP-120A12J | BNA | JST B2P3-VH | JST B4P-VH | 12 V | 9.5 A | 114 W | | | 29 |
| | | NEW MEP-200A12J | BNA | JST B2P3-VH | JST B6P-VH-B | | 16.67 A* | 200 W* | 16.67 A | 200 W | |
| | | NEW MEP-120A15J | BNA | JST B2P3-VH | JST B4P-VH | 15 V | 8.0 A | 120 W | | | |
| | | NEW MEP-120A18J | BNA | JST B2P3-VH | JST B4P-VH | 18 V | 6.67 A | 120 W | | | 30 |
| | | NEW MEP-120A24J | BNA | JST B2P3-VH | JST B4P-VH | 24 V | 5.0 A | 120 W | | | |
| | | NEW MEP-200A24J | BNA | JST B2P3-VH | JST B6P-VH-B | | 8.34 A* | 200 W* | 8.34 A | 200 W | |
| | | NEW MEP-200A48J | BNA | JST B2P3-VH | JST B6P-VH-B | 48 V | 4.17 A* | 200 W* | 4.17 A | 200 W | |

* Refer to technical datasheet

| Product Type | Series | Model Name | CC Code | Input Terminal | Output Terminal | Output Voltage | Output Current | Output Power | Page |
|---|---|---|---|---|---|---|---|---|---|
| **ATX Power Supply** | **MDS** | MDS-350AD701 | AA | C14 | Wire harness | +3.3 V, +5 V, +5 $V_{SB}$, +12 $V_1$, +12 $V_2$, -12 V, -5 V | 8.0 A, 9.0 A, 1.25 A, 8.0 A, 8.0 A, 0.25 A, 0.1 A | 350 W | 32 |

## Model Numbering

| ME | U – | XXX | □ | □ | T | □□□ |
|---|---|---|---|---|---|---|
| **Delta Medical Power Supply** | U - U Frame | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Output Voltage** | **Input Connector Type** | **CC Code** |
| | | 600 - 600 W | C - Family C | 24 - 24 V<br>48 - 48 V | T - Terminal Block (Class I) | AAA - With Remote ON/OFF, with conformal coating |
| | | 650 - 650 W | A - Family A | 12 - 12 V<br>24 - 24 V<br>48 - 48 V | | |

| ME | P – | XXX | A | □ | J | □□□ |
|---|---|---|---|---|---|---|
| **Delta Medical Power Supply** | P - Open Frame | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Output Voltage** | **Input Connector Type** | **CC Code** |
| | | 120 - 120 W | A - Family A | 12 - 12 V<br>15 - 15 V<br>18 - 18 V<br>24 - 24 V | J - JST connector | BNA - Delta Standard No conformal coating, no Remote ON/OFF |
| | | 200 - 200 W | | 12 - 12 V<br>24 - 24 V<br>48 - 48 V | | |

| MDS – | XXX | A | D | 701 | □□ |
|---|---|---|---|---|---|
| **Delta Medical Power Supply** | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Product Type** | **Output Voltage** | **CC Code** [1] |
| | 350 - 350 W | A - Family A | D - Enclosed | 701 - +3.3 V, +5 V, +5 $V_{SB}$, +12 $V_1$, +12 $V_2$, -12 V, -5 V | |

1) Refer to technical datasheet

# Product Selection Guide

New products are frequently introduced. Please visit www.DeltaPSU.com for latest product updates.

| Product Type | Series | Model Name | CC Code | Output Voltage | Output Current | Output Power | Page |
|---|---|---|---|---|---|---|---|
| **Adapter** | **MDS** | MDS-005AAS05 | AU | 5 V | 1.0 A | 5 W | 35 |
| | | MDS-005AAS05 | AV | | 1.0 A | 5 W | |
| | | MDS-005AAS05 | BU | | 1.0 A | 5 W | |
| | | MDS-005AAS05 | BV | | 1.0 A | 5 W | |
| | | MDS-005AAS05 | CU | | 1.0 A | 5 W | |
| | | MDS-005AAS05 | CV | | 1.0 A | 5 W | |
| | | MDS-030AAC05 | AA | | 3.0 A | 15 W | |
| | | MDS-030AAC05 | AB | | 3.0 A | 15 W | |
| | | MDS-030AAC05 | AC | | 3.0 A | 15 W | |
| | | MDS-030AAC12 | AA | 12 V | 2.0 A | 24 W | 36 |
| | | MDS-030AAC12 | AB | | 2.0 A | 24 W | |
| | | MDS-030AAC12 | BB | | 2.0 A | 24 W | |
| | | MDS-060BAS12 | AB | | 5.0 A | 60 W | |
| | | MDS-080AAS12 | AB | | 6.67 A | 80 W | |
| | | MDS-150AAS12 | BA | | 10.0 A | 120 W | |
| | | MDS-030AAC15 | AA | 15 V | 2.0 A | 30 W | 37 |
| | | MDS-030AAC15 | AB | | 2.0 A | 30 W | |
| | | MDS-030AAC15 | AC | | 2.0 A | 30 W | |
| | | MDS-090AAS15 | BA | | 6.0 A | 90 W | |
| | | MDS-090AAS15 | BE | | 6.0 A | 90 W | |
| | | MDS-090AAS15 | FA | | 6.0 A | 90 W | |
| | | MDS-090AAS15 | FE | | 6.0 A | 90 W | |
| | | MDS-060BAS19 | AA | 19 V | 3.15 A | 60 W | |
| | | MDS-090AAS19 | BA | | 4.73 A | 90 W | 38 |
| | | MDS-090AAS19 | BE | | 4.73 A | 90 W | |
| | | MDS-090AAS19 | FA | | 4.73 A | 90 W | |
| | | MDS-090AAS19 | FE | | 4.73 A | 90 W | |
| | | MDS-150AAS19 | BA | | 7.89 A | 150 W | |
| | | MDS-150AAS19 | FA | | 7.89 A | 150 W | |
| | | MDS-150CAB19 | AA | | 7.9 A | 150 W | |

## Model Numbering

| | | | | | | CC Code | |
|---|---|---|---|---|---|---|---|
| **MDS –** | **XXX** | **□** | **A** | **S** | **□** | **□** | **□** |
| **Delta Medical Power Supply** | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Product Type** | **No. of Output** | **Output Voltage** | **Input Connector Type** | **Refer to technical datasheet** |
| MDS-005AAS series | 005 - 5 W | A - Family A | A - Adapter | S - Single Output | 05 - 5 V | A - CN<br>B - US<br>C - EU | |
| MDS-060BAS series | 060 - 60 W | B - Family B | | | 12 -12 V<br>19 - 19 V<br>24 - 24 V | A - C8 | |
| MDS-080AAS series | 080 - 80 W | A - Family A | | | 12 -12 V | | |

| **MDS –** | **XXX** | **AAC** | **□** | **□□** |
|---|---|---|---|---|
| **Delta Medical Power Supply** | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Output Voltage** | **CC Code [1]** |
| MDS-030AAC series | 030 - 30 W | | 05 - 5 V<br>12 - 12 V<br>15 - 15 V<br>24 - 24 V | |

| **MDS –** | **XXX** | **C** | **A** | **B** | **19** | **□□** |
|---|---|---|---|---|---|---|
| **Delta Medical Power Supply** | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Product Type** | **Input Connector Type** | **Output Voltage** | **CC Code [1]** |
| | 150 - 150 W | C - Family C | A - Adapter | B - Class I C6 | 19 - 19 V | |

1) Refer to technical datasheet

New products are frequently introduced. Please visit www.DeltaPSU.com for latest product updates.

| Product Type | Series | Model Name | CC Code | Output Voltage | Output Current | Output Power | Page |
|---|---|---|---|---|---|---|---|
| **Adapter** | **MDS** | MDS-030AAC24 | AA | 24 V | 1.25 A | 30 W | 39 |
| | | MDS-030AAC24 | AC | | 1.25 A | 30 W | |
| | | MDS-060BAS24 | AG | | 2.5 A | 60 W | |
| | | MDS-090AAS24 | BA | | 3.75 A | 90 W | |
| | | MDS-090AAS24 | BE | | 3.75 A | 90 W | |
| | | MDS-090AAS24 | FA | | 3.75 A | 90 W | |
| | | MDS-090AAS24 | FE | | 3.75 A | 90 W | |
| | | MDS-090BAS24 | AB | | 3.75 A | 90 W | 40 |
| | | MDS-150AAS24 | BA | | 6.25 A | 150 W | |
| | | MDS-150AAS24 | BE | | 6.25 A | 150 W | |
| | | MDS-150AAS24 | FA | | 6.25 A | 150 W | |
| | **MEA** | MEA-065A12C | A-A | 12 V | 5.0 A | 60 W | 41 |
| | | MEA-065A12C | 6-A | | 5.0 A | 60 W | |
| | | MEA-090A12C | V-A | | 6.75 A | 81 W | |
| | | MEA-065A15C | A-A | 15 V | 4.33 A | 65 W | |
| | | MEA-090A15C | V-A | | 6.0 A | 90 W | |
| | | MEA-065A19C | A-A | 19 V | 3.42 A | 65 W | 42 |
| | | MEA-090A19C | V-A | | 4.74 A | 90 W | |
| | | MEA-065A24C | A-A | 24 V | 2.71 A | 65 W | |
| | | MEA-065A24C | 6-A | | 2.71 A | 65 W | |
| | | MEA-090A24C | V-A | | 3.75 A | 90 W | |
| | | MEA-250A24C | H-A | | 10.42 A | 250 W | |

## Model Numbering

| MDS – | XXX | □ | A | S | □ | □□ |
|---|---|---|---|---|---|---|
| **Delta Medical Power Supply** | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Product Type** | **No. of Output** | **Output Voltage** | **CC Code [1]** |
| MDS-090AAS series | 090 - 90 W | A - Family A | A - Adapter | S - Single Output | 15 - 15 V<br>19 - 19 V<br>24 - 24 V | |
| MDS-090BAS series | 090 - 90 W | B - Family B | | | 24 - 24 V | |
| MDS-150AAS series | 150 - 150 W | A - Family A | | | 12 - 12 V<br>19 - 19 V<br>24 - 24 V | |

| | | | | | | CC Code [1] | | |
|---|---|---|---|---|---|---|---|---|
| **ME** | **A –** | **XXX** | **A** | **□** | **C** | **□** | **-** | **A** |
| **Delta Medical Power Supply** | A - Desktop Adapter | **Max power wattage in the product series. May be lower at some conditions.** | **Family Code** | **Output Voltage** | **Input Connector Type** | **Output Plug Spec** | Delta Standard | **Output Plug Type** |
| | | 065 - 65 W | A - Family A | 12 - 12 V<br>15 - 15 V<br>19 - 19 V<br>24 - 24 V | C - C14 | A - Tuning Fork: 5.5 x 2.5 x 10 mm, 180°, 1.2 m<br>6 - 4-pin DIN [2] | | A - Tuning Fork / DIN / Other |
| | | 090 - 90 W | | | | V - 5.5 x 2.5 x 11 mm, 90°, 1.2 m | | |
| | | 250 - 250 W | | 24 - 24 V | | H - 6-pin mini-fit: 1.5 m | | |

1) Refer to technical datasheet
2) 12 V and 24 V model

# Configurable Power Supplies

## MEG-A

Configurable power supply with flexible modular design and adjustable output voltage range from 2-60 V

**Power Range:** 700-3,000 W

## Applications

X-Ray

CT Scan

IVD

Ultrasound

Da Vinci Robot

# MEG-A (2 V - 60 V)

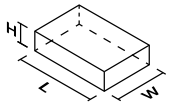
- Compact size and High Power Density
- 2 × MOPP isolation
- Output selectable from 2 $V_{DC}$ to 60 $V_{DC}$
- Analog Voltage Trimming
- 3 Slots Modules Configurable
- Current sharing for single slot modules
- Compliant with IEC 60601-1-2 Ed. 4 requirements

