

## Product Specification

Universal AC Input 90-264VAC  
2" x 4" Footprint  
Single Main Output plus Aux. 12V

## Key Product Features

- Medical (2 MOPP) Safety Approved
- ITE Safety Approved
- High Density
- Active PFC
- Low Profile (1.06" height)
- High Efficiency 90% typ.
- Convection rated to 100W
- 12V, 0.5A Aux (Fan) Output
- RoHS Compliant

## Safety and EMC

- CSA/UL 60601-1-1 3rd Ed. Safety
- CSA/UL 60950-1 ITE Safety
- NEMKO EN60601-1/EN60950-1
- CE Mark (LVD)
- EN50022 (CISPR 22) Conducted Class A
- EN61000-3-2 Class D Harmonics
- EN61000-3-3 Voltage Fluctuations
- EN61000-4-2, 3, 4, 5, 6, 11 Immunity

# HD160 Series

## 160 Watt High-Density AC/DC Power Supply



### Description

The HD160 Series of open frame switching power supplies utilizes a highly advanced circuit topology to deliver 160 Watts in an industry standard package that has a 4.00 x 2.00 inch footprint and 1U height. The series has been designed meet the requirements of Medical, Telecom and Industrial applications and operates over the universal AC input range. These supplies have active power factor correction (PFC), flexible output configurations an auxiliary 12V output that can be used to drive a fan, and compliance to worldwide safety and EMC standards.

### Ratings

Input Voltage Range	90 to 264 VAC, 47 to 63 Hz or 170 to 370 VDC
Output Power—200 LFM Forced Air	160W (5V model is 100W)
Output Power—Free Air	100W
Power Factor	0.98 at 230VAC
Efficiency	90%
Output Ripple	1% pk-pk, 0 to 20MHz
Aux. Fan Output	12V, 0.5A
Size	Industry Standard 2 in. x 4 in. x 1.06 in.

### Model Selection

Model	Output Power	Standby Voltage
HD 160-105	100 Watts	+5V @ 20A
HD 160-112	160 Watts	12V @ 13.3A
HD 160-118	160 Watts	18V @ 8.88A
HD 160-124	160 Watts	24V @ 6.66A
HD 160-148	160 Watts	48V @ 3.33A

Contact factory for other voltage configurations.

## Electrical Specifications

### Input

AC Input Voltage	90-264VAC (47-63Hz) or 170-370 VDC
Input Current	2A Max Continuous
Input Reflected Ripple	FCC 68 part 15 Class B
Power Factor Correction	0.98 at 220VAC (typical)
Input Line Protection	3A 250VAC IEC Type
Hold-up Time	>16msec @ Full Load
Efficiency	90% Typical
Leakage	100/200uA @ 115/230 VAC (max)

### Output

Line Regulation	$\pm 0.1\%$ for $V_{in}$ (min.) to $V_{in}$ (max.)
Load Regulation	$V_1 = \pm 1\% / V_2 = \pm 5\%$ Max
Adjustment Range	$\pm 5\%$ Minimum
Min. Load Requirement	None
Ripple	$\pm 1\%$ (20MHz)
Transient Response	5% Max Deviation For 50% Load Step
Over-Voltage Protection	115-150% (Latched Shut-down)
Turn-On Delay	1 Sec. Max.
Initial Setting Accuracy	$\pm 1\%$
Over-Current	110-130% of I-Max (Auto-Recovery)
Aux Fan Output	12 VDC @ 500m A

## EMC and Safety Certifications

### Electromagnetic Compatibility

Electrostatic Discharge	EN61000-4-2, $\pm 4$ KV Contact / $\pm 8$ KV Air Discharge
Radiated Susceptibility	EN61000-4-3, 26-1000MHz, 10V/M, 80% AM
EFT / Bursts	EN61000-4-4, $\pm 2$ KV
Surges	EN61000-4-5, $\pm 2$ KV Line-Earth, $\pm 1$ KV Line-Line
Conducted Immunity	EN61000-4-6, 0.15-800MHz, 10V, 80% AM
Voltage Dips	EN61000-4-11, 95% Dip & 10ms, 30% Dip & 500ms
Voltage Interruptions	EN61000-4-11, 95% Reduction, 5s
Fluctuations & Flicker	EN61000-3-3

### Safety & Emissions

Safety Approvals	CSA/UL 22.2 No. 60950-1-M90 & 60601-1-M90, NEMKO EN60950-1 / EN60601-1, CE Mark (LVD)
Conducted Emissions	EN S0022 (CISPR 22) Class A

