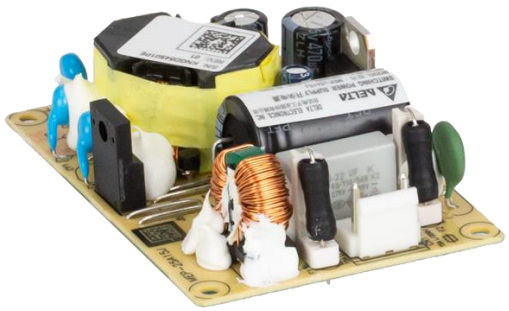
Medical / Industrial AC-DC Power Supply

25 W Convection 2” x 3” / MEP-25A☐J BNA



MEP-25A

Highlights & Features

- 2" x 3" x 0.9" low-profile design
- Safety Approvals to IEC 60601-1
- Compliant with IEC 60601-1-2 4th Ed. Requirements
- Low touch current
- Over Voltage/Load/Temperature & Short Circuit protections
- 2 x MOPP (means of patient protection)

Safety Certifications

E356265

Model Number: MEP-25A☐J BNA
Unit Weight: 70 grams (2.47 ounces)
Dimensions (W × L × H): 50.8 x 76.2 x 23 mm (2.0 x 3.0 x 0.9 inch)

General Description

The MEP-25A series of embedded power supply come with universal AC input at 90Vac to 264Vac. Other features include low touch current, risk management report available and the electric shock protection comply with 2 x MOPP. The MEP series is certified for EMC standards according to EN 55011 for industrial, medical equipment. The MEP series of embedded power supply come with both medical and ITE safety approvals including UL/CCC/CE and CB certification and are fully compliant with RoHS Directive 2011/65/EU for environmental protection.

Model Information

Model Number	Input Voltage	Output Voltage	Max Continuous Current
MEP-25A15J BNA	90-264 Vac	15 Vdc	1.67 A

Model Numbering

						CC Code
MEP –	**25**	**A**	**☐**	**J**	**☐**	**BNA**
ME: Delta Medical Power Supply P: Open frame	Max Wattage in Product Series 25: 25 W	Family Code	Output Voltage (Single Output) 15 – 15V	Family Code J: JST connector	Blank	Delta Standard, No conformal coating

All parameters are specified at 25°C ambient unless otherwise noted.
PSU.deltaww.com (February 2026, Rev. 00)

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Specifications

Input Ratings / Characteristics

Model Number		MEP-25A15J
Nominal Input Voltage		100-240 Vac
Input Voltage Range		90-264 Vac
Nominal Input Frequency		50-60 Hz
Input Frequency Range		47-63 Hz
Input Current (max)		0.6 A @ 115 Vac 0.4 A @ 230 Vac
Efficiency (typ.) @ full load	@ 115 Vac	85.7%
	@ 230 Vac	86.5%
No Load Power Consumption (typ.)		0.21 W @ 115 Vac & 230 Vac
Inrush Current (typ.)		35 A @ 230 Vac, cold start
Earth leakage current (max)		0.15 uA @ NC, 0.3 uA @ SFC*1
Touch current (max)		0.05 uA @ NC, 0.1 uA @ SFC*1

*1 NC: normal condition; SFC: single fault condition

Output Ratings / Characteristics*2

Model Number	MEP-25A15J
Output Power (max)	25 W
Line Regulation (max)	0.5%
Load Regulation (max)	1%
PARD*2 (20 MHz) (typ.)	100 mVpp
Start-up Time (max)	2000 ms @ 115 Vac 1000 ms @ 230 Vac
Hold-up Time (typ.)	24ms @ 115Vac, 115ms @230Vac (100% load)
Rise time (max)	30ms @ 115Vac & 230Vac (100% load)
Dynamic Response	± 3% @ with 50-100% load change, (50% duty @ 10 Hz, 2.5 A/us slew rate)

*2 PARD is measured with an AC coupling mode, and in parallel to end terminal with 0.1 μF ceramic capacitor & 47 μF electrolytic capacitor.
PSU need to burn in > 5 minutes.

