MDR-240WY

Single Output, Wide Input 240W DIN Rail AC/DC Power Supplies

Key Features:

- 240W Output Power
- 3,000 VAC I/O Isolation
- Universal AC Input
- Takes AC or DC Input
- Ultra Slim Case
- UL Approved
- -30°C to 70°C Operation
- DC OK Relay Contact
- Meets EN 55032 B
- 900 kHour MTBF
- High Efficiency

Electrical Specifications

Specifications typical @ +25°C, nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range		180		550	VAC
		254		780	VDC
Input Frequency		47		63	Hz
Input Current	See Model Selection Guide				
Power Factor	230/400 VAC			0.84	
Leakage Current	530 VAC			3.5	mA
Inrush Current, Cold Start				50	A Pk

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±2.0		%
Line Regulation			±0.5		%
Load Regulation			±1.0		%
Ripple & Noise (20 MHz), See Note 1				150	mVp-p
Hold-Up Time	Full Load 230/400 VAC	18			ms
Temperature Coefficient	0°C to +50°C		±0.03		%/°C
Over Current Protection		105		130	%IOUT
Short Circuit Protection, See Note 2	Continuous (Autorecovery)				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage, See Note 3	Input to Output	3,000			VAC
	Input to Field Ground	2,000			
	Output to Field Ground	500			
	Output to DC OK Relay	500			
Isolation Resistance	500VDC Input to Output	100			MΩ
	500VDC Input to Field Ground				
	500VDC Output to Field Ground				

EMI **See Page 2**

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-30		+70	°C
Storage Temperature Range		-40		+85	°C
Cooling	Free Air Convection (See Derating Curves on Page 2)				
Humidity, RH, Non-condensing	Working	20		95	%
	Storage	10		95	
Overtemperature Protection	Autorecovery				

Physical

Size	2.48 x 4.47 x 4.92 in. (See Mechanical Drawing on Page 3)
Case Material	Aluminum and Steel
Weight	35.27 oz (1000g) (See Mechanical Drawing on Page 3)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C	900			kHours
Safety Standards	UL61010-1, UL61010-2-201, EN62368-1				
Vibration	IEC 60068-2-6, 10-500 Hz, 2G 10 min/1 cycle, 60 min each along X, Y, Z axis				

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Model Selection Guide

Model Number	Input		Output					Over Voltage Protection (VDC) See Note 4	Efficiency % (Typ @ 400 VAC)
	Current (A)		Voltage (VDC)	Adjust Range (VDC)	Current (A)		Power (W)		
	230 VAC	400 VAC			Rated	% Min.			
MDR-240WY-24	2	1	24	24.0 - 28.0	10	0	240	29.0 - 33.0	91
MDR-240WY-48	2	1	48	48.0 - 55.0	5	0	240	56.0 - 65.0	91