## Applications

X-Ray | CT Scan | IVD | Ultrasound | Da Vinci Robot

| Output | | MEG-700A3 | MEG-1K2A4 |
|---|---|---|---|
| Output Slots | | 3 Slots | 4 Slots |
| Output Power | | 700 W | 1,200 W |
| Line Regulation | | ± 0.5% | |
| Load Regulation | | ± 1% | |
| Ripple & Noise | | < 1% pk-pk Vrated or 100 mV, which is larger | |
| Hold-up Time | | 12 ms @ rated load, with nominal input range | |
| Dynamic Response | | ± 5% @ with 50-100% load change | |
| Remote Sense | | Up to 500 mV compensation for voltage drop across | |
| **Output Module** | | | |
| Output Numbers | | Single Output / Dual Output | |
| Output Voltage | | Single Output: Single Slot: 2 V - 60 V; Triple Slot: 8 V - 60 V<br>Dual Output: Single Slot: 3.3-30 V | |
| Output Power (Max) | | Single Output: Single Slot: 300 W; Triple Slot: 700 W<br>Dual Output: Single Slot: 180 W | Single Output: Single Slot: 300 W; Triple Slot: 1200 W<br>Dual Output: Single Slot: 240 W |
| **Input** | | | |
| Input Voltage Range | | 90-264 $V_{AC}$ | |
| Input Frequency | | 47-63 Hz | |
| Input Current | | < 8.5 A | |
| Input Surge Voltage (Max) | | 300 $V_{AC}$ for 100 ms | |
| Efficiency | 115 $V_{AC}$ | 91.0% | 90.0% |
| | 230 $V_{AC}$ | 93.0% | |
| Inrush Current (Cold Start) | 230 $V_{AC}$ | 40 A | |
| Power Factor | 115 $V_{AC}$ | > 0.95 @ full load | |
| | 230 $V_{AC}$ | | |
| Patient Leakage Current [1] | | < 0.1 mA @ NC, < 0.5 mA @ SFC | |
| Earth Leakage Current [1] | | < 0.3 mA @ NC, < 1 mA @ SFC | |
| **Mechanical** | | | |
| Dimensions (L × W × H) | mm | 215.9 × 88.9 × 41.5 | 254 × 88.9 × 40.5 |
| | inch | 8.50 × 3.50 × 1.63 | 10.00 × 3.50 × 1.59 |
| Unit Weight | kg | 0.80 | 1.30 |
| | lb | 1.76 | 2.86 |
| MTBF [2] | | 500,000 hrs | |
| EMC & Emissions | | EN 55011/EN 55032, FCC Title 47: Class B | |
| **Environment** | | | |
| Operating Temperature [3] | | -20°C to +70°C | |
| Storage Temperature | | -40°C to +85°C | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | |
| Operating Altitude | | 0 to 5,000 m (0 to 16,400 ft) | |
| **Medical Rating** | | | |
| Float Rating | | B | |
| MOPP | | 2 × MOPP | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) For MEG-700A3, MTBF as per Telcordia SR-332 (I/P: 160 $V_{AC}$, Ta: 35°C).
   For MEG-1K2A4, MTBF as per Telcordia SR-332 (I/P: 160 $V_{AC}$, O/P: 1,200 W, Ta: 35°C).
   For MEG-2K1A6, MTBF as per Telcordia SR-332 (I/P: 160 $V_{AC}$, O/P: 1,800 W, Ta: 35°C).
   For MEG-3K0A9, MTBF as per Telcordia SR-332 (I/P: 180 $V_{AC}$, Ta: 35°C)
3) Refer power de-rating in the product datasheet.

| MEG-2K1A6 | MEG-3K0A9 |
|---|---|
| 6 Slots | 9 Slots |
| 2,100 W | 3,000 W |
| ± 0.5% | |
| ± 1% | |
| < 1% pk-pk Vrated or 100 mV, which is larger | |
| 12 ms @ rated load, with nominal input range | |
| ± 5% @ with 50-100% load change | |
| Up to 500 mV compensation for voltage drop across | |
| | |
| Single Output / Dual Output | |
| Single Output: Single Slot: 2 V - 60 V; Triple Slot: 8 V - 60 V<br>Dual Output: Single Slot: 3.3 V - 30 V | |
| Single Output: Single Slot: 300 W; Triple Slot: 1200 W<br>Dual Output: Single Slot: 240 W | |
| | |
| 90-264 $V_{AC}$ | |
| 47-63 Hz | |
| < 15 A | < 20 A |
| 300 $V_{AC}$ for 100 ms | |
| 90.0% | |
| 93.0% | |
| 40 A | |
| > 0.95 @ full load | |
| < 0.1 mA @ NC, < 0.5 mA @ SFC | |
| < 0.3 mA @ NC, < 1 mA @ SFC | < 0.4 mA @ NC, < 1 mA @ SFC |
| | |
| 254 × 127 × 40.5 | 254 × 181 × 40.5 |
| 10.00 × 5.00 × 1.59 | 10.00 × 7.13 × 1.59 |
| 2.00 | 2.50 |
| 4.41 | 5.51 |
| 500,000 hrs | |
| EN 55011/EN 55032, FCC Title 47: Class B | |
| | |
| -20°C to +70°C | |
| -40°C to +85°C | |
| 5 to 95% RH (Non-Condensing) | |
| 0 to 5,000 m (0 to 16,400 ft) | |
| | |
| B | |
| 2 × MOPP | |

# Enclosed Power Supplies

## MDS

General use for medical application

**Power Range:** 200-400 W

## MEB

High power output with built-in fan cooling

**Power Range:** 500-1,200 W

## Applications

Dental | Dialysis | IVD | Patient Bed | Respiratory | Ultrasound | Aesthetic | X-Ray

# MDS (12 V, 18 V, 24 V, 48 V)

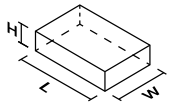
- Universal AC input voltage range
- Safety approvals for medical and IT applications
- Compliant with IEC 60601-1-2 Ed. 4 requirements
- Class B Conducted and Radiated EMI
- Suitable for type BF medical product
- 2 × MOPP isolation
- Power Good signal

## Applications

Dental | Dialysis | IVD | Patient Bed | Respiratory

| Output | | MDS-200ADB12 AA | MDS-250ADB12 A☐ | MDS-300ADB12 AA | MDS-400ADB12 AA | MDS-300ADB18 A☐ |
|---|---|---|---|---|---|---|
| Output Voltage | | 12 V | 12 V | 12 V | 12 V | 18 V |
| Output Current (Max) | | 9.17 A (Convection)<br>16.67 A (with 8.5 CFM Forced Air) | 11.25 A (Convection)<br>20.84 A (with 10 CFM Forced Air) | 15.83 A (Convection)<br>25.0 A (with 10 CFM Forced Air) | 33.33 A (with 20 CFM Forced Air) | 10.55 A (Convection)<br>16.66 A (with 10 CFM Forced Air) |
| Output Power | | 110 W (Convection)<br>200 W (with 8.5 CFM Forced Air) | 135 W (Convection)<br>250 W (with 10 CFM Forced Air) | 190 W (Convection)<br>300 W (with 10 CFM Forced Air) | 400 W (with 20 CFM Forced Air) | 190 W (Convection)<br>300 W (with 10 CFM Forced Air) |
| Load Regulation | | ± 1% | | | | |
| Ripple & Noise | | 1% typ. pk-pk Vrated @ full load | | | 150 mV pk-pk Vrated @ full load | 1% typ. pk-pk Vrated @ full load |
| **Input** | | | | | | |
| Input Voltage Range | | 90-264 $V_{AC}$ | | | | |
| Input Frequency | | 47-63 Hz | | | | |
| Efficiency | 115 $V_{AC}$ (60 Hz) | 91.0% typ. | 89.45% typ | 91.3% typ. | 89.5% typ. | 92.5% typ. |
| | 230 $V_{AC}$ (50 Hz) | 93.0% typ. | 90.5% typ. | 92.6% typ. | 91.5% typ. | 93.5% typ. |
| Leakage Current [1] | 264 $V_{AC}$ | Input-PE:<br>< 0.1 mA @ NC, < 0.3 mA @ SFC<br>Output-PE:<br>< 0.1 mA @ NC, < 0.5 mA @ SFC | | | | |
| **Mechanical** | | | | | | |
| Dimensions (L × W × H) | mm | 113.9 × 64.7 × 44.7 | 140 × 88.9 × 44.4 | 140 × 88.9 × 44.4 | 140 × 88.9 × 44.4 | 140 × 88.9 × 44.4 |
| | inch | 4.48 × 2.55 × 1.76 | 5.51 × 3.50 × 1.75 | 5.51 × 3.50 × 1.75 | 5.51 × 3.50 × 1.75 | 5.51 × 3.50 × 1.75 |
| Unit Weight | kg | 0.35 | 0.61 | 0.61 | 0.61 | 0.61 |
| | lb | 0.76 | 1.35 | 1.35 | 1.35 | 1.35 |
| MTBF [2] | | 800,000 hrs | 500,000 hrs | 800,000 hrs | 500,000 hrs | 800,000 hrs |
| EMC & Emissions | | EN 55011/EN 55032, FCC Title 47: Class B | | | | |
| **Environment** | | | | | | |
| Operating Temperature [3] | | -10°C to +70°C | | | | |
| Storage Temperature | | -40°C to +85°C | | | | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | | | | |
| Operating Altitude | | 0 to 5,000 m (0 to 16,400 ft) | | | | |
| **Medical Rating** | | | | | | |
| Float Rating | | BF | | | | |
| MOPP | | 2 × MOPP | | | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load, Ta: 35°C).
For MDS-400ADB12 A☐, MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load with 20 CFM Forced Air, Ta: 35°C).
For MDS-400ADB24 A☐, MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load with 10CFM Forced Air, Ta: 35°C).
3) Refer power de-rating in the product datasheet.

| MDS-200ADB24 AA | MDS-250ADB24 AA | MDS-300ADB24 A□ | MDS-400ADB24 A□ | MDS-300ADB48 A□ |
|---|---|---|---|---|
| 24 V | 24 V | 24 V | 24 V | 48 V |
| 5.0 A (Convection)<br>8.33 A (with 5.5 CFM Forced Air) | 5.62 A (Convection)<br>10.41 A (with 10 CFM Forced Air) | 8.75 A (Convection)<br>12.5 A (with 10 CFM Forced Air) | 16.67 A (with 16 CFM Forced Air) | 4.375 A (Convection)<br>6.25 A (with 10 CFM Forced Air) |
| 120 W (Convection)<br>200 W (with 5.5 CFM Forced Air) | 135 W (Convection)<br>250 W (with 10 CFM Forced Air) | 210 W (Convection)<br>300 W (with 10 CFM Forced Air) | 400 W (with 16 CFM Forced Air) | 210 W (Convection)<br>300 W (with 10 CFM Forced Air) |
| ± 1% | | | | |
| 1% typ. pk-pk Vrated @ full load | | | | |
| | | | | |
| 90-264 $V_{AC}$ | | | | |
| 47-63 Hz | | | | |
| 92.0% typ. | 91.85% typ. | 93.0% typ. | 92.0% typ. | 92.5% typ. |
| 93.0% typ. | 92.98% typ. | 94.0% typ. | 93.0% typ. | 93.5% typ. |
| Input-PE:<br>< 0.1 mA @ NC, < 0.3 mA @ SFC<br>Output-PE:<br>< 0.1 mA @ NC, < 0.5 mA @ SFC | | | | |
| | | | | |
| 113.9 × 64.7 × 44.7 | 140 × 88.9 × 44.4 | 140 × 88.9 × 44.4 | 140 × 88.9 × 44.4 | 140 × 88.9 × 44.4 |
| 4.48 × 2.55 × 1.76 | 5.51 × 3.50 × 1.75 | 5.51 × 3.50 × 1.75 | 5.51 × 3.50 × 1.75 | 5.51 × 3.50 × 1.75 |
| 0.35 | 0.61 | 0.61 | 0.61 | 0.61 |
| 0.76 | 1.35 | 1.35 | 1.35 | 1.35 |
| 800,000 hrs | 500,000 hrs | 800,000 hrs | 500,000 hrs | 800,000 hrs |
| EN 55011/EN 55032, FCC Title 47: Class B | | | | |
| | | | | |
| -10°C to +70°C | | | | |
| -40°C to +85°C | | | | |
| 5 to 95% RH (Non-Condensing) | | | | |
| 0 to 5,000 m (0 to 16,400 ft) | | | | |
| | | | | |
| BF | | | | |
| 2 × MOPP | | | | |