Mechanical

Package		Open Frame
Dimensions (W x L x H)		50.8 x 76.2 x 23.0 mm (2.0 x 3.0 x 0.9 inch)
Unit Weight		70 grams (2.47 ounces)
Cooling System		Convection
Terminal	Input	JST: B2P3-VH(LF)(SN) or equivalent
	Output	JST: B4P-VH(LF)(SN) or equivalent

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Environment

Surrounding Air Temperature	Operating	-10°C to +70°C
	Storage	-40°C to +85°C
Temperature Power De-rating		-10°C to +50°C 100% load 50°C to 70°C de-rate power by 2.5% / °C, See Fig.1
Operating Humidity		10-95% RH (Non-Condensing)
Operating Altitude		Up to 5,000 meters (up to 16,400 feet or 106-54kPa)
Shock Test (Non-Operating)		50 G, 11 ms, 3 shocks for each direction
Vibration (Non-Operating)		5-500 Hz, 2.09 Grms, 20 minutes for each three axis
Over Voltage Category		II
Pollution Degree		2

Power De-rating Curve (Convection)

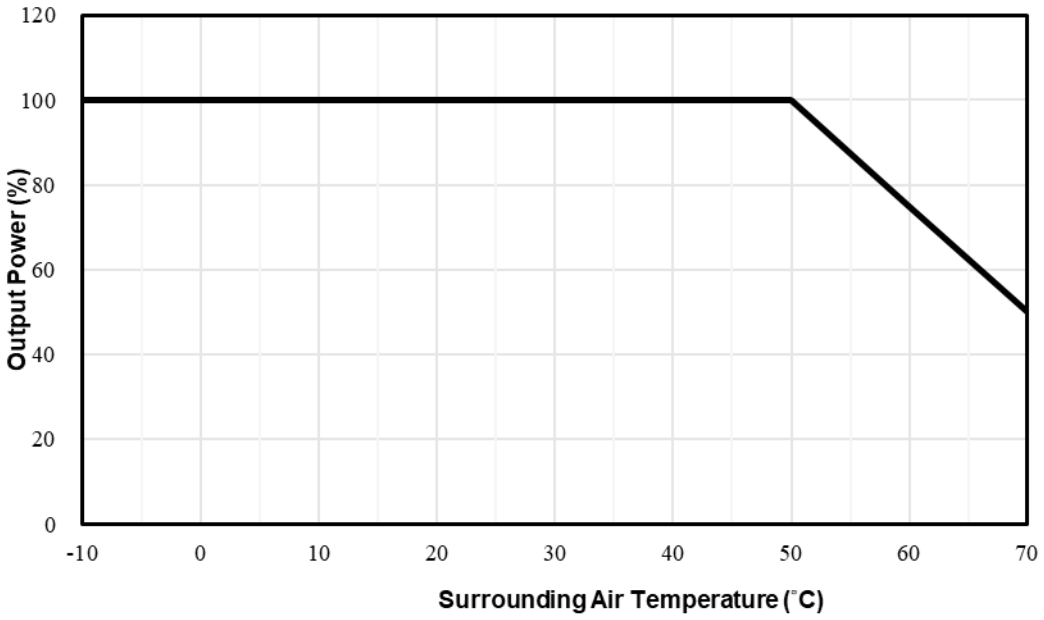

Figure 1. Temperature Power De-rating

Protections

Overvoltage	150%, Latch Mode
Over load / Over current	150%~210% of rated load current, Hiccup Mode, (Non-Latching, Auto-Recovery)
Over Temperature	Hiccup Mode, (Non-Latching, Auto-Recovery)
Short Circuit	Hiccup Mode, (Non-Latching, Auto-Recovery)
Protection Against Shock	Class II

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Reliability Data

MTBF (typ.) at 115 Vac & 230 Vac, 25 °C	3 Million Hours based on Telecordia SR-332
Operating life at 100Vac, 100% load @ 40°C	5 years