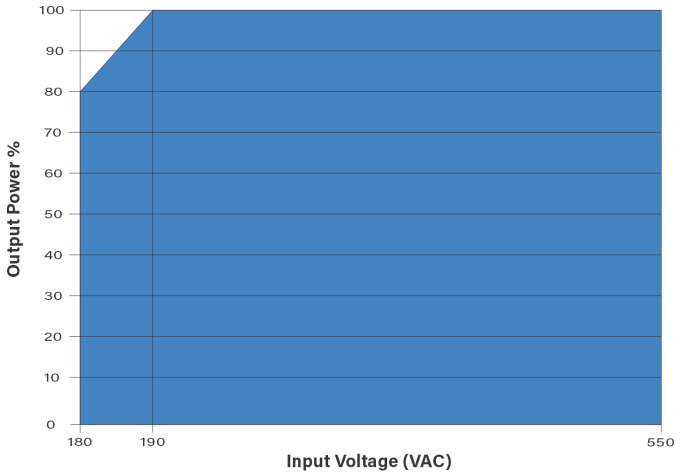
EMI/RFI

Parameter	Standard	Criteria	Level
Radiated Emissions	CISPR 32/EN 55032		B
Conducted Emissions	CISPR 32/EN 55032		B
Harmonic Current	EN 61000-3-2	A	
Voltage Flicker	EN 61000-3-3	A	
ESD	EN 61000-4-2	B	±4KV Contact, ±8KV Air
RS	EN 61000-4-3	A	3V/m
EFT	EN 61000-4-4	B	±1KV
Surge	EN 61000-4-5	A	±1KV line to line
	EN 61000-4-5	A	±2KV line to ground
CS	EN 61000-4-6	A	3V.r.m.s
EMC	EN 61000-4-8	A	1A/m
Voltage Dip, Short, Interruption	EN61000-4-11	B	0%, 70%

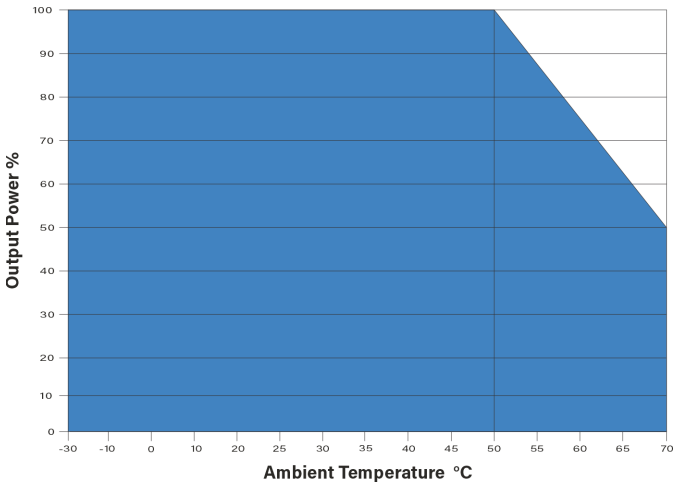
Notes:

1. Output ripple is measured at 20 MHz bandwidth using 0.1 μF and 47 μF capacitors connected in parallel as close to the power supply terminals as possible.
2. Output short circuit protection is provided by constant current limiting until hiccup after 3 seconds. The unit recovers automatically when the fault condition is removed.
3. Isolation is tested for 60 seconds with a leakage current of <5 mA.
4. Protection type: shutdown, recycle input to recover.
5. There is an ambient temperature derating of 3.5°C /1000m for operating higher than 2000m (6500ft).