# MEB (12 V, 24 V, 48 V)

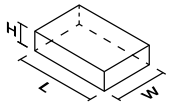
- High Power Density
- 2 × MOPP Isolation
- Safety Approvals to IEC 60601-1 Ed. 2 & 3.1
- Suitable for Type BF Medical Products
- Full Power up to 50°C Ambient
- Class B Conducted and Radiated EMI

## Applications

Ultrasound | IVD | Aesthetic | Dialysis | X-Ray

| | | NEW | | | |
|---|---|---|---|---|---|
| **Output** | | **MEB-750A12□ AAA** | **MEB-500A24F AA** | **MEB-750A24□ AAA** | **MEB-750A48□ AAA** |
| Output Voltage | | 12 V | 24 V | 24 V | 48 V |
| Output Current (Max) | | 58.4 A | 21.0 A | 31.25 A | 15.63 A |
| Output Power | | 700 W | 504 W | 750 W | 750 W |
| Load Regulation | | < 2% | < 150mV | < 2% | < 2% |
| Ripple & Noise | | 1% pk-pk Vrated @ rated load | < 300mVpp @ 0°C to +50°C | 1% pk-pk Vrated @ rated load | |
| **Input** | | | | | |
| Input Voltage Range | | 85-264 $V_{AC}$ | 90-264 $V_{AC}$ | 85-264 $V_{AC}$ | |
| Input Frequency | | 47-63 Hz | | | |
| Efficiency | 230 $V_{AC}$ (50 Hz) | 90.5% typ. | 92.0% typ. | 94.0% typ. | |
| Leakage Current [1] | 264 $V_{AC}$ | Input-PE:<br>0.3 mA typ. @ NC,<br>1 mA typ. @ SFC<br>Output-PE:<br>0.1 mA typ. @ NC,<br>0.5 mA typ. @ SFC | Input-PE:<br>< 0.1 mA @ NC,<br>< 0.3 mA @ SFC<br>Output-PE:<br>< 0.1 mA @ NC,<br>< 0.5 mA @ SFC | Input-PE:<br>0.3 mA typ. @ NC,<br>1 mA typ. @ SFC<br>Output-PE:<br>0.1 mA typ. @ NC,<br>0.5 mA typ. @ SFC | |
| **Mechanical** | | | | | |
| Dimensions (L × W × H) | mm | 177.8 × 101.6 × 40 | 165.3 × 85.2 × 41 | 177.8 × 101.6 × 40 | 177.8 × 101.6 × 40 |
| | inch | 7.00 × 4.00 × 1.57 | 6.50 × 3.35 × 1.61 | 7.00 × 4.00 × 1.57 | 7.00 × 4.00 × 1.57 |
| Unit Weight | kg | 1.10 | 0.66 | 1.10 | 1.10 |
| | lb | 2.40 | 1.46 | 2.40 | 2.40 |
| MTBF [2] | | > 500,000 hrs | > 700,000 hrs | > 500,000 hrs | |
| EMC & Emissions | | EN 55011, EN 55032, FCC Title 47: Class B | EN 55011 & Compliant with EN 55032, FCC Title 47: Class B | EN 55011, EN 55032, FCC Title 47: Class B | |
| **Environment** | | | | | |
| Operating Temperature [3] | | -20°C to +70°C | | | |
| Storage Temperature | | -40°C to +80°C | -30°C to +80°C | -40°C to +80°C | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | 20 to 90% RH (Non-Condensing) | 5 to 95% RH (Non-Condensing) | |
| Operating Altitude | | 0 to 5,000 m (0 to 16,400 ft) | IEC 60601-1:<br>0 to 3,000 m (0 to 9,840 ft)<br>IEC 60950-1 & IEC 62368-1:<br>0 to 5,000 m (0 to 16,400 ft) | 0 to 5,000 m (0 to 16,400 ft) | |
| **Medical Rating** | | | | | |
| Float Rating | | BF | | | |
| MOPP | | 2 × MOPP | | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MEB-500A24F, MTBF as per Telcordia SR-332 (: I/P: 115 $V_{AC}$, O/P: 100% load, Ta: 25°C).
MEB-750A12□, MEB-750A24□ and MEB-750A48□, MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load, Ta: 35°C).
3) Refer power de-rating in the product datasheet.

# MEB (24 V, 42 V, 48 V)

- Up to 1200 W in 5" × 8.03" × 1.59" package
- Full power from 90 $V_{AC}$ to 264 $V_{AC}$, up to 50°C ambient
- 2 × MOPP isolation, Suitable for type BF medical products
- Current sharing and 5 V / 2 A standby output
- PMBus Ver 1.3 supported
- Intelligent fan speed control
- Class B Conducted and Radiated EMI

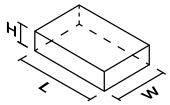
## Applications

Ultrasound | IVD | Aesthetic | Dialysis | X-Ray



| Output | | MEB-1K2A24T ABA | MEB-1K2A42T ABA | MEB-1K2A48T ABA |
|---|---|---|---|---|
| Output Voltage | | 24 V | 42 V | 48 V |
| Output Current (Max) | | 50.0 A | 28.5 A | 25.0 A |
| Output Power | | 1200 W | 1200 W | 1200 W |
| Load Regulation | | 2% | | |
| Ripple & Noise | | 1% typ. pk-pk Vrated @ rated load | | |
| **Input** | | | | |
| Input Voltage Range | | 85-264 $V_{AC}$ | | |
| Input Frequency | | 47-63 Hz | | |
| Efficiency | 115 $V_{AC}$ (60 Hz) | 90.0% typ. | 90.9% typ. | 91.5% typ. |
| | 230 $V_{AC}$ (50 Hz) | 93.0% typ. | 93.2% typ. | 94.0% typ. |
| Leakage Current [1] | 264 $V_{AC}$ | Input-PE:<br>< 0.3 mA @ NC,<br>< 1 mA @ SFC<br>Output-PE:<br>< 0.1 mA @ NC,<br>< 0.5 mA @ SFC | | |
| **Mechanical** | | | | |
| Dimensions (L × W × H) | mm | 204 × 127 × 40.5 | 204 × 127 × 40.5 | 204 × 127 × 40.5 |
| | inch | 8.03 × 5.00 × 1.59 | 8.03 × 5.00 × 1.59 | 8.03 × 5.00 × 1.59 |
| Unit Weight | kg | 1.50 | 1.50 | 1.50 |
| | lb | 3.30 | 3.30 | 3.30 |
| MTBF [2] | | > 500,000 hrs | | |
| EMC & Emissions | | EN 55011/EN 55032, FCC Title 47: Class B | | |
| **Environment** | | | | |
| Operating Temperature [3] | | -20°C to +70°C | | |
| Storage Temperature | | -40°C to +85°C | | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | | |
| Operating Altitude | | 0 to 5,000 m (0 to 16,400 ft) | | |
| **Medical Rating** | | | | |
| Float Rating | | BF | | |
| MOPP | | 2 × MOPP | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load, Ta: 35°C).
3) Refer power de-rating in the product datasheet.

# Open Frame Power Supplies

## MDS

Standard footprint offers versatile output and wattage

**Power Range:** 40-400 W

## MEU

U-Frame outline offers convection or forced air cooling

**Power Range:** 600-650 W

## MEP

High power density in a small footprint and low profile. Applicable to Class I/II applications

**Power Range:** 120-200 W

## Applications

Dental

Medical Display

Respiratory

Patient Bed

IVD

Ultrasound

Dialysis

# MDS (12 V, 15 V)

- Universal AC input voltage range
- Safety approvals for medical and IT applications
- Over-Voltage/Load/Temperature & Short Circuit Protections
- Low touch current (< 0.1 mA Normal & < 0.3 mA Single Fault)
- Compliant with IEC 60601-1-2 Ed. 4 requirements
- 2 × MOPP isolation
- High MTBF

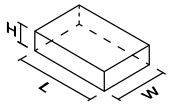
## Applications

Medical Display

Respiratory

| Output | | MDS-040APS12B A | MDS-065APS12B A | MDS-100APS12B A | MDS-100BPS12B A |
|---|---|---|---|---|---|
| Output Voltage | | 12 V | 12 V | 12 V | 12 V |
| Output Current (Max) | | 3.33 A | 5.42 A | 8.33 A | 6.67 A (Convection)<br>8.33 A (with 10 CFM Forced Air) |
| Output Power | | 40 W | 65 W | 100 W | 80 W (Convection)<br>100 W (With 10 CFM Forced Air) |
| Load Regulation | | ± 1% | | | |
| Ripple & Noise | | 22.8 mV pk-pk @ full load | 21.6 mV pk-pk @ full load | 25 mV pk-pk @ full load | 76 mV pk-pk @ full load |
| **Input** | | | | | |
| Input Voltage Range | | 90-264 $V_{AC}$ | | | |
| Input Frequency | | 47-63 Hz | | | |
| Efficiency | 115 $V_{AC}$ | 86.5% typ. | 87.5% typ. | 89.2% typ. | 87.0% typ. |
| | 230 $V_{AC}$ | | | | |
| Touch Current [1] | 264 $V_{AC}$ | < 0.1 mA @ NC, < 0.3 mA @ SFC | | | |
| Leakage Current [1] | 264 $V_{AC}$ | - | | < 0.15 mA @ NC, < 0.3 mA @ SFC | |
| **Mechanical** | | | | | |
| Dimensions (L × W × H) | mm | 76.2 × 50.8 × 23 | 101.6 × 50.8 × 30 | 127 × 76.2 × 31 | 101.6 × 50.8 × 31.8 |
| | inch | 3.00 × 2.00 × 0.91 | 4.00 × 2.00 × 1.18 | 5.00 × 3.00 × 1.22 | 4.00 × 2.00 × 1.25 |
| Unit Weight | kg | 0.08 | 0.13 | 0.21 | 0.15 |
| | lb | 0.18 | 0.29 | 0.46 | 0.33 |
| MTBF [2] | | 3,000,000 hrs | 2,500,000 hrs | 3,000,000 hrs | 1,000,000 hrs |
| EMC & Emissions | | EN 55011/EN 55032, FCC Title 47: Class B | | | |
| **Environment** | | | | | |
| Operating Temperature [3] | | -10°C to +70°C | | | |
| Storage Temperature | | -40°C to +85°C | | | |
| Operating Humidity | | 10 to 95% RH (Non-Condensing) | 5 to 95% RH (Non-Condensing) | | 10 to 95% RH (Non-Condensing) |
| Operating Altitude | | 0 to 3,000 m (0 to 9,840 ft) | | | 0 to 5,000 m (0 to 16,400 ft) |
| **Medical Rating** | | | | | |
| Float Rating | | BF | | | |
| MOPP | | 2 × MOPP | | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332.
3) Refer power de-rating in the product datasheet.

| MDS-040APS15B A | MDS-065APS15B A | MDS-100APS15B A | MDS-100BPS15B A |
|---|---|---|---|
| 15 V | 15 V | 15 V | 15 V |
| 2.67 A | 4.2 A | 6.67 A | 5.3 A (Convection)<br>6.7 A (with 10 CFM Forced Air) |
| 40 W | 63 W | 100 W | 80 W (Convection)<br>100 W (with 10 CFM Forced Air) |
| ± 1% | | | |
| 16.4 mV pk-pk @ full load | 18 mV pk-pk @ full load | 35.2 mV pk-pk @ full load | 51.2 mV pk-pk @ full load |
| | | | |
| 90-264 $V_{AC}$ | | | |
| 47-63 Hz | | | |
| 87.2% typ. | 89.2% typ. | 90.6% typ. | 88.2% typ. |
| < 0.1 mA @ NC, < 0.3 mA @ SFC | | | |
| - | | < 0.15 mA @ NC, < 0.3 mA @ SFC | |
| | | | |
| 76.2 × 50.8 × 23 | 101.6 × 50.8 × 30 | 127 × 76.2 × 31 | 101.6 × 50.8 × 31.8 |
| 3.00 × 2.00 × 0.91 | 4.00 × 2.00 × 1.18 | 5.00 × 3.00 × 1.22 | 4.00 × 2.00 × 1.25 |
| 0.08 | 0.13 | 0.21 | 0.15 |
| 0.18 | 0.29 | 0.46 | 0.33 |
| 3,000,000 hrs | 2,500,000 hrs | 3,000,000 hrs | 1,000,000 hrs |
| EN 55011/EN 55032, FCC Title 47: Class B | | | |
| | | | |
| -10°C to +70°C | | | |
| -40°C to +85°C | | | |
| 10 to 95% RH (Non-Condensing) | 5 to 95% RH (Non-Condensing) | | 10 to 95% RH (Non-Condensing) |
| 0 to 3,000 m (0 to 9,840 ft) | | | 0 to 5,000 m (0 to 16,400 ft) |
| | | | |
| BF | | | |
| 2 × MOPP | | | |

