

DF150 SERIES

Defiant Future Series

160 W Conduction/Convection Cooling



Advanced Energy's DF150 series is a ruggedized 160 W AC-DC power supply purpose-built for mission-critical applications. Engineered for environments where reliability is non-negotiable, it features fanless operation with both conduction and convection cooling options to ensure silent, dependable performance under extreme conditions. It supports advanced electronics in field-deployed systems. Its robust design withstands altitude variations, humidity cycles, and rugged transport profiles, guaranteeing power continuity during rapid maneuvers and extended missions. The DF150 provides a secure, long-life power solution for ground applications demanding uncompromising durability and performance.

AT A GLANCE

Total Power

160 W

of Outputs

Single

Outputs

27 VDC

SPECIAL FEATURES

- Designed to meet MIL-STD-810H environmental requirements
- Designed to meet MIL-STD-461G EMI/EMC requirements
- Fanless operation (conduction or convection cooled variants)
- IP67 ingress protection
- Stable 27 VDC output with high efficiency
- Over-voltage, over-current, and over-temperature protection
- CE marking
- 2 years warranty

COMPLIANCE

- MIL-STD-461G EMI/EMC requirements
- MIL-STD-810G environmental requirements
- EMI Class B
- EN 61000 Immunity

SAFETY

- CE Mark (LVD+EMC+RoHS)

ELECTRICAL SPECIFICATIONS

Input		
Input Voltage Range	90 to 132 VAC/180 to 264 VAC (Nominal 115/230 VAC)	
Frequency	47 to 63 Hz (Nominal 50/60 Hz)	
Input Fusing	Internal fuse on both L and N lines	
Inrush Current	< 50 Apk at 264 VAC, 25°C ambient temperature, cold start, excluding X caps	
Power Factor	0.98 (90/115 VAC), 0.87 (230 VAC), 100% load	
Input Current	< 2.2 Arms @ 90 VAC, 50/60 Hz	
Hold up time	16 ms min for Main Output, 100% load	
Efficiency	90% min at 100% load 25°C ambient	
Leakage Current	< 1 mArms per IEC 62368-1 Standard, 264 VAC, 50/60 Hz	
Isolation voltage	3,000 VAC 1,500 VAC 500 VDC	
Input to Output		
Input to Ground		
Output to Ground		
Output		
Output Setpoint	27.0 VDC	
Output Current Range	0 to 5.93 A	
Max Power	160 W	
Total Regulation	± 2.0%	Combined Line / Load / Temperature
Output Ripple & Noise	1.0% max Vp-p	1% limit achieved with 2 × 820 μF/35 V external capacitors (e.g., Nichicon UPM1V821MHD1TO or equivalent). At Ta < −10°C, ripple ≤1.5% typical; ≤3.0% with additional external capacitance (22,000 μF by -46°C).
Remote Sense	Not supported	
Load Transient	±5% of Vout; recovery < 500 ms	50 % load step; 1 A/μs slew rate
Overshoot/Undershoot	< 3%	Worst case
Overcurrent Protection (OCP)	Trip ≤130% of full-load current	Automatic recovery after removal of fault
Overvoltage Protection (OVP)	Trip level 110–135% of Vout	Latches off (manual input recycle to reset)
Overtemperature Protection (OTP)	TBA	Automatic shutdown on over-temperature with auto-recovery when temperature returns to safe range.
Turn-on Delay	≤ 1.5 s	All conditions
Rise Time	< 0.5 s / < 1 s	High/Low line

ORDERING INFORMATION

Model	Output Voltage	Color	Cooling Type	AC Input Cable	DC Output Cable
DF150	27 V	G - Green K - Khaki B - Black	B - Conducted cooling (Baseplate) H - Convection cooling (Mounted heatsink)	1: 4FT cable - Tin leads 2: 2FT cable - NEMA 5-15P 3: 4FT cable - NEMA 5-15P	Blank: 2FT cable - Tin Leads

Nomenclature example: DF150-27-KB3 (Color: Khaki, Conduction cooling, 4FT AC cable with NEMA 5-15P)

EMI/EMC/SAFETY COMPLIANCE

Standard	Details
FCC/EN	Conducted and radiated EMI: FCC Part 15 Class B; EN55032 Class B
Safety	Designed to meet UL/CSA/EN/IEC 62368-1; CE (LVD+EMC+RoHS)