Safety Standards / Directives

Medical Safety		IEC60601-1 CB report, ANSI/AAMI ES60601-1, TUV EN60601-1 ANSI/AAMI ES60601-1 + CAN/CSA-C22.2 NO. 60601-1
ITE Safety		IEC 62368-1 CB report GB 4943.1, GB/T 9254.1, GB17625.1
CE		In conformance with Low Voltage Directive 2014/35/EU, MDD Directive 93/42/EEC EN 60601-1: 2006 + A1: 2013 + A12: 2014 & EN 60601-1-2: 2015
Galvanic Isolation	Input to/Output (2XMOPP) Input to/Ground (1XMOPP) Output to/Ground (1XMOPP)	4000 Vac 1500 Vac 500 Vac (Type BF application rated)

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EMC

EMC / Emissions		EN55011 (Group I, Class B)
Harmonic Current Emissions	IEC 61000-3-2	Meet Class A limit
Voltage Flicker	IEC 61000-3-3	
Immunity to		
Electrostatic Discharge	IEC 61000-4-2	Level 4 Criteria A[1)] Air Discharge: 15 kV Contact Discharge: 8 kV
Radiated Field	IEC 61000-4-3	Criteria A[1)] 80MHz-2700MHz, 10V/m AM modulation 385MHz-5785MHz, 28V/m Pulse mode and other modulation
Electrical Fast Transient / Burst	IEC 61000-4-4	Level 3 Criteria A[1)]: 2 kV
Surge	IEC 61000-4-5	Level 3 Criteria A[1)] Common Mode[3)]: 2 kV Differential Mode[4)]: 1 kV
Conducted	IEC 61000-4-6	Level 2 Criteria A[1)] 150 kHz-80 MHz, 3 Vrms, 6 Vrms at ISM bands and Amateur radio bands
Power Frequency Magnetic Fields	IEC 61000-4-8	Criteria A[1)] Magnetic field strength 30 A/m
Voltage Dips	IEC 61000-4-11	0% residual; 0.5 cycle, Criteria A[1)] 0% residual; 1 cycle, Criteria B[2)] 70% residual; 25 cycle, Criteria A[2)] 0% residual; 250 cycle, Criteria B[2)]
Voltage Dips	IEC 60601-1-2	Criteria A[2)] 0% UT, 0.5 cycle (10 ms) (0°,45°,90°,135°,180°,225°,270°,315°,360°) Criteria B[2)] 0% U_T,1 cycle (20 ms), 0° Criteria A[2)] 70% U_T,25 cycle (500 ms) , 0° Criteria B[2)] 0% U_T,250 cycle (5000 ms) , 0°

1) Criteria A: Normal performance within the specification limits
2) Criteria B: Output out of output regulation or shuts down during test. Automatically restored to normal operation after test.
3) Asymmetrical: Common mode (Line to earth)
4) Symmetrical: Differential mode (Line to line)

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Dimensions

W x L x H: 50.8 x 76.2 × 23.0 mm (2.0 x 3.0 × 0.9 inch)