# MDS (18 V, 24 V)

- Universal AC input voltage range
- Safety approvals for medical and IT applications
- Over-Voltage/Load/Temperature & Short Circuit Protections
- Low touch current (< 0.1 mA Normal & < 0.3 mA Single Fault)
- Compliant with IEC 60601-1-2 Ed. 4 requirements
- 2 × MOPP isolation
- High MTBF

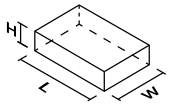
## Applications

Medical Display

Respiratory

| Output | | MDS-040APS18B A | MDS-065APS18B A | MDS-100APS18B A | MDS-100BPS18B A |
|---|---|---|---|---|---|
| Output Voltage | | 18 V | 18 V | 18 V | 18 V |
| Output Current (Max) | | 2.22 A | 3.61 A | 5.55 A | 4.4 A (Convection)<br>5.5 A (with 10 CFM Forced Air) |
| Output Power | | 40 W | 65 W | 100 W | 80 W (Convection)<br>100 W (with 10 CFM Forced Air) |
| Load Regulation | | ± 1% | | | |
| Ripple & Noise | | 14.8 mV pk-pk @ full load | 20.8 mV pk-pk @ full load | 28.8 mV pk-pk @ full load | 88 mV pk-pk @ full load |
| **Input** | | | | | |
| Input Voltage Range | | 90-264 $V_{AC}$ | | | |
| Input Frequency | | 47-63 Hz | | | |
| Efficiency | 115 $V_{AC}$ | 86.9% typ. | 87.7% typ. | 91.24% typ. | 87.6% typ. |
| | 230 $V_{AC}$ | | | | |
| Touch Current [1] | 264 $V_{AC}$ | < 0.1 mA @ NC, < 0.3 mA @ SFC | | | |
| Leakage Current [1] | 264 $V_{AC}$ | - | | < 0.15 mA @ NC, < 0.3 mA @ SFC | |
| **Mechanical** | | | | | |
| Dimensions (L × W × H) | mm | 76.2 × 50.8 × 23 | 101.6 × 50.8 × 30 | 127 × 76.2 × 31 | 101.6 × 50.8 × 31.8 |
| | inch | 3.00 × 2.00 × 0.91 | 4.00 × 2.00 × 1.18 | 5.00 × 3.00 × 1.22 | 4.00 × 2.00 × 1.25 |
| Unit Weight | kg | 0.08 | 0.13 | 0.21 | 0.15 |
| | lb | 0.18 | 0.29 | 0.46 | 0.33 |
| MTBF [2] | | 3,000,000 hrs | 2,500,000 hrs | 3,000,000 hrs | 1,000,000 hrs |
| EMC & Emissions | | EN 55011/EN 55032, FCC Title 47: Class B | | | |
| **Environment** | | | | | |
| Operating Temperature [3] | | -10°C to +70°C | | | |
| Storage Temperature | | -40°C to +85°C | | | |
| Operating Humidity | | 10 to 95% RH (Non-Condensing) | 5 to 95% RH (Non-Condensing) | | 10 to 95% RH (Non-Condensing) |
| Operating Altitude | | 0 to 3,000 m (0 to 9,840 ft) | | | 0 to 5,000 m (0 to 16,400 ft) |
| **Medical Rating** | | | | | |
| Float Rating | | BF | | | |
| MOPP | | 2 × MOPP | | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332.
3) Refer power de-rating in the product datasheet.

| MDS-040APS24B A | MDS-065APS24B A | MDS-100APS24B A | MDS-100BPS24B A |
|---|---|---|---|
| 24 V | 24 V | 24 V | 24 V |
| 1.67 A | 2.71 A | 4.17 A | 3.3 A (Convection)<br>4.2 A (with 10 CFM Forced Air) |
| 40 W | 65 W | 100 W | 80 W (Convection)<br>100 W (with 10 CFM Forced Air) |
| ± 1% | | | |
| 34 mV pk-pk @ full load | 32.8 mV pk-pk @ full load | 55.2 mV pk-pk @ full load | 58.4 mV pk-pk @ full load |
| | | | |
| 90-264 $V_{AC}$ | | | |
| 47-63 Hz | | | |
| 86.3% typ. | 88.4% typ. | 91.08% typ. | 89.3% typ. |
| < 0.1 mA @ NC, < 0.3 mA @ SFC | | | |
| - | | < 0.15 mA @ NC, < 0.3 mA @ SFC | |
| | | | |
| 76.2 × 50.8 × 23 | 101.6 × 50.8 × 30 | 127 × 76.2 × 31 | 101.6 × 50.8 × 31.8 |
| 3.00 × 2.00 × 0.91 | 4.00 × 2.00 × 1.18 | 5.00 × 3.00 × 1.22 | 4.00 × 2.00 × 1.25 |
| 0.08 | 0.13 | 0.21 | 0.15 |
| 0.18 | 0.29 | 0.46 | 0.33 |
| 3,000,000 hrs | 2,500,000 hrs | 3,000,000 hrs | 1,000,000 hrs |
| EN 55011/EN 55032, FCC Title 47: Class B | | | |
| | | | |
| -10°C to +70°C | | | |
| -40°C to +85°C | | | |
| 10 to 95% RH (Non-Condensing) | 5 to 95% RH (Non-Condensing) | | 10 to 95% RH (Non-Condensing) |
| 0 to 3,000 m (0 to 9,840 ft) | | | 0 to 5,000 m (0 to 16,400 ft) |
| | | | |
| BF | | | |
| 2 × MOPP | | | |

# MDS (12 V, 18 V, 24 V)

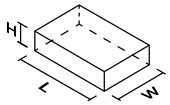
- Universal AC input voltage range
- Safety approvals for medical and IT applications
- Compliant with IEC 60601-1-2 Ed. 4 requirements
- Class B Conducted and Radiated EMI
- Enclosed cover design option available
- Suitable for type BF medical product
- 2 × MOPP isolation
- Power Good signal

## Applications

Dental | Dialysis | IVD | Patient Bed | Respiratory

| Output | | MDS-200APB12 AA | MDS-250APB12 A□ | MDS-300APB12 AA | MDS-400APB12 A□ |
|---|---|---|---|---|---|
| Output Voltage | | 12 V | 12 V | 12 V | 12 V |
| Output Current (Max) | | 10.83 A (Convection)<br>16.67 A (with 8.5 CFM Forced Air) | 12.5 A (Convection)<br>20.84 A (with 10 CFM Forced Air) | 18.33 A (Convection)<br>25.0 A (with 10 CFM Forced Air) | 16.67 A (Convection)<br>33.33 A (with 16 CFM Forced Air) |
| Output Power | | 130 W (Convection)<br>200 W (with 8.5 CFM Forced Air) | 150 W (Convection)<br>250 W (with 10 CFM Forced Air) | 220 W (Convection)<br>300 W (with 10 CFM Forced Air) | 200 W (Convection)<br>400 W (with 16 CFM Forced Air) |
| Load Regulation | | ± 2.5% | ± 1% | | |
| Ripple & Noise | | 1% typ. pk-pk Vrated @ full load | | | |
| **Input** | | | | | |
| Input Voltage Range | | 90-264 $V_{AC}$ | | | |
| Input Frequency | | 47-63 Hz | | | |
| Efficiency | 115 $V_{AC}$ (60 Hz) | 91.0% typ. | 89.45% typ. | 91.3% typ. | 89.5% typ. |
| | 230 $V_{AC}$ (50 Hz) | 93.0% typ. | 90.5% typ. | 92.6% typ. | 91.5% typ. |
| Leakage Current [1] | 264 $V_{AC}$ | Input-PE:<br>< 0.1 mA @ NC, < 0.3 mA @ SFC<br>Output-PE:<br>< 0.1 mA @ NC, < 0.5 mA @ SFC | | | |
| **Mechanical** | | | | | |
| Dimensions (L × W × H) | mm | 101.9 × 51.1 × 36.6 | 127.3 × 76.5 × 36.6 | 127.3 × 76.5 × 36.6 | 127.3 x 76.5 x 36.6 |
| | inch | 4.01 × 2.01 × 1.44 | 5.01 × 3.01 × 1.44 | 5.01 × 3.01 × 1.44 | 5.01 × 3.01 × 1.44 |
| Unit Weight | kg | 0.20 | 0.41 | 0.41 | 0.41 |
| | lb | 0.44 | 0.90 | 0.90 | 0.90 |
| MTBF [2] | | 800,000 hrs | 500,000 hrs | | |
| EMC & Emissions | | EN 55011/EN 55032, FCC Title 47: Class B | | | |
| **Environment** | | | | | |
| Operating Temperature [3] | | -10°C to +70°C | | | |
| Storage Temperature | | -40°C to +85°C | | | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | | | |
| Operating Altitude | | 0 to 5,000 m (0 to 16,400 ft) | | | |
| **Medical Rating** | | | | | |
| Float Rating | | BF | | | |
| MOPP | | 2 × MOPP | | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load for Convection, Ta: 35°C).
For MDS-400APB12 A□, MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load with 16 CFM Forced Air, Ta: 35°C).
For MDS-300APB18 A□, MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load for Convection, Ta: 35°C).
For MDS-400APB24 A□, MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load with 10 CFM Forced Air, Ta: 35°C).
3) Refer power de-rating in the product datasheet.

| MDS-300APB18 A□ | MDS-200APB24 AA | MDS-250APB24 A□ | MDS-300APB24 A□ | MDS-400APB24 A□ |
|---|---|---|---|---|
| 18 V | 24 V | 24 V | 24 V | 24 V |
| 12.22 A (Convection)<br>16.66 A (with 10 CFM Forced Air) | 5.83 A (Convection)<br>8.33 A (with 5.5 CFM Forced Air) | 6.25 A (Convection)<br>10.41 A (with 10 CFM Forced Air) | 10.0 A (Convection)<br>12.5 A (with 10 CFM Forced Air) | 16.66 A (with 10 CFM Forced Air) |
| 220 W (Convection)<br>300 W (with 10CFM Forced Air) | 140 W (Convection)<br>200 W (with 5.5 CFM Forced Air) | 150 W (Convection)<br>250 W (with 10 CFM Forced Air) | 240 W (Convection)<br>300 W (with 10 CFM Forced Air) | 400 W (with 10 CFM Forced Air) |
| ± 2.5% | | ± 1% | | |
| 1% typ. pk-pk Vrated @ full load | | | | |
| | | | | |
| 90-264 $V_{AC}$ | | | | |
| 47-63 Hz | | | | |
| 92.5% typ. | 92.0% typ. | 91.85% typ. | 93.0% typ. | 92.0% typ. |
| 93.5% typ. | 93.0% typ. | 92.98% typ. | 94.0% typ. | 93.0% typ. |
| Input-PE:<br>< 0.1 mA @ NC, < 0.3 mA @ SFC<br>Output-PE:<br>< 0.1 mA @ NC, < 0.5 mA @ SFC | | | | |
| | | | | |
| 127.3 × 76.5 × 36.6 | 101.9 × 51.1 × 36.6 | 127.3 × 76.5 × 36.6 | 127.3 × 76.5 × 36.6 | 127.3 x 76.5 x 36.6 |
| 5.01 × 3.01 × 1.44 | 4.01 × 2.01 × 1.44 | 5.01 × 3.01 × 1.44 | 5.01 × 3.01 × 1.44 | 5.01 × 3.01 × 1.44 |
| 0.41 | 0.20 | 0.41 | 0.41 | 0.41 |
| 0.90 | 0.44 | 0.90 | 0.90 | 0.90 |
| 800,000 hrs | | 500,000 hrs | 800,000 hrs | 500,000 hrs |
| EN 55011/EN 55032, FCC Title 47: Class B | | | | |
| | | | | |
| -10°C to +70°C | | | | |
| -40°C to +85°C | | | | |
| 5 to 95% RH (Non-Condensing) | | | | |
| 0 to 5,000 m (0 to 16,400 ft) | | | | |
| | | | | |
| BF | | | | |
| 2 × MOPP | | | | |