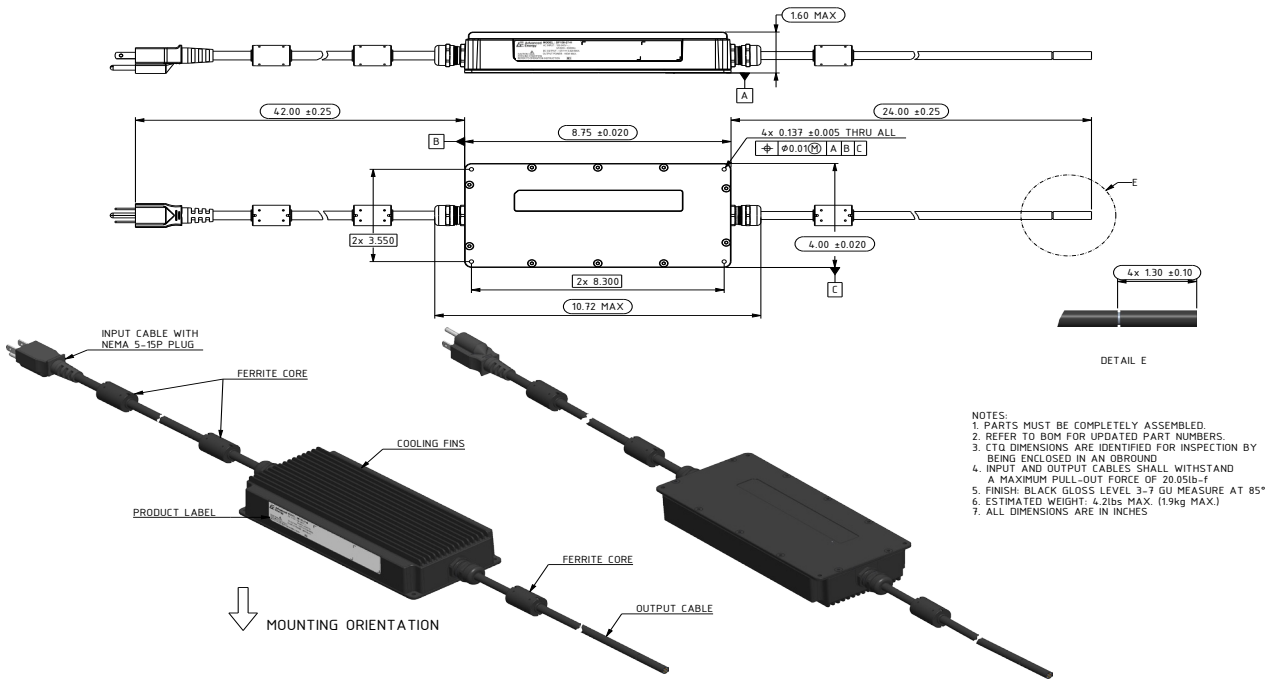
MIL-STD-461G Requirement	Frequency Range
CE102 – Conducted Emission (115 and 220 VAC)	10 kHz to 10 MHz
RE102 – Radiated Emission (Army – Ground)	2 MHz to 18 GHz
RS103 – Radiated Susceptibility (Army – Ground)	2 MHz to 30 MHz; 30 MHz to 1 GHz; 1 GHz to 18 GHz
CS101 – Conducted Susceptibility	30 Hz to 150 kHz
CS114 – Bulk Cable Injection	10 kHz to 200 kHz
CS115 – Impulse Excitation	30 Hz rate for one minute
CS116 – Damped Sinusoidal Transients	10 kHz to 100 MHz
CS118 – Electrostatic Discharge	Level 3 (Air/Contact Discharge) ±8 kV

ENVIRONMENTAL SPECIFICATIONS (MIL-STD-810H)

Test	Condition
Operating Temperature	-46°C to +60°C
Storage Temperature	-46°C to +85°C (induced) ¹
High Temp: Operating	Method 501.7 Proc II, Hot Dry A1, 60°C max
High Temp: Storage	Method 501.7 Proc I, Hot Dry A1, 85°C max
Low Temp: Operating	Method 502.7 Proc II, Cold C2, -46°C min
Low Temp: Storage	Method 502.7 Proc I, Cold C2, -46°C min
Humidity	Method 507.6 Proc II, aggravated cycle, 10 cycles
Altitude	Method 500.6 Proc II - operation/air carriage, altitude range: -1,500 ft to 50,000 ft
Transport Vibration	Method 514.8 Proc I: Category 4: Common Carrier – Two-wheeled trailer composite Category 7: Aircraft – Jet Cargo Vibration Exposure Category 8: Propeller aircraft - Vibration Exposure (4- and 6-bladed C-130). Category 9: Helicopter Vibration Exposure Category 10: Helicopter Vibration Zones
Vibration	Method 514.8 Proc I: Category 12: Jet Aircraft – Installed Materiel Category 13: Propeller Aircraft – Installed Materiel Category 20: Ground Mobile – Installed Materiel in wheeled tracked/Trailer Category 23: Personnel – Materiel Carried By/On Personnel
Shock	Method 516.8 Proc I, functional shock, 40 G peak objective
IP67	Water immersion up to 1 m for 30 minutes
Performance	Voltage ripple/noise per spec; MTBF >100,000 hrs

Note 1: Induced conditions are air temperature levels to which material may be exposed during extreme storage or transit situations, or non-operational but in the operational configuration without containerization.

MECHANICAL DRAWINGS



Mechanical Table

Parameter	Value
Cooling	Conduction (baseplate) or Convection (heatsink)
DC Output	Bare wires with half-stripped leads
Labeling	Standard AE label with CE marking; Barcode with model/serial/date/revision
Potting	Partial silicone potting
Weight	1.8 kg
Conduction	8.75 in (L) x 4.0 in (W) x 1.3 in (H)
Convection	8.75 in (L) x 4.0 in (W) x 1.6 in (H)



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ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than four decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE | TRUST

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