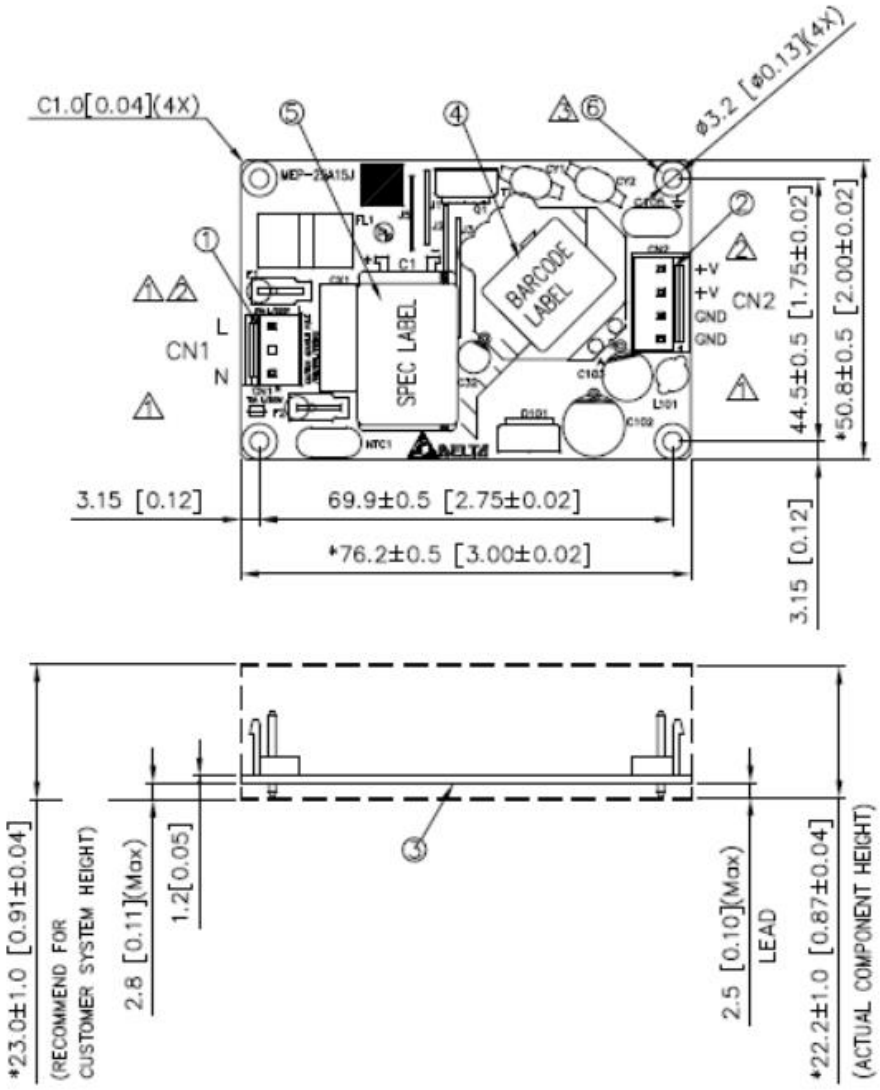

Figure 2. Dimensions

Notes:
- All dimensions are in millimeters and inches.

Connector Definition and Pin Assignment:

No	Item	Part No.	Mating
1	**AC input connector (CN1)**	JST, B2P3-VH (LF)(SN) or equivalent	JST, VHR-3N or equivalent
2	**DC output connector (CN2)**	JST, B4P-VH (LF)(SN) or equivalent	JST, VHR-4N or equivalent

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Functions

Start-up Time

The time required for the output voltage to reach 90% of its final steady state value, after the input voltage is applied.

Rise Time

The time required for the output voltage to change from 10% to 90% of its final steady state value.

Hold-up Time

Time between the collapse of the AC input voltage, and the output falling to 90% of its steady state value.

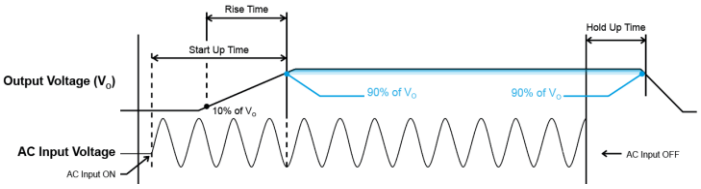

Figure 2. Time Sequence

Dynamic Response (Main Output)

The power supply output voltage will remain within ±3% of its steady state value, when subjected to a dynamic load 50% to 100% of its rated current.