# MDS (36 V, 48 V)

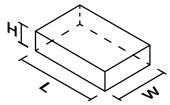
- Universal AC input voltage range
- Safety approvals for medical and IT applications
- Compliant with IEC 60601-1-2 Ed. 4 requirements
- Enclosed cover design option available
- Suitable for type BF medical product
- 2 × MOPP isolation
- Power Good signal

## Applications

Dental | Respiratory | Patient Bed

| Output | | MDS-200APB36 AA | MDS-300APB48 A□ |
|---|---|---|---|
| Output Voltage | | 36 V | 48 V |
| Output Current (Max) | | 3.33 A (Convection)<br>5.56 A (with 5.5 CFM Forced Air) | 5.0 A (Convection)<br>6.25 A (with 10 CFM Forced Air) |
| Output Power | | 120 W (Convection)<br>200 W (with 5.5 CFM Forced Air) | 240 W (Convection)<br>300 W (with 10 CFM Forced Air) |
| Load Regulation | | ± 2.5% | ± 1% |
| Ripple & Noise | | 1% typ. pk-pk Vrated @ full load | |
| **Input** | | | |
| Input Voltage Range | | 90-264 $V_{AC}$ | |
| Input Frequency | | 47-63 Hz | |
| Efficiency | 115 $V_{AC}$ (60 Hz) | 91.5% typ. | 92.5% typ. |
| | 230 $V_{AC}$ (50 Hz) | 94.0% typ. | 93.5% typ. |
| Leakage Current [1] | 264 $V_{AC}$ | Input-PE:<br>< 0.1 mA @ NC, < 0.3 mA @ SFC<br>Output-PE:<br>< 0.1 mA @ NC, < 0.5 mA @ SFC | |
| **Mechanical** | | | |
| Dimensions (L × W × H) | mm | 101.9 × 51.1 × 36.6 | 127.3 × 76.5 × 36.6 |
| | inch | 4.01 × 2.01 × 1.44 | 5.01 × 3.01 × 1.44 |
| Unit Weight | kg | 0.20 | 0.41 |
| | lb | 0.44 | 0.90 |
| MTBF [2] | | 800,000 hrs | |
| EMC & Emissions | | EN 55011/EN 55032, FCC Title 47: Class B | |
| **Environment** | | | |
| Operating Temperature [3] | | -10°C to +70°C | |
| Storage Temperature | | -40°C to +85°C | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | |
| Operating Altitude | | 0 to 5,000 m (0 to 16,400 ft) | |
| **Medical Rating** | | | |
| Float Rating | | BF | |
| MOPP | | 2 × MOPP | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load for Convection, Ta: 35°C).
3) Refer power de-rating in the product datasheet.

# MEU (12 V, 24 V, 48 V)

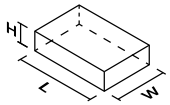
- Convection cooled
- Full Power up to 50°C Ambient
- 2 × MOPP isolation
- Suitable for type BF medical products
- Compliant with IEC 60601-1-2 Ed. 4 requirements
- PMBus Ver 1.3 supported (for MEU-600C☐T)
- Up to 500Khrs MTBF
- Normal and Reversed Option for Remote On/Off and Power Good Signal

## Applications

Patient Bed | IVD | Ultrasound | Dialysis

| Output | | MEU-650A12T AAA | MEU-600C24T AAA | MEU-650A24T AAA | MEU-600C48T AAA | MEU-650A48T AAA |
|---|---|---|---|---|---|---|
| Output Voltage | | 12 V | 24 V | 24 V | 48 V | 48 V |
| Output Current (Max) | | 33.4 A (Convection)<br>50.0 A (with 11.8 CFM Forced Air) | 25.0 A | 18.75 A (Convection)<br>27.1 A (with 6.9 CFM Forced Air) | 12.5 A | 9.375 A (Convection)<br>13.6 A (with 11.8 CFM Forced Air) |
| Output Power | | 400 W (Convection)<br>600 W (with 11.8 CFM Forced Air) | 600 W | 450 W (Convection)<br>650 W (with 6.9 CFM Forced Air) | 600 W | 450 W (Convection)<br>650 W (with 6.9 CFM Forced Air) |
| Load Regulation | | 2% | | | | |
| Ripple & Noise | | 1% typ. pk-pk Vrated @ rated load (400 W)<br>1.5% Vrated pk-pk @ rated load (600 W) | 1% typ. pk-pk Vrated @ rated load | 1% typ. pk-pk Vrated @ rated load (450 W)<br>1.5% Vrated pk-pk @ rated load (650 W) | 1% typ. pk-pk Vrated @ rated load | 1% typ. pk-pk Vrated @ rated load (450 W)<br>1.5% Vrated pk-pk @ rated load (650 W) |
| **Input** | | | | | | |
| Input Voltage Range | | 90-264 $V_{AC}$ | 85-264 $V_{AC}$ | 90-264 $V_{AC}$ | 85-264 $V_{AC}$ | 90-264 $V_{AC}$ |
| Input Frequency | | 47-63 Hz | | | | |
| Efficiency | 115 $V_{AC}$ (60 Hz) | 92.0% typ. | 92.5% typ. | 94.5% typ. | 94.0% typ. | 95.0% typ. |
| | 230 $V_{AC}$ (50 Hz) | 93.0% typ. | 94.0% typ. | 95.5% typ. | 95.0% typ. | 96.0% typ. |
| Leakage Current [1] | 264 $V_{AC}$ | Input-PE:<br>< 0.3 mA @ NC, < 1 mA @ SFC<br>Output-PE:<br>< 0.1 mA @ NC, < 0.5 mA @ SFC | | | | |
| **Mechanical** | | | | | | |
| Dimensions (L × W × H) | mm | 152.4 × 101.6 × 40 | 203.2 × 127 × 40 | 152.4 × 101.6 × 40 | 203.2 × 127 × 40 | 152.4 × 101.6 × 40 |
| | inch | 6.00 × 4.00 × 1.57 | 8.00 × 5.00 × 1.57 | 6.00 × 4.00 × 1.57 | 8.00 × 5.00 × 1.57 | 6.00 × 4.00 × 1.57 |
| Unit Weight | kg | 0.80 | 1.30 | 0.80 | 1.30 | 0.80 |
| | lb | 1.76 | 2.87 | 1.76 | 2.87 | 1.76 |
| MTBF [2] | | 500,000 hrs | | | | |
| EMC & Emissions | | EN 55011/EN 55032, FCC Title 47: Class B | | | | |
| **Environment** | | | | | | |
| Operating Temperature [3] | | -20°C to +70°C | | | | |
| Storage Temperature | | -40°C to +85°C | | | | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | | | | |
| Operating Altitude | | 0 to 5,000 m (0 to 16,400 ft) | | | | |
| **Medical Rating** | | | | | | |
| Float Rating | | BF | | | | |
| MOPP | | 2 × MOPP | | | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load for Convection, Ta: 35°C).
3) Refer power de-rating in the product datasheet.

# MEP (12 V, 15 V, 18 V, 24 V, 48 V)

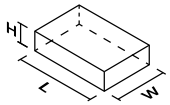
- Suitable for type BF medical products
- 2 × MOPP isolation
- Compliant with IEC 60601-1-2 Ed. 4 requirements
- Class B conducted and radiated EMI
- Applicable to Class I/II system

## Applications

Medical Display | Respiratory | Dental

| | | NEW | NEW | NEW |
|---|---|---|---|---|
| **Output** | | **MEP-120A12J BNA** | **MEP-200A12J BNA** | **MEP-120A15J BNA** |
| Output Voltage | | 12 V | 12 V | 15 V |
| Output Current (Max) | | 9.5 A | 16.67 A | 8.0 A |
| Output Power | | 114 W | 200 W | 120 W |
| Load Regulation | | ± 1% | 2% | ± 1% |
| Ripple & Noise | | 100 mVpp | 1% typ. pk-pk Vrated @ rated load | 120 mVpp |
| **Input** | | | | |
| Input Voltage Range | | 90-264 $V_{AC}$ | | |
| Input Frequency | | 47-63 Hz | | |
| Efficiency | 115 $V_{AC}$ (60 Hz) | 91.0% typ. | 92.4% typ. | 91.5% typ. |
| | 230 $V_{AC}$ (50 Hz) | 93.5% typ. | 93.8% typ. | 93.5% typ. |
| Leakage Current [1] | 264 $V_{AC}$ | Input-PE:<br>< 0.1 mA @ NC, < 1 mA @ SFC<br>Output-PE:<br>< 0.1 mA @ NC, < 0.5 mA @ SFC | Input-PE:<br>< 71 µA @ NC, < 156 µA @ SFC<br>Output-PE:<br>< 71 µA @ NC, < 159 µA @ SFC | Input-PE:<br>< 0.1 mA @ NC, < 1 mA @ SFC<br>Output-PE:<br>< 0.1 mA @ NC, < 0.5 mA @ SFC |
| **Mechanical** | | | | |
| Dimensions (L × W × H) | mm | 76.2 × 50.8 × 31 | 101.6 × 50.8 × 28.5 | 76.2 × 50.8 × 31 |
| | inch | 3.00 × 2.00 × 1.22 | 4.00 × 2.00 × 1.12 | 3.00 × 2.00 × 1.22 |
| Unit Weight | kg | 0.14 | 0.21 | 0.14 |
| | lb | 0.31 | 0.46 | 0.31 |
| MTBF [2] | | 700,000 hrs | 1,000,000 hrs | 700,000 hrs |
| EMC & Emissions | | CISPR 11 / EN 55032 | | |
| **Environment** | | | | |
| Operating Temperature [3] | | -30°C to +70°C | | |
| Storage Temperature | | -40°C to +85°C | | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | | |
| Operating Altitude | | 0 to 5,000 m (0 to 16,400 ft) | | |
| **Medical Rating** | | | | |
| Float Rating | | BF | | |
| MOPP | | 2 × MOPP | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$ & 230 $V_{AC}$, Ta: 25°C).
For MEP-200A□J BNA, MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 170 W for Convection, Ta: 35°C).
3) Refer power de-rating in the product datasheet.

| NEW | NEW | NEW | NEW |
|---|---|---|---|
| **MEP-120A18J BNA** | **MEP-120A24J BNA** | **MEP-200A24J BNA** | **MEP-200A48J BNA** |
| 18 V | 24 V | 24 V | 48 V |
| 6.67 A | 5.0 A | 8.34 A | 4.17 A |
| 120 W | 120 W | 200 W | 200 W |
| ± 1% | | 2% | |
| 150 mVpp | | 1% typ. pk-pk Vrated @ rated load | |
| | | | |
| 90-264 $V_{AC}$ | | | |
| 47-63 Hz | | | |
| 92.0% typ. | | 93.3% typ. | 93.8% typ. |
| 94.0% typ. | | 94.7% typ. | 95.4% typ. |
| Input-PE:<br>< 0.1 mA @ NC, < 1 mA @ SFC<br>Output-PE:<br>< 0.1 mA @ NC, < 0.5 mA @ SFC | | Input-PE:<br>< 71 µA @ NC, < 156 µA @ SFC<br>Output-PE:<br>< 71 µA @ NC, < 159 µA @ SFC | |
| | | | |
| 76.2 × 50.8 × 31 | 76.2 × 50.8 × 31 | 101.6 × 50.8 × 28.5 | 101.6 × 50.8 × 28.5 |
| 3.00 × 2.00 × 1.22 | 3.00 × 2.00 × 1.22 | 4.00 × 2.00 × 1.12 | 4.00 × 2.00 × 1.12 |
| 0.14 | 0.14 | 0.21 | 0.21 |
| 0.31 | 0.31 | 0.46 | 0.46 |
| 700,000 hrs | | 1,000,000 hrs | |
| CISPR 11 / EN 55032 | | | |
| | | | |
| -30°C to +70°C | | | |
| -40°C to +85°C | | | |
| 5 to 95% RH (Non-Condensing) | | | |
| 0 to 5,000 m (0 to 16,400 ft) | | | |
| | | | |
| BF | | | |
| 2 × MOPP | | | |