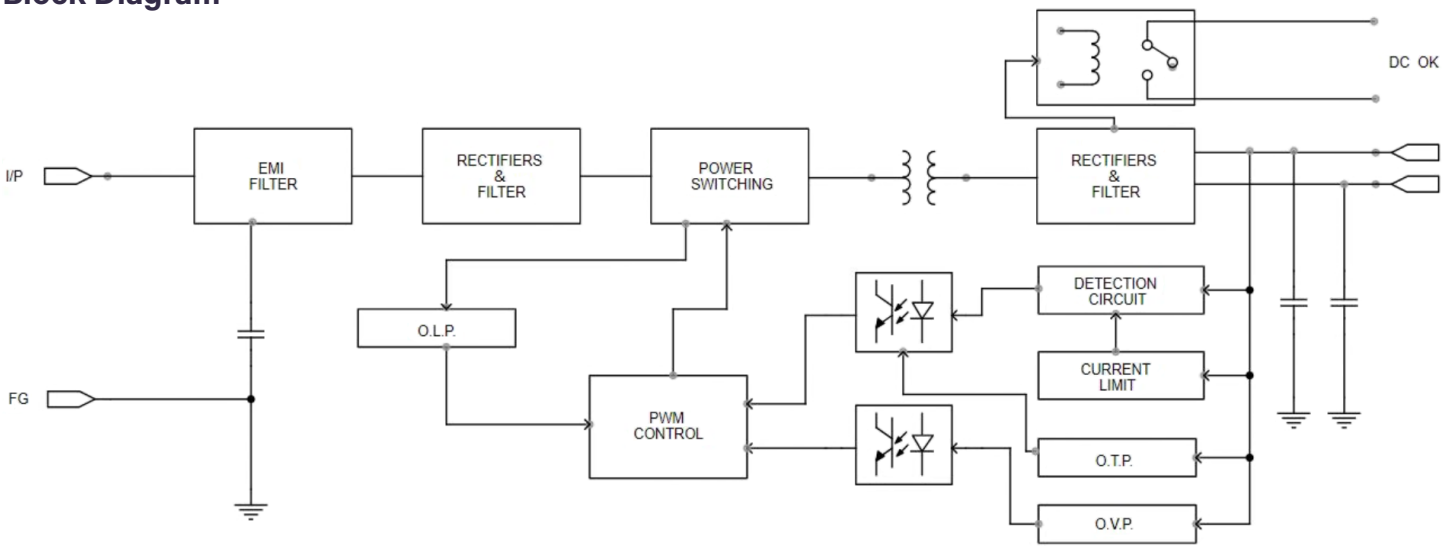
Input Voltage Derating



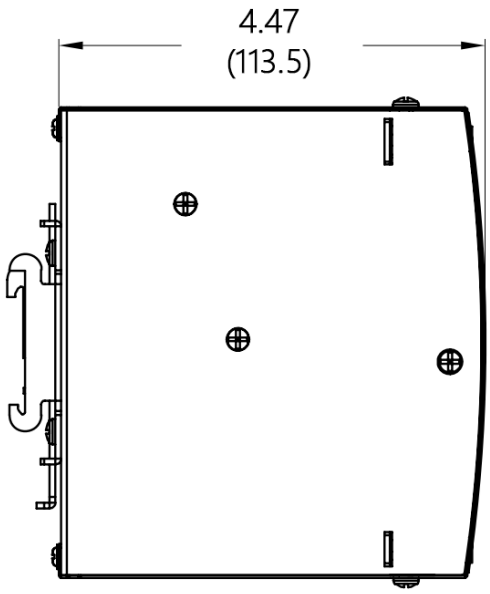
Temperature Derating

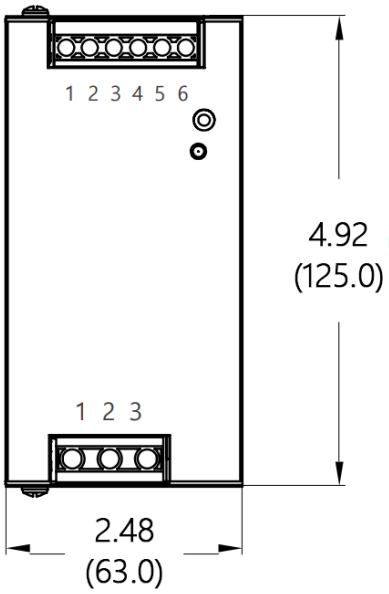


Block Diagram



Mechanical Dimensions





DC OK Relay Contact	
Contact Closed	PSU turns on · DC OK
Contact Open	PSU turns off · DC Fail
Contact Ratings (Max.)	60VDC/0.3A resistive load
	30VDC/1A resistive load
	30VAC/0.5A resistive load

Notes:
- All dimensions are typical in inches (mm)
- Weight: 35.27 Oz (1000g)

Input	
Pin	**Function**
1	GRND
2	AC/L2
3	AC/L1

Output	
Pin	**Function**
1, 2	Relay Contact
3, 4	+VOUT
5, 6	-VOUT

Installation Clearance:
- Top: 40mm
- Bottom: 20mm
- Sides: 5mm, increase space to 10-15mm if adjacent device is heat source

MPD has a very wide range of high performance AC/DC power supplies ranging from 600W UChannel units to 1W units in miniature Single-In-Line (SIP) packages. All are designed and certified to international safety and EMC/EMI standards.
We have AC/DC supplies approved for use in medical equipment, DIN rail supplies, "Green" energy supplies and constant power supplies.
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