■ **50% to 100% Load**

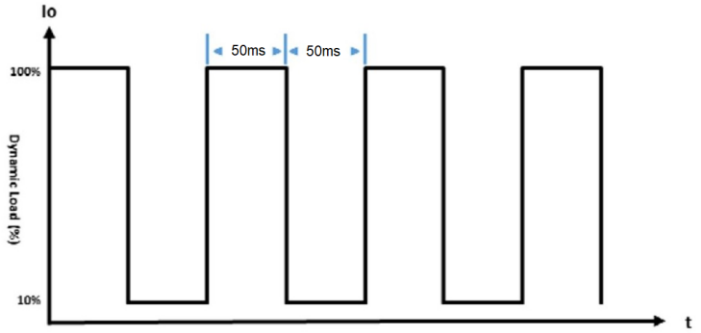

Figure 3. Dynamic Load (10 Hz)

Inrush Current

Inrush current is the input current that occurs when the input voltage is first applied. For AC input voltages, the maximum peak value of inrush current will occur during the first half cycle of the applied AC voltage. This peak value decreases exponentially during subsequent cycles of AC voltage.

Overvoltage Protection

The power supply’s overvoltage circuit will be activated when its internal feedback circuit fails. The output voltage shall not exceed its specifications defined on Page 3 under “Protections”. Power supply will latch off, and require removal/re-application of input AC voltage in order to restart.

Overload & Over current Protections

The power supply’s Overload (OLP) and Over current (CP) Protections will be activated before output current under 150~210% of I_O (Max load). Upon such occurrence, V_O will start to drop. Once the power supply has reached its maximum power limit, the protection will be activated and the power supply will go into “Hiccup mode” (Auto-Recovery). The power supply will recover once the fault condition causing the OLP and OCP is removed and I_O is back within the specified limit.

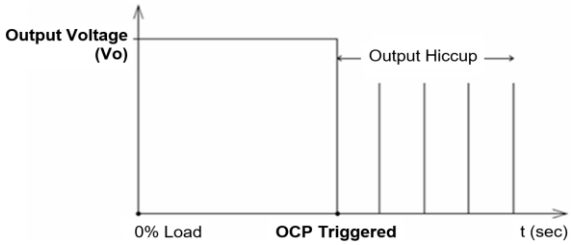

Figure 4. Hiccup at OLP/OCP

Additionally, if the Iout is >100% for a prolong period of time (depending on the load), the Over Temperature Protection (OTP) may be activated due to high temperature on critical components. The power supply will then go into hiccup mode.

Short Circuit Protection

Output OLP/OCP function also provides protection against short circuits. When a short circuit is applied, the output current will operate in “Hiccup mode”, The power supply will return to normal operation after the short circuit is removed.

Over Temperature Protection

As mentioned above, the power supply also has Over Temperature Protection (OTP). This is activated when the overload condition persists for an extended duration and the output current is below the overload trigger point but >100% load. In the event of a higher operating temperature condition at 100% load, the power supply will run into OTP when the surrounding air temperature is higher than the operating temperature. When activated, the output voltage will go into hiccup mode until the surrounding air temperature drops to its normal operating temperature.

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Certificate

All Delta Medical Power products conform to the European directive 2011/65/EU.

ROHS is the abbreviation for “Restriction of the use of certain hazardous substances”

Delta has been certified as meeting the requirement of ISO 13485: 2003 and EN ISO 13485:2012 for the design and manufacture of switching power supply and adaptor for medical device.

In addition to a UL Total Certification Program (TCP) approved client laboratory for IEC60950 and IEC60065. Delta also has participated UL Client Test Data Program (CDTP) for IEC 60601

E356265

Attention

Delta provides all information in the datasheets on an “AS IS” basis and does not offer any kind of warranty through the information for using the product. In the event of any discrepancy between the information in the catalog and datasheets, the datasheets shall prevail (please refer to PSU.deltaww.com for the latest datasheets information). Delta shall have no liability of indemnification for any claim or action arising from any error for the provided information in the datasheets. Customer shall take its responsibility for evaluation of using the product before placing an order with Delta.

Delta reserves the right to make changes to the information described in the datasheets without notice.

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