# ATX Power Supply

## MDS

Medical ATX power supply with built-in fan cooling

**Power Range:** 350 W

# MDS

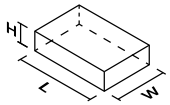
- Universal AC input voltage range
- Safety approvals for medical and IT applications
- Compliant with IEC 60601-1-2 Ed. 4 requirements
- Suitable for type BF patient access applications
- ATX 12 V standard function & form factor
- Maximum output power of 350 watts
- Built-in active PFC

## Applications

Medical PC

| Output | | MDS-350AD701 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Output Voltage | | +3.3 V | +5 V | +5 $V_{SB}$ | +12 $V_1$ | +12 $V_2$ | -12 V | -5 V |
| Output Current (Nom) | | 8.0 A | 9.0 A | 1.25 A | 8.0 A | 8.0 A | 0.25 A | 0.1 A |
| Output Power | | 350 W | | | | | | |
| Load Regulation | | ± 5% | | | | | ± 10% | |
| Ripple & Noise | | < 50 mVpp | < 50 mVpp | < 150 mVpp | < 120 mVpp | < 120 mVpp | < 120 mVpp | < 50 mVpp |
| **Input** | | | | | | | | |
| Input Voltage Range | | 90-264 $V_{AC}$ | | | | | | |
| Input Frequency | | 47-63 Hz | | | | | | |
| Efficiency | 115 $V_{AC}$ (60 Hz) | 82% typ. | | | | | | |
| | 230 $V_{AC}$ (50 Hz) | 85% typ. | | | | | | |
| Leakage Current [1] | | < 0.1 mA @ NC, < 0.3 mA @ SFC | | | | | | |
| **Mechanical** | | | | | | | | |
| Dimensions (L × W × H) | mm | 194 × 100 × 40.5 | | | | | | |
| | inch | 7.64 × 3.94 × 1.59 | | | | | | |
| Unit Weight | kg | 1.20 | | | | | | |
| | lb | 2.65 | | | | | | |
| MTBF [2] | | 500,000 hrs | | | | | | |
| EMC & Emissions | | EN 55011/EN 55032, FCC Title 47: Class B | | | | | | |
| **Environment** | | | | | | | | |
| Operating Temperature [3] | | 0°C to +50°C | | | | | | |
| Storage Temperature | | -40°C to +85°C | | | | | | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | | | | | | |
| Operating Altitude | | 0 to 5,000 m (0 to 16,400 ft) | | | | | | |
| **Medical Rating** | | | | | | | | |
| Float Rating | | BF | | | | | | |
| MOPP | | 2 × MOPP | | | | | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load, Ta: 35°C).
3) Refer power de-rating in the product datasheet.

# Adapters

## MDS

General adapter for medical application

**Power Range:** 5-150 W

## MEA

New generation adapter with compact size and high power density design

**Power Range:** 65-250 W

## Applications

CPAP

Medical Display

# MDS (5 V, 12 V)

- Universal AC input voltage range
- Over-Voltage/Load/Temperature & Short Circuit Protections
- Low touch current (< 0.1 mA Normal & < 0.3 mA Single Fault)
- Compliant with IEC 60601-1-2 Ed. 4 requirements
- Safety approvals for medical and IT applications
- IP22 Ingress Protection Rating (except MDS-150AAS12 BA)
- 2 × MOPP isolation

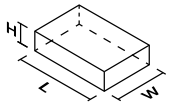
## Applications

CPAP

Medical Display

| Output | | MDS-005AAS05 A□ | MDS-005AAS05 B□ | MDS-005AAS05 C□ | MDS-030AAC05 A□ |
|---|---|---|---|---|---|
| Output Voltage | | 5 V | 5 V | 5 V | 5 V |
| Output Current (Max) | | 1.0 A | 1.0 A | 1.0 A | 3.0 A |
| Output Power | | 5 W | 5 W | 5 W | 15 W |
| Load Regulation | | ± 9% | | | ± 5% |
| Ripple & Noise | | 88 mV pk-pk @ full load | | | < 100 mV pk-pk @ rated load |
| **Input** | | | | | |
| Input Voltage Range | | 90-264 $V_{AC}$ | | | 85-264 $V_{AC}$ |
| Input Frequency | | 47-63 Hz | | | |
| Average Efficiency | 115 $V_{AC}$ | 73.63% | | | 81.4% |
| | 230 $V_{AC}$ | | | | |
| Touch Current [1] | 264 $V_{AC}$ | < 0.1 mA @ NC, < 0.3 mA @ SFC | | | |
| Leakage Current [1] | 264 $V_{AC}$ | - | | | < 0.1 mA @ NC, < 0.5 mA @ SFC |
| **Mechanical** | | | | | |
| Dimensions (L × W × H) | mm | 56.5 × 39.5 × 28 | 56.5 × 39.5 × 28 | 56.5 × 39.5 × 28 | 88 × 53.5 × 27.5 |
| | inch | 2.22 × 1.56 × 1.10 | 2.22 × 1.56 × 1.10 | 2.22 × 1.56 × 1.10 | 3.46 × 2.11 × 1.08 |
| Unit Weight | kg | 0.10 | 0.10 | 0.10 | 0.15 |
| | lb | 0.22 | 0.22 | 0.22 | 0.33 |
| Connector Type | | MDS-005AAS05 A□: Input: Wall mount – CN; Output: AV: Barrel type; AU: Micro USB<br>MDS-005AAS05 B□: Input: Wall mount – US; Output: BV: Barrel type; BU: Micro USB<br>MDS-005AAS05 C□: Input: Wall mount – EU; Output: CV: Barrel type; CU: Micro USB<br>MDS-030AAC05 AA: Input: Wall mount – CN; Output: Barrel type<br>MDS-030AAC05 AB: Input: Wall mount – US; Output: Barrel type<br>MDS-030AAC05 AC: Input: Wall mount – EU; Output: Barrel type | | | |
| MTBF [2] | | 1,000,000 hrs | | | 500,000 hrs |
| EMC & Emissions | | EN 55011/EN 55032 | | | |
| **Environment** | | | | | |
| Operating Temperature [3] | | 0°C to +40°C | | | |
| Storage Temperature | | -40°C to +85°C | | | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | | | |
| Operating Altitude | | 0 to 3,000 m (0 to 9,840 ft) | | | 0 to 5,000 m (0 to 16,400 ft) |
| Degree of Protection | | IP22 | | | |
| Protection Against Shock | | Class II | | | |
| **Medical Rating** | | | | | |
| Float Rating | | BF | | | |
| MOPP | | 2 × MOPP | | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332.
For MDS-030AAC05 □□ and MDS-030AAC12 □□, MTBF as per Telcordia SR-332 (I/P: 100 $V_{AC}$, O/P: 100% load, Ta: 25°C).
3) Refer power de-rating in the product datasheet.

| MDS-030AAC12 □□ | MDS-060BAS12 AB | MDS-080AAS12 AB | MDS-150AAS12 BA |
|---|---|---|---|
| 12 V | 12 V | 12 V | 12 V |
| 2.0 A | 5.0 A | 6.67 A | 10.0 A |
| 24 W | 60 W | 80 W | 120 W |
| ± 5% | | ± 4.5% | |
| < 150 mV pk-pk @ rated load | 1% typ. pk-pk @ full load | 118.4 mV pk-pk @ full load | 104 mV pk-pk @ full load |
| | | | |
| 85-264 $V_{AC}$ | 90-264 $V_{AC}$ | | |
| 47-63 Hz | | | |
| 86.21% | 88.0% | 83% typ. | 88.0% |
| | | | 87.0% |
| < 0.1 mA @ NC, < 0.3 mA @ SFC | | | |
| < 0.1 mA @ NC,<br>< 0.5 mA @ SFC | - | | |
| | | | |
| 88 × 53.5 × 27.5 | 135 × 62 × 34.1 | 150 × 75 × 40 | 170 × 85 × 40 |
| 3.46 × 2.11 × 1.08 | 5.31 × 2.44 × 1.34 | 5.91 × 2.95 × 1.57 | 6.69 × 3.35 × 1.57 |
| 0.15 | 0.34 | 0.50 | 1.10 |
| 0.33 | 0.78 | 1.10 | 2.43 |
| MDS-030AAC12 AA: Input: Wall mount – CN; Output: Barrel type<br>MDS-030AAC12 AB: Input: Wall mount – US; Output: Barrel type<br>MDS-030AAC12 BB: Input: Wall mount – US; Output: Barrel type<br>MDS-060BAS12 AB, MDS-080AAS12 AB: Input: C8 socket; Output: 4-pin DIN<br>MDS-150AAS12 BA: Input: C14 socket; Output: 4-pin DIN | | | |
| 500,000 hrs | 1,000,000 hrs | | |
| EN 55011/EN 55032 | | | |
| | | | |
| 0°C to +40°C | | | |
| -40°C to +85°C | | | |
| 5 to 95% RH (Non-Condensing) | | 10 to 95% RH (Non-Condensing) | |
| 0 to 5,000 m (0 to 16,400 ft) | | | 0 to 3,000 m (0 to 9,840 ft) |
| IP22 | | | - |
| Class II | | | Class II with functional earth |
| | | | |
| BF | | | B |
| 2 × MOPP | | | |

# MDS (15 V, 19 V)

- Universal AC input voltage range
- Over-Voltage/Load/Temperature & Short Circuit Protections
- Low touch current (< 0.1 mA Normal & < 0.3 mA Single Fault)
- Compliant with IEC 60601-1-2 Ed. 4 requirements
- Safety approvals for medical and IT applications
- 2 × MOPP isolation

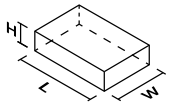
## Applications

CPAP

Medical Display

| Output | | MDS-030AAC15 A□ | MDS-090AAS15 B□ | MDS-090AAS15 F□ | MDS-060BAS19 AA |
|---|---|---|---|---|---|
| Output Voltage | | 15 V | 15 V | 15 V | 19 V |
| Output Current (Max) | | 2.0 A | 6.0 A | 6.0 A | 3.15 A |
| Output Power | | 30 W | 90 W | 90 W | 60 W |
| Load Regulation | | ± 5% | ± 4.5% | | ± 5% |
| Ripple & Noise | | < 200 mV pk-pk @ rated load | 114 mV pk-pk @ full load | | 1% typ. pk-pk @ full load |
| **Input** | | | | | |
| Input Voltage Range | | 85-264 $V_{AC}$ | 90-264 $V_{AC}$ | | |
| Input Frequency | | 47-63 Hz | | | |
| Average Efficiency | 115 $V_{AC}$ | 87.0% | 88.0% | | 88.0% |
| | 230 $V_{AC}$ | | | | 87.0% |
| Touch Current [1] | 264 $V_{AC}$ | < 0.1 mA @ NC, < 0.3 mA @ SFC | | | |
| Leakage Current [1] | 264 $V_{AC}$ | < 0.1 mA @ NC, < 0.5 mA @ SFC | < 0.1 mA @ NC, < 0.3 mA @ SFC | | |
| **Mechanical** | | | | | |
| Dimensions (L × W × H) | mm | 88 × 53.5 × 27.5 | 150 × 60 × 35 | 150 × 60 × 35 | 135 × 62 × 34.1 |
| | inch | 3.46 × 2.11 × 1.08 | 5.91 × 2.36 × 1.38 | 5.91 × 2.36 × 1.38 | 5.31 × 2.44 × 1.34 |
| Unit Weight | kg | 0.15 | 0.45 | 0.45 | 0.34 |
| | lb | 0.33 | 0.99 | 0.99 | 0.75 |
| Connector Type | | MDS-030AAC15 AA: Input: Wall mount – CN; Output: Barrel type<br>MDS-030AAC15 AB: Input: Wall mount – US; Output: Barrel type<br>MDS-030AAC15 AC: Input: Wall mount – EU; Output: Barrel type<br>MDS-090AAS15 BA, MDS-090AAS15 FA: Input: C14 socket; Output: 4-pin DIN<br>MDS-090AAS15 BE, MDS-090AAS15 FE: Input: C14 socket; Output: Tuning Fork type<br>MDS-060BAS19 AA: Input: C8 socket; Output: Tuning Fork type | | | |
| MTBF [2] | | 500,000 hrs | 1,000,000 hrs | | |
| EMC & Emissions | | EN 55011/EN 55032 | | | |
| **Environment** | | | | | |
| Operating Temperature [3] | | 0°C to +40°C | | | |
| Storage Temperature | | -40°C to +85°C | | | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | 10 to 95% RH (Non-Condensing) | | 5 to 95% RH (Non-Condensing) |
| Operating Altitude | | 0 to 5,000 m (0 to 16,400 ft) | 0 to 3,000 m (0 to 9,840 ft) | | 0 to 5,000 m (0 to 16,400 ft) |
| Degree of Protection | | IP22 | - | | IP22 |
| Protection Against Shock | | Class II | Class II with functional earth | Class I | Class II |
| **Medical Rating** | | | | | |
| Float Rating | | BF | | B | BF |
| MOPP | | 2 × MOPP | | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332.
For MDS-030AAC15 A□, MTBF as per Telcordia SR-332 (I/P: 100 $V_{AC}$, O/P: 100% load, Ta: 25°C).
3) Refer power de-rating in the product datasheet.

| MDS-090AAS19 B□ | MDS-090AAS19 F□ | MDS-150AAS19 BA | MDS-150AAS19 FA | MDS-150CAB19 AA |
|---|---|---|---|---|
| 19 V | 19 V | 19 V | 19 V | 19 V |
| 4.73 A | 4.73 A | 7.89 A | 7.89 A | 7.9 A |
| 90 W | 90 W | 150 W | 150 W | 150 W |
| ± 4.5% | | | | ± 5% |
| 91.2 mV pk-pk @ full load | | 190 mV pk-pk @ full load | | 109 mV pk-pk @ full load |
| | | | | |
| 90-264 $V_{AC}$ | | | | |
| 47-63 Hz | | | | |
| 88.0% | | 88.0% | | 92.0% typ. |
| - | | | | |
| < 0.1 mA @ NC, < 0.3 mA @ SFC | | | | |
| < 0.1 mA @ NC, < 0.3 mA @ SFC | | | | |
| | | | | |
| 150 × 60 × 35 | 150 × 60 × 35 | 170 × 85 × 40 | 170 × 85 × 40 | 150 × 65 × 32 |
| 5.91 × 2.36 × 1.38 | 5.91 × 2.36 × 1.38 | 6.69 × 3.35 × 1.57 | 6.69 × 3.35 × 1.57 | 5.91 × 2.56 × 1.26 |
| 0.45 | 0.45 | 1.10 | 1.10 | 0.52 |
| 0.99 | 0.99 | 2.43 | 2.43 | 1.15 |
| MDS-090AAS19 BA, MDS-090AAS19 FA: Input: C14 socket; Output: 4-pin DIN<br>MDS-090AAS19 BE, MDS-090AAS19 FE: Input: C14 socket; Output: Tuning Fork type<br>MDS-150AAS19 BA, MDS-150AAS19 FA: Input: C14 socket; Output: 4-pin DIN<br>MDS-150CAB19 AA: Input: C6 socket; Output: 4-pin DIN | | | | |
| 1,000,000 hrs | | | | 2,100,000 hrs |
| EN 55011/EN 55032 | | | | |
| | | | | |
| 0°C to +40°C | | | | |
| -40°C to +85°C | | | | |
| 10 to 95% RH (Non-Condensing) | | | | |
| 0 to 3,000 m (0 to 9,840 ft) | | | | 0 to 5,000 m (0 to 16,400 ft) |
| - | | | | IP22 |
| Class II with functional earth | Class I | Class II with functional earth | Class I | |
| | | | | |
| BF | B | | | |
| 2 × MOPP | | | | |

# MDS (24 V)

- Universal AC input voltage range
- Over-Voltage/Load/Temperature & Short Circuit Protections
- Low touch current (< 0.1 mA Normal & < 0.3 mA Single Fault)
- Compliant with IEC 60601-1-2 Ed. 4 requirements
- Safety approvals for medical and IT applications
- 2 × MOPP isolation
- High MTBF

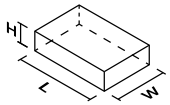
## Applications

CPAP

Medical Display

| Output | | MDS-030AAC24 A☐ | MDS-060BAS24 AG | MDS-090AAS24 B☐ |
|---|---|---|---|---|
| Output Voltage | | 24 V | 24 V | 24 V |
| Output Current (Max) | | 1.25 A | 2.5 A | 3.75 A |
| Output Power | | 30 W | 60 W | 90 W |
| Load Regulation | | ± 5% | ± 5% | ± 4.5% |
| Ripple & Noise | | < 200mV pk-pk @ rated load | 1% typ. pk-pk @ full load | 94.4mV pk-pk @ full load |
| **Input** | | | | |
| Input Voltage Range | | 85-264 $V_{AC}$ | 90-264 $V_{AC}$ | |
| Input Frequency | | 47-63 Hz | | |
| Average Efficiency | 115 $V_{AC}$ | 87.0% | | 88.0% |
| | 230 $V_{AC}$ | | | - |
| Touch Current [1] | 264 $V_{AC}$ | < 0.1 mA @ NC, < 0.3 mA @ SFC | | |
| Leakage Current [1] | 264 $V_{AC}$ | < 0.1 mA @ NC, < 0.5 mA @ SFC | - | < 0.1 mA @ NC, < 0.3 mA @ SFC |
| **Mechanical** | | | | |
| Dimensions (L × W × H) | mm | 88 × 53.5 × 27.5 | 135 × 62 × 34.1 | 150 × 60 × 35 |
| | inch | 3.46 × 2.11 × 1.08 | 5.31 × 2.44 × 1.34 | 5.91 × 2.36 × 1.38 |
| Unit Weight | kg | 0.15 | 0.34 | 0.45 |
| | lb | 0.33 | 0.75 | 0.99 |
| Connector Type | | MDS-030AAC24 AA: Input: Wall mount – CN; Output: Barrel type<br>MDS-030AAC24 AC: Input: Wall mount – EU; Output: Barrel type<br>MDS-060BAS24 AG: Input: C8 socket; Output: Tuning Fork type<br>MDS-090AAS24 BA, MDS-090AAS24 FA: Input: C14 socket; Output: 4-pin DIN | | |
| MTBF [2] | | 500,000 hrs | 1,000,000 hrs | |
| EMC & Emissions | | EN 55011/EN 55032 | | |
| **Environment** | | | | |
| Operating Temperature [3] | | 0°C to +40°C | | |
| Storage Temperature | | -40°C to +85°C | | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | | |
| Operating Altitude | | 0 to 5,000 m (0 to 16,400 ft) | | 0 to 3,000 m (0 to 9,840 ft) |
| Degree of Protection | | IP22 | | - |
| Protection Against Shock | | Class II | | Class II with functional earth |
| **Medical Rating** | | | | |
| Float Rating | | BF | | B |
| MOPP | | 2 × MOPP | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332.
   For MDS-030AAC24 A☐, MTBF as per Telcordia SR-332 (I/P: 100 $V_{AC}$, O/P: 100% load, Ta: 25°C).
3) Refer power de-rating in the product datasheet.

| MDS-090AAS24 F□ | MDS-090BAS24 AB | MDS-150AAS24 B□ | MDS-150AAS24 FA |
|---|---|---|---|
| 24 V | 24 V | 24 V | 24 V |
| 3.75 A | 3.75 A | 6.25 A | 6.25 A |
| 90 W | 90 W | 150 W | 150 W |
| ± 4.5% | ± 4.5% | | |
| 94.4mV pk-pk @ full load | 107.2 mV pk-pk @ full load | 240 mV pk-pk @ full load | |
| | | | |
| 90-264 $V_{AC}$ | | | |
| 47-63 Hz | | | |
| 88.0% | 87.61% @ full load | 88.0% | |
| - | | 87.0% | |
| < 0.1 mA @ NC, < 0.3 mA @ SFC | | | |
| < 0.1 mA @ NC,<br>< 0.3 mA @ SFC | - | | |
| | | | |
| 150 × 60 × 35 | 150 × 75 × 40 | 170 × 85 × 40 | 170 × 85 × 40 |
| 5.91 × 2.36 × 1.38 | 5.91 × 2.95 × 1.57 | 6.69 × 3.35 × 1.57 | 6.69 × 3.35 × 1.57 |
| 0.45 | 0.50 | 1.10 | 1.10 |
| 0.99 | 1.10 | 2.43 | 2.43 |
| MDS-090AAS24 BE, MDS-090AAS24 FE: Input: C14 socket; Output: Tuning Fork type<br>MDS-090BAS24 AB: Input: C8 socket; Output: 4-pin DIN<br>MDS-150AAS24 BA, MDS-150AAS24 FA: Input: C14 socket; Output: 4-pin DIN<br>MDS-150AAS24 BE: Input: C14 socket; Output: Tuning Fork type | | | |
| 1,000,000 hrs | | | |
| EN 55011/EN 55032 | | | |
| | | | |
| 0°C to +40°C | | | |
| -40°C to +85°C | | | |
| 5 to 95% RH (Non-Condensing) | 10 to 95% RH (Non-Condensing) | | |
| 0 to 3,000 m (0 to 9,840 ft) | 0 to 5,000 m (0 to 16,400 ft) | 0 to 3,000 m (0 to 9,840 ft) | |
| - | IP22 | - | |
| Class I | Class II | Class II with functional earth | Class I |
| | | | |
| B | BF | B | |
| 2 × MOPP | | | |

# MEA (12 V, 15 V, 19 V, 24 V)

- Universal AC input voltage range
- High Efficiency meets DoE VI
- Low leakage current
- 2 × MOPP isolation
- Compliant with IEC 60601-1-2 Ed. 4 requirements
- Safety approvals for medical and IT applications

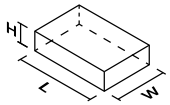
## Applications

CPAP

Medical Display

| Output | | MEA-065A12C □-A | MEA-090A12C V-A | MEA-065A15C A-A | MEA-090A15C V-A |
|---|---|---|---|---|---|
| Output Voltage | | 12 V | 12 V | 15 V | 15 V |
| Output Current (Max) | | 5.0 A | 6.75 A | 4.33 A | 6 A |
| Output Power | | 60 W | 81 W | 65 W | 90 W |
| Load Regulation | | ± 4.5% | | | |
| Ripple & Noise | | 1% | | | |
| **Input** | | | | | |
| Input Voltage Range | | 90-264 $V_{AC}$ | | | |
| Input Frequency | | 47-63 Hz | | | |
| Average Efficiency | 115 $V_{AC}$ | 88.0% | 88.0% | 88.0% | 89.0% |
| | 230 $V_{AC}$ | | 89.0% | | |
| Touch Current [1] | 264 $V_{AC}$ | < 0.1mA @ NC, < 0.3mA @ SFC | | | |
| Leakage Current [1] | 264 $V_{AC}$ | < 0.1 mA @ NC, < 0.3 mA @ SFC | < 0.1 mA @ NC, < 0.5 mA @ SFC | < 0.1 mA @ NC, < 0.3 mA @ SFC | < 0.1 mA @ NC, < 0.5 mA @ SFC |
| **Mechanical** | | | | | |
| Dimensions (L × W × H) | mm | 115 × 50 × 29 | 135 × 62 × 32 | 115 × 50 × 29 | 135 × 62 × 32 |
| | inch | 4.52 × 1.97 × 1.14 | 5.31 × 2.44 × 1.26 | 4.52 × 1.97 × 1.14 | 5.31 × 2.44 × 1.26 |
| Unit Weight | kg | 0.25 | 0.31 | 0.25 | 0.31 |
| | lb | 0.55 | 0.68 | 0.55 | 0.68 |
| Connector Type | | MEA-065A12C A-A, MEA-065A15C A-A: Input: C14 socket; Output: Barrel type<br>MEA-065A12C 6-A: Input: C14 socket; Output: 4-pin DIN<br>MEA-090A12C V-A, MEA-090A15C V-A: Input: C14 socket; Output: Tuning Fork type | | | |
| MTBF [2] | | 1,000,000 hrs | | | |
| EMC & Emissions | | EN 55011/EN 55032 | | | |
| **Environment** | | | | | |
| Operating Temperature [3] | | -10°C to +60°C | | | |
| Storage Temperature | | -40°C to +85°C | | | |
| Operating Humidity | | 5 to 95% RH (Non-Condensing) | | | |
| Operating Altitude | | 0 to 5,000 m (0 to 16,400 ft) | | | |
| Degree of Protection | | IP22 | | | |
| Protection Against Shock | | Class I | | | |
| **Medical Rating** | | | | | |
| Float Rating | | B | | | |
| MOPP | | 2 × MOPP | | | |

**Dimensions Reference**




**Notes**
1) NC: normal condition, SFC: single fault condition.
2) MTBF as per Telcordia SR-332.
For MEA-065A□C □-A and MEA-250A24C H-A, MTBF as per Telcordia SR-332 (I/P: 115 $V_{AC}$, O/P: 100% load, Ta: 25°C).
3) Refer power de-rating in the product datasheet.

| MEA-065A19C A-A | MEA-090A19C V-A | MEA-065A24C □-A | MEA-090A24C V-A | MEA-250A24C H-A |
|---|---|---|---|---|
| 19 V | 19 V | 24 V | 24 V | 24 V |
| 3.42 A | 4.74 A | 2.71 A | 3.75 A | 10.42 A |
| 65 W | 90 W | 65 W | 90 W | 250 W |
| ± 4.5% | | | | |
| 1% | | | | < 240 mV pk-pk @ rated load |
| | | | | |
| 90-264 $V_{AC}$ | | | | |
| 47-63 Hz | | | | |
| 89.0% | | | | 90.0% |
| < 0.1 mA @ NC, < 0.3 mA @ SFC | | | | |
| < 0.1 mA @ NC, < 0.3 mA @ SFC | < 0.1 mA @ NC, < 0.5 mA @ SFC | < 0.1 mA @ NC, < 0.3 mA @ SFC | < 0.1 mA @ NC, < 0.5 mA @ SFC | < 0.2 mA @ NC, < 0.5 mA @ SFC |
| | | | | |
| 115 × 50 × 29 | 135 × 62 × 32 | 115 × 50 × 29 | 135 × 62 × 32 | 200 × 100 × 43 |
| 4.52 × 1.97 × 1.14 | 5.31 × 2.44 × 1.26 | 4.52 × 1.97 × 1.14 | 5.31 × 2.44 × 1.26 | 7.87 × 3.94 × 1.69 |
| 0.25 | 0.31 | 0.25 | 0.31 | 1.05 |
| 0.55 | 0.68 | 0.55 | 0.68 | 2.31 |
| MEA-065A19C A-A, MEA-065A24C A-A: Input: C14 socket; Output: Barrel type<br>MEA-065A24C 6-A: Input: C14 socket; Output: 4-pin DIN<br>MEA-090A19C V-A, MEA-090A24C V-A: Input: C14 socket; Output: Tuning Fork type<br>MEA-250A24C H-A: Input: C14 socket; Output: 6-pin mini-fit | | | | |
| 1,000,000 hrs | | | | 500,000 hrs |
| EN 55011/EN 55032 | | | | |
| | | | | |
| -10°C to +60°C | | | | 5°C to +60°C |
| -40°C to +85°C | | | | -40°C to +70°C |
| 5 to 95% RH (Non-Condensing) | | | | |
| 0 to 5,000 m (0 to 16,400 ft) | | | | |
| IP22 | | | | |
| Class I | | | | |
| | | | | |
| B | | | | BF |
| 2 × MOPP | | | | |

# Alternate Model List

| Series | Model Name* | CC Code | Output Voltage | Output Current | Output Power | Recommended MEA Model Name | Page |
|---|---|---|---|---|---|---|---|
| **MDS-060AAS** | MDS-060AAS12 | BA | 12V | 5.0A | 60W | MEA-065A12C A-A | 41 |
| | | | | | | MEA-065A12C 6-A | |
| | MDS-060AAS15 | BA | 15V | 4.0A | 60W | MEA-065A15C A-A | |
| | MDS-060AAS19 | BA | 19V | 3.2A | 60W | MEA-065A19C A-A | 42 |
| | MDS-060AAS24 | BA | 24V | 2.5A | 60W | MEA-065A24C A-A | |
| | | | | | | MEA-065A24C 6-A | |
| **MDS-090AAS** | MDS-090AAS15 | BE | 15V | 6.0A | 90W | MEA-090A15C V-A | 41 |
| | MDS-090AAS15 | FE | | 6.0A | 90W | MEA-090A15C V-A | |
| | MDS-090AAS19 | BE | 19V | 4.73A | 90W | MEA-090A19C V-A | 42 |
| | MDS-090AAS19 | FE | | 4.73A | 90W | MEA-090A19C V-A | |
| | MDS-090AAS24 | BE | 24V | 3.75A | 90W | MEA-090A24C V-A | |
| | MDS-090AAS24 | FE | | 3.75A | 90W | MEA-090A24C V-A | |

* Please visit www.DeltaPSU.com for product detail specifications.

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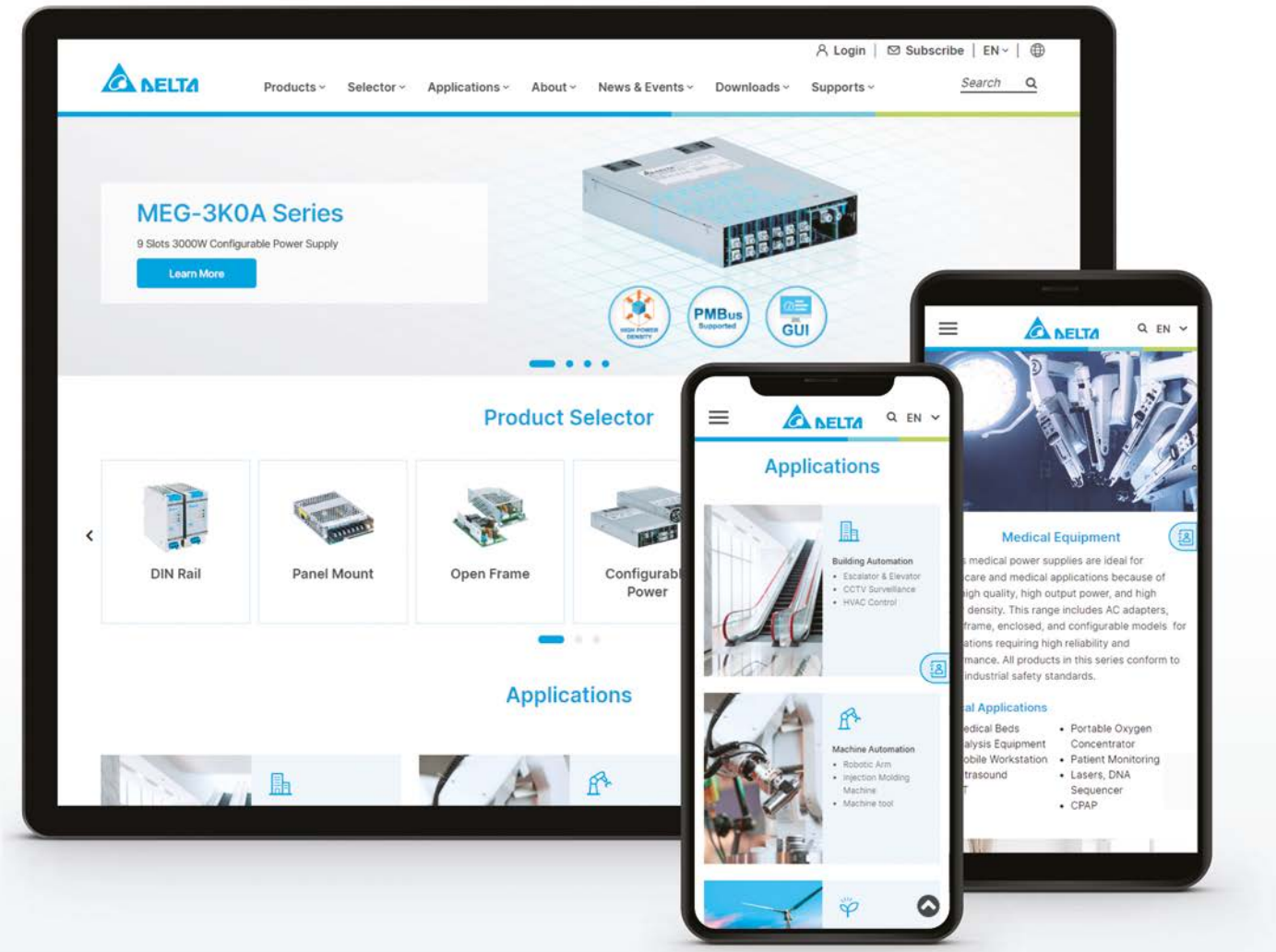


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# Global Operation & Service

## Asia

### Delta Electronics, Inc.

3 Tungyuan Road, Chungli Industrial Zone,
Taoyuan County 32063, Taiwan, R.O.C.

TEL: +886 3 452 6107
FAX: +886 3 452 7314

### Delta Electronics (Shanghai) Co., Ltd.
China Headquarters

No. 182 Minyu Road, Pudong,
Shanghai, P.R.C. 201209

TEL: +86 21 6872 3988
FAX: +86 21 6872 3996

### Delta Electronics (Shanghai) Co., Ltd.
Beijing Branch

No. 7 Building, 6th Courtyard, Beichen East
Rd., Chaoyang Dist., Beijing, P.R.C. 100105

TEL: +86 10 8225 3225
FAX: +86 10 8225 1360

### Delta Electronics (Thailand) PCL.

909 Soi 9, Moo 4, Bangpoo Industrial Estate
(E.P.Z.), Pattana 1 Rd., T. Phrakasa, A. Muang,
Samutprakarn 10280, Thailand

TEL: +66 2 709 2800
FAX: +66 2 709 2827

### Delta Electronics India Pvt. Ltd.

Plot No. 43, Sector - 35, HSIIDC,
Gurgaon, Haryana 122001

TEL: +91 124 4874 900
+91 124 4169 040
FAX: +91 124 4874 945

### Delta Electronics (Japan), Inc.

2-1-14 Minato-ku Shibadaimon,
Tokyo, 105-0012, Japan

TEL: +81 3 5733 1111
FAX: +81 3 5733 1211

### Delta Electronics (Korea), Inc.

1504, Byucksan Digital Valley 6-Cha,
Gasan-dong, Geumcheon-gu, Seoul,
153-704, Korea

TEL: +82 2 515 5303
+82 2 515 5305
FAX: +82 2 515 5302

### Delta Electronics (Australia) Pty Ltd

20-21, 45 Normanby Rd.
Nothing Hill, VIC 3168, Australia

TEL: +61 9543 3720
FAX: +61 9544 0606

### Delta Energy Systems
(Singapore) Pte Ltd

4 Kaki Bukit Avenue 1
#05-04, Singapore 417939

TEL: +65 6747 5155
FAX: +65 6744 9228

## North America

### Delta Electronics (Americas) Ltd.
North American Headquarters

46101 Fremont Blvd.
Fremont, CA 94538, U.S.A.

TEL: +1 510 668 5100
FAX: +1 510 668 0680

## Central & South America

### Delta Electronics International
Mexico S.A. de C.V.

Centrum Park, Av. Gustavo Baz Prada 309
Edificio E Planta Baja, Col. La Loma, C.P.
54030 Tlalnepantla, Estado de México

TEL: +52 55 3603 9200

### Delta Electronics Brasil Ltda.

Estrada Velha Rio São Paulo, 5300 –
Eugênio de Melo 12247-001 - São José dos
Campos - SP - Brasil

TEL: +55 12 3932 2300

## Europe

### Delta Electronics (Netherlands) B.V.
EMEA Headquarters

Zandsteen 15
2132 MZ Hoofddorp, The Netherlands

TEL: +31 20 800 3900

Automotive Campus 260
5708 JZ Helmond, The Netherlands

TEL: +31 40 800 3900

### Delta Greentech Elektronik (Turkey)

Şerifali Mah. Hendem Cad. Kule Sok. No: 16-A,
Ümraniye, İstanbul, Turkey

TEL: +90 216 499 99 10
FAX: +90 216 499 80 